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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/588,084	05/27/2014	8738740	141-1 US/PCT CON	4986

24949 7590 05/07/2014

TEITELBAUM & MACLEAN
280 SUNNYSIDE AVENUE
OTTAWA, ON K1S 0R8
CANADA

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 0 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):

John McCue, Ottawa, CANADA;
Robert McCue, Ottawa, CANADA;
Gregory Shostakovsky, Kanata, CANADA;
Glenn McCue, Ottawa, CANADA;

Form PTO 1449A U.S. Department of Commerce Patent and Trademark Office Information Disclosure Statement by Applicant	ATTY. DOCKET NUMBER: 141-1 US/PCT CON	SERIAL NUMBER:<br~~New Application~~ 13/588,084
	APPLICANT: McCue et al.	
	FILING DATE:<br~~New Application~~ Herewith	GROUP:<br~~New Application~~ 2441

U.S. Patent Documents

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILIN APPE
		5586264	Dec 17, 1996	Belknap et al	395	200.08	
		6621980	Sep 16, 2003	Gould et al	386	69	
		6850982	Feb 1, 2005	Siegel	709	227	
		7242809	Jul 10, 2007	Hunter et al	382	224	
		20020184189	Dec 5, 2002	Hay et al	707	1	
		20030091338	May 15, 2003	Snow et al	386	96	
		20030172346	Sep 11, 2003	Gould et al	715	501.1	
		2003 221194	Nov 27, 2003	Thiagarajan et al	725	55	
		20050061873	Mar 24, 2005	Pirillo	235	380	
		20050091062	Apr 28, 2005	Burges et al	704	273	
		20050111824	May 26, 2005	Hunter et al	386	52	
		20050245243	Nov 3, 2005	Zuniga	455	414.3	
		20050250439	Nov 10, 2005	Leslie	455	11.1	
		2006 140162	Jun 29, 2006	Vasa	370	338	
		20060236219	Oct 19, 2006	Grigorovitch et al	715	500.1	
		20060242550	Oct 26, 2006	Rahman et al	715	500.1	
		20060271989	Nov 30, 2006	Glaser et al	725	111	
		2007 041356	Feb 22, 2007	Fontijn	370	352	
		20070083911	Apr 12, 2007	Madden et al	725	135	
		20100281509	Nov 4, 2010	Yu et al.	725	100	
		20110118858	May 19, 2011	Rottler et al.	700	94	

Change(s) applied to document,
/N.W.S./
2/10/2014

/Alicia Baturay/ 05/02/2013

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.B./

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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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)

24949 7590 01/14/2014
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280 SUNNYSIDE AVENUE
OTTAWA, ON K1S 0R8
CANADA

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.
13/588,084	08/17/2012	John McCue	141-1 US/PCT CON	4986

TITLE OF INVENTION: TRANSMISSION OF DIGITAL AUDIO DATA

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$480	$0	$0	$480	04/14/2014

EXAMINER	ART UNIT	CLASS-SUBCLASS
BATURAY, ALICIA	2441	709-219000

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 Teitelbaum & MacLean
2 Neil Teitelbaum
3 Doug MacLean

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: Audio Pod Inc.

(B) RESIDENCE: (CITY and STATE OR COUNTRY): Ottawa, Canada

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 credits any overpayment, to Deposit Account Number 502810 (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
- ☐ Applicant certifying micro entity status. See 37 CFR 1.29
  NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
- ☐ Applicant asserting small entity status. See 37 CFR 1.27
  NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
- ☐ Applicant changing to regular undiscounted fee status.
  NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /Neil Teitelbaum/ Date April 11, 2014

Typed or printed name Neil Teitelbaum Registration No. 38793

PTOL-85 Part B (10-13) Approved for use through 10/31/2013. OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Electronic Patent Application Fee Transmittal

Application Number:	13588084
Filing Date:	17-Aug-2012
Title of Invention:	TRANSMISSION OF DIGITAL AUDIO DATA
First Named Inventor/Applicant Name:	John McCue
Filer:	Neil Teitelbaum/Lisa Fader
Attorney Docket Number:	141-1 US/PCT CON

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	480	480
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**480**

Electronic Acknowledgement Receipt	
EFS ID:	18740417
Application Number:	13588084
International Application Number:	
Confirmation Number:	4986
Title of Invention:	TRANSMISSION OF DIGITAL AUDIO DATA
First Named Inventor/Applicant Name:	John McCue
Customer Number:	24949
Filer:	Neil Teitelbaum/Lisa Fader
Filer Authorized By:	Neil Teitelbaum
Attorney Docket Number:	141-1 US/PCT CON
Receipt Date:	11-APR-2014
Filing Date:	17-AUG-2012
Time Stamp:	14:21:55
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$480
RAM confirmation Number	534
Deposit Account	502810
Authorized User	FADER, LISA
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees) Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	PTOL85.pdf	88119 31d3634d72efebf3473992bf6ea7ca3449c2acdf	no	1
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30093 968f31bd33b40bd1240a515a94f7e64f94b8eb5e	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	118212		

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.

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NOTICE OF ALLOWANCE AND FEE(S) DUE

24949 7590 01/14/2014

TEITELBAUM & MACLEAN
280 SUNNYSIDE AVENUE
OTTAWA, ON K1S 0R8
CANADA

EXAMINER	
BATURAY, ALICIA	
ART UNIT	PAPER NUMBER
2441	

DATE MAILED: 01/14/2014

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/588,084	08/17/2012	John McCue	141-1 US/PCT CON	4986

TITLE OF INVENTION: TRANSMISSION OF DIGITAL AUDIO DATA

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$480	$0	$0	$480	04/14/2014

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
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P.O. Box 1450
Alexandria, Virginia 22313-1450
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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.
13/588,084	08/17/2012	John McCue	141-1 US/PCT CON	4986

TITLE OF INVENTION: TRANSMISSION OF DIGITAL AUDIO DATA

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EXAMINER	ART UNIT	CLASS-SUBCLASS
BATURAY, ALICIA	2441	709-219000

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 credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
- ❑ Applicant certifying micro entity status. See 37 CFR 1.29
  NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
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  NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

PTOL-85 Part B (10-13) Approved for use through 10/31/2013. OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/588,084	08/17/2012	John McCue	141-1 US/PCT CON	4986

24949 7590 01/14/2014

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280 SUNNYSIDE AVENUE
OTTAWA, ON K1S 0R8
CANADA

EXAMINER	
BATURAY, ALICIA	

ART UNIT	PAPER NUMBER
2441	

DATE MAILED: 01/14/2014

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 0 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 0 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).

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OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B 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. 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.

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. 13/588,084	Applicant(s) MCCUE ET AL.	
	Examiner Alicia Baturay	Art Unit 2441	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *the amendment filed 18 December 2013*.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on_____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are *46-54, 56-63, and 68 (renumbered 1-18)*. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov .
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:
   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
5. ☐ Examiner's Amendment/Comment
6. ☐ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/Alicia Baturay/
Primary Examiner, Art Unit 2441

Notice of References Cited	Application/Control No. 13/588,084	Applicant(s)/Patent Under Reexamination MCCUE ET AL.	
	Examiner Alicia Baturay	Art Unit 2441	Page 1 of 2

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,393,462 B1	05-2002	Mullen-Schultz, Gary Lee	709/206
*	B	US-6,542,869 B1	04-2003	Foote, Jonathan	704/500
*	C	US-6,697,564 B1	02-2004	Toklu et al.	386/285
*	D	US-6,810,409 B1	10-2004	Fry et al.	709/202
*	E	US-6,816,834 B2	11-2004	Jaroker, Jon	704/235
*	F	US-6,850,982 B1	02-2005	Siegel, Kenneth P.	709/227
*	G	US-7,242,809 B2	07-2007	Hunter et al.	382/224
*	H	US-7,379,875 B2	05-2008	Burges et al.	704/273
*	I	US-7,539,086 B2	05-2009	Jaroker, Jon	369/25.01
*	J	US-8,225,335 B2	07-2012	Glenner et al.	719/322
*	K	US-8,285,809 B2	10-2012	McCue et al.	709/217
*	L	US-8,386,621 B2	02-2013	Park et al.	709/228
*	M	US-2003/0046348 A1	03-2003	Pinto et al.	709/206

FOREIGN PATENT DOCUMENTS

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

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*		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.

Notice of References Cited	Application/Control No. 13/588,084	Applicant(s)/Patent Under Reexamination MCCUE ET AL.	
	Examiner Alicia Baturay	Art Unit 2441	Page 2 of 2

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2003/0221194 A1	11-2003	Thiagarajan et al.	725/55
*	B	US-2005/0171763 A1	08-2005	Zhou et al.	704/201
*	C	US-2005/0245243 A1	11-2005	Zuniga, Michael A.	455/414.3
*	D	US-2006/0140162 A1	06-2006	Vasa, Yojak	370/338
*	E	US-2007/0016636 A1	01-2007	Boerries et al.	709/200
*	F	US-2007/0041356 A1	02-2007	Fontijn, Wilhelmus Franciscus Johannes	370/352
*	G	US-2007/0083911 A1	04-2007	Madden et al.	725/135
*	H	US-2007/0189737 A1	08-2007	Chaudhri et al.	386/125
*	I	US-2008/0301318 A1	12-2008	McCue et al.	709/231
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

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

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
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	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
	13588084	MCCUE ET AL.
	Examiner	Art Unit
	ALICIA BATURAY	2441

✓	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	05/09/2013	09/12/2013	01/02/2014						
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	2	-	-	-						
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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13588084	MCCUE ET AL.
	Examiner	Art Unit
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☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
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	66	✓	✓	-						
	67	✓	✓	-						
12	68		✓	=						

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13588084	MCCUE ET AL.
	Examiner	Art Unit
	ALICIA BATURAY	2441

CPC		
Symbol	Type	Version

CPC Combination Sets				
Symbol	Type	Set	Ranking	Version

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	18	
/ALICIA BATURAY/ Primary Examiner.Art Unit 2441	01/02/2014	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	13	7

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13588084	MCCUE ET AL.
	Examiner	**Art Unit**
	ALICIA BATURAY	2441

US ORIGINAL CLASSIFICATION		INTERNATIONAL CLASSIFICATION										
CLASS	SUBCLASS	CLAIMED					NON-CLAIMED					
709	219	G	0	6	F	15 / 16 (2006.01.01)						

CROSS REFERENCE(S)						
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	18	
/ALICIA BATURAY/ Primary Examiner.Art Unit 2441	01/02/2014	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	13	7

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13588084	MCCUE ET AL.
	Examiner	**Art Unit**
	ALICIA BATURAY	2441

☐ 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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	5		21		37	8	53								
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	11		27		43	14	59								
	12		28		44	15	60								
	13		29		45	16	61								
	14		30	1	46	17	62								
	15		31	2	47	18	63								
	16		32	3	48		64								

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 18	
/ALICIA BATURAY/ Primary Examiner.Art Unit 2441 (Primary Examiner)	01/02/2014 (Date)	O.G. Print Claim(s) 13	O.G. Print Figure 7

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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13588084	MCCUE ET AL.
	Examiner	Art Unit
	ALICIA BATURAY	2441

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
709	219	05/09/2013	AB
709	219	09/12/2013	AB
709	219	01/02/2014	AB

SEARCH NOTES		
Search Notes	Date	Examiner
Searched EAST (US-PGPUB, USPAT, EPO, JPO, DERWENT, IBM_TDB)	05/09/2013	AB
Conducted Inventor Name Search	05/09/2013	AB
Conducted Class/Subclass Search	05/09/2013	AB
Updated EAST Search (US-PGPUB, USPAT, EPO, JPO, DERWENT, IBM_TDB)	09/12/2013	AB
Updated Inventor Name Search	09/12/2013	AB
Updated Class/Subclass Search	09/12/2013	AB
Updated EAST Search (US-PGPUB, USPAT, EPO, JPO, DERWENT, IBM_TDB)	01/02/2014	AB
Updated Inventor Name Search	01/02/2014	AB
Updated Class/Subclass Search	01/02/2014	AB
Conducted Interference Search	01/02/2014	AB

INTERFERENCE SEARCH

US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
PG-PUB; UPAD	See Search History	01/02/2014	AB

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CONFIRMATION NO. 4986

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
13/588,084	08/17/2012 RULE	709	2441	141-1 US/PCT CON

APPLICANTS

INVENTORS

John McCue, Ottawa, CANADA;
Robert McCue, Ottawa, CANADA;
Gregory Shostakovsky, Kanata, CANADA;
Glenn McCue, Ottawa, CANADA;

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

This application is a CON of 12/096,933 06/11/2008 PAT 8285809
which is a 371 of PCT/CA2006/002046 12/12/2006
which claims benefit of 60/749,632 12/13/2005

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

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08/29/2012

Foreign Priority claimed	35 USC 119(a-d) conditions met	Verified and Acknowledged	Met after Allowance	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
☐ Yes ☑ No	☐ Yes ☑ No	/ALICIA BATURAY/ Examiner's Signature	☐ Initials	CANADA	15	~~22~~ 18	~~3~~ 2

ADDRESS

TEITELBAUM & MACLEAN
280 SUNNYSIDE AVENUE
OTTAWA, ON K1S 0R8
CANADA

TITLE

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BIB (Rev. 05/07).

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L2	12	709/217.ccls. and (book adj mark) and audio	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/01/02 15:42
L3	0	(McCue.in. or Shostakovsky.in.) same (audio)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/01/02 15:42
L8	172	(siz$3 adj file same network adj (throughput or speed or bandwidth))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/01/02 15:43
S1	1816	(segment$7 or break$3 or reduc$3) same audio same (silence or "low decibel" or gaps)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 10:55
S2	1334	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same audio same (silence or "low decibel" or gaps))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 10:57
S3	3547	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same (silence or "low decibel" or gaps))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 10:58
S4	4	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same (silence or "low decibel" or gaps) same (natural adj language))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 10:58
S5	24	("5586264", "6621980", "20020184189", "20030091338", "20030172346", "20050061873", "20050091062", "20050111824", "20050250439", "20060236219", "20060242550", "20060271989").pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 11:00
S6	0	audio-pod.as.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 11:03
S7	496	McCue.in. or Shostakovsky.in.	US-PGPUB; USPAT; EPO; JPO; DERWENT;	OR	ON	2010/01/26 11:04

			IBM_TDB			
S8	0	(McCue.in. or Shostakovsky.in.) same (audio)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 11:04
S9	552	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same (silence or "low decibel" or gaps) same (language or speech))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 14:06
S10	23	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same (silence or "low decibel" or gaps) adj (language or speech))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 14:07
S11	3	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same stream$3 same (silence or "low decibel" or gaps) adj (language or speech))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 14:13
S12	8403	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same stream$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 14:16
S13	268	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same stream$3 same (descriptor or index))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 14:17
S14	47	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same stream$3 same (descriptor or index) same (start or end or play))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 14:17
S15	4	("7379875", "7242809").pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 11:24
S16	7	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same stream$3 same purg$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 15:58
S17	8403	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same stream$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 15:58
S18	1060	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same stream$3 same buffer$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 15:58
S19	2167	@ad<"20051213" and (stream$3 same buffer$3 same (purg$3 or empty$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT;	OR	ON	2010/01/27 15:59

			IBM_TDB			
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S21	50	@ad<"20051213" and (audio same stream$3 same buffer$3 adj (purg$3 or empty$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 15:59
S22	11	@ad<"20051213" and (audio same stream$3 same used same buffer$3 adj (purg$3 or empty$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 16:01
S23	14	@ad<"20051213" and (stream$3 same buffer$3 same bookmark)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 16:04
S24	47	@ad<"20051213" and (((Quality adj service) or QoS) same (stream$3) same transfer adj rate)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 16:09
S25	10	@ad<"20051213" and (((Quality adj service) or QoS) same (stream$3) same transfer adj rate and transaction)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 16:10
S26	1082	@ad<"20051213" and (((Quality adj service) or QoS) same (stream$3) same audio)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 16:12
S27	207	@ad<"20051213" and (((Quality adj service) or QoS) same (stream$3) same audio same server)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 16:12
S28	6	@ad<"20051213" and (((Quality adj service) or QoS) same (stream$3) same audio same server same (choice or choose or choosing))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 16:13
S29	0	@ad<"20051213" and (((Quality adj service) or QoS) same transfer adj rate and transaction adj rate)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 16:15
S30	50	@ad<"20051213" and (((Quality adj service) or QoS) and transfer adj rate and transaction adj rate)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 16:15
S31	10	@ad<"20051213" and ((((Quality adj service) or QoS) or ((Service adj level adj agreement) or SLA)) same (choose adj server))	US-PGPUB; USPAT; EPO; JPO; DERWENT;	OR	ON	2010/01/27 16:18

			IBM_TDB			
S32	2	"20080301318".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/04/20 13:42
S33	74	small adj audio adj files	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/07/20 16:11
S34	6	@ad<"20051213" and (book adj mark) same (audio adj stream)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/07/21 11:09
S35	58	@ad<"20051213" and (book adj mark) same audio	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/07/21 11:22
S36	3	@ad<"20051213" and (book adj mark) and (time adj offset)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/07/21 11:22
S37	345	@ad<"20051213" and ((book adj mark) or mark$3) same (time adj offset)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/07/21 11:23
S38	76	@ad<"20051213" and ((book adj mark) or mark$3) same (time adj offset) same position	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/07/21 11:23
S39	14	@ad<"20051213" and ((book adj mark) or mark$3) and (time adj offset) same current adj position	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/07/21 11:24
S40	509	McCue.in. or Shostakovsky.in.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/07/21 16:09
S41	8	709/217.ccls. and (book adj mark) and audio	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/07/21 16:10
S42	21	("20050091062" | "6621980" | "20050061873" | "20060271989" | "0118858" | "0281509" | "20050111824" | "20060242550" | "6850982" | "5586264" | "20030221194" | "20060140162" | "20070041356" | "20030172346" | "20060236219" | "7242809" | "20020184189" | "20030091338" | "20050250439" | "20050245243" |	US-PGPUB; USPAT	OR	OFF	2012/06/18 14:27

		"20070083911").PN.				
S43	0	(McCue.in. or Shostakovsky.in.) same (audio)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/18 14:27
S44	9	709/217.ccls. and (book adj mark) and audio	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/18 14:27
S45	185	(book adj mark$3).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/18 14:38
S46	3	((audio or mp3 or mpeg or sound) same (book adj mark$3)).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/18 14:38
S52	23	("20020184189" | "20030091338" | "20030172346" | "20030221194" | "20050061873" | "20050091062" | "20050111824" | "20050245243" | "20050250439" | "20060140162" | "20060236219" | "20060242550" | "20060271989" | "20070041356" | "20070067267" | "20070083911" | "20090171750" | "20100281509" | "20110118858" | "5586264" | "6621980" | "6850982" | "7242809").PN.	US-PGPUB; USPAT	OR	OFF	2013/05/02 10:25
S53	1	"20120317245".pn.	US-PGPUB	OR	OFF	2013/05/02 14:49
S54	2	("8386621", "8239893").pn.	USPAT	OR	OFF	2013/05/02 16:13
S55	19	Netflix.as.	USPAT	OR	OFF	2013/05/02 16:14
S56	3565	@ad<"20051213" and (parallel adj stream$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 16:15
S57	3	@ad<"20051213" and ((parallel adj stream$3) same statistics)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 16:15
S58	4	("20070260546" | "20070288588" | "5761417" | "7096263").PN. OR ("8386621").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2013/05/02 16:16
S59	38	@ad<"20051213" and (transfer$7 adj ((book adj mark) or bookmark))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 16:51
S60	7	@ad<"20051213" and (transfer$7 adj ((book adj mark) or bookmark) and audio)	US-PGPUB; USPAT; EPO; JPO;	OR	ON	2013/05/02 16:52

			DERWENT; IBM_TDB			
S61	1	@ad<"20051213" and ((parallel adj download$3) same (audio or mp3 or wav))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 17:12
S62	69	@ad<"20051213" and ((parallel adj download$3) and (audio or mp3 or wav))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 17:12
S63	5180	@ad<"20051213" and (download$3 and (audio or mp3 or wav) and throughput)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 17:13
S64	580	@ad<"20051213" and (download$3 same throughput and (audio or mp3 or wav))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 17:13
S65	72	@ad<"20051213" and (download$3 same throughput same (audio or mp3 or wav))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 17:13
S66	0	@ad<"20051213" and (download$3 same server adj throughput same (audio or mp3 or wav))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 17:15
S67	0	@ad<"20051213" and (download$3 same statistics same throughput same (audio or mp3 or wav))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 17:16
S68	0	@ad<"20051213" and (download$3 same faster adj server same (audio or mp3 or wav))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 17:17
S69	1	@ad<"20051213" and (download$3 same faster adj server and (audio or mp3 or wav))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 17:17
S70	15	@ad<"20051213" and ((server adj (cluster or group or farm)) same (fastest or quickest or swiftest))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/06 08:59
S71	8	@ad<"20051213" and (((log adj in) or login) same ISBN)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/07 12:45
S72	3	"8285809".pn.	US-PGPUB; USPAT; EPO; JPO;	OR	OFF	2013/09/11 13:00

			DERWENT; IBM_TDB			
S73	0	(siz$3 adj file adj network adj (throughput or speed or bandwidth))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/11 14:55
S74	164	(siz$3 adj file same network adj (throughput or speed or bandwidth))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/11 14:56
S75	26	@ad<"20051213" and (siz$3 adj file same network adj (throughput or speed or bandwidth))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/11 14:56
S76	0	(McCue.in. or Shostakovsky.in.) same (audio)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/11 15:42
S77	11	709/217.ccls. and (book adj mark) and audio	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/11 15:42

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L4	0	audio-pod.as.	US-PGPUB; UPAD	OR	ON	2014/01/02 15:42
L5	1407	(segment$7 or break$3 or reduc$3) same audio same (silence or "low decibel" or gaps)	US-PGPUB; UPAD	OR	ON	2014/01/02 15:42
L6	4	(download$3 same statistics same throughput same (audio or mp3 or wav))	US-PGPUB; UPAD	OR	ON	2014/01/02 15:42
L7	0	(siz$3 adj file adj network adj (throughput or speed or bandwidth))	US-PGPUB; UPAD	OR	OFF	2014/01/02 15:43
L9	305	(book adj mark) and audio	US-PGPUB; UPAD	OR	ON	2014/01/02 15:43
S47	3	((audio or mp3 or mpeg or sound) same (book adj mark$3)).clm.	US-PGPUB; UPAD	OR	OFF	2012/06/18 14:39
S48	19	(small adj (audio or sound or mp3 or mpeg)).clm.	US-PGPUB; UPAD	OR	OFF	2012/06/18 14:39
S49	0	((book adj mark$3) same (off adj set)).clm.	US-PGPUB; UPAD	OR	OFF	2012/06/18 14:40
S50	0	((book adj mark$3) and (off adj set)).clm.	US-PGPUB;	OR	OFF	2012/06/18 14:41

			UPAD			
S51	36	((small or short or miniscule) adj (audio or sound or mp3 or mpeg)).clm.	US-PGPUB; UPAD	OR	OFF	2012/06/18 14:41

1/2/2014 3:53:24 PM
C:\Users\abaturay\Alicia's Documents\EAST Searches\13588084-NaturalLanguageAudioGapsAudioOnDemandCON.wsp

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of: **McCue et al**	Atty Docket No.: **141-1 US/PCT CON**
Serial No.: **13/588,084**	Art Unit: **2441**
Filing Date: **August 17, 2012**	Examiner: **Baturay, Alicia**
Confirmation No.: **4986**	

For: **TRANSMISSION OF DIGITAL AUDIO DATA**

December 18, 2013

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

AMENDMENT

Dear Sir:

In response to the Office Action of September 19, 2013, please consider the following remarks and amend the above-identified application as follows:

Amendments to the Claims are reflected in the listing of claims, which begins on page 2 of this paper.

Remarks begin on page 6 of this paper.

Amendments to the Claims

This listing of the claims will replace all prior versions, and listings, of claims in the application:

1-45 (cancelled)

46. (Currently amended) A non-transitory computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to:

send a request to a network-based server, the request including a unique identifier for identifying an audio stream;

load a list of library servers received from the network-based server, the list of library servers determined in dependence upon the unique identifier;

maintain service level statistics for each library server in the list of library servers;

select a first library server from the list of library servers in dependence upon the service level statistics, the first library server having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream; ~~and~~

download a first digital audio file from the plurality of digital audio files for playback with a media player,

select a second library server from the list of library servers in dependence upon the service level statistics, the second library server having a copy of the plurality of digital audio files; and

download a second other digital audio file from the second library server for playback with the media player.

47. (Previously presented) The non-transitory computer readable storage medium according to claim 46, wherein the unique identifier is an ISBN number.

48. (Previously presented) The non-transitory computer readable storage medium according to claim 47, wherein a size of each digital audio file in the plurality of digital audio files is selected in dependence upon network throughput rates.

49. (Previously presented) The non-transitory computer readable storage medium according to claim 48, wherein the unique identifier is obtained from one of a bookmark structure, a card catalog structure, and an advertising structure.

50. (Previously presented) The non-transitory computer readable storage medium according to claim 46, wherein the unique identifier is obtained from one of a bookmark structure, a card catalog structure, and an advertising structure.

51. (Previously presented) The non-transitory computer readable storage medium according to claim 46, wherein the service level statistics include historical transfer rates for each library server in the list of library servers.

52. (Previously presented) The non-transitory computer readable storage medium according to claim 51, wherein the computer code is further configured to cause said computer to:

compare the historical transfer rates of all library servers on the list of library servers;

select the fastest library server on the list of library servers;

initialize a value representing a floating average transfer rate;

monitor transaction times for the fastest library server and update the floating average transfer rate;

increase the floating average transfer rate by a first predetermined value in dependence upon an unavailability of the fastest library server; and

update the historical transfer rate for the fastest server in dependence upon the floating average transfer rate exceeding a predetermined value.

53. (Previously presented) The non-transitory computer readable storage medium according to claim 52, wherein the computer code is further configured to cause said computer to:

calculate an average value of the historical transfer rates for all library servers on the list of servers and subtract a second predetermined value from the historical transfer rate for each library server that has a historical value exceeding the calculated average.

54. (Previously presented) The non-transitory computer readable storage medium according to claim 52, wherein the first library server is the fastest library server.

55. (Canceled)

56. (Previously presented) The non-transitory computer readable storage medium according to claim 46, wherein the request includes login information.

57. (Previously presented) The non-transitory computer readable storage medium according to claim 46, wherein the computer code is configured to cause said computer to:

download a descriptor file from the first library server, the descriptor file for ordering the plurality of digital audio files, the descriptor file including at least one of a start time, an end time, and a play time of each digital audio file in the plurality of digital audio files within the audio stream,

wherein the computer determines the first digital audio file for playback using a time offset external to the descriptor file and the at least one of the start time, end time, and play time of each digital audio file in the plurality of digital audio files.

58. (Previously presented) A non-transitory computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to:

determine a first position within an audio stream playing on a media player;

determine a time offset using a point in time of the first position from a beginning of the audio stream;

create a bookmark for the first position, the bookmark including a file, the file including a unique identifier for identifying the audio stream and including the time offset,

wherein the bookmark is for positioning the audio stream to the first position using the time offset,

wherein the audio stream is stored as a plurality of digital audio files in a library, each digital audio file including a different segment of the audio stream, and wherein the computer code is further configured to cause said computer to:

determine a first digital audio file from the plurality of digital audio files to be loaded for playback with the media player from the first position, the first digital audio file selected using the time offset and a descriptor file, the descriptor file for ordering the plurality of digital audio files and including at least one of a start time, an end time, and a play time of each digital audio file in the plurality of digital audio files within the audio stream;

determine if the first digital audio file is resident within the computer;

download the first digital audio file from the library in dependence upon whether the first digital audio file is already resident within the computer; and

load the first digital audio file for playback with the media player from the first position.

59. (Previously presented) The non-transitory computer readable storage medium according to claim 58, wherein the first position is determined when the media player is stopped while playing the audio stream.

60. (Previously presented) The non-transitory computer readable storage medium according to claim 58, wherein the first position is determined in response to a make bookmark command.

61. (Previously presented) The non-transitory computer readable storage medium according to claim 58, wherein the time offset is determined by subtracting a predetermined value from the point in time of the first position from the beginning of the audio stream.

62. (Previously presented) The non-transitory computer readable storage medium according to claim 58, wherein the computer code is further configured to cause said computer to:

transfer the bookmark to another computer.

63. (Previously presented) The non-transitory computer readable storage medium according to claim 62, wherein the other computer is for loading a digital audio file including the first position for playback by an other media player, the media player and the other media player using one of the same audio formats and different audio formats.

64-67. (cancelled)

68. (Previously presented) The non-transitory computer readable storage medium according to claim 46, wherein a size of each digital audio file in the plurality of digital audio files is selected in dependence upon network throughput rates.

REMARKS

Claims 46-54, 56-63, and 68 are pending. Claims 1-45, 55, and 64-67 have been cancelled.

Applicant would like to thank the Examiner for indicating that claims 58-63 are allowed. Applicant would also like to thank the Examiner for indicating, in an electronic mail sent from Alicia Baturay to Neil Teitelbaum on October 7, 2013, that claim 55 would be allowable if rewritten in independent form. Claim 46 has been amended to include the subject matter of claim 55, and thus claim 46 and claims 47-54, 56-57, and 68, which depended therefrom, are believed to be allowable. As indicated above, claim 55 and claims 64-67 have been cancelled. Accordingly, it is respectfully submitted that the application is in condition for allowance.

Notably, the above-mentioned e-mail was sent in response to a query for clarification involving what appeared to be a typographical error in the Office Action dated 09/19/2013. More specifically, the above-mentioned e-mail was sent in response to an e-mail sent from Neil Teitelbaum to Alicia Baturay on October 7, 2013 that noted that according to the first page of the Office Action claim 55 is objected to, whereas on page 37 of the Office Action it was stated that claim 57 would be allowable if rewritten in independent form, and that on pages 10 and 24 of the Office Action, claims 55 and 57, respectively, appeared to be rejected. Applicant would like to thank the Examiner for clarifying that claim 55 would be allowable if rewritten in independent form. Applicant also wishes to point out that the amendments and arguments referred to at Point 7 on page 2 of the Office Action do not appear to relate to the present application.

In view of the foregoing amendments and remarks, it is respectfully submitted that the Application is now in condition for Allowance and favorable reconsideration is kindly requested.

Should any minor informalities need to be addressed, the Examiner is encouraged to contact the undersigned attorney at the telephone number listed below.

The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment, to Deposit Account No: 50-2810.

Please associate this application with Customer No: 24949.

Respectfully submitted,

Neil Teitelbaum
Regn No. 38,793

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JMC/mdb

Electronic Acknowledgement Receipt

EFS ID:	17695092
Application Number:	13588084
International Application Number:	
Confirmation Number:	4986
Title of Invention:	TRANSMISSION OF DIGITAL AUDIO DATA
First Named Inventor/Applicant Name:	John McCue
Customer Number:	24949
Filer:	Neil Teitelbaum/Melanie Budarick
Filer Authorized By:	Neil Teitelbaum
Attorney Docket Number:	141-1 US/PCT CON
Receipt Date:	18-DEC-2013
Filing Date:	17-AUG-2012
Time Stamp:	14:00:59
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		141-1USPCTCONOAResponse.pdf	89576 5457ed241b3b2bd8c67d7d0fdfe7261d363a83d7	yes	8

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	6
	Applicant Arguments/Remarks Made in an Amendment	7	8
Warnings:			
Information:			
	Total Files Size (in bytes):	89576	

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

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

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

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

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 13/588,084	Filing Date 08/17/2012	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)		
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

		(Column 1)		(Column 2)	(Column 3)		
AMENDMENT	12/18/2013	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 18	Minus	** 22	= 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**

		(Column 1)		(Column 2)	(Column 3)		
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	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
/DORRETTA BROOKS/

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www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/588,084	08/17/2012	John McCue	141-1 US/PCT CON	4986

24949 7590 09/19/2013

TEITELBAUM & MACLEAN
280 SUNNYSIDE AVENUE
OTTAWA, ON K1S 0R8
CANADA

EXAMINER	
BATURAY, ALICIA	
ART UNIT	PAPER NUMBER
2441	

NOTIFICATION DATE	DELIVERY MODE
09/19/2013	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ANNETTE@PATENTS.ORG

Office Action Summary	Application No.	Applicant(s)	
	13/588,084	MCCUE ET AL.	
	Examiner	Art Unit	
	Alicia Baturay	2441	

-- 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 *14 August 2013*.

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

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *46-63 and 65-68* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☒ Claim(s) *58-63* is/are allowed.

7)☒ Claim(s) *46-57 and 65-68* is/are rejected.

8)☒ Claim(s) *55* is/are objected to.

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

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

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

11)☒ The drawing(s) filed on *17 August 2012* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to the amendment filed 14 August 2013.

2. Claims 52, 53, 58, and 65-67 were amended.

3. Claims 1-45 and 65 were cancelled.

4. Claim 68 was added.

5. Claims 46-63 and 65-68 are pending in this Office Action.

Response to Amendment

6. The rejection of claim 53 under 35 U.S.C. § 112, 2nd paragraph regarding indefiniteness was addressed and is withdrawn.

7. Applicant's amendments and arguments with respect to claims 1-20 and new claims 21-59 filed on October 21, 2004 have been fully considered but they are deemed to be moot in view of the new grounds of rejection.

Response to Arguments

8. Applicant's arguments filed 14 August 2013 have been fully considered, but they are not persuasive for the reasons set forth below.

9. ***Applicant Argues:*** Daoud et al. do not teach computer readable code, which when executed by a computer, causes said computer to *send a request to* a network-based server, the request

including a unique identifier for identifying an audio stream, and to load a list of library servers *received from the* network-based server, the list of library servers determined in dependence upon the unique identifier.

In Response: The examiner respectfully submits that the combination of Daoud, Zuniga, Hunter, and Griffin teaches send a request to a network-based server (direct the transaction to a server), the request including a unique identifier (the data packet can include an email message to be delivered to a recipient, a uniform resource locator (URL) requesting a hypertext markup language (HTTP) page from the corresponding Internet site, etc. – see Daoud, Fig. 2; col. 4, lines 6-22) for identifying an audio stream (when a user selects content from the content providers web site, a user request-playback data file is created containing the identification numbers of the selected audio tracks – see Zuniga, page 5, paragraph 55); load a list of library servers received from the network-based server (when the transaction is received at the load balancer, the load balancer reads the requested level of service from the service tag), the list of library servers determined in dependence upon the unique identifier (Based on the server index, the load balancer selects the server from the server group that is best providing the requested level of service (e.g., "premium"). The server ID is indicated as a group of servers. That is, Servers A, B, and C, are providing a "premium" level of service. For example, where the service tag indicates that the requested level of service is "premium," the load balancer directs the transaction to any one of the servers 511, 512, and 513 in the premium group. The load balancer can use conventional load balancing algorithms (e.g., fastest available) to select a specific server 511, 512, 513 within the premium group – see

Daoud, Fig. 6; col. 8, lines 31-50). This renders the rejection proper, and thus the rejection stands.

10. ***Applicant Argues:*** The cited combination cannot teach *a non-transitory computer readable storage medium* including computer readable code, which when executed by a computer, causes said computer to: *send a request to a network-based server, load a list of library servers received from the network-based server,* and *download a first digital audio file from the plurality of digital audio files for playback with a media player.*

In Response: The examiner respectfully submits that the combination of Daoud, Zuniga, Hunter, and Griffin teaches download a first digital audio file from the plurality of digital audio files for playback with a media player (when the content file is copied from a first user device to a second user device, it is copied without any information transmitted from the first user device to the second user device indicating the play back status of the content file. As a result, if the content file is partially consumed on the first user device and then the content file is copied to a second user device, the content must either be displayed from the beginning of the content file or the user must manually attempt to locate the point where the display of the consumption on the first user device – see Griffin, page 1, paragraph 3).

The other limitations have been discussed above or within the instant office action.

This renders the rejection proper, and thus the rejection stands.

11. ***Applicant Argues:*** One of ordinary skill in the art would never interpret Griffin to teach "download a first digital audio file from the plurality of digital audio files for playback with a media player, each digital audio file in the plurality of digital audio files including a different segment of the audio stream."

In Response: The examiner respectfully submits that the combination of Daoud, Zuniga, Hunter, and Griffin teaches download a first digital audio file from the plurality of digital audio files for playback with a media player (when the content file is copied from a first user device to a second user device, it is copied without any information transmitted from the first user device to the second user device indicating the play back status of the content file. As a result, if the content file is partially consumed on the first user device and then the content file is copied to a second user device, the content must either be displayed from the beginning of the content file or the user must manually attempt to locate the point where the display of the consumption on the first user device – see Griffin, page 1, paragraph 3) from the plurality of digital audio files for playback with a media player, each digital audio file in the plurality of digital audio files including a different segment of the audio stream (video data associated with frames of the selected shots is analyzed to determine a time of each video shot. The selected video shots are organized in chronological order based on the determined time of each shot. The organized sequence of video shots is analyzed to determine time gaps between successive video shots. The segmenting routine segments the video recording into two video clusters by segmenting or grouping video shots on opposite

sides of the largest time gap – see Hunter, col. 15, lines 29-48). This renders the rejection proper, and thus the rejection stands.

12. ***Applicant Argues:*** The cited combination does not teach "download a second other digital audio file from a second library server for playback with the media player." No combination of the cited references teaches downloading different segments of an audio stream from different libraries.

In Response: The examiner respectfully submits that the combination of Daoud, Zuniga, Hunter, and Griffin teaches download a second other digital audio file from the second library server for playback with the media player (where the service tag indicates that the requested level of service is "premium," the load balancer directs the transaction to any one of the servers 511, 512, 513 in the premium group. The load balancers can direct the transaction to the "fastest" available server in the server pool – see Daoud, Fig. 1; col. 3, line 39 – col. 4, line 6; and col. 8, lines 31-50). This renders the rejection proper, and thus the rejection stands.

13. ***Applicant Argues:*** Thiagarajan does not teach a non-transitory computer readable storage medium having computer code configured to cause a computer to purge the downloaded digital audio files in dependence upon an amount of memory available. A pause buffer (e.g.,

configured as a circular, or ring, buffer) typically writes over data in volatile memory (RAM) and does not purge downloaded files. In addition, it is respectfully submitted that one of ordinary skill in the art would never interpret the data within the pause buffer to be equivalent to one or more downloaded digital audio files. For example, it is well known in the art, the data that is being streamed needs to be processed for rendering and is generally understood to be a frame or packet, rather than a digital audio file.

In Response: The examiner respectfully submits that Thiagarajan teaches the use of a digital video recorder that receives video content. The digital video recorder includes a hard disk memory so that a viewer can record the video content. The digital video recorder also includes a pause buffer to record the most recent segment of a paused broadcast program or on-demand video. This pause buffer is typically configured as a circular, or ring, buffer on the hard disk memory and the amount of time which a television program can be delayed is dependent upon how much storage space is allocated for the pause buffer. When a pause buffer reaches capacity, the content corresponding to the beginning of a pause event will be written over (Thiagarajan, page 1, paragraphs 1 and 2).

There is nothing in Thiagarajan that suggests that the data in the buffer must be an unprocessed frame or packet rather than a digital file. Using the broadest reasonable interpretation, the examiner respectfully submits that writing over data present in the beginning of a circular queue is equivalent to purging downloaded data. Merriam-Webster's Collegiate Dictionary 10th Edition defines "purge" as "to clear," "to free," or "to rid." When the original data present in the beginning of the circular queue is written over, it is written

over by different data. Thus, that original data is no longer accessible, and the queue is rid of it. This renders the rejection proper, and thus the rejection stands.

Claim Rejections - 35 USC § 103

14. 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.

15. Claims 46 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daoud et al. (U.S. 7,984,147) in view of Zuniga (U.S. 2005/0245243) in view of Hunter et al. (U.S. 7,242,809) and further in view of Griffin (U.S. 2007/0124331).

Zuniga and Hunter were cited in the IDS filed on 17 August 2012.

16. With respect to claim 46, Daoud teaches a non-transitory computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to: send a request to a network-based server, the request including a unique identifier (Daoud, Fig. 2; col. 4, lines 6-22); load a list of library servers received from the network-based server, the list of library servers determined in dependence upon the unique identifier (Daoud, Fig. 6; col. 8, lines 31-50); maintain service level statistics for each library server in the list of library servers (Daoud, Fig. 4; col. 6, lines 22-44); select a first library

server from the list of library servers in dependence upon the service level statistics, the first library server (Daoud, col. 6, lines 45-63)

Daoud does not explicitly teach identifying an audio stream.

However, Zuniga teaches identifying an audio stream (Zuniga, page 5, paragraph 55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Daoud in view of Zuniga in order to enable identifying an audio stream. One would be motivated to do so in order to provide better bandwidth use and reduce or eliminate the need to transmit large audio segments to a client device by assigning an identifier to the audio segment and the audio segment is broken into several audio files (Zuniga, page 2, paragraph 20).

The combination of Daoud and Zuniga does not explicitly teach having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream.

However, Hunter teaches having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream (Hunter, col. 15, lines 29-48).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud and Zuniga in view of Hunter in order to enable having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream. One would be motivated to do so in order to provide automatic segmentation of digital files into one or more video clusters

corresponding to specific events, date ranges, time ranges, chapters or any other logical way to segment digital files (Hunter, col. 1, lines 8-12).

The combination of Daoud, Zuniga, and Hunter does not explicitly teach download a first digital audio file from the plurality of digital audio files for playback with a media player.

However, Griffin teaches download a first digital audio file from the plurality of digital audio files for playback with a media player (Griffin, page 1, paragraph 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud, Zuniga, and Hunter in view of Griffin in order to enable download a first digital audio file from the plurality of digital audio files for playback with a media player. One would be motivated to do so in order to provide a bookmark associated with the content file such that the bookmark will save the place in the content file such that the bookmark will save the place in the content file where the consumption of the content was stopped. The bookmark can be used when the user desires to access the same content at a later time either on the same or a different user device (Griffin, page 1, paragraph 5).

17. With respect to claim 55, the combination of Daoud, Zuniga, Hunter, and Griffin teaches the invention described in claim 46, including the non-transitory computer readable storage medium wherein the computer code is further configured to cause said computer to: select a second library server from the list of library servers in dependence upon the service level statistics (Daoud, Fig. 1; col. 3, line 39 – col. 4, line 6), the second library server having a copy of the plurality of digital audio files (Hunter, col. 15, lines 29-48); and download a

second other digital audio file from the second library server for playback with the media player (Griffin, page 1, paragraph 3).

18. Claims 47 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daoud in view of Zuniga in view of Hunter in view of Griffin and further in view of Iida et al. (U.S. 2003/0167262).

19. With respect to claim 47, Daoud teaches the invention described in claim 46, including a non-transitory computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to: send a request to a network-based server, the request including a unique identifier (Daoud, Fig. 2; col. 4, lines 6-22); load a list of library servers received from the network-based server, the list of library servers determined in dependence upon the unique identifier (Daoud, Fig. 6; col. 8, lines 31-50); maintain service level statistics for each library server in the list of library servers (Daoud, Fig. 4; col. 6, lines 22-44); select a first library server from the list of library servers in dependence upon the service level statistics, the first library server (Daoud, col. 6, lines 45-63)

Daoud does not explicitly teach identifying an audio stream.

However, Zuniga teaches identifying an audio stream (Zuniga, page 5, paragraph 55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Daoud in view of Zuniga in order to enable identifying an audio stream.

One would be motivated to do so in order to provide better bandwidth use and reduce or eliminate the need to transmit large audio segments to a client device by assigning an identifier to the audio segment and the audio segment is broken into several audio files (Zuniga, page 2, paragraph 20).

The combination of Daoud and Zuniga does not explicitly teach having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream.

However, Hunter teaches having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream (Hunter, col. 15, lines 29-48).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud and Zuniga in view of Hunter in order to enable having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream. One would be motivated to do so in order to provide automatic segmentation of digital files into one or more video clusters corresponding to specific events, date ranges, time ranges, chapters or any other logical way to segment digital files (Hunter, col. 1, lines 8-12).

The combination of Daoud, Zuniga, and Hunter does not explicitly teach download a first digital audio file from the plurality of digital audio files for playback with a media player.

However, Griffin teaches download a first digital audio file from the plurality of digital audio files for playback with a media player (Griffin, page 1, paragraph 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud, Zuniga, and Hunter in view of Griffin in order to enable download a first digital audio file from the plurality of digital audio files for playback with a media player. One would be motivated to do so in order to provide a bookmark associated with the content file such that the bookmark will save the place in the content file such that the bookmark will save the place in the content file where the consumption of the content was stopped. The bookmark can be used when the user desires to access the same content at a later time either on the same or a different user device (Griffin, page 1, paragraph 5).

The combination of Daoud, Zuniga, Hunter, and Griffin does not explicitly teach the non-transitory computer readable storage medium wherein the unique identifier is an ISBN number.

However, Iida teaches the non-transitory computer readable storage medium wherein the unique identifier is an ISBN number (Iida, page 7, paragraph 77).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud, Zuniga, Hunter, and Griffin in view of Iida in order to enable the non-transitory computer readable storage medium wherein the unique identifier is an ISBN number. One would be motivated to do so in order to perform communications with a plurality of information search sites via a network, requesting each of said for an information search, and receiving a search result of the information search (Iida, page 1, paragraph 9).

20. With respect to claim 56, the combination of Daoud, Zuniga, Hunter, Griffin, and Iida teaches the invention described in claim 46, including the non-transitory computer readable storage medium wherein the request includes login information (Iida, page 7, paragraph 77).

21. Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Daoud in view of Zuniga in view of Hunter in view of Griffin in view of Iida and further in view of Wong et al. (U.S. 7,721,301).

22. With respect to claim 48, Daoud teaches the invention described in claim 47, including a non-transitory computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to: send a request to a network-based server, the request including a unique identifier (Daoud, Fig. 2; col. 4, lines 6-22); load a list of library servers received from the network-based server, the list of library servers determined in dependence upon the unique identifier (Daoud, Fig. 6; col. 8, lines 31-50); maintain service level statistics for each library server in the list of library servers (Daoud, Fig. 4; col. 6, lines 22-44); select a first library server from the list of library servers in dependence upon the service level statistics, the first library server (Daoud, col. 6, lines 45-63)

Daoud does not explicitly teach identifying an audio stream.

However, Zuniga teaches identifying an audio stream (Zuniga, page 5, paragraph 55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Daoud in view of Zuniga in order to enable identifying an audio stream. One would be motivated to do so in order to provide better bandwidth use and reduce or eliminate the need to transmit large audio segments to a client device by assigning an identifier to the audio segment and the audio segment is broken into several audio files (Zuniga, page 2, paragraph 20).

The combination of Daoud and Zuniga does not explicitly teach having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream.

However, Hunter teaches having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream (Hunter, col. 15, lines 29-48).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud and Zuniga in view of Hunter in order to enable having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream. One would be motivated to do so in order to provide automatic segmentation of digital files into one or more video clusters corresponding to specific events, date ranges, time ranges, chapters or any other logical way to segment digital files (Hunter, col. 1, lines 8-12).

The combination of Daoud, Zuniga, and Hunter does not explicitly teach download a first digital audio file from the plurality of digital audio files for playback with a media player.

However, Griffin teaches download a first digital audio file from the plurality of digital audio files for playback with a media player (Griffin, page 1, paragraph 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud, Zuniga, and Hunter in view of Griffin in order to enable download a first digital audio file from the plurality of digital audio files for playback with a media player. One would be motivated to do so in order to provide a bookmark associated with the content file such that the bookmark will save the place in the content file such that the bookmark will save the place in the content file where the consumption of the content was stopped. The bookmark can be used when the user desires to access the same content at a later time either on the same or a different user device (Griffin, page 1, paragraph 5).

The combination of Daoud, Zuniga, Hunter, and Griffin does not explicitly teach the non-transitory computer readable storage medium wherein the unique identifier is an ISBN number.

However, Iida teaches the non-transitory computer readable storage medium wherein the unique identifier is an ISBN number (Iida, page 7, paragraph 77).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud, Zuniga, Hunter, and Griffin in view of Iida in order to enable the non-transitory computer readable storage medium wherein the unique identifier is an ISBN number. One would be motivated to do so in order to perform communications with a plurality of information search sites via a network, requesting each of

said for an information search, and receiving a search result of the information search (Iida, page 1, paragraph 9).

The combination of Daoud, Zuniga, Hunter, Griffin, and Iida does not explicitly teach the non-transitory computer readable storage medium wherein a size of each digital audio file in the plurality of digital audio files is selected in dependence upon network throughput rates.

However, Wong teaches the non-transitory computer readable storage medium wherein a size of each digital audio file in the plurality of digital audio files is selected in dependence upon network throughput rates (Wong, col. 7, lines 29-42).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud, Zuniga, Hunter, Griffin, and Iida in view of Wong in order to enable the non-transitory computer readable storage medium wherein a size of each digital audio file in the plurality of digital audio files is selected in dependence upon network throughput rates. One would be motivated to do so in order to enable the computing device that stores the remote collection to intelligently scale the size of the file for the receiving device to reduce network bandwidth requirements (Wong, col. 2, lines 49-54).

23. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Daoud in view of Zuniga in view of Hunter in view of Griffin in view of Iida in view of Wong and further in view of Arons ("SpeechSkimmer: A System for Interactively Skimming Recorded Speech").

Zuniga, Hunter, and Arons were cited in the IDS filed on 17 August 2012.

24. With respect to claim 49, Daoud teaches the invention described in claim 48, including a non-transitory computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to: send a request to a network-based server, the request including a unique identifier (Daoud, Fig. 2; col. 4, lines 6-22); load a list of library servers received from the network-based server, the list of library servers determined in dependence upon the unique identifier (Daoud, Fig. 6; col. 8, lines 31-50); maintain service level statistics for each library server in the list of library servers (Daoud, Fig. 4; col. 6, lines 22-44); select a first library server from the list of library servers in dependence upon the service level statistics, the first library server (Daoud, col. 6, lines 45-63)

Daoud does not explicitly teach identifying an audio stream.

However, Zuniga teaches identifying an audio stream (Zuniga, page 5, paragraph 55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Daoud in view of Zuniga in order to enable identifying an audio stream. One would be motivated to do so in order to provide better bandwidth use and reduce or eliminate the need to transmit large audio segments to a client device by assigning an identifier to the audio segment and the audio segment is broken into several audio files (Zuniga, page 2, paragraph 20).

The combination of Daoud and Zuniga does not explicitly teach having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream.

However, Hunter teaches having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream (Hunter, col. 15, lines 29-48).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud and Zuniga in view of Hunter in order to enable having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream. One would be motivated to do so in order to provide automatic segmentation of digital files into one or more video clusters corresponding to specific events, date ranges, time ranges, chapters or any other logical way to segment digital files (Hunter, col. 1, lines 8-12).

The combination of Daoud, Zuniga, and Hunter does not explicitly teach download a first digital audio file from the plurality of digital audio files for playback with a media player.

However, Griffin teaches download a first digital audio file from the plurality of digital audio files for playback with a media player (Griffin, page 1, paragraph 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud, Zuniga, and Hunter in view of Griffin in order to enable download a first digital audio file from the plurality of digital audio files for playback with a media player. One would be motivated to do so in order to provide a bookmark associated with the content file such that the bookmark will save the place in the content file such that the bookmark will save the place in the content file where the consumption of the content was stopped. The bookmark can be used when the user desires to

access the same content at a later time either on the same or a different user device (Griffin, page 1, paragraph 5).

The combination of Daoud, Zuniga, Hunter, and Griffin does not explicitly teach the non-transitory computer readable storage medium wherein the unique identifier is an ISBN number.

However, Iida teaches the non-transitory computer readable storage medium wherein the unique identifier is an ISBN number (Iida, page 7, paragraph 77).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud, Zuniga, Hunter, and Griffin in view of Iida in order to enable the non-transitory computer readable storage medium wherein the unique identifier is an ISBN number. One would be motivated to do so in order to perform communications with a plurality of information search sites via a network, requesting each of said for an information search, and receiving a search result of the information search (Iida, page 1, paragraph 9).

The combination of Daoud, Zuniga, Hunter, Griffin, and Iida does not explicitly teach the non-transitory computer readable storage medium wherein a size of each digital audio file in the plurality of digital audio files is selected in dependence upon network throughput rates.

However, Wong teaches the non-transitory computer readable storage medium wherein a size of each digital audio file in the plurality of digital audio files is selected in dependence upon network throughput rates (Wong, col. 7, lines 29-42).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud, Zuniga, Hunter, Griffin, and Iida in view of

Wong in order to enable the non-transitory computer readable storage medium wherein a size of each digital audio file in the plurality of digital audio files is selected in dependence upon network throughput rates. One would be motivated to do so in order to enable the computing device that stores the remote collection to intelligently scale the size of the file for the receiving device to reduce network bandwidth requirements (Wong, col. 2, lines 49-54)..

The combination of Daoud, Zuniga, Hunter, Griffin, Iida, and Wong does not explicitly teach the non-transitory computer readable storage medium wherein the unique identifier is obtained from one of a bookmark structure, a card catalog structure, and an advertising structure.

However, Arons teaches the non-transitory computer readable storage medium wherein the unique identifier is obtained from one of a bookmark structure, a card catalog structure, and an advertising structure (Arons, pages 31-32, 5.22).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud, Zuniga, Hunter, Griffin, Iida, and Wong in view of Arons in order to enable the non-transitory computer readable storage medium wherein the unique identifier is obtained from one of a bookmark structure, a card catalog structure, and an advertising structure. One would be motivated to do so in order to exploit acoustic cues to segment recorded speech into semantically meaningful chunks (Arons, page 4, 4th full paragraph).

25. Claims 50 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daoud in view of Zuniga in view of Hunter in view of Griffin and further in view of Arons.

26. With respect to claim 50, Daoud teaches the invention described in claim 46, including a non-transitory computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to: send a request to a network-based server, the request including a unique identifier (Daoud, Fig. 2; col. 4, lines 6-22); load a list of library servers received from the network-based server, the list of library servers determined in dependence upon the unique identifier (Daoud, Fig. 6; col. 8, lines 31-50); maintain service level statistics for each library server in the list of library servers (Daoud, Fig. 4; col. 6, lines 22-44); select a first library server from the list of library servers in dependence upon the service level statistics, the first library server (Daoud, col. 6, lines 45-63)

Daoud does not explicitly teach identifying an audio stream.

However, Zuniga teaches identifying an audio stream (Zuniga, page 5, paragraph 55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Daoud in view of Zuniga in order to enable identifying an audio stream. One would be motivated to do so in order to provide better bandwidth use and reduce or eliminate the need to transmit large audio segments to a client device by assigning an identifier to the audio segment and the audio segment is broken into several audio files (Zuniga, page 2, paragraph 20).

The combination of Daoud and Zuniga does not explicitly teach having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream.

However, Hunter teaches having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream (Hunter, col. 15, lines 29-48).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud and Zuniga in view of Hunter in order to enable having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream. One would be motivated to do so in order to provide automatic segmentation of digital files into one or more video clusters corresponding to specific events, date ranges, time ranges, chapters or any other logical way to segment digital files (Hunter, col. 1, lines 8-12).

The combination of Daoud, Zuniga, and Hunter does not explicitly teach download a first digital audio file from the plurality of digital audio files for playback with a media player.

However, Griffin teaches download a first digital audio file from the plurality of digital audio files for playback with a media player (Griffin, page 1, paragraph 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud, Zuniga, and Hunter in view of Griffin in order to enable download a first digital audio file from the plurality of digital audio files for playback with a media player. One would be motivated to do so in order to provide a bookmark associated with the content file such that the bookmark will save the place in the

content file such that the bookmark will save the place in the content file where the consumption of the content was stopped. The bookmark can be used when the user desires to access the same content at a later time either on the same or a different user device (Griffin, page 1, paragraph 5).

The combination of Daoud, Zuniga, Hunter, and Griffin does not explicitly teach the non-transitory computer readable storage medium wherein the unique identifier is obtained from one of a bookmark structure, a card catalog structure, and an advertising structure.

However, Arons teaches the non-transitory computer readable storage medium wherein the unique identifier is obtained from one of a bookmark structure, a card catalog structure, and an advertising structure (Arons, pages 31-32, 5.22).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud, Zuniga, Hunter, and Griffin in view of Arons in order to enable the non-transitory computer readable storage medium wherein the unique identifier is obtained from one of a bookmark structure, a card catalog structure, and an advertising structure. One would be motivated to do so in order to exploit acoustic cues to segment recorded speech into semantically meaningful chunks (Arons, page 4, 4th full paragraph).

27. With respect to claim 57, the combination of Daoud, Zuniga, Hunter, Griffin, and Arons teaches the invention described in claim 46, including the non-transitory computer readable storage medium wherein the computer code is configured to cause said computer to: download a descriptor file from the first library server, the descriptor file for ordering the

plurality of digital audio files, the descriptor file including at least one of a start time, an end time, and a play time of each digital audio file in the plurality of digital audio files within the audio stream (Hunter, col. 16, lines 21-25), wherein the computer determines the first digital audio file for playback using a time offset external to the descriptor file and the at least one of the start time, end time, and play time of each digital audio file in the plurality of digital audio files (Arons, pages 31-32, 5.22).

28. Claims 51-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daoud in view of Zuniga in view of Hunter in view of Griffin and further in view of Siegel (U.S. 6,850,982).

Zuniga, Hunter, and Siegel were cited in the IDS filed on 17 August 2012.

29. With respect to claim 51, Daoud teaches the invention described in claim 46, including a non-transitory computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to: send a request to a network-based server, the request including a unique identifier (Daoud, Fig. 2; col. 4, lines 6-22); load a list of library servers received from the network-based server, the list of library servers determined in dependence upon the unique identifier (Daoud, Fig. 6; col. 8, lines 31-50); maintain service level statistics for each library server in the list of library servers (Daoud, Fig. 4; col. 6, lines 22-44); select a first library server from the list of library servers in

dependence upon the service level statistics, the first library server (Daoud, col. 6, lines 45-63)

Daoud does not explicitly teach identifying an audio stream.

However, Zuniga teaches identifying an audio stream (Zuniga, page 5, paragraph 55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Daoud in view of Zuniga in order to enable identifying an audio stream. One would be motivated to do so in order to provide better bandwidth use and reduce or eliminate the need to transmit large audio segments to a client device by assigning an identifier to the audio segment and the audio segment is broken into several audio files (Zuniga, page 2, paragraph 20).

The combination of Daoud and Zuniga does not explicitly teach having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream.

However, Hunter teaches having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream (Hunter, col. 15, lines 29-48).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud and Zuniga in view of Hunter in order to enable having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream. One would be motivated to do so in order to provide automatic segmentation of digital files into one or more video clusters

corresponding to specific events, date ranges, time ranges, chapters or any other logical way to segment digital files (Hunter, col. 1, lines 8-12).

The combination of Daoud, Zuniga, and Hunter does not explicitly teach download a first digital audio file from the plurality of digital audio files for playback with a media player.

However, Griffin teaches download a first digital audio file from the plurality of digital audio files for playback with a media player (Griffin, page 1, paragraph 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud, Zuniga, and Hunter in view of Griffin in order to enable download a first digital audio file from the plurality of digital audio files for playback with a media player. One would be motivated to do so in order to provide a bookmark associated with the content file such that the bookmark will save the place in the content file such that the bookmark will save the place in the content file where the consumption of the content was stopped. The bookmark can be used when the user desires to access the same content at a later time either on the same or a different user device (Griffin, page 1, paragraph 5).

The combination of Daoud, Zuniga, Hunter, and Griffin does not explicitly teach the non-transitory computer readable storage medium wherein the service level statistics include historical transfer rates for each library server in the list of library servers.

However, Siegel teaches the non-transitory computer readable storage medium wherein the service level statistics include historical transfer rates for each library server in the list of library servers (Siegel, col. 15, lines 27-48).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud, Zuniga, Hunter, and Griffin in view of Siegel in order to enable the non-transitory computer readable storage medium wherein the service level statistics include historical transfer rates for each library server in the list of library servers. One would be motivated to do so in order to eliminate the need to reform a connection to the client and greatly improves overall system performance (Siegel, col. 2, lines 3-5).

30. With respect to claim 52, the combination of Daoud, Zuniga, Hunter, Griffin, and Siegel teaches the invention described in claim 51, including the non-transitory computer readable storage medium wherein the computer code is further configured to cause said computer to: compare the historical transfer rates of all library servers on the list of library servers; select the fastest library server on the list of library servers; initialize a floating average value representing transfer rate; monitor transaction times for the fastest library server and update the floating average transfer rate; increase the floating average transfer rate by a first predetermined value in dependence upon an unavailability of the fastest library server; and update the historical transfer rate for the fastest server in dependence upon the floating average transfer rate exceeding a predetermined value (Siegel, col. 15, lines 27-48).

31. With respect to claim 53, the combination of Daoud, Zuniga, Hunter, Griffin, and Siegel teaches the invention described in claim 52, including the non-transitory computer readable storage medium wherein the computer code is further configured to cause said computer to:

at arbitrary time intervals, calculate an average value of the historical transfer rates for all library servers on the list of servers and subtract a second predetermined value from the historical transfer rate for each library server that has a historical value exceeding the calculated average (Siegel, col. 15, lines 27-48).

32. With respect to claim 54, the combination of Daoud, Zuniga, Hunter, Griffin, and Siegel teaches the invention described in claim 52, including the non-transitory computer readable storage medium wherein the first library server is the fastest library server (Daoud, col. 8, lines 31-50).

33. Claims 65 and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zuniga and further in view of Wong.

34. With respect to claim 65, Zuniga teaches a non-transitory computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to: download a first digital audio file stored in a library, the library connected to the computer via a network (Zuniga, page 5, paragraph 55), the first digital audio file selected from a plurality of digital audio files stored in the library, each digital audio file in the plurality of digital audio files including a different segment of an audio stream (Zuniga, page 4, paragraph 45), and to allow each digital audio file in the plurality of digital audio files to be downloaded and begin playing in less than about 5 seconds, the first digital audio file

selected in dependence upon a predetermined position within the audio stream (Zuniga, page 3, paragraph 31; and page 5, paragraph 55).

Zuniga does not explicitly teach a size of each digital audio file in the plurality of digital audio files selected in dependence upon network throughput rates.

However, Wong teaches a size of each digital audio file in the plurality of digital audio files selected in dependence upon network throughput rates (Wong, col. 7, lines 29-42).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Zuniga in view of Wong in order to enable identifying a size of each digital audio file in the plurality of digital audio files selected in dependence upon network throughput rates. One would be motivated to do so in order to enable the computing device that stores the remote collection to intelligently scale the size of the file for the receiving device (Wong, col. 2, lines 49-54).

35. With respect to claim 66, the combination of Zuniga and Wong teaches the invention described in claim 65, including the non-transitory computer readable storage medium wherein the computer code is further configured to cause said computer to: download successive digital audio files in the plurality of digital audio files from the library (Zuniga, page 5, paragraph 55); and successively play the first digital audio file and the successive digital audio files using a media player (Zuniga, page 1, paragraph 10; and page 7, paragraph 75) to reproduce an experience of a contiguous audio stream without reconstruction of the audio stream (Zuniga, page 3, paragraph 31; and page 5, paragraph 55).

36. Claim 67 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zuniga in view of Wong and further in view of Thiagarajan et al. (U.S. 2003/0221194).

Zuniga and Thiagarajan were cited in the IDS filed on 17 August 2012.

37. With respect to claim 67, Zuniga teaches the invention described in claim 66, including a non-transitory computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to: download a first digital audio file stored in a library, the library connected to the computer via a network (Zuniga, page 5, paragraph 55), the first digital audio file selected from a plurality of digital audio files stored in the library, each digital audio file in the plurality of digital audio files including a different segment of an audio stream (Zuniga, page 4, paragraph 45), and to allow each digital audio file in the plurality of digital audio files to be downloaded and begin playing in less than about 5 seconds, the first digital audio file selected in dependence upon a predetermined position within the audio stream (Zuniga, page 3, paragraph 31; and page 5, paragraph 55).

Zuniga does not explicitly teach a size of each digital audio file in the plurality of digital audio files selected in dependence upon network throughput rates.

However, Wong teaches a size of each digital audio file in the plurality of digital audio files selected in dependence upon network throughput rates (Wong, col. 7, lines 29-42).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Zuniga in view of Wong in order to enable identifying a size of each digital audio file in the plurality of digital audio files selected in dependence upon network throughput rates. One would be motivated to do so in order to enable the computing device

that stores the remote collection to intelligently scale the size of the file for the receiving device (Wong, col. 2, lines 49-54).

The combination of Zuniga and Wong does not explicitly teach the non-transitory computer readable storage medium wherein the computer code is further configured to cause said computer to: determine numeric values representing current time offsets into the audio stream while the first digital audio file and the successive digital audio files are successively played; and purge the downloaded digital audio files in dependence upon an amount of memory available, a current time offset, and time-offsets provided in bookmarks resident on the computer.

However, Thiagarajan teaches the non-transitory computer readable storage medium wherein the computer code is further configured to cause said computer to: determine numeric values representing current time offsets into the audio stream while the first digital audio file and the successive digital audio files are successively played; and purge the downloaded digital audio files in dependence upon an amount of memory available, a current time offset, and time-offsets provided in bookmarks resident on the computer (Thiagarajan, page 1, paragraph 3 and page 5, paragraph 52).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Zuniga and Wong in view of Thiagarajan in order to enable the non-transitory computer readable storage medium wherein the computer code is further configured to cause said computer to: determine numeric values representing current time offsets into the audio stream while the first digital audio file and the successive digital audio files are successively played; and purge the downloaded digital audio files in

dependence upon an amount of memory available, a current time offset, and time-offsets provided in bookmarks resident on the computer. One would be motivated to do so in order to provide the ability to pause the broadcast of a program and return to watch the program, while still in progress, from the point at which it was paused (Thiagarajan, page 1, paragraph 2).

38. Claim 68 is rejected under 35 U.S.C. 103(a) as being unpatentable over Daoud in view of Zuniga in view of Hunter in view Griffin and further in view of Wong.

39. With respect to claim 68, Daoud teaches the invention described in claim 46, including a non-transitory computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to: send a request to a network-based server, the request including a unique identifier (Daoud, Fig. 2; col. 4, lines 6-22); load a list of library servers received from the network-based server, the list of library servers determined in dependence upon the unique identifier (Daoud, Fig. 6; col. 8, lines 31-50); maintain service level statistics for each library server in the list of library servers (Daoud, Fig. 4; col. 6, lines 22-44); select a first library server from the list of library servers in dependence upon the service level statistics, the first library server (Daoud, col. 6, lines 45-63)

Daoud does not explicitly teach identifying an audio stream.

However, Zuniga teaches identifying an audio stream (Zuniga, page 5, paragraph 55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Daoud in view of Zuniga in order to enable identifying an audio stream. One would be motivated to do so in order to provide better bandwidth use and reduce or eliminate the need to transmit large audio segments to a client device by assigning an identifier to the audio segment and the audio segment is broken into several audio files (Zuniga, page 2, paragraph 20).

The combination of Daoud and Zuniga does not explicitly teach having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream.

However, Hunter teaches having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream (Hunter, col. 15, lines 29-48).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud and Zuniga in view of Hunter in order to enable having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream. One would be motivated to do so in order to provide automatic segmentation of digital files into one or more video clusters corresponding to specific events, date ranges, time ranges, chapters or any other logical way to segment digital files (Hunter, col. 1, lines 8-12).

The combination of Daoud, Zuniga, and Hunter does not explicitly teach download a first digital audio file from the plurality of digital audio files for playback with a media player.

However, Griffin teaches download a first digital audio file from the plurality of digital audio files for playback with a media player (Griffin, page 1, paragraph 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud, Zuniga, and Hunter in view of Griffin in order to enable download a first digital audio file from the plurality of digital audio files for playback with a media player. One would be motivated to do so in order to provide a bookmark associated with the content file such that the bookmark will save the place in the content file such that the bookmark will save the place in the content file where the consumption of the content was stopped. The bookmark can be used when the user desires to access the same content at a later time either on the same or a different user device (Griffin, page 1, paragraph 5).

The combination of Daoud, Zuniga, Hunter, and Griffin does not explicitly teach the non-transitory computer readable storage medium wherein a size of each digital audio file in the plurality of digital audio files is selected in dependence upon network throughput rates.

However, Wong teaches the non-transitory computer readable storage medium wherein a size of each digital audio file in the plurality of digital audio files is selected in dependence upon network throughput rates (Wong, col. 7, lines 29-42).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud, Zuniga, Hunter, and Griffin in view of Wong in order to enable the non-transitory computer readable storage medium wherein a size of each digital audio file in the plurality of digital audio files is selected in dependence upon network throughput rates. One would be motivated to do so in order to enable the computing

device that stores the remote collection to intelligently scale the size of the file for the receiving device to reduce network bandwidth requirements (Wong, col. 2, lines 49-54).

Allowable Subject Matter

40. Claim 57 is objected as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

41. Claims 58-63 are allowable over the prior art of record.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia Baturay whose telephone number is (571) 272-3981. The examiner can normally be reached at 7am - 4:30pm, Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing Chan can be reached on (571) 272-7493. The fax 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).

/Alicia Baturay/
Primary Examiner, Art Unit 2441

September 12, 2013

Notice of References Cited	Application/Control No. 13/588,084	Applicant(s)/Patent Under Reexamination MCCUE ET AL.	
	Examiner Alicia Baturay	Art Unit 2441	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-7,721,301	05-2010	Wong et al.	719/322
	B	US-			
	C	US-			
	D	US-			
	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)
*	U	
	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.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13588084	MCCUE ET AL.
	Examiner	Art Unit
	ALICIA BATURAY	2441

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
709	219	05/09/2013	AB
709	219	09/12/2013	AB

SEARCH NOTES		
Search Notes	Date	Examiner
Searched EAST (US-PGPUB, USPAT, EPO, JPO, DERWENT, IBM_TDB)	05/09/2013	AB
Conducted Inventor Name Search	05/09/2013	AB
Conducted Class/Subclass Search	05/09/2013	AB
Updated EAST Search (US-PGPUB, USPAT, EPO, JPO, DERWENT, IBM_TDB)	09/12/2013	AB
Updated Inventor Name Search	09/12/2013	AB
Updated Class/Subclass Search	09/12/2013	AB

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	1816	(segment$7 or break$3 or reduc$3) same audio same (silence or "low decibel" or gaps)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 10:55
S2	1334	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same audio same (silence or "low decibel" or gaps))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 10:57
S3	3547	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same (silence or "low decibel" or gaps))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 10:58
S4	4	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same (silence or "low decibel" or gaps) same (natural adj language))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 10:58
S5	24	("5586264", "6621980", "20020184189", "20030091338", "20030172346", "20050061873", "20050091062", "20050111824", "20050250439", "20060236219", "20060242550", "20060271989").pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 11:00
S6	0	audio-pod.as.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 11:03
S7	496	McCue.in. or Shostakovsky.in.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 11:04
S8	0	(McCue.in. or Shostakovsky.in.) same (audio)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 11:04
S9	552	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same (silence or "low decibel" or gaps) same (language or speech))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 14:06
S10	23	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same (silence or "low decibel" or gaps) adj (language or	US-PGPUB; USPAT; EPO; JPO; DERWENT;	OR	ON	2010/01/26 14:07

		speech))	IBM_TDB			
S11	3	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same stream$3 same (silence or "low decibel" or gaps) adj (language or speech))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 14:13
S12	8403	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same stream$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 14:16
S13	268	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same stream$3 same (descriptor or index))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 14:17
S14	47	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same stream$3 same (descriptor or index) same (start or end or play))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 14:17
S15	4	("7379875", "7242809").pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 11:24
S16	7	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same stream$3 same purg$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 15:58
S17	8403	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same stream$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 15:58
S18	1060	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same stream$3 same buffer$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 15:58
S19	2167	@ad<"20051213" and (stream$3 same buffer$3 same (purg$3 or empty$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 15:59
S20	450	@ad<"20051213" and (stream$3 same buffer$3 adj (purg$3 or empty$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 15:59
S21	50	@ad<"20051213" and (audio same stream$3 same buffer$3 adj (purg$3 or empty$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 15:59
S22	11	@ad<"20051213" and (audio same stream$3 same used same buffer$3 adj (purg$3 or empty$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT;	OR	ON	2010/01/27 16:01

			IBM_TDB			
S23	14	@ad<"20051213" and (stream$3 same buffer$3 same bookmark)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 16:04
S24	47	@ad<"20051213" and (((Quality adj service) or QoS) same (stream$3) same transfer adj rate)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 16:09
S25	10	@ad<"20051213" and (((Quality adj service) or QoS) same (stream$3) same transfer adj rate and transaction)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 16:10
S26	1082	@ad<"20051213" and (((Quality adj service) or QoS) same (stream$3) same audio)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 16:12
S27	207	@ad<"20051213" and (((Quality adj service) or QoS) same (stream$3) same audio same server)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 16:12
S28	6	@ad<"20051213" and (((Quality adj service) or QoS) same (stream$3) same audio same server same (choice or choose or choosing))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 16:13
S29	0	@ad<"20051213" and (((Quality adj service) or QoS) same transfer adj rate and transaction adj rate)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 16:15
S30	50	@ad<"20051213" and (((Quality adj service) or QoS) and transfer adj rate and transaction adj rate)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 16:15
S31	10	@ad<"20051213" and ((((Quality adj service) or QoS) or ((Service adj level adj agreement) or SLA)) same (choose adj server))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 16:18
S32	2	"20080301318".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/04/20 13:42
S33	74	small adj audio adj files	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/07/20 16:11
S34	6	@ad<"20051213" and (book adj mark) same (audio adj stream)	US-PGPUB; USPAT; EPO; JPO; DERWENT;	OR	ON	2010/07/21 11:09

			IBM_TDB			
S35	58	@ad<"20051213" and (book adj mark) same audio	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/07/21 11:22
S36	3	@ad<"20051213" and (book adj mark) and (time adj offset)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/07/21 11:22
S37	345	@ad<"20051213" and ((book adj mark) or mark$3) same (time adj offset)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/07/21 11:23
S38	76	@ad<"20051213" and ((book adj mark) or mark$3) same (time adj offset) same position	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/07/21 11:23
S39	14	@ad<"20051213" and ((book adj mark) or mark$3) and (time adj offset) same current adj position	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/07/21 11:24
S40	509	McCue.in. or Shostakovsky.in.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/07/21 16:09
S41	8	709/217.ccls. and (book adj mark) and audio	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/07/21 16:10
S42	21	("20050091062" | "6621980" | "20050061873" | "20060271989" | "0118858" | "0281509" | "20050111824" | "20060242550" | "6850982" | "5586264" | "20030221194" | "20060140162" | "20070041356" | "20030172346" | "20060236219" | "7242809" | "20020184189" | "20030091338" | "20050250439" | "20050245243" | "20070083911").PN.	US-PGPUB; USPAT	OR	OFF	2012/06/18 14:27
S43	0	(McCue.in. or Shostakovsky.in.) same (audio)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/18 14:27
S44	9	709/217.ccls. and (book adj mark) and audio	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/18 14:27
S45	185	(book adj mark$3).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT;	OR	OFF	2012/06/18 14:38

			IBM_TDB			
S46	3	((audio or mp3 or mpeg or sound) same (book adj mark$3)).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/18 14:38
S52	23	("20020184189" | "20030091338" | "20030172346" | "20030221194" | "20050061873" | "20050091062" | "20050111824" | "20050245243" | "20050250439" | "20060140162" | "20060236219" | "20060242550" | "20060271989" | "20070041356" | "20070067267" | "20070083911" | "20090171750" | "20100281509" | "20110118858" | "5586264" | "6621980" | "6850982" | "7242809").PN.	US-PGPUB; USPAT	OR	OFF	2013/05/02 10:25
S53	1	"20120317245".pn.	US-PGPUB	OR	OFF	2013/05/02 14:49
S54	2	("8386621", "8239893").pn.	USPAT	OR	OFF	2013/05/02 16:13
S55	19	Netflix.as.	USPAT	OR	OFF	2013/05/02 16:14
S56	3565	@ad<"20051213" and (parallel adj stream$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 16:15
S57	3	@ad<"20051213" and ((parallel adj stream$3) same statistics)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 16:15
S58	4	("20070260546" | "20070288588" | "5761417" | "7096263").PN. OR ("8386621").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2013/05/02 16:16
S59	38	@ad<"20051213" and (transfer$7 adj ((book adj mark) or bookmark))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 16:51
S60	7	@ad<"20051213" and (transfer$7 adj ((book adj mark) or bookmark) and audio)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 16:52
S61	1	@ad<"20051213" and ((parallel adj download$3) same (audio or mp3 or wav))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 17:12
S62	69	@ad<"20051213" and ((parallel adj download$3) and (audio or mp3 or wav))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 17:12
S63	5180	@ad<"20051213" and (download$3 and (audio or mp3 or wav) and throughput)	US-PGPUB; USPAT; EPO; JPO;	OR	ON	2013/05/02 17:13

			DERWENT; IBM_TDB			
S64	580	@ad<"20051213" and (download$3 same throughput and (audio or mp3 or wav))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 17:13
S65	72	@ad<"20051213" and (download$3 same throughput same (audio or mp3 or wav))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 17:13
S66	0	@ad<"20051213" and (download$3 same server adj throughput same (audio or mp3 or wav))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 17:15
S67	0	@ad<"20051213" and (download$3 same statistics same throughput same (audio or mp3 or wav))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 17:16
S68	0	@ad<"20051213" and (download$3 same faster adj server same (audio or mp3 or wav))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 17:17
S69	1	@ad<"20051213" and (download$3 same faster adj server and (audio or mp3 or wav))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 17:17
S70	15	@ad<"20051213" and ((server adj (cluster or group or farm)) same (fastest or quickest or swiftest))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/06 08:59
S71	8	@ad<"20051213" and (((log adj in) or login) same ISBN)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/07 12:45
S72	3	"8285809".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/11 13:00
S73	0	(siz$3 adj file adj network adj (throughput or speed or bandwidth))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/11 14:55
S74	164	(siz$3 adj file same network adj (throughput or speed or bandwidth))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/11 14:56
S75	26	@ad<"20051213" and (siz$3 adj file same network adj (throughput or speed or bandwidth))	US-PGPUB; USPAT; EPO; JPO;	OR	OFF	2013/09/11 14:56

			DERWENT; IBM_TDB			
S76	0	(McCue.in. or Shostakovsky.in.) same (audio)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/11 15:42
S77	11	709/217.ccls. and (book adj mark) and audio	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/11 15:42

9/12/2013 4:19:41 PM
C:\Users\abaturay\Alicia's Documents\EAST Searches\13588084-NaturalLanguageAudioGapsAudioOnDemandCON.wsp

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13588084	MCCUE ET AL.
	Examiner	Art Unit
	ALICIA BATURAY	2441

✓	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	05/09/2013	09/12/2013							
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	4	-	-							
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	33	-	-							
	34	-	-							
	35	-	-							
	36	-	-							

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☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	05/09/2013	09/12/2013							
	37	-	-							
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	64	O	-							
	65	✓	✓							
	66	✓	✓							
	67	✓	✓							

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of: McCue et al	**Our File: 141-1 US/PCT CON**
Serial No: 13/588,084	**Group: 2441**
Filed: August 17, 2012	**Examiner: Baturay, Alicia**

For: TRANSMISSION OF DIGITAL AUDIO DATA

Confirmation No.: 4986

August 14, 2013

E-filed
Commissioner for Patents

AMENDMENT

Dear Sir:

In response to the Office Action of May 17, 2013, please consider the following remarks and amend the above-identified application as follows:

Amendments to the Claims are reflected in the listing of claims, which begins on page 2 of this paper.

Remarks begin on page 7 of this paper.

Amendments to the Claims

This listing of the claims will replace all prior versions, and listings, of claims in the application:

1-45 (cancelled)

46. (Previously presented) A non-transitory computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to:

send a request to a network-based server, the request including a unique identifier for identifying an audio stream;

load a list of library servers received from the network-based server, the list of library servers determined in dependence upon the unique identifier;

maintain service level statistics for each library server in the list of library servers;

select a first library server from the list of library servers in dependence upon the service level statistics, the first library server having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream; and

download a first digital audio file from the plurality of digital audio files for playback with a media player.

47. (Previously presented) The non-transitory computer readable storage medium according to claim 46, wherein the unique identifier is an ISBN number.

48. (Previously presented) The non-transitory computer readable storage medium according to claim 47, wherein a size of each digital audio file in the plurality of digital audio files is selected in dependence upon network throughput rates.

49. (Previously presented) The non-transitory computer readable storage medium according to claim 48, wherein the unique identifier is obtained from one of a bookmark structure, a card catalog structure, and an advertising structure.

50. (Previously presented) The non-transitory computer readable storage medium according to claim 46, wherein the unique identifier is obtained from one of a bookmark structure, a card catalog structure, and an advertising structure.

51. (Previously presented) The non-transitory computer readable storage medium according to claim 46, wherein the service level statistics include historical transfer rates for each library server in the list of library servers.

52. (Currently amended) The non-transitory computer readable storage medium according to claim 51, wherein the computer code is further configured to cause said computer to:

compare the historical transfer rates of all library servers on the list of library servers;

select the fastest library server on the list of library servers;

initialize a value representing a floating average ~~value representing~~ transfer rate;

monitor transaction times for the fastest library server and update the floating average transfer rate;

increase the floating average transfer rate by a first predetermined value in dependence upon an unavailability of the fastest library server; and

update the historical transfer rate for the fastest server in dependence upon the floating average transfer rate exceeding a predetermined value.

53. (Currently amended) The non-transitory computer readable storage medium according to claim 52, wherein the computer code is further configured to cause said computer to:

~~at arbitrary time intervals,~~ calculate an average value of the historical transfer rates for all library servers on the list of servers and subtract a second predetermined value from the historical transfer rate for each library server that has a historical value exceeding the calculated average.

54. (Previously presented) The non-transitory computer readable storage medium according to claim 52, wherein the first library server is the fastest library server.

55. (Previously presented) The non-transitory computer readable storage medium according to claim 46, wherein the computer code is further configured to cause said computer to:

select a second library server from the list of library servers in dependence upon the service level statistics, the second library server having a copy of the plurality of digital audio files; and

download a second other digital audio file from the second library server for playback with the media player.

56. (Previously presented) The non-transitory computer readable storage medium according to claim 46, wherein the request includes login information.

57. (Previously presented) The non-transitory computer readable storage medium according to claim 46, wherein the computer code is configured to cause said computer to:

download a descriptor file from the first library server, the descriptor file for ordering the plurality of digital audio files, the descriptor file including at least one of a start time, an end time, and a play time of each digital audio file in the plurality of digital audio files within the audio stream,

wherein the computer determines the first digital audio file for playback using a time offset external to the descriptor file and the at least one of the start time, end time, and play time of each digital audio file in the plurality of digital audio files.

58. (Currently amended) A non-transitory computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to:

determine a first position within an audio stream playing on a media player;

determine a time offset using a point in time of the first position from a beginning of the audio stream;

create a bookmark for the first position, the bookmark including a file, the file including a unique identifier for identifying the audio stream and including the time offset,

wherein the bookmark is for positioning the audio stream to the first position using the time offset,

wherein the audio stream is stored as a plurality of digital audio files in a library, each digital audio file including a different segment of the audio stream, and wherein the computer code is further configured to cause said computer to:

determine a first digital audio file from the plurality of digital audio files to be loaded for playback with the media player from the first position, the first digital audio file selected using

the time offset and a descriptor file, the descriptor file for ordering the plurality of digital audio files and including at least one of a start time, an end time, and a play time of each digital audio file in the plurality of digital audio files within the audio stream;

determine if the first digital audio file is resident within the computer;

download the first digital audio file from the library in dependence upon whether the first digital audio file is already resident within the computer; and

load the first digital audio file for playback with the media player from the first position.

59. (Previously presented) The non-transitory computer readable storage medium according to claim 58, wherein the first position is determined when the media player is stopped while playing the audio stream.

60. (Previously presented) The non-transitory computer readable storage medium according to claim 58, wherein the first position is determined in response to a make bookmark command.

61. (Previously presented) The non-transitory computer readable storage medium according to claim 58, wherein the time offset is determined by subtracting a predetermined value from the point in time of the first position from the beginning of the audio stream.

62. (Previously presented) The non-transitory computer readable storage medium according to claim 58, wherein the computer code is further configured to cause said computer to:

transfer the bookmark to another computer.

63. (Previously presented) The non-transitory computer readable storage medium according to claim 62, wherein the other computer is for loading a digital audio file including the first position for playback by an other media player, the media player and the other media player using one of the same audio formats and different audio formats.

64. (cancelled)

65. (Previously presented) A non-transitory computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to:

download a first digital audio file stored in a library, the library connected to the computer via a network, the first digital audio file selected from a plurality of digital audio files

stored in the library, each digital audio file in the plurality of digital audio files including a different segment of an audio stream, a size of each digital audio file in the plurality of digital audio files selected in dependence upon network throughput rates and to allow each digital audio file in the plurality of digital audio files to be downloaded and begin playing in less than about 5 seconds, the first digital audio file selected in dependence upon a predetermined position within the audio stream.

66. (Currently amended) ~~A~~ The non-transitory computer readable storage medium according to claim 65, wherein the computer code is further configured to cause said computer to:

download successive digital audio files in the plurality of digital audio files from the library; and

successively play the first digital audio file and the successive digital audio files using a media player to reproduce an experience of a contiguous audio stream without reconstruction of the audio stream.

67. (Currently amended) ~~A~~ The non-transitory computer readable storage medium according to claim 66, wherein the computer code is further configured to cause said computer to:

determine numeric values representing current time offsets into the audio stream while the first digital audio file and the successive digital audio files are successively played; and

purge the downloaded digital audio files in dependence upon an amount of memory available, a current time offset, and time-offsets provided in bookmarks resident on the computer.

68. (New) The non-transitory computer readable storage medium according to claim 46, wherein a size of each digital audio file in the plurality of digital audio files is selected in dependence upon network throughput rates.

REMARKS

Claims 46-67 were pending. Claim 64 has been cancelled. New claim 68 has been added.

Claim 53 has been rejected under 35 USC 112, second paragraph. Claim 53 has been amended to remove the term "at arbitrary time intervals", and thus is believed to conform with 35 USC 112. No new matter has been added.

Claims 46 and 55 have been rejected under 35 USC 103(a) as being unpatentable over Daoud et al. (US 7,984,147), in view of Zuniga (US 2005/0245243), in view of Hunter et al. (US 7,242,809), and further in view of Griffin (US 2007/0124331). This rejection is respectfully traversed.

In particular, it is respectfully submitted that Daoud et al. do not teach computer readable code, which when executed by a computer, causes said computer to *send a request to* a network-based server, the request including a unique identifier for identifying an audio stream, and to load a list of library servers *received from the* network-based server, the list of library servers determined in dependence upon the unique identifier, as defined in claim 46.

Daoud et al. teach program code for selecting a requested level of service for a transaction 200 and program code for assigning the requested level of service. Referring to column 8, lines 31-50, Daoud et al. teach that the transaction 200 is received at a load balancer 300, which reads the requested level of service and selects a server (e.g., 512) based on a server index 600. Referring to column 6, lines 22-50, the server index is a multi-dimensional array stored in memory accessible by the load balancer, and is used to determine the server in the server pool that can best provide the requested level of service. The server pool is managed by the load balancer 300.

Daoud et al. do not teach computer readable code, which when executed by a computer, causes said computer to *send a request to a network-based server* and to *load a list of library servers received from the network-based server*. In fact, since the server index taught by Daoud et al. is stored in memory accessible by the load balancer 300, and appears to be managed by the load balancer 300, it is respectfully submitted that the program code of the load balancer 300 already has access to the server index and thus does not *send a request to a network-based server* and *load a list of library servers received from the network-based server,* as defined in claim 46 of the instant application. For example, it is respectfully submitted that the load balancer software cannot load a list of library servers *received* from a network-based server because the load balancer manages/creates the server pool/server index. In addition, it is respectfully submitted that one of ordinary skill in the art would never interpret the memory accessible by the load balancer 300 to be a network-based server, since at column 7, lines 22-30 Daoud et al. define a server as any computer or device that manages resources (e.g., which memory alone cannot do). It is further submitted that the one of ordinary skill in the art would never interpret the program code for selecting a requested level of service for a transaction 200 and program code for assigning the requested level of service to be computer readable code, which when executed by a computer, causes said computer to *send a request to* a network-based server, and to load a list of library servers *received from the* network-based server. For example, referring to column 6, lines 45-55, only the load balancer accesses the server index (i.e., the program code for assigning the requested level of service never interacts with the server index).

Notably, providing computer readable code, which when executed by a computer, causes said computer to *send a request to a network-based server* and to *load a list of library servers received from the network-based server*, provides client-based performance management. As discussed in paragraphs [65]-[67] of the instant application, client-based performance management is an important factor in ensuring the integrity of the audio stream available to the user. Advantageously, since the server statistics are created and maintained in the client only, the client software selects the server using performance data that is specific to the client. For example, as discussed in paragraph [67], this client-based performance management allows the time of operations such as logging in, getting the file, and/or getting the file size to be used to select the server. More specifically, the entire time for the transaction (e.g., from the original

request to a response from the request) is used to select the server. Accordingly, this client-based performance management is able to balance network and server loads on the basis of performance defined by the client. In contrast, Daoud et al. only teaches resource managing and does not provide client-based performance management wherein the transaction is evaluated/monitored from the client side (i.e., the speed of the transaction between the load balancer and the origin of the transaction is ignored).

Since Daoud et al. do not teach computer readable code, which when executed by a computer, causes said computer to send a request to a network-based server, the request including a unique identifier for identifying an audio stream, and to load a list of library servers received from the network-based server, the list of library servers determined in dependence upon the unique identifier, as defined in claim 46, it is respectfully submitted that the combination provided by the cited references does not teach the combination of elements found in claim 46 and that a *prima facie* case of obviousness has not been established. Accordingly, claim 46 and claims 47-57, which depend therefrom, are believed to be patentable.

In addition, it is respectfully submitted that modifying the combination of Daoud, Zuniga, and Hunter in view of Griffin does not provide the invention defined in claim 46, for the following reasons.

First, as discussed *supra,* Daoud et al. teach a first program code for selecting a requested level of service for a transaction for assigning the requested level of service and a second program code used by the load balancer. It is respectfully submitted that the first and second program codes are different codes and are provided on separate non-transitory computer readable storage media. For example, as is well know to those of ordinary skill in the art, load balancing is typically provided by dedicated software or hardware (e.g., a load balancing engine) that is disposed far from the origin of the transaction (e.g., is often coupled to a port where external clients connect to access services). Further support that the first and second program codes are provided on separate non-transitory computer readable storage media is found in Daoud at column 6, lines 45-50, wherein it is stated that the transaction is received by the load balancer, and that the service tag is read using suitable program code. Since the first and second program

codes are provided on separate non-transitory computer readable storage media, it is respectfully submitted that the cited combination cannot teach *a non-transitory computer readable storage medium* including computer readable code, which when executed by a computer, causes said computer to: *send a request to a network-based server*, *load a list of library servers received from the network-based server*, and *download a first digital audio file from the plurality of digital audio files for playback with a media player*, as defined in claim 46. For example, if the first program code for selecting a requested level of service for the transaction is modified in view of Griffin to download a first digital audio file from the plurality of digital audio files for playback with a media player, the combination will not provide program code used to load a list of library servers (i.e., as discussed *supra*, the server index taught by Daoud is only accessible by the load balancer). In contrast, if the second program code used by the load balancer is modified in view of Griffin to download a first digital audio file, the combination will not provide computer readable code that causes said computer to *send a request to* a network-based server and to load a list of library servers *received from the* network-based server (e.g., as discussed *supra* the load balancer does not receive the list of library servers from a network-based server). Furthermore, it is respectfully submitted that one of ordinary skill in the art would never modify the second program code used by the load balancer to download a first digital audio file because the load balancer is used solely for managing the internet load (e.g., in a server farm) in a transparent manner and because it would be pointless for a load balancer to download an audio file for playback with a media player. In fact, modifying the program code of a load balancer to download an audio file for playback with a media player would slow down the transaction, which is in direct contrast to the focus of Daoud et al. (e.g., to improve service using level of service assigned).

Second, referring to paragraph [0020], Griffin teaches downloading and storing content files, each of which has a bookmark associated therewith. It is respectfully, submitted that one of ordinary still in the art would understand that each of these content files represents a single, complete unit (i.e., that the content files stored on the content server taught by Griffin are not digital audio files including different segments of an audio stream). Accordingly, it is respectfully submitted that one of ordinary skill in the art would never interpret Griffin to teach "download a first digital audio file from the plurality of digital audio files for playback with a

media player, each digital audio file in the plurality of digital audio files including a different segment of the audio stream" as defined in claim 46 of the instant invention. It is further submitted that one of ordinary skill in the art would not find it obvious to modify the teachings of Daoud, Zuniga and Hunter in view of Griffin, because Griffin teaches away from providing "a plurality of digital audio files for playback with a media player, each digital audio file in the plurality of digital audio files including a different segment of the audio stream", by specifying that a separate bookmark file is created for each content file (e.g., see paragraph [0020]). Accordingly, claim 46 and claims 47-57, which depend therefrom, are believed to be patentable.

In addition, with specific regard to claim 55, it is respectfully submitted that the cited combination does not teach "download a first digital audio file from the plurality of digital audio files for playback with a media player, each digital audio file in the plurality of digital audio files including a different segment of the audio stream" and "download a second other digital audio file from a second library server for playback with the media player." More specifically, it is respectfully submitted that no combination of the cited references teaches downloading different segments of an audio stream from different libraries.

With specific regard to claim 57, it is respectfully submitted that Arons does not teach small digital audio files and thus cannot teach "wherein the computer determines the first digital audio file for playback using a time offset external to the descriptor file and the at least one of the start time, end time, and play time of each digital audio file in the plurality of digital audio files." For example, referring to section 3.9 on page 20 of the SpeechSkimmer document, Arons teaches that a *single file* is created that contains all of the segmentation data. In the same section, on page 21, it is specifically stated that audio data are read from *the* sound file.

Applicant would like to thank the Examiner for indicating that claim 64 would be allowable if rewritten in independent form, including all of the limitations of the base claim and any intervening claims. The subject matter of claim 64 has been written in independent form as amended claim 58. In addition, amended claim 58 corrects the phrase "resident with the computer" to --resident within the computer--. Claim 64 has been cancelled. No new matter

has been added. Accordingly, claim 58 and claims 59-63, which depend therefrom, are believed to be patentable.

Claims 65 and 66 have been rejected under 35 USC 103(a) as being unpatentable over Zuniga in view of Daoud et al. Claim 67 have been rejected under 35 USC 103(a) as being unpatentable over Zuniga in view of Daoud et al. and in view of Thiagarajan et al (US 20030221194). These rejections are respectfully traversed.

First, it is respectfully submitted that Daoud et al. do not teach *a size of each digital audio file in the plurality of digital audio files selected in dependence upon network throughput rates*, as stated on page 24 of the Office Action. In fact, referring to column 5, lines 33-36 Daoud et al. specify that "the requested level of service may also be based on characteristics or parameters of the transaction 200 itself. For example, large processing requests can be assigned to faster servers." In other words, Daoud et al. teach the opposite of *a size of each digital audio file in the plurality of digital audio files selected in dependence upon network throughput rates*, by teaching that the size of the transaction is innate and that larger processing requests will be assigned to faster servers. In contrast, the instant application teaches that selecting the size of each small audio file in dependence upon network throughput rates allows the small audio file to be transferred from the server to the client in a period of time that does not cause appreciable consternation on behalf of the user (e.g., see paragraph [46] of the instant application).

Second, it is respectfully submitted one of ordinary skill in the art would not find it obvious to modify Zuniga and/or the other cited references to allow *a size of each digital audio file in the plurality of digital audio files* to be *selected in dependence upon network throughput rates, and in particular to allow each digital audio file in the plurality of digital audio files to be downloaded and begin playing in less than about 5 seconds*, as defined in claim 65. In fact, it is respectfully submitted that Zuniga teaches away from *a size of each digital audio file in the plurality of digital audio files selected in dependence upon network throughput rates and to allow each digital audio file in the plurality of digital audio files to be downloaded and begin playing in less than about 5 seconds*, by specifying at paragraph [0032] that the highest priority audio content is delivered within the hour or within minutes. In addition, from paragraphs

[0024] and [0038] it is clear that Zuniga believes that audio books have the lowest delivery priority and that this type of content will be delivered over a period not exceeding a few days. Accordingly, it is clear that one of ordinary skill in the art would never consider modifying Zuniga such that *a size of each digital audio file in the plurality of digital audio files* is *selected in dependence upon network throughput rates to allow each digital audio file in the plurality of digital audio files to be downloaded and begin playing in less than about 5 seconds.* In fact, it is respectfully submitted that Zuniga teaches away from selecting *a size of each digital audio file in the plurality of digital audio files* to be *selected to allow each digital audio file in the plurality of digital audio files to be downloaded and begin playing in less than about 5 seconds* by proposing a different solution (e.g., delivery priority) to coordinating delivery of audio content. Accordingly, claim 65 and claims 66-67, which depend therefrom, are believed to be patentable.

In addition, with specific regard to claim 67, it is respectfully submitted that Thiagarajan does not teach a non-transitory computer readable storage medium having computer code configured to cause a computer to purge the downloaded digital audio files in dependence upon an amount of memory available. Referring to the abstract, paragraph [0003], and paragraph [0055], Thiagarajan teaches streaming and a pause buffer. It is respectfully submitted that one of ordinary skill in the art would never interpret the use of a pause buffer (e.g., configured as a circular, or ring, buffer on the hard disk memory as described in paragraph [0003]) to be equivalent to purging downloaded digital audio files. For example, a circular, or ring, buffer typically writes over data in volatile memory (RAM) and does not purge downloaded files. In addition, it is respectfully submitted that one of ordinary skill in the art would never interpret the data within the pause buffer to be equivalent to one or more downloaded digital audio files. For example, as is well known in the art, the data that is being streamed needs to be processed for rendering and is generally understood to be a frame or packet, rather than a digital audio file.

In addition, claim 52 has been amended to provide proper antecedence, claims 66 and 67 have been amended for consistency, and new claim 68 has been added. An example of support for new claim 68 is found in claim 48. No new matter has been added. Since new claim 68

depends from claim 46, which is believed to be patentable, it is respectfully submitted that new claim 68 is also patentable.

In view of the above comments, early and favorable reconsideration of the application is respectfully requested.

Should any minor informalities need to be addressed, the Examiner is encouraged to contact the undersigned attorney at the telephone number listed below.

The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment, to Deposit Account No: 50-2810.

Please associate this application with Customer No: 24949.

Respectfully submitted,

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JMC/lmf

Electronic Acknowledgement Receipt

EFS ID:	16583367
Application Number:	13588084
International Application Number:	
Confirmation Number:	4986
Title of Invention:	TRANSMISSION OF DIGITAL AUDIO DATA
First Named Inventor/Applicant Name:	John McCue
Customer Number:	24949
Filer:	Neil Teitelbaum/Lisa Fader
Filer Authorized By:	Neil Teitelbaum
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Receipt Date:	14-AUG-2013
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Time Stamp:	10:11:41
Application Type:	Utility under 35 USC 111(a)

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Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment/Req. Reconsideration-After Non-Final Reject	Response.pdf	133188 c58ff7f89becb0f11cd0632a3f023a686d5bf558	no	14

Warnings:	
Information:	

Total Files Size (in bytes):	133188

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

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

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

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

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 13/588,084	Filing Date 08/17/2012	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)		
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

		(Column 1)		(Column 2)	(Column 3)		
AMENDMENT	08/14/2013	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 22	Minus	** 22	= 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**

		(Column 1)		(Column 2)	(Column 3)		
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	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
/PATSY ZIMMERMAN/

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/588,084	08/17/2012	John McCue	141-1 US/PCT CON	4986

24949 7590 05/17/2013

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CANADA

EXAMINER	
BATURAY, ALICIA	
ART UNIT	PAPER NUMBER
2441	

NOTIFICATION DATE	DELIVERY MODE
05/17/2013	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ANNETTE@PATENTS.ORG

Office Action Summary	Application No.	Applicant(s)	
	13/588,084	MCCUE ET AL.	
	Examiner	Art Unit	
	Alicia Baturay	2441	

-- 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 *17 August 2012*.

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

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *46-67* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *46-63 and 65-67* is/are rejected.

8)☒ Claim(s) *64* is/are objected to.

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

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

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

11)☒ The drawing(s) filed on *17 August 2012* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

DETAILED ACTION

1. Claims 46-67 are presented for examination.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 53 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Line 3 states "at arbitrary time intervals." It is unclear exactly what the metes and bounds of the claim are in regards to this statement.

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 46 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daoud et al. (U.S. 7,984,147) in view of Zuniga (U.S. 2005/0245243) in view of Hunter et al. (U.S. 7,242,809) and further in view of Griffin (U.S. 2007/0124331).

Zuniga and Hunter were cited in the IDS filed on 17 August 2012.

6. With respect to claim 46, Daoud teaches a non-transitory computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to: send a request to a network-based server, the request including a unique identifier (Daoud, Fig. 2; col. 4, lines 6-22); load a list of library servers received from the network-based server, the list of library servers determined in dependence upon the unique identifier (Daoud, Fig. 6; col. 8, lines 31-50); maintain service level statistics for each library server in the list of library servers (Daoud, Fig. 4; col. 6, lines 22-44); select a first library server from the list of library servers in dependence upon the service level statistics, the first library server (Daoud, col. 6, lines 45-63)

Daoud does not explicitly teach identifying an audio stream.

However, Zuniga teaches identifying an audio stream (Zuniga, page 5, paragraph 55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Daoud in view of Zuniga in order to enable identifying an audio stream. One would be motivated to do so in order to provide better bandwidth use and reduce or eliminate the need to transmit large audio segments to a client device by assigning an identifier to the audio segment and the audio segment is broken into several audio files (Zuniga, page 2, paragraph 20).

The combination of Daoud and Zuniga does not explicitly teach having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream.

However, Hunter teaches having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream (Hunter, col. 15, lines 29-48).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud and Zuniga in view of Hunter in order to enable having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream. One would be motivated to do so in order to provide automatic segmentation of digital files into one or more video clusters corresponding to specific events, date ranges, time ranges, chapters or any other logical way to segment digital files (Hunter, col. 1, lines 8-12).

The combination of Daoud, Zuniga, and Hunter does not explicitly teach download a first digital audio file from the plurality of digital audio files for playback with a media player.

However, Griffin teaches download a first digital audio file from the plurality of digital audio files for playback with a media player (Griffin, page 1, paragraph 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud, Zuniga, and Hunter in view of Griffin in order to enable download a first digital audio file from the plurality of digital audio files for playback with a media player. One would be motivated to do so in order to provide a bookmark associated with the content file such that the bookmark will save the place in the content file such that the bookmark will save the place in the content file where the consumption of the content was stopped. The bookmark can be used when the user desires to

access the same content at a later time either on the same or a different user device (Griffin, page 1, paragraph 5).

7. With respect to claim 55, the combination of Daoud, Zuniga, Hunter, and Griffin teaches the invention described in claim 46, including the non-transitory computer readable storage medium wherein the computer code is further configured to cause said computer to: select a second library server from the list of library servers in dependence upon the service level statistics (Daoud, Fig. 1; col. 3, line 39 – col. 4, line 6), the second library server having a copy of the plurality of digital audio files (Hunter, col. 15, lines 29-48); and download a second other digital audio file from the second library server for playback with the media player (Griffin, page 1, paragraph 3).

8. Claims 47, 48, and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daoud in view of Zuniga in view of Hunter in view of Griffin and further in view of Iida et al. (U.S. 2003/0167262).

9. With respect to claim 47, Daoud teaches the invention described in claim 46, including a non-transitory computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to: send a request to a network-based server, the request including a unique identifier (Daoud, Fig. 2; col. 4, lines 6-22); load a list of library servers received from the network-based server, the list of library servers

determined in dependence upon the unique identifier (Daoud, Fig. 6; col. 8, lines 31-50); maintain service level statistics for each library server in the list of library servers (Daoud, Fig. 4; col. 6, lines 22-44); select a first library server from the list of library servers in dependence upon the service level statistics, the first library server (Daoud, col. 6, lines 45-63)

Daoud does not explicitly teach identifying an audio stream.

However, Zuniga teaches identifying an audio stream (Zuniga, page 5, paragraph 55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Daoud in view of Zuniga in order to enable identifying an audio stream. One would be motivated to do so in order to provide better bandwidth use and reduce or eliminate the need to transmit large audio segments to a client device by assigning an identifier to the audio segment and the audio segment is broken into several audio files (Zuniga, page 2, paragraph 20).

The combination of Daoud and Zuniga does not explicitly teach having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream.

However, Hunter teaches having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream (Hunter, col. 15, lines 29-48).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud and Zuniga in view of Hunter in order to enable having a plurality of digital audio files, each digital audio file in the plurality of digital

audio files including a different segment of the audio stream. One would be motivated to do so in order to provide automatic segmentation of digital files into one or more video clusters corresponding to specific events, date ranges, time ranges, chapters or any other logical way to segment digital files (Hunter, col. 1, lines 8-12).

The combination of Daoud, Zuniga, and Hunter does not explicitly teach download a first digital audio file from the plurality of digital audio files for playback with a media player.

However, Griffin teaches download a first digital audio file from the plurality of digital audio files for playback with a media player (Griffin, page 1, paragraph 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud, Zuniga, and Hunter in view of Griffin in order to enable download a first digital audio file from the plurality of digital audio files for playback with a media player. One would be motivated to do so in order to provide a bookmark associated with the content file such that the bookmark will save the place in the content file such that the bookmark will save the place in the content file where the consumption of the content was stopped. The bookmark can be used when the user desires to access the same content at a later time either on the same or a different user device (Griffin, page 1, paragraph 5).

The combination of Daoud, Zuniga, Hunter, and Griffin does not explicitly teach the non-transitory computer readable storage medium wherein the unique identifier is an ISBN number.

However, Iida teaches the non-transitory computer readable storage medium wherein the unique identifier is an ISBN number (Iida, page 7, paragraph 77).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud, Zuniga, Hunter, and Griffin in view of Iida in order to enable the non-transitory computer readable storage medium wherein the unique identifier is an ISBN number. One would be motivated to do so in order to perform communications with a plurality of information search sites via a network, requesting each of said for an information search, and receiving a search result of the information search (Iida, page 1, paragraph 9).

10. With respect to claim 48, the combination of Daoud, Zuniga, Hunter, Griffin, and Iida teaches the invention described in claim 47, including the non-transitory computer readable storage medium wherein a size of each digital audio file in the plurality of digital audio files is selected in dependence upon network throughput rates (Daoud, col. 5, lines 35-36).

11. With respect to claim 56, the combination of Daoud, Zuniga, Hunter, Griffin, and Iida teaches the invention described in claim 46, including the non-transitory computer readable storage medium wherein the request includes login information (Iida, page 7, paragraph 77).

12. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Daoud in view of Zuniga in view of Hunter in view of Griffin in view of Iida and further in view of Arons ("SpeechSkimmer: A System for Interactively Skimming Recorded Speech").

Zuniga, Hunter, and Arons were cited in the IDS filed on 17 August 2012.

13. With respect to claim 49, Daoud teaches the invention described in claim 48, including a non-transitory computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to: send a request to a network-based server, the request including a unique identifier (Daoud, Fig. 2; col. 4, lines 6-22); load a list of library servers received from the network-based server, the list of library servers determined in dependence upon the unique identifier (Daoud, Fig. 6; col. 8, lines 31-50); maintain service level statistics for each library server in the list of library servers (Daoud, Fig. 4; col. 6, lines 22-44); select a first library server from the list of library servers in dependence upon the service level statistics, the first library server (Daoud, col. 6, lines 45-63)

Daoud does not explicitly teach identifying an audio stream.

However, Zuniga teaches identifying an audio stream (Zuniga, page 5, paragraph 55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Daoud in view of Zuniga in order to enable identifying an audio stream. One would be motivated to do so in order to provide better bandwidth use and reduce or eliminate the need to transmit large audio segments to a client device by assigning an identifier to the audio segment and the audio segment is broken into several audio files (Zuniga, page 2, paragraph 20).

The combination of Daoud and Zuniga does not explicitly teach having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream.

However, Hunter teaches having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream (Hunter, col. 15, lines 29-48).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud and Zuniga in view of Hunter in order to enable having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream. One would be motivated to do so in order to provide automatic segmentation of digital files into one or more video clusters corresponding to specific events, date ranges, time ranges, chapters or any other logical way to segment digital files (Hunter, col. 1, lines 8-12).

The combination of Daoud, Zuniga, and Hunter does not explicitly teach download a first digital audio file from the plurality of digital audio files for playback with a media player.

However, Griffin teaches download a first digital audio file from the plurality of digital audio files for playback with a media player (Griffin, page 1, paragraph 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud, Zuniga, and Hunter in view of Griffin in order to enable download a first digital audio file from the plurality of digital audio files for playback with a media player. One would be motivated to do so in order to provide a bookmark associated with the content file such that the bookmark will save the place in the content file such that the bookmark will save the place in the content file where the consumption of the content was stopped. The bookmark can be used when the user desires to

access the same content at a later time either on the same or a different user device (Griffin, page 1, paragraph 5).

The combination of Daoud, Zuniga, Hunter, and Griffin does not explicitly teach the non-transitory computer readable storage medium wherein the unique identifier is an ISBN number.

However, Iida teaches the non-transitory computer readable storage medium wherein the unique identifier is an ISBN number (Iida, page 7, paragraph 77).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud, Zuniga, Hunter, and Griffin in view of Iida in order to enable the non-transitory computer readable storage medium wherein the unique identifier is an ISBN number. One would be motivated to do so in order to perform communications with a plurality of information search sites via a network, requesting each of said for an information search, and receiving a search result of the information search (Iida, page 1, paragraph 9).

The combination of Daoud, Zuniga, Hunter, Griffin, and Iida does not explicitly teach the non-transitory computer readable storage medium wherein the unique identifier is obtained from one of a bookmark structure, a card catalog structure, and an advertising structure.

However, Arons teaches the non-transitory computer readable storage medium wherein the unique identifier is obtained from one of a bookmark structure, a card catalog structure, and an advertising structure (Arons, pages 31-32, 5.22).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud, Zuniga, Hunter, Griffin, and Iida in view of

Arons in order to enable the non-transitory computer readable storage medium wherein the unique identifier is obtained from one of a bookmark structure, a card catalog structure, and an advertising structure. One would be motivated to do so in order to exploit acoustic cues to segment recorded speech into semantically meaningful chunks (Arons, page 4, 4th full paragraph).

14. Claims 50 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daoud in view of Zuniga in view of Hunter in view of Griffin and further in view of Arons.

15. With respect to claim 50, Daoud teaches the invention described in claim 46, including a non-transitory computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to: send a request to a network-based server, the request including a unique identifier (Daoud, Fig. 2; col. 4, lines 6-22); load a list of library servers received from the network-based server, the list of library servers determined in dependence upon the unique identifier (Daoud, Fig. 6; col. 8, lines 31-50); maintain service level statistics for each library server in the list of library servers (Daoud, Fig. 4; col. 6, lines 22-44); select a first library server from the list of library servers in dependence upon the service level statistics, the first library server (Daoud, col. 6, lines 45-63)

Daoud does not explicitly teach identifying an audio stream.

However, Zuniga teaches identifying an audio stream (Zuniga, page 5, paragraph 55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Daoud in view of Zuniga in order to enable identifying an audio stream. One would be motivated to do so in order to provide better bandwidth use and reduce or eliminate the need to transmit large audio segments to a client device by assigning an identifier to the audio segment and the audio segment is broken into several audio files (Zuniga, page 2, paragraph 20).

The combination of Daoud and Zuniga does not explicitly teach having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream.

However, Hunter teaches having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream (Hunter, col. 15, lines 29-48).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud and Zuniga in view of Hunter in order to enable having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream. One would be motivated to do so in order to provide automatic segmentation of digital files into one or more video clusters corresponding to specific events, date ranges, time ranges, chapters or any other logical way to segment digital files (Hunter, col. 1, lines 8-12).

The combination of Daoud, Zuniga, and Hunter does not explicitly teach download a first digital audio file from the plurality of digital audio files for playback with a media player.

However, Griffin teaches download a first digital audio file from the plurality of digital audio files for playback with a media player (Griffin, page 1, paragraph 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud, Zuniga, and Hunter in view of Griffin in order to enable download a first digital audio file from the plurality of digital audio files for playback with a media player. One would be motivated to do so in order to provide a bookmark associated with the content file such that the bookmark will save the place in the content file such that the bookmark will save the place in the content file where the consumption of the content was stopped. The bookmark can be used when the user desires to access the same content at a later time either on the same or a different user device (Griffin, page 1, paragraph 5).

The combination of Daoud, Zuniga, Hunter, and Griffin does not explicitly teach the non-transitory computer readable storage medium wherein the unique identifier is obtained from one of a bookmark structure, a card catalog structure, and an advertising structure.

However, Arons teaches the non-transitory computer readable storage medium wherein the unique identifier is obtained from one of a bookmark structure, a card catalog structure, and an advertising structure (Arons, pages 31-32, 5.22).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud, Zuniga, Hunter, and Griffin in view of Arons in order to enable the non-transitory computer readable storage medium wherein the unique identifier is obtained from one of a bookmark structure, a card catalog structure, and an advertising structure. One would be motivated to do so in order to exploit acoustic cues to

segment recorded speech into semantically meaningful chunks (Arons, page 4, 4th full paragraph).

16. With respect to claim 57, the combination of Daoud, Zuniga, Hunter, Griffin, and Arons teaches the invention described in claim 46, including the non-transitory computer readable storage medium wherein the computer code is configured to cause said computer to: download a descriptor file from the first library server, the descriptor file for ordering the plurality of digital audio files, the descriptor file including at least one of a start time, an end time, and a play time of each digital audio file in the plurality of digital audio files within the audio stream (Hunter, col. 16, lines 21-25), wherein the computer determines the first digital audio file for playback using a time offset external to the descriptor file and the at least one of the start time, end time, and play time of each digital audio file in the plurality of digital audio files (Arons, pages 31-32, 5.22).

17. Claims 51-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daoud in view of Zuniga in view of Hunter in view of Griffin and further in view of Siegel (U.S. 6,850,982).

Zuniga, Hunter, and Siegel were cited in the IDS filed on 17 August 2012.

18. With respect to claim 51, Daoud teaches the invention described in claim 46, including a non-transitory computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to: send a request to a network-based server, the request including a unique identifier (Daoud, Fig. 2; col. 4, lines 6-22); load a list of library servers received from the network-based server, the list of library servers determined in dependence upon the unique identifier (Daoud, Fig. 6; col. 8, lines 31-50); maintain service level statistics for each library server in the list of library servers (Daoud, Fig. 4; col. 6, lines 22-44); select a first library server from the list of library servers in dependence upon the service level statistics, the first library server (Daoud, col. 6, lines 45-63)

Daoud does not explicitly teach identifying an audio stream.

However, Zuniga teaches identifying an audio stream (Zuniga, page 5, paragraph 55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Daoud in view of Zuniga in order to enable identifying an audio stream. One would be motivated to do so in order to provide better bandwidth use and reduce or eliminate the need to transmit large audio segments to a client device by assigning an identifier to the audio segment and the audio segment is broken into several audio files (Zuniga, page 2, paragraph 20).

The combination of Daoud and Zuniga does not explicitly teach having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream.

However, Hunter teaches having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream (Hunter, col. 15, lines 29-48).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud and Zuniga in view of Hunter in order to enable having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream. One would be motivated to do so in order to provide automatic segmentation of digital files into one or more video clusters corresponding to specific events, date ranges, time ranges, chapters or any other logical way to segment digital files (Hunter, col. 1, lines 8-12).

The combination of Daoud, Zuniga, and Hunter does not explicitly teach download a first digital audio file from the plurality of digital audio files for playback with a media player.

However, Griffin teaches download a first digital audio file from the plurality of digital audio files for playback with a media player (Griffin, page 1, paragraph 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud, Zuniga, and Hunter in view of Griffin in order to enable download a first digital audio file from the plurality of digital audio files for playback with a media player. One would be motivated to do so in order to provide a bookmark associated with the content file such that the bookmark will save the place in the content file such that the bookmark will save the place in the content file where the consumption of the content was stopped. The bookmark can be used when the user desires to

access the same content at a later time either on the same or a different user device (Griffin, page 1, paragraph 5).

The combination of Daoud, Zuniga, Hunter, and Griffin does not explicitly teach the non-transitory computer readable storage medium wherein the service level statistics include historical transfer rates for each library server in the list of library servers.

However, Siegel teaches the non-transitory computer readable storage medium wherein the service level statistics include historical transfer rates for each library server in the list of library servers (Siegel, col. 15, lines 27-48).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Daoud, Zuniga, Hunter, and Griffin in view of Siegel in order to enable the non-transitory computer readable storage medium wherein the service level statistics include historical transfer rates for each library server in the list of library servers. One would be motivated to do so in order to eliminate the need to reform a connection to the client and greatly improves overall system performance (Siegel, col. 2, lines 3-5).

19. With respect to claim 52, the combination of Daoud, Zuniga, Hunter, Griffin, and Siegel teaches the invention described in claim 51, including the non-transitory computer readable storage medium wherein the computer code is further configured to cause said computer to: compare the historical transfer rates of all library servers on the list of library servers; select the fastest library server on the list of library servers; initialize a floating average value representing transfer rate; monitor transaction times for the fastest library server and update

the floating average transfer rate; increase the floating average transfer rate by a first predetermined value in dependence upon an unavailability of the fastest library server; and update the historical transfer rate for the fastest server in dependence upon the floating average transfer rate exceeding a predetermined value (Siegel, col. 15, lines 27-48).

20. With respect to claim 53, the combination of Daoud, Zuniga, Hunter, Griffin, and Siegel teaches the invention described in claim 52, including the non-transitory computer readable storage medium wherein the computer code is further configured to cause said computer to: at arbitrary time intervals, calculate an average value of the historical transfer rates for all library servers on the list of servers and subtract a second predetermined value from the historical transfer rate for each library server that has a historical value exceeding the calculated average (Siegel, col. 15, lines 27-48).

21. With respect to claim 54, the combination of Daoud, Zuniga, Hunter, Griffin, and Siegel teaches the invention described in claim 52, including the non-transitory computer readable storage medium wherein the first library server is the fastest library server (Daoud, col. 8, lines 31-50).

22. Claim 58 is rejected under 35 U.S.C. 103(a) as being unpatentable over Madden et al. (U.S. 2007/0083911) and further in view of Zuniga.

Zuniga, Hunter, and Madden were cited in the IDS filed on 17 August 2012.

23. With respect to claim 58, Madden teaches a non-transitory computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to: determine a first position within an audio stream playing on a media player; determine a time offset using a point in time of the first position from a beginning of the audio stream; create a bookmark for the first position, the bookmark including a file, the file including a unique identifier (Madden, page 16, paragraph 211) and including the time offset (Madden, page 16, paragraph 211), using the time offset (Madden, page 16, paragraph 211).

Madden does not explicitly teach identifying the audio stream and wherein the bookmark is for positioning the audio stream to the first position.

However, Zuniga teaches identifying the audio stream (Zuniga, page 5, paragraph 55) and wherein the bookmark is for positioning the audio stream to the first position (Zuniga, page 5, paragraph 55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Madden in view of Zuniga in order to enable identifying the audio stream and wherein the bookmark is for positioning the audio stream to the first position. One would be motivated to do so in order to provide better bandwidth use and reduce or eliminate the need to transmit large audio segments to a client device by assigning an identifier to the audio segment and the audio segment is broken into several audio files (Zuniga, page 2, paragraph 20).

24. Claims 59-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Madden in view of Zuniga and further in view of Griffin.

25. With respect to claim 59, Madden teaches the invention described in claim 58, including a non-transitory computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to: determine a first position within an audio stream playing on a media player; determine a time offset using a point in time of the first position from a beginning of the audio stream; create a bookmark for the first position, the bookmark including a file, the file including a unique identifier (Madden, page 16, paragraph 211) and including the time offset (Madden, page 16, paragraph 211), using the time offset (Madden, page 16, paragraph 211).

Madden does not explicitly teach identifying the audio stream and wherein the bookmark is for positioning the audio stream to the first position.

However, Zuniga teaches identifying the audio stream (Zuniga, page 5, paragraph 55) and wherein the bookmark is for positioning the audio stream to the first position (Zuniga, page 5, paragraph 55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Madden in view of Zuniga in order to enable identifying the audio stream and wherein the bookmark is for positioning the audio stream to the first position. One would be motivated to do so in order to provide better bandwidth use and reduce or eliminate the need to transmit large audio segments to a client device by assigning an

identifier to the audio segment and the audio segment is broken into several audio files (Zuniga, page 2, paragraph 20).

The combination of Madden and Zuniga does not explicitly teach the non-transitory computer readable storage medium wherein the first position is determined when the media player is stopped while playing the audio stream.

However, Griffin teaches the non-transitory computer readable storage medium wherein the first position is determined when the media player is stopped while playing the audio stream (Griffin, page 3, paragraph 22).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Madden and Zuniga in view of Griffin in order to enable the non-transitory computer readable storage medium wherein the first position is determined when the media player is stopped while playing the audio stream. One would be motivated to do so in order to provide a bookmark associated with the content file such that the bookmark will save the place in the content file such that the bookmark will save the place in the content file where the consumption of the content was stopped. The bookmark can be used when the user desires to access the same content at a later time either on the same or a different user device (Griffin, page 1, paragraph 5).

26. With respect to claim 60, the combination of Madden, Zuniga, and Griffin teaches the invention described in claim 58, including the non-transitory computer readable storage medium wherein the first position is determined in response to a make bookmark command (Griffin, page 3, paragraph 21).

27. With respect to claim 61, the combination of Madden, Zuniga, and Griffin teaches the invention described in claim 58, including the non-transitory computer readable storage medium wherein the time offset is determined by subtracting a predetermined value from the point in time of the first position from the beginning of the audio stream (Griffin, pages 2-3, paragraph 20).

28. With respect to claim 62, the combination of Madden, Zuniga, and Griffin teaches the invention described in claim 58, including the non-transitory computer readable storage medium wherein the computer code is further configured to cause said computer to: transfer the bookmark to another computer (Griffin, page 1, paragraph 3).

29. With respect to claim 63, the combination of Madden, Zuniga, and Griffin teaches the invention described in claim 62, including the non-transitory computer readable storage medium wherein the other computer is for loading a digital audio file including the first position for playback by an other media player (Griffin, page 1, paragraph 3), the media player and the other media player using one of the same audio formats and different audio formats (Griffin, page 1, paragraph 2).

30. Claims 65 and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zuniga and further in view of Daoud.

31. With respect to claim 65, Zuniga teaches a non-transitory computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to: download a first digital audio file stored in a library, the library connected to the computer via a network (Zuniga, page 5, paragraph 55), the first digital audio file selected from a plurality of digital audio files stored in the library, each digital audio file in the plurality of digital audio files including a different segment of an audio stream (Zuniga, page 4, paragraph 45), and to allow each digital audio file in the plurality of digital audio files to be downloaded and begin playing in less than about 5 seconds, the first digital audio file selected in dependence upon a predetermined position within the audio stream (Zuniga, page 3, paragraph 31; and page 5, paragraph 55).

Zuniga does not explicitly teach a size of each digital audio file in the plurality of digital audio files selected in dependence upon network throughput rates.

However, Daoud teaches a size of each digital audio file in the plurality of digital audio files selected in dependence upon network throughput rates (Daoud, col. 5, lines 35-36).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Zuniga in view of Daoud in order to enable identifying a size of each digital audio file in the plurality of digital audio files selected in dependence upon network throughput rates. One would be motivated to do so in order to provide load balancing tools that are used to direct incoming transactions to the server in the server pool in such a way that the traffic is balanced across all the servers in the pool (Daoud, col. 1, lines 23-26).

32. With respect to claim 66, the combination of Zuniga and Daoud teaches the invention described in claim 65, including the non-transitory computer readable storage medium wherein the computer code is further configured to cause said computer to: download successive digital audio files in the plurality of digital audio files from the library (Zuniga, page 5, paragraph 55); and successively play the first digital audio file and the successive digital audio files using a media player (Zuniga, page 1, paragraph 10; and page 7, paragraph 75) to reproduce an experience of a contiguous audio stream without reconstruction of the audio stream (Zuniga, page 3, paragraph 31; and page 5, paragraph 55).

33. Claim 67 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zuniga in view of Daoud and further in view of Thiagarajan et al. (U.S. 2003/0221194).

Zuniga, Hunter, and Thiagarajan were cited in the IDS filed on 17 August 2012.

34. With respect to claim 67, Zuniga teaches the invention described in claim 66, including a non-transitory computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to: download a first digital audio file stored in a library, the library connected to the computer via a network (Zuniga, page 5, paragraph 55), the first digital audio file selected from a plurality of digital audio files stored in the library, each digital audio file in the plurality of digital audio files including a different segment of an audio stream (Zuniga, page 4, paragraph 45), and to allow each digital audio file in the plurality of digital audio files to be downloaded and begin playing in less than

about 5 seconds, the first digital audio file selected in dependence upon a predetermined position within the audio stream (Zuniga, page 3, paragraph 31; and page 5, paragraph 55).

Zuniga does not explicitly teach a size of each digital audio file in the plurality of digital audio files selected in dependence upon network throughput rates.

However, Daoud teaches a size of each digital audio file in the plurality of digital audio files selected in dependence upon network throughput rates (Daoud, col. 5, lines 35-36).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Zuniga in view of Daoud in order to enable identifying a size of each digital audio file in the plurality of digital audio files selected in dependence upon network throughput rates. One would be motivated to do so in order to provide load balancing tools that are used to direct incoming transactions to the server in the server pool in such a way that the traffic is balanced across all the servers in the pool (Daoud, col. 1, lines 23-26).

The combination of Zuniga and Daoud does not explicitly teach the non-transitory computer readable storage medium wherein the computer code is further configured to cause said computer to: determine numeric values representing current time offsets into the audio stream while the first digital audio file and the successive digital audio files are successively played; and purge the downloaded digital audio files in dependence upon an amount of memory available, a current time offset, and time-offsets provided in bookmarks resident on the computer.

However, Thiagarajan teaches the non-transitory computer readable storage medium wherein the computer code is further configured to cause said computer to: determine numeric values representing current time offsets into the audio stream while the first digital

audio file and the successive digital audio files are successively played; and purge the downloaded digital audio files in dependence upon an amount of memory available, a current time offset, and time-offsets provided in bookmarks resident on the computer (Thiagarajan, page 1, paragraph 3 and page 5, paragraph 52).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Zuniga and Daoud in view of Thiagarajan in order to enable the non-transitory computer readable storage medium wherein the computer code is further configured to cause said computer to: determine numeric values representing current time offsets into the audio stream while the first digital audio file and the successive digital audio files are successively played; and purge the downloaded digital audio files in dependence upon an amount of memory available, a current time offset, and time-offsets provided in bookmarks resident on the computer. One would be motivated to do so in order to provide the ability to pause the broadcast of a program and return to watch the program, while still in progress, from the point at which it was paused (Thiagarajan, page 1, paragraph 2).

Allowable Subject Matter

35. Claim 64 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia Baturay whose telephone number is (571) 272-3981. The examiner can normally be reached at 7am - 4:30pm, Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing Chan can be reached on (571) 272-7493. The fax 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).

/Alicia Baturay/
Primary Examiner, Art Unit 2441

May 9, 2013

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	Examiner Alicia Baturay	Art Unit 2441	Page 1 of 1

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NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
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Form PTO 1449A U.S. Department of Commerce Patent and Trademark Office Information Disclosure Statement by Applicant	ATTY. DOCKET NUMBER: 141-1 US/PCT CON	SERIAL NUMBER: ~~New Application~~ 13/588,084
	APPLICANT: McCue et al.	
	FILING DATE: ~~New Application~~ Herewith	GROUP: ~~New Application~~ 2441

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		20070083911	Apr 12, 2007	Madden et al	725	135	
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		20110118858	May 19, 2011	Rottler et al.	700	94	

/Alicia Baturay/ 05/02/2013

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.B./

Foreign Patent Documents

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO

Other Documents (Including Author, Title, Date Pertinent Pages, Etc.)

		"SpeechSkimmer: A System for Interactively Skimming Recorded Speech" by Barry Arons, MIT Media Lab, ACM Transactions on Computer-Human Interaction, Vol. 4, No. 1, March 1997, Pages 3-38

EXAMINER /Alicia Baturay/	DATE CONSIDERED 05/02/2013

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

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.B./

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13588084	MCCUE ET AL.
	Examiner	Art Unit
	ALICIA BATURAY	2441

✓	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	05/09/2013								
	1	-								
	2	-								
	3	-								
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	34	-								
	35	-								
	36	-								

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
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CLAIM		DATE								
Final	Original	05/09/2013								
	37	-								
	38	-								
	39	-								
	40	-								
	41	-								
	42	-								
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	45	-								
	46	✓								
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	61	✓								
	62	✓								
	63	✓								
	64	O								
	65	✓								
	66	✓								
	67	✓								

Form PTO 1449A U.S. Department of Commerce Patent and Trademark Office Information Disclosure Statement by Applicant	ATTY. DOCKET NUMBER: 141-1 US/PCT CON	SERIAL NUMBER: ~~New Application~~ 13/588,084
	APPLICANT: McCue et al.	
	FILING DATE: ~~New Application~~ Herewith	GROUP: ~~New Application~~ 2441

U.S. Patent Documents

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILIN APPL
		20070067267	Mar 22, 2007	Ives	1	1	
		20090171750	Jul 2, 2009	Zhou et al	705	14.53	

Foreign Patent Documents

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO

Other Documents (Including Author, Title, Date Pertinent Pages, Etc.)

		EPUB Media Overlays 3.0", International Digital Publishing Forum, (http://idpf.org/epub/30/spec/epub30-mediaoverlays-20110516.html), 16 May 2011

EXAMINER /Alicia Baturay/	DATE CONSIDERED 05/02/2013

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

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	1816	(segment$7 or break$3 or reduc$3) same audio same (silence or "low decibel" or gaps)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 10:55
S2	1334	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same audio same (silence or "low decibel" or gaps))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 10:57
S3	3547	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same (silence or "low decibel" or gaps))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 10:58
S4	4	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same (silence or "low decibel" or gaps) same (natural adj language))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 10:58
S5	24	("5586264", "6621980", "20020184189", "20030091338", "20030172346", "20050061873", "20050091062", "20050111824", "20050250439", "20060236219", "20060242550", "20060271989").pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 11:00
S6	0	audio-pod.as.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 11:03
S7	496	McCue.in. or Shostakovsky.in.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 11:04
S8	0	(McCue.in. or Shostakovsky.in.) same (audio)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 11:04
S9	552	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same (silence or "low decibel" or gaps) same (language or speech))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 14:06
S10	23	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same (silence or "low decibel" or gaps) adj (language or	US-PGPUB; USPAT; EPO; JPO; DERWENT;	OR	ON	2010/01/26 14:07

		speech))	IBM_TDB			
S11	3	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same stream$3 same (silence or "low decibel" or gaps) adj (language or speech))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 14:13
S12	8403	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same stream$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 14:16
S13	268	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same stream$3 same (descriptor or index))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 14:17
S14	47	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same stream$3 same (descriptor or index) same (start or end or play))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/26 14:17
S15	4	("7379875", "7242809").pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 11:24
S16	7	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same stream$3 same purg$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 15:58
S17	8403	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same stream$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 15:58
S18	1060	@ad<"20051213" and ((segment$7 or break$3 or reduc$3) same (audio or (multi adj media) or mp3 or sound) same stream$3 same buffer$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 15:58
S19	2167	@ad<"20051213" and (stream$3 same buffer$3 same (purg$3 or empty$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 15:59
S20	450	@ad<"20051213" and (stream$3 same buffer$3 adj (purg$3 or empty$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 15:59
S21	50	@ad<"20051213" and (audio same stream$3 same buffer$3 adj (purg$3 or empty$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 15:59
S22	11	@ad<"20051213" and (audio same stream$3 same used same buffer$3 adj (purg$3 or empty$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT;	OR	ON	2010/01/27 16:01

			IBM_TDB			
S23	14	@ad<"20051213" and (stream$3 same buffer$3 same bookmark)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 16:04
S24	47	@ad<"20051213" and (((Quality adj service) or QoS) same (stream$3) same transfer adj rate)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 16:09
S25	10	@ad<"20051213" and (((Quality adj service) or QoS) same (stream$3) same transfer adj rate and transaction)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 16:10
S26	1082	@ad<"20051213" and (((Quality adj service) or QoS) same (stream$3) same audio)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 16:12
S27	207	@ad<"20051213" and (((Quality adj service) or QoS) same (stream$3) same audio same server)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 16:12
S28	6	@ad<"20051213" and (((Quality adj service) or QoS) same (stream$3) same audio same server same (choice or choose or choosing))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 16:13
S29	0	@ad<"20051213" and (((Quality adj service) or QoS) same transfer adj rate and transaction adj rate)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 16:15
S30	50	@ad<"20051213" and (((Quality adj service) or QoS) and transfer adj rate and transaction adj rate)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 16:15
S31	10	@ad<"20051213" and ((((Quality adj service) or QoS) or ((Service adj level adj agreement) or SLA)) same (choose adj server))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/27 16:18
S32	2	"20080301318".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/04/20 13:42
S33	74	small adj audio adj files	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/07/20 16:11
S34	6	@ad<"20051213" and (book adj mark) same (audio adj stream)	US-PGPUB; USPAT; EPO; JPO; DERWENT;	OR	ON	2010/07/21 11:09

			IBM_TDB			
S35	58	@ad<"20051213" and (book adj mark) same audio	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/07/21 11:22
S36	3	@ad<"20051213" and (book adj mark) and (time adj offset)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/07/21 11:22
S37	345	@ad<"20051213" and ((book adj mark) or mark$3) same (time adj offset)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/07/21 11:23
S38	76	@ad<"20051213" and ((book adj mark) or mark$3) same (time adj offset) same position	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/07/21 11:23
S39	14	@ad<"20051213" and ((book adj mark) or mark$3) and (time adj offset) same current adj position	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/07/21 11:24
S40	509	McCue.in. or Shostakovsky.in.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/07/21 16:09
S41	8	709/217.ccls. and (book adj mark) and audio	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/07/21 16:10
S42	21	("20050091062" | "6621980" | "20050061873" | "20060271989" | "0118858" | "0281509" | "20050111824" | "20060242550" | "6850982" | "5586264" | "20030221194" | "20060140162" | "20070041356" | "20030172346" | "20060236219" | "7242809" | "20020184189" | "20030091338" | "20050250439" | "20050245243" | "20070083911").PN.	US-PGPUB; USPAT	OR	OFF	2012/06/18 14:27
S43	0	(McCue.in. or Shostakovsky.in.) same (audio)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/18 14:27
S44	9	709/217.ccls. and (book adj mark) and audio	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/18 14:27
S45	185	(book adj mark$3).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT;	OR	OFF	2012/06/18 14:38

			IBM_TDB			
S46	3	((audio or mp3 or mpeg or sound) same (book adj mark$3)).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/18 14:38
S52	23	("20020184189" | "20030091338" | "20030172346" | "20030221194" | "20050061873" | "20050091062" | "20050111824" | "20050245243" | "20050250439" | "20060140162" | "20060236219" | "20060242550" | "20060271989" | "20070041356" | "20070067267" | "20070083911" | "20090171750" | "20100281509" | "20110118858" | "5586264" | "6621980" | "6850982" | "7242809").PN.	US-PGPUB; USPAT	OR	OFF	2013/05/02 10:25
S53	1	"20120317245".pn.	US-PGPUB	OR	OFF	2013/05/02 14:49
S54	2	("8386621", "8239893").pn.	USPAT	OR	OFF	2013/05/02 16:13
S55	19	Netflix.as.	USPAT	OR	OFF	2013/05/02 16:14
S56	3565	@ad<"20051213" and (parallel adj stream$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 16:15
S57	3	@ad<"20051213" and ((parallel adj stream$3) same statistics)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 16:15
S58	4	("20070260546" | "20070288588" | "5761417" | "7096263").PN. OR ("8386621").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2013/05/02 16:16
S59	38	@ad<"20051213" and (transfer$7 adj ((book adj mark) or bookmark))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 16:51
S60	7	@ad<"20051213" and (transfer$7 adj ((book adj mark) or bookmark) and audio)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 16:52
S61	1	@ad<"20051213" and ((parallel adj download$3) same (audio or mp3 or wav))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 17:12
S62	69	@ad<"20051213" and ((parallel adj download$3) and (audio or mp3 or wav))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 17:12
S63	5180	@ad<"20051213" and (download$3 and (audio or mp3 or wav) and throughput)	US-PGPUB; USPAT; EPO; JPO;	OR	ON	2013/05/02 17:13

			DERWENT; IBM_TDB			
S64	580	@ad<"20051213" and (download$3 same throughput and (audio or mp3 or wav))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 17:13
S65	72	@ad<"20051213" and (download$3 same throughput same (audio or mp3 or wav))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 17:13
S66	0	@ad<"20051213" and (download$3 same server adj throughput same (audio or mp3 or wav))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 17:15
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S68	0	@ad<"20051213" and (download$3 same faster adj server same (audio or mp3 or wav))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 17:17
S69	1	@ad<"20051213" and (download$3 same faster adj server and (audio or mp3 or wav))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 17:17
S70	15	@ad<"20051213" and ((server adj (cluster or group or farm)) same (fastest or quickest or swiftest))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/06 08:59
S71	8	@ad<"20051213" and (((log adj in) or login) same ISBN)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/07 12:45

5/9/2013 9:45:44 AM
C:\Users\abaturay\Alicia's Documents\EAST Searches\13588084-NaturalLanguageAudioGapsAudioOnDemandCON.wsp

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BIB DATA SHEET

CONFIRMATION NO. 4986

SERIAL NUMBER	FILING or 371(c) DATE RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
13/588,084	08/17/2012	709	2441	141-1 US/PCT CON

APPLICANTS

John McCue, Ottawa, CANADA;
Robert McCue, Ottawa, CANADA;
Gregory Shostakovsky, Kanata, CANADA;
Glenn McCue, Ottawa, CANADA;

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

This application is a CON of 12/096,933 06/11/2008 PAT 8285809
which is a 371 of PCT/CA2006/002046 12/12/2006
which claims benefit of 60/749,632 12/13/2005

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

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **** ** SMALL ENTITY **
08/29/2012

Foreign Priority claimed	☐ Yes ☑ No	☐ Met after Allowance	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
35 USC 119(a-d) conditions met	☐ Yes ☑ No		CANADA	15	22	3
Verified and Acknowledged	/ALICIA BATURAY/ Examiner's Signature	Initials				

ADDRESS

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280 SUNNYSIDE AVENUE
OTTAWA, ON K1S 0R8
CANADA

TITLE

TRANSMISSION OF DIGITAL AUDIO DATA

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BIB (Rev. 05/07).

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13588084	MCCUE ET AL.
	Examiner	Art Unit
	ALICIA BATURAY	2441

SEARCHED			
Class	Subclass	Date	Examiner
709	219	05/09/2013	AB

SEARCH NOTES		
Search Notes	Date	Examiner
Searched EAST (US-PGPUB, USPAT, EPO, JPO, DERWENT, IBM_TDB)	05/09/2013	AB
Conducted Inventor Name Search	05/09/2013	AB
Conducted Class/Subclass Search	05/09/2013	AB

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/588,084	08/17/2012	John McCue	

CONFIRMATION NO. 4986

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CANADA

PUBLICATION NOTICE

OC000000058144915

Title:TRANSMISSION OF DIGITAL AUDIO DATA

Publication No.US-2012-0317245-A1
Publication Date:12/13/2012

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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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 13/588,084

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	95		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	310		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	125		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	22 minus 20 =	* 2	x 30 =	60	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3 minus 3 =	*	x 125 =	0.00			
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).			0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	590		TOTAL	

APPLICATION AS AMENDED - PART II

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

		(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($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							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 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
13/588,084	08/17/2012	2183	590		22	3

CONFIRMATION NO. 4986

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FILING RECEIPT

Date Mailed: 09/04/2012

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)

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Douglas MacLean--48096

Domestic Priority data as claimed by applicant

This application is a CON of 12/096,933 06/11/2008
which is a 371 of PCT/CA2006/002046 12/12/2006
which claims benefit of 60/749,632 12/13/2005

Foreign Applications (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.)

If Required, Foreign Filing License Granted: 08/29/2012

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 13/588,084**

Projected Publication Date: 12/13/2012

Non-Publication Request: No

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

Title

TRANSMISSION OF DIGITAL AUDIO DATA

Preliminary Class

712

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

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Teitelbaum & MacLean

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August 17, 2012

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

Sir:

Re: New United States Continuation Application
Inventor(s): McCue et al.
Title: TRANSMISSION OF DIGITAL AUDIO DATA
Our File: 141-1 US/PCT CON

This is a Request for filing of a new CON patent application of U.S. Serial No: 12/096,933 filed June 11, 2008, which was the National Stage of International Application No. PCT/CA2006/002046 filed December 12, 2006, which claims priority from US Pat. Appl. Ser. No. 60/749,632 filed December 13, 2005, all of which are incorporated by reference in the present application. Enclosed are:

1. Declaration signed by the Inventor(s) from the parent application;
2. **33** pages of specification, from the parent application, including:
   45 claims, Abstract of the Disclosure;
3. Formal drawings including figures **1 to 19 (15** pages of figures) from the parent application;
4. Preliminary Amendment, including:
   Specification, showing amendments;
   Specification, clean copy;
   Claim Amendments with **22** claims, **3** being independent
5. Information Disclosure Statements (two) and references;

Please publish Fig. 3

Small Entity Assertion: Applicant claims entitlement to small entity status in this application.

Convention priority is claimed under 35 USC 119 with respect to U.S. Patent Appln. No: 12/096,933 filed June 11, 2008, which was the National Stage of International Application No. PCT/CA2006/002046 filed December 12, 2006, which claims priority from US Pat. Appl. Ser. No. 60/749,632 filed December 13, 2005.

The following fees are payable:

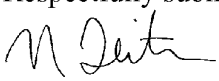
- **Online Filing fee - $ 95.00**
- **Examination fee - $125.00**
- **Search fee - $310.00**
- **Extra Claim fee - $ 60.00**

The Commissioner is hereby authorized to charge any fees which may be required to our VISA Account.

The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment, to Deposit Account No: 50-2810.

Please associate this application with Customer No: 24949.

Respectfully submitted,



Neil Teitelbaum
Regn No: 38,793

Encl.
/mdb

File No: 141-1 US/PCT

DECLARATION FOR PATENT APPLICATION

As below named inventors, we hereby declare that:

Our residence, post office addresses and citizenship are as stated below next to our names, **John McCUE; Robert McCUE; Gregory SHOSTAKOVSKY; and Glenn McCUE.**

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

SEGMENTATION AND TRANSMISSION OF AUDIO STREAMS

the specification of which:

(check one)

_____ is attached hereto

__X__ was filed on __December 12, 2006__

as International Application No. __PCT/CA2006/002046__

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 acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulation, 1.56(a).

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 having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s) Priority Claimed:

PCT/CA2006/002046 WO	December 12, 2006	Pending
(Number) (Country)	(Filing Date)	(Status)

patented/pending/abandoned

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

60/749,632	December 13, 2005	Expired
(Appln Serial No.)	(Filing Date)	(Status) patented/pending/abandoned

We hereby appoint the following agent to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

Neil Teitelbaum **Regn. No: 38,793 Tel No: (613) 523-3784 ext. 100**
Douglas MacLean **Regn. No: 48,096 Tel No: (613) 523-3784 ext. 200**

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280 Sunnyside Avenue
Ottawa, Ontario, Canada
K1S 0R8

Please associate this application with Customer No: 24949.

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

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Inventor's signature: Date: JUNE 6 2008.

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Inventor's signature Date: June 6, 2008

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Citizenship: **Canadian**

Full name of third inventor: **Gregory SHOSTAKOVSKY**

Inventor's signature Date: June 6, 2008

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Citizenship: **Canadian**

Full name of fourth inventor: **Glenn McCUE**

Inventor's signature Date: June 6 2008

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Citizenship: **Canadian**

SEGMENTATION AND TRANSMISSION OF AUDIO STREAMS

TECHNICAL FIELD

[1] The present application relates generally to the transmission of digital audio data, and in particular, to a system, method, and computer-readable code for the delivery of digital audio data on demand.

BACKGROUND OF THE INVENTION

[2] Traditionally, there have been two different approaches for delivering digital audio data. In the first approach, the digital audio data is mass downloaded. More specifically, and as shown schematically in Fig. 1, one or more files corresponding to an entire audio stream 10 is transmitted one frame 12 at a time from the server to the client. Once the entire audio stream 10 has been received and reassembled to form a continuous, contiguous audio stream, it is stored in storage 14 prior to being transmitted to a media player 16.

[3] In the second approach, streaming technology is used to deliver the digital audio data 'just-in-time'. More specifically, and as shown schematically in Fig. 2, an entire audio stream 20 is transmitted one frame 22 at a time from the server to the client, where it is received and reassembled, in part, to provide a continuous, contiguous audio stream (i.e., a small portion of audio stream continuity is preserved). Once each frame is played by the media player 26, it is then discarded from the buffer.

[4] Small audio streams, or audio-video streams, which for example correspond to individual songs, very short movies, and music videos, are typically transmitted using the first approach. In terms of the delivery of these smaller streams of media, the delays experienced by the users are generally tolerated because they are relatively short in nature. Typically, time delays are measured as one or two minutes, and although possible, tend not to exceed this.

[5] The delivery of larger audio streams, which for example include books and radio shows, presents a problem for the user community. Whereas a single song that plays for 4 minutes may

take 1 minute to download, an audio book that plays for 12 hours may take 3 to 4 hours to download. Although the general performance is relatively the same in terms of throughput rate, users of this media complain about the hours of waiting to receive and use the media selected.

[6] While streaming technology obviates the waiting associated with mass download, any degradation experienced in the delivery of the content in real time introduces interruptions in the audio stream, causing breaks and interruptions in the users experience of that audio stream. Moreover, since the digital audio data is not stored, repositioning within the audio stream (e.g., using rewind or fast forward functions) interrupts the just-in-time nature of content delivery, and thus, may introduce significant delays and/or be inefficient. For example, in the case of rewinding a streamed audio stream, the content associated with the new position selected in the audio stream will need to be downloaded a second time and the future content temporarily stored in the buffer will be discarded.

[7] In both of the existing technologies, great effort is made to reassemble the audio stream into a continuous, contiguous audio stream prior to being presented to the media player. In the case of the mass download approach, the entire audio stream is downloaded and reassembled prior to use. In streaming technologies, a very small portion of the audio stream is downloaded and reassembled prior to use with additional content delivered and already played content discarded continuously, to maintain a very small portion of continuity in the audio stream. Notably, this reconstruction of the audio stream complicates the digital audio data delivery and increases delivery time.

[8] In addition, in both of the existing technologies, the user has limited tracking options. For example, 'The Godfather' is an audio book that, as commercially released, contains 24 MP3 files that require 80 megabytes of storage and plays at normal speed for a total of almost 9 hours. In order to use these files with existing mass download technology, the user must manually keep track of which file is currently being listened to and where one is in that particular file.

[9] Tracking problems also develop if the users audio player automatically changes files, if the user is listening to multiple audio streams and/or if the user listens to audio streams on more than one client device (e.g. if a user is listening to the audio stream at work and wants to resume

play at home). It can be particularly difficult and time consuming for the user to resume listening to an audio stream at a specific position.

SUMMARY OF THE INVENTION

[10] The instant invention obviates some of the above-described disadvantages by segmenting an audio stream into a plurality of small digital audio files using gaps in the natural language of the audio stream. These small digital audio files are transmitted, loaded, and played, in a specific order, such that from the user's perspective, the audio stream is reproduced in an apparently seamless manner. Advantageously, this is done without reassembling the audio stream, either in whole or in part. Further advantageously, since the small digital audio files are created using natural language gaps, they can be sufficiently small to ensure that a first small digital audio file is downloaded and played without significant delay, while successive small digital audio files are downloaded to be played in the future. Accordingly, the user receives the audio-on-demand in a timely manner.

[11] The instant invention further obviates some of the above-described disadvantages by providing a virtual audio stream descriptor, which includes a record of the position of each small digital audio file in the audio stream, to increase tracking options. More specifically, the virtual audio stream descriptor and one or more predetermined time offsets into the audio stream are used to position or reposition the audio stream at will. The predetermined time offsets are typically provided via internal media marks, external media marks, and/or rewind/fast-forward functions.

[12] In accordance with one aspect of the instant invention there is provided a method of providing files for storage in a network accessible library for use in the transmission of digital audio data, comprising the steps of: a) segmenting an audio stream into a plurality of small digital audio files using natural language gaps in the audio stream; b) determining at least one of a start time, an end time, and a play time of each small digital audio file within the audio stream; and c) creating a descriptor for identifying the audio stream and for ordering the plurality of small digital audio files, the descriptor including the at least one of a start time, an end time, and a play time of each small digital audio file within the audio stream.

[13] In accordance with another aspect of the instant invention there is provided a method for the transmission of digital audio data, comprising the steps of: a) selecting the audio stream from the network accessible library; b) determining a first small digital audio file in the plurality of small digital audio files to be transmitted; c) transmitting the first small digital audio file from the network accessible library to a client; and d) using a media player, playing the first small digital audio file.

[14] In accordance with another aspect of the instant invention there is provided a method for the transmission of digital audio data, comprising the steps of: a) selecting an audio stream, the audio stream stored as a plurality of small digital audio files, each small digital audio file corresponding to a segment of the audio stream bounded by natural language gaps in the audio stream; b) determining a first small digital audio file in the plurality of small digital audio files to be transmitted; c) transmitting the first small digital audio file from a server to a client; d) using a media player, playing the transmitted first small digital audio file; e) determining subsequent small digital audio files in the plurality of small digital audio files to be transmitted; f) transmitting the subsequent small digital audio files from a server to a client; and, g) using the media player, playing the transmitted subsequent small digital audio files such that, to a user, the transition therebetween is apparently seamless.

[15] In accordance with another aspect of the instant invention there is provided a method for creating a bookmark for use in the transmission of digital audio data, comprising the steps of: a) listening to an audio stream; b) determining a current position within the audio stream; c) determining a time offset from a start of the audio stream to the current position; and, d) creating a bookmark for the current position including the time offset.

[16] In accordance with another aspect of the instant invention there is provided a system for the transmission of digital audio data comprising: a server for storing audio streams, each audio stream stored as a plurality of small digital audio files, each small digital audio file corresponding to a segment of the corresponding audio stream bounded by natural language gaps in the audio stream; a client for playing selected audio streams stored on the server; and a network for connecting the server and the client and facilitating transmission of the small digital audio files from the server to the client, wherein at least one of the server and the client provides

a descriptor for each audio stream stored on the server, each descriptor including at least one of a start time, an end time, and a play time of the plurality of small digital audio files of the corresponding audio stream, each descriptor providing means for the client to begin play of the selected audio stream from any position therein without significant delay.

[17] In accordance with another aspect of the instant invention there is provided a system a computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to: download at least part of a selected audio stream stored on a network accessible server, the selected audio stream stored as a plurality of small digital audio files, each small digital audio file corresponding to a segment of the selected audio stream bounded by natural language gaps in the selected audio stream; and begin playing the downloaded audio stream using a media player without significant delay and such the transition between successive small digital audio files appears seamless to a user of the media player.

BRIEF DESCRIPTION OF THE DRAWINGS

[18] Further features and advantages of the present invention will become apparent from the following detailed description, taken in combination with the appended drawings, in which:

[19] FIG. 1 is a schematic diagram showing the prior art mass download of an audio stream;

[20] FIG. 2 is a schematic diagram showing prior art streaming of an audio stream;

[21] FIG. 3 is a schematic diagram illustrating the transmission of an audio stream in accordance with one embodiment of the instant invention;

[22] FIG. 4 is a schematic diagram of one embodiment of a network based library;

[23] FIG. 5a shows an embodiment of an actual audio stream structure;

[24] FIG. 5b shows an embodiment of a small digital audio file structure;

[25] FIG. 5c shows an embodiment of a virtual audio stream descriptor structure;

[26] FIG. 5d shows an embodiment of an illustration structure;

[27] FIG. 5e shows an embodiment of an advertising structure;

[28] FIG. 5f shows an embodiment of a catalog index structure;

[29] FIG. 5g shows an embodiment of a server list structure;

[30] FIG. 6 is a schematic diagram showing card catalog index structure relationships;

[31] FIG. 7 is a schematic diagram illustrating one embodiment of a library creation process;

[32] FIG. 8 is a schematic diagram illustrating one embodiment of an audio stream splitter process;

[33] FIG. 9 shows an embodiment of a bookmark structure;

[34] FIG. 10 is a schematic diagram showing virtual audio stream structure relationships;

[35] FIG. 11 is a schematic diagram illustrating one embodiment of a performance management process;

[36] FIG. 12 is a schematic diagram illustrating information transfer and client memory status;

[37] FIG. 13 is a schematic diagram illustrating one embodiment of a bookmarked audio stream purge process;

[38] FIG. 14 is a schematic diagram illustrating one embodiment of an active audio stream purging process;

[39] FIG. 15 is a schematic diagram illustrating one embodiment of a memory manager process;

[40] FIG. 16 is a schematic diagram illustrating one embodiment of a download manager process;

[41] FIG. 17 is a flow diagram illustrating one embodiment of a process for using the software product;

[42] FIG. 18 is a flow diagram illustrating one embodiment of the player control process; and

[43] FIG. 19 is a flow diagram illustrating one embodiment of the general functional process.

[44] It will be noted that throughout the appended drawings, like features are identified by like reference numerals.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

[45] Referring to Fig. 3, there is shown a system for transmitting digital audio data in accordance with one embodiment of the instant invention. The system includes a server 100, a client 150, and a network (not shown) for connecting the server 100 and the client 150.

[46] On the server side 100, an audio stream analyser 115 is provided for analysing large digital audio files 110 frame by frame 112, and for segmenting the large digital audio files 110 into a plurality of small audio files 122. More specifically, the audio stream analyser 115 locates areas of silence or low decibel levels, hereafter referred to as gaps, within the audio stream. When these natural language gaps are found, and after more than a specific amount of content has been processed, that content is written to a small audio file. This parsing process is repeated until the entire audio stream has been split, or segmented, into the plurality of small audio files 122. In general, the size of each small audio file is selected such that it can be transferred from the server 100 to the client 150 in a period of time that that does not cause appreciable consternation on behalf of the user. For example, as a benchmark for success, this time frame is similar to that used in the telephone industry when a subscriber lifts a receiver and waits for a dial tone. Accordingly, a two second wait is considered to be close to the maximum tolerable delay, with the optimal target being in the sub-second range. The actual size range of the small audio files will be dependent on the network throughput rates. As a result, as network speed increases, the upper limit on the size of the segments will also increase.

[47] The audio stream analyser 115 also analyses each small digital audio file to determine the start time, end time, and/or play time of the small digital audio file within the audio stream 110. This information is recorded in an index file 124 (e.g., an XML document). The index file 124, which is a virtual description of the actual audio stream, provides the information needed by a media player to reproduce the experience of a contiguous audio stream for the user without

reconstructing the audio stream. The term 'actual audio stream' as used herein, refers to the plurality of small digital audio files that comprise the entire audio stream, and that when played sequentially, provide an apparently seamless audio experience. According to one embodiment, each of the small digital audio files is named using a number (e.g., eight-digit decimal number) that indicates its logical order in the actual audio stream.

[48] In addition to providing actual stream details (i.e., the information for locating and managing the plurality of small digital audio files), the virtual audio stream descriptor 124 also typically includes descriptive details used to describe the content of the audio stream, such as the title and/or ISBN. Optionally, the virtual audio stream descriptor 124 also includes internal media marks, illustrations related to the audio stream, and/or internal advertising. Internal media marks are used to identify a specific point in time in the audio stream that is offset from the beginning of the audio stream. More specifically, they generally point to a time offset associated with some user readable tag such as a table of contents, an index, a list of tables, a list of figures, footnotes, quotations, a list of illustrations, etc. Illustrations related to the audio stream and/or internal advertising may include graphics, static images, moving images, and/or other audio-visual content that is displayed for a fixed duration.

[49] In general, the virtual audio stream descriptor 124 and the actual audio stream 122 will be stored together in a same location 120 on the server 100. For example, according to one embodiment the plurality of small audio files 122 and the virtual audio stream descriptor 124 are stored in a same directory of a library residing on one or more servers on the Internet. According to the embodiment illustrated in Fig. 4, the plurality of small audio files 122 and the virtual audio stream descriptor 124 are stored in the same library, but in different areas. More specifically, the virtual audio stream descriptors 124 are stored in an area for administrative files 144, whereas the plurality of small audio files 122 is stored in an area for actual audio streams 140. The area for actual audio streams 140 includes *n* directories for storing *n* audio streams, each with a corresponding cover art image. The cover art image, which is a graphic file, is intended to provide a user with a familiar look and feel of a book cover and/or to provide easy recognition. Optionally, one or more of the *n* directories is located at a remote URL.

[50] The administrative files, which include the virtual audio stream descriptors 124, typically use the electronic equivalent of a card catalog to provide a simple, easy to use method of navigation and access of the actual audio streams. In general, these card catalog index files (e.g., XML documents) will include a hierarchical structure of cascading indexes that relate in various ways. For example, according to one embodiment the card catalogue will include indices based on keywords such as historical, detective, suspense, action, etc. The references contained in each index point to other index structures or to a specific virtual stream descriptor. Each index structure contains a reference to its parent index structure, thus allowing navigation in both directions (i.e., up and down the branch of hierarchy). Each media entry may appear within the structure of the entire index multiple times, to allow reference and/or navigation from many points. The structure of the index is such that endless navigation loops caused by circular definitions are not possible.

[51] The administrative files also optionally include announcements, updates, and a server list (not shown). Announcements, which for example may be in an XML file, are typically informative or instructive in nature. The updates, which may include programs, data files, instruction files, setup files, and/or other text, typically contain information for providing a maintenance update. The server list (not shown), which may also be an XML document, typically contains a list of servers that are available on the network and that can provide general library and content information. In general, each server listed will be a mirror of the primary server (also included in the list).

[52] Figs. 5a-g show examples of data structures of: a) an actual audio stream, b) a small digital audio file, c) a virtual stream descriptor, d) illustrations, e) advertising, f) a card catalog, and g) a server list, respectively. Fig. 6, which shows the structure relationships, demonstrates that the actual audio stream, illustration, advertisement, and cover art image structure (not shown) are each referenced as a target structure from the virtual audio stream descriptor. Each of the actual audio stream, illustration, and cover art image structures also contain a reference identifier back to its parent structure. In contrast, the announcment structure (not shown) is functionally independent of other information bearing structures.

[53] An embodiment of a process used to create an audio book library is shown in Fig. 7. The audio stream, in raw form, is acquired from either a publisher or is imported from an audio media or conversion routine. The raw files are analysed using natural language gaps and are segmented into the plurality of small digital audio files (i.e., segment files) that form the actual audio stream. Book cover art is imported and formatted, if required. The plurality of small digital audio files and cover art image are placed in a unique directory, which is local or at some remote URL. Audio stream information that describes the audio stream is manually entered using the library administrator utility to create a virtual audio stream descriptor for each audio stream. Information that describes the location and structure of the actual audio stream is provided using the audio stream profiler. The administrator utility is also used to build a series of integrated index files that make up the card catalog for the library, and to provide tools to maintain updates, server lists and announcements. Preferably, this master library is replicated on a number of mirror sites that are also made available on the network. Following updates to the master library, an automated verification utility ensures that network accessible copies of the library (i.e., the one or more mirror sites) are also updated to ensure the integrity of the system.

[54] Referring to Fig. 8, the segmentation of the raw files is discussed in further detail. In a first step, 200, the list of original raw audio files is built in logical order. These files are processed one at a time. More specifically, after confirming the existence of a raw file 202, the raw file is opened 204, a segment file is opened 206, and a frame is obtained from the raw file 208. Assuming the frame does not correspond to the end of the raw file 210, and that the segment file has not reached an arbitrary minimum size 214 (e.g., 100 kilobytes), the frame is written to the segment file 216. After this limit is reached, audio frames are analysed looking for a period of silence or low decibel levels 218. If this period of silence is found, or if the upper size limit (e.g., 250 kilobytes) of the segment file is exceeded, the current segment file is closed 220 and a new output small audio file is opened 222. In the event that the unprocessed raw file content is less than a slack limit 212 (e.g., 25 kilobytes), the testing for silence and the upper limit testing is not performed and the remaining audio frames are written to the then current segment file. According to one embodiment, this method is used to find periods of silence between chapters, paragraphs, sentences, phrases, words, and/or at punctuation marks. Optionally, the audio stream splitter/analyser 115 searches for long periods of silence, which are subsequently truncated. For example, periods of silence that exceed 2 seconds in length have

been found to make users assume that a problem exists in the delivery or replay of the audio stream. In order to eliminate these user concerns, periods of silence that exceed 2 seconds in length can be truncated, and the audio content that has been truncated, discarded.

[55] Referring again to Fig. 3, the client side includes a memory manager 152, a download manager (not shown), a media coordinator 154, and a media player 156. The memory manager 152 is a complex memory manager used to maintain the integrity of the actual audio stream, which is transferred from the server 100 to the client 150 using a standard transfer utility (e.g., FTP). The function of the memory manager 152 is to ensure that there is sufficient memory available to receive large numbers of small digital audio files, to ensure that sufficient audio content is available when needed, and to ensure that a quantity of already heard audio content is maintained (e.g., so a user can rewind the audio stream to review recently heard content without repeated downloads). The download manager is responsible for obtaining the small audio files that make up the audio stream. The media coordinator 154 delivers the plurality of small digital audio files in the appropriate order to the media player 156. The memory manager 152, download manager (not shown), and media coordinator 154, are all part of an integrated, network-based software product used to control the media player 156.

[56] According to one embodiment, the software product is a user-friendly interface that allows the user to select an audio stream, to download a small digital audio file representing a selected part of the selected audio stream, to play the small digital audio file relatively quickly (e.g., within 2 to 5 seconds), and to download and play the logically next small digital audio file such that the transition between successive small audio files is apparently seamless.

[57] According to one embodiment, the software product includes computer-readable code that allows the user to use a plurality of navigation buttons to access a network-based library card catalog, bookmarks, cover art images, and/or announcements/updates. As discussed above, a network-based library card catalog, which may index audio streams in a hierarchical fashion such that there are many possible paths to reach a single audio stream, is typically stored on a network-based library for the navigation thereof. According to one embodiment, once the navigation button for the card catalogue is selected the user is able browse through a series of keywords describing a plurality of audio streams, to select an audio stream from the network

based card catalogue, to load a profile of the selected audio stream, and/or to download the selected audio stream. According to one embodiment, the profile includes information obtained from the descriptive details entered into the virtual audio stream descriptor.

[58] Bookmarks are external media marks (i.e., external to the virtual audio stream descriptor) that allow the user to identify and/or access an audio stream at any point within that audio stream. Similar to internal media marks, each bookmark provides a time offset from the beginning of the audio stream. In other words, if an audio stream starts at time zero and continues for some elapsed time to a maximum duration, the bookmark identifies a specific point in time in the audio stream that is offset from the beginning of that audio stream. The bookmark also identifies and/or points to the virtual audio stream descriptor of the target audio stream (e.g., in a local directory or at some network address). Using the time offset and the information in the virtual audio stream descriptor, the software product is able to select the appropriate small audio file to be played. Moreover, the exact position within the small audio file can also be calculated as a local offset to ensure correct positioning within that small audio file.

[59] Bookmarks are typically, but not always, created by the client software. For example, if the media player is stopped in the middle of an audio stream, a bookmark is created and stored. Alternatively, the user creates a bookmark using a 'make bookmark' command. More than one bookmark may be created for each audio stream. The bookmark identifies the bookmarked audio stream and the time offset of the bookmarked position. Optionally, to assist the user of the audio stream in 'picking up where you left off', a predetermined time (e.g., 30 seconds) is subtracted from the time offset of the bookmarked position and stored as the new time offset. Optionally, the predetermined time is listener selectable. Fig. 9 shows an example of a data structure for an external bookmark, whereas Fig. 10 illustrates the structure relationships. Notably, the virtual audio stream descriptor may be addressed from either the integrated card catalog or the bookmark. Optionally, the virtual audio stream descriptor is addressed in another manner.

[60] Since the bookmark only contains references to the audio stream, and does not contain any part of the audio stream itself, the bookmark can be transferred from client to client or from server to client without violating the copyright of the work product contained within the audio

stream. For example, a user can bookmark an audio stream at an interesting point and e-mail that bookmark to friends without violating copyright. Clearly, the ability to position an audio stream at some arbitrary point without the need for that media to be resident provides great flexibility. Moreover, the nature of the bookmark makes it independent of the physical structure of the audio stream. This allows changes in media and format without corrupting the integrity of the mark or the audio stream. Examples of such changes include changing bit and scan rates in MP3 files, changing from MP3 to .wav format, changes to the actual audio stream, small audio file structure, and/or reformatting of the audio stream itself. According to one embodiment, the bookmark is an XML document.

[61] The bookmark navigation button allows the user to view a list of bookmarks corresponding to open audio streams (e.g., a book that has been accessed and partially read), to select a bookmark, and to play the audio stream at the bookmarked position. For example, the software product may list the bookmarked audio streams in the descending order of the date and time that the audio steam was last read.

[62] According to one embodiment, the software product includes computer-readable code that allows the user to use a plurality of standard player control buttons to begin playing the audio stream, stop playing the audio stream, and/or fast forward within the audio stream. Notably, the rewind and fast-forward control buttons do not actually act on the audio stream. Rather, these two functions are used to advance or retard the time offset that indicates the then current position in the audio stream. For example, rewind will cause this offset to decrease to a minimum of zero (e.g., seconds), whereas fast forward will increase the time offset to a maximum of the upper limit of the audio stream duration. Accordingly, the user is able to fast forward and rewind through the audio stream, even if the audio content is not resident. In particular, after the time offset has been adjusted to where the user desires, if the relevant small audio file is not resident, it is obtained from the library, again in the 2 to 5 second range. The small audio file is then loaded, positioned and played.

[63] According to one embodiment, the software product includes computer-readable code that provides a number of different displays, including for example, a basic display, an introduction display, a bookmark display, a library card catalog display, a book details display, a

book player display, and a book cover display. These displays provide appeal and/or familiarity to the user. For example, the basic display may provide a decorative skin or frame to standardize the appearance of the software product when played on different platforms (e.g., desktop, laptop, personal data assistant, cell phone, dedicated device, etc), whereas the introduction display may appear during the start up of the program. Other displays, such as the bookmark display, library card catalog display, and/or book details displays may provide the navigation buttons. The book player display may show the book that is currently loaded into the player, the book title, author, copyright, and/or book length. The book player display may also provide the standard player control buttons discussed above. Optionally, the book player provides a content level indicator, which is a measure of the amount of continuous content that is resident beyond the current position in the book, and/or a positive feedback feature, which is used to inform the user that the player is active. According to one embodiment, the navigation and/or control buttons are selected using standard data entry techniques, which for example, may use a mouse, keyboard, touch pad, and/or touch sensitive screen. If the latter is provided, a virtual keyboard is typically provided.

[64] According to one embodiment, the software product also provides a number of other displays including a set-up display, a notes display, a quotations display, and/or a contact list display. The set-up display allows the user to enter/change user account name, password, default server information, DNS name of server, communication ports of the server, and/or secure sockets. The notes display allows the user to enter or select personal notes, which may be edited and/or e-mailed to other clients. In general, the note file may include a unique numerical identification of the audio stream, a tag to the audio stream, a user defined title, comments, the author of the comments, and/or the date and time the note was created. The quotation display allows the user to enter or select various quotations, which may also be edited and/or e-mailed to other clients. In general, the quotation file may include a unique numerical identification of the audio stream, the start and end point of the quotation in the audio stream, a user defined title, and user defined comments. The contact list display allows the user to maintain a list of names and e-mail address used by the software product.

[65] According to one embodiment, the software product includes computer-readable code that provides client-based performance management. The performance level of the digital audio

data delivery is an important factor in ensuring the integrity of the audio stream available to the user. The purpose of client-based performance management is to ensure that the client software receives service at or above minimum levels. According to one embodiment, this service is automated and is provided transparently to the user utilizing any then current available network resource to do so. In other words, the user is not aware of the source of the service or the mechanics of accessing that service.

[66] For performance management purposes, the client software views the network and library server as a single entity. To ensure performance levels, the client software maintains statistics for service level for each library server. These server statistics are used when attempting to find the historically fastest server. This file is created and maintained in the client only. If service levels fall below a minimum acceptable level, the client software goes through the list of servers described above to determine which server has the best historical record of service. The client software selects this new server as the primary provider. Notably, using performance management may result in the user receiving small digital audio files from more than one server for the same audio stream.

[67] The performance management logic is built into lower level functions that perform various network and library based functions. These include 1) Logging in to a server; 2) Obtaining a file from the server; 3) Obtaining file size and creation dates. Referring to Fig. 11, the initial steps taken by the client software are to load the list of servers 360 available for use and the historical transfer statistics 362. The fastest server from the list is then selected 364 as the primary server. If the server is not available or fails to respond, the next fastest server is selected. The process continues until a server is reached. If no servers are available, the default server entered is used. Servers that are found to be slow or are continually in error will have their transfer rate increased based on one of two values 366. The value is either the total elapsed time of the transaction with the server or an error value equal to a predetermined transaction delay (e.g., one minute). As time goes on, these operational statistics are aged 368 to reduce the effect of errors or network delays. Servers are slowly aged until such time as their statistics are not less than the average for all servers. The result of the aging process means that, assuming no additional delays or errors, the operational average will decrease to some baseline average that will be greater than the fastest servers but still make the aged servers available in the future.

With the then current fastest server established, that server is used as the target of all library operations. A connection must be established to the network in order to communicate. Each operation including, but not limited to login, get file and get file size are timed to see how long each transaction takes. This testing is built right into the lower level logic of the client software. In the event that a server is failed out as a result of error or degradation, a new server is selected to take its place. This server replacement occurs in the same manner that is customarily used for a non-fatal error. That is, the transaction is retried following the server replacement process without the upper levels of client software logic or the user becoming aware that it has occurred. In this way, the client software is able to balance network and server loads on the basis of performance without intervention from any other level.

[68] According to one embodiment, the software product uses a universal ISBN server, which is designed to provide a simplified means to locate network-based library services from one or more suppliers on a network. The ISBN server may be located on the Internet for global access or on various intranets for use by various public or private organizations. The purpose of the ISBN server is to receive a request from a client device and return a list of one or more servers. The request from the client device will include a unique ISBN number or other unique identifier. The ISBN server will look up the unique identifier in a preloaded database and assemble or extract a list of servers capable of supporting library services for that identifier. This list is then returned to the client device. Upon receipt of the list of library servers, a selection is made from that list as the preferred provider of library service (e.g., as discussed with regards to client based performance management). The selected server is then accessed to acquire the virtual audio stream descriptor that goes with the unique identifier originally provided by the client.

[69] Preferably, the software product, including the computer-readable code, is stored on a computer readable storage medium on the client side of the system 150. The computer readable code is then used to access information structures and files that reside on one or more servers on the server side of the system 100 (e.g., within a server farm). Information transfer from client to server is accomplished using industry standard server software, tools and utilities. A summary of various types of information, structures or files is provided in Table 1.

Information Type	Content
Administrative	Contains information, structures and files that are used to facilitate access to media contained within the library and maintain the operational environment status of the client software.
Announcements	Contains announcements that could be used in a number of ways, typically to inform users and keep them up to date on current or upcoming events or news.
Server List	Contains the primary server site and a list of library mirror sites capable of maintaining audio stream continuity for the consumer in the event of degraded or interrupted service.
Performance History	Contains a list of historical throughput performance and failure rate metrics for the library primary and mirror sites. Present only on the client platform.
Updates	Contains the actual files and information needed to perform network-based updates while online using automated routines provided.
Catalog Index	Contains the cross-reference information needed to access subordinate catalog indexes and to access virtual audio stream descriptors.
Virtual Reference	Contains information, structures and files used to provide access to and delivery of specific audio streams.
Bookmark	Contains the information needed to restart a specific audio stream at a specific point.
Virtual Audio Stream Descriptor	Contains the information that describes all aspects of an audio stream and the information needed to access and use the actual audio stream.
Cover Art Image	Contains a graphic or image that is used to represent the entire audio stream to the user in their own mind similar to the task accomplished by the cover art graphics on a printed book.
Actual audio	Contains the actual media content and supportive graphics and/or audio/video content
Actual audio Stream	Contains one or more small audio files that comprise the entire audio stream and that when played in order form a seamless audio experience.
Illustrations	If present, contains one or more graphic, image, video or audio/video portions of multimedia content intended for use with and in support of the actual audio stream.
Ancillary	Contains other information, structures and files used in the delivery of content not considered actual content within audio streams.
Advertisements	If present, contains one or more graphic, image, video or audio/video portions of multimedia content intended to be used before, during and after presentation of any audio stream subject to the requirements described in the virtual audio stream descriptor.

Table 1. Various types of information, structures, and files

[70] Fig. 12 shows the information, structures and files contained on the server side generally grouped by function. The same information, structures and files are grouped differently on the client side and, in particular, are grouped by their requirement for retention. More specifically, this schematic diagram illustrates that as information is transferred from the server to the client, it is typically organized based on the priorities defined for the memory manager. The structures used are considered more or less expendable subject to their content. Static structures contain information needed to establish and maintain connections with the servers on the network. The term static indicates that the structures, once defined, remain in place although the content thereof may change. The memory manager will preserve these structures at all costs. The volatile structures include those whose existence is short lived. The memory manager will balance the need for space with the need to retain content surrounding active bookmarks. As the demands for space increase, the content surrounding bookmarks becomes less and less. The structures that are considered dynamic are semi-permanent structures that typically exist for the duration that an audio stream remains open and bookmarked. The memory manager will make every effort to ensure that these structures are preserved, but may remove them as a final option to obtain space. Typically, the last structures to be purged are the oldest bookmark structures.

[71] According to one embodiment, the static files are contained in a root directory, while the volatile files are contained in a spooler directory. A list of possible static and/or volatile files that may be used by the software product is provided in Table 2.

Filename(s)	**Contents**
Static Files	
Audio Pod Directory	The directory that contains all files that are static in their existence
Spooler Directory	The directory that contains all files that are volatile in their existence
AudioPod.exe	The Audio Pod executable image
AudioPod.xml	The Audio Pod startup initialization file; in XML format
UpdateManager.exe	The Audio Pod Update Manager executable image
ServerList.xml	The list of libraries, mirrors and servers that are available on the network as targets for the Audio Pod Performance/Load manager; in XML format
ServerStats.xml	The historical rate of response statistics for all library servers;

	in XML format
BookMarks.xml	The list of active bookmarks; in XML format
TheEnd.mp3	The audio stream to be played on completion of an audio stream (book)
ErrorAlert.mp3	The audio stream to play when the Audio Pod must attract the attention of the user while listening to another audio stream (book)
Volatile Files	
Small Audio Files	Audio files that make up the various open audio streams (book); in MP3 format
Cover Art Graphic Files	Graphic files that contain images of book covers; in jpg graphic format
Card Catalog Index Files	Files containing Card Catalog indexes; in XML format
Book Profiles	Files containing Book Profiles; in XML format
Announcement File	File containing a notice or announcement; in XML format
Update File	File containing components needed to perform an update to the Audio Pod and/or any of its' components

Table 2. List of Possible Static and Volatile Files

[72] As discussed above, a memory purge process is used to remove volatile files to ensure that a requested level of free memory is made available. This process works directly on the contents of the spooler directory. The purging process takes different approaches when dealing with the active audio stream, bookmarked audio streams, and ancillary or support files. A demand for a significant quantity of memory is made at the opening of a new audio stream, or reopening a bookmarked audio stream. The size of the demand is subject to the ultimate size of memory available, the size of the audio stream being accessed and the volume of content from the subject audio stream that may already be resident. In the event that sufficient memory is not available, memory is purged in the following order.

1. Ancillary or support files that are considered volatile are removed from memory.
2. Virtual audio streams, supporting files and related audio content for any audio stream for which there is no bookmark are deleted.
3. Bookmarked audio streams are purged with increasing levels of severity until the memory demands are met.

4. The content of dynamic memory including virtual audio stream descriptors, and supporting files are deleted, starting with the oldest.

[73] When purging bookmarked audio streams, the purging process attempts to retain as much resident content as is possible. The purge process focuses on the bookmark position within the audio stream. Some resident content is retained within the audio stream preceding the bookmarked position. This is to allow the user the ability to rewind the audio stream in an attempt to pick up where they left off. However, this quantity of content is not large and generally will not exceed 5 minutes. The main effort is to preserve as much resident content of the audio stream that follows the position. In order to satisfy the demand for memory, most, if not all, bookmarked audio streams will have some future content purged. In the event that sufficient memory cannot be obtained with an initial purge of content, the level of severity of the purge will be increased and the purge process repeated. The volume of resident content in the bookmarked audio streams is reduced. This reduction is most severe in content preceding bookmarked positions. As the levels of severity increase further, the quantity of content preceding the bookmarked positions prevents further gains through purging, and content that follows the bookmarked positions is aggressively purged. The purging process continues, reducing the quantity of content surrounding bookmarked positions until, at the ultimate extreme, no content remains. Under normal circumstances, the demand for memory will be met and this situation is expected never to arise. This process is shown in Fig. 13.

[74] When the demand for memory is met, the selected audio stream becomes the focus of the purging process. The effort becomes one of ensuring that sufficient content is maintained around the current player position to ensure a continuous replay of the audio stream. As the player position approaches the end of available resident content, the current audio stream is purged to make room for additional content. Every attempt is made to preserve some content preceding the current player position to allow the user to rewind a few minutes to pick up the story in the event of interruption. Referring to Fig. 14, A shows the normally expected state of memory with already heard content purged and future content loaded as the player position approaches the end of resident content, whereas B-D shows the state of memory that may result when internal media marks, external bookmarks, rewind, or fast forward functions are used. In these situations, the media player position may be outside of resident content or may result in a discontinuity of

resident content. In each situation, the content that precedes the current player position typically is purged prior to purging any content that follows the current player position.

[75] According to one embodiment of the instant invention, a method of using the software product to transmit digital audio data is described as follows. A user selects an audio stream. Examples of audio streams include audio books, magazines, newscasts, radio shows, lectures, museum tours, etc, or parts thereof. The audio stream typically is selected from a card catalog, a bookmark, or other means. In general, the actual audio format of the sound information is not important.

[76] Once an audio stream has been selected, a demand is raised to the memory manager for enough space to work with the virtual audio stream descriptor (e.g., about 250K bytes). In normal operation, this quantity of memory is routinely expected to be available resulting in no action taken by the memory manager.

[77] The software product ensures that the virtual audio stream descriptor has been downloaded. More specifically, the volatile memory is checked for the existence of this structure and, if it is not resident, it is downloaded. A demand is then raised to the memory manager for the lesser of two quantities of memory. The first value is 75 percent of available memory. The second is the ultimate size of the actual audio stream minus the amount of any memory currently consumed by any small audio files that may already be resident.

[78] The desired position within the actual audio stream is then ascertained. The default position is assumed to correspond a time offset of zero. If the method of selection was a bookmark, or an internal media mark, then the offset position is obtained from that structure. The offset is validated to be in the range from zero to the maximum duration of the audio stream, a value obtained from the virtual audio stream descriptor. The time offset is compared against the list of small audio file metrics stored in the virtual audio stream descriptor. When the time offset falls between the start and end times of a specific small audio file, that small audio file is identified as the target small audio file. A local time offset is calculated by subtracting the start time of that small audio file from the time offset that was the subject of the search. This local offset is retained for use when positioning the target small audio file.

[79] If the target small audio file is not resident, then it is downloaded. The small audio file is loaded into the media player and the media player is positioned to the calculated local time offset. When the media player is started, the download manager is signalled to commence operations. The download manager purges the current audio stream and then examines the virtual audio stream and the content of volatile memory. Small audio files are downloaded sequentially. When the end of the audio stream is reached, downloading stops. If memory is exhausted and the download manager indicates that enough continuous audio content is resident, downloading stops. Otherwise, a demand for additional memory is raised with the memory manager, and the process is repeated.

[80] As the media player advances through the audio stream, the small audio files are successively loaded and played until the end of the audio stream is reached. The current position in the actual audio stream is tracked. If the current position in the actual audio stream approaches the end of resident audio content and the entire audio stream is not downloaded, then the current audio stream is purged to make memory available for new content, and the download manager is started. New content is downloaded until the end of the audio stream is reached or memory is exhausted. This process is repeated as often as is necessary. In this manner, the software product can process complete audio streams that exceed the size of memory available.

[81] The small audio files are contained within a common spooling area. As the spooling area fills with small audio files, the quantity of unheard audio increases. This quantity is displayed to the user. As a result, the invention can continue to play through resident unheard small audio files even during periods when out of network contact with the library. The memory manager will detect when network service is restored and continue processing as normal.

[82] If the media player is stopped, a bookmark is created and stored. The bookmark identifies the audio stream and the time offset of the bookmarked position. The offset value stored is the current position in the audio stream less an arbitrary time. This allows the listener to 'pick up the story' when the listener resumes the current audio stream. If the listener changes the time offset into the audio stream using the rewind and fast forward buttons, or any of the media marks that may be available, the new offset position is used to position the audio stream as described above.

[83] When the end of the audio stream is reached, any bookmarks are removed from dynamic memory. Without a bookmark, the memory manager will purge the audio stream and all references at the next signal to commence operations.

[84] This approach allows many audio streams to be opened and bookmarked at one time. Given the actual size of these large audio streams, it will be necessary to have a memory manager capable of ensuring sufficient space is available for the most active audio streams while preserving as much physical content surrounding active bookmarks as is possible. The need to preserve actual audio content around bookmarks becomes clear when considering levels of degradation associated with the acquisition of content across the network. The ultimate goal is to have as near zero delay as is possible when resuming an audio stream. Retaining sufficient media allows audio streams to start virtually instantly, and then acquire media content as needed.

[85] Fig. 15 provides an overview of the memory manager process in greater detail. When activated, the memory manager first checks to see if there is sufficient audio content already resident (e.g., enough for about 5 minutes play time). If there is enough content, the remainder of the audio stream is resident or the download manager is running, then no action is taken. Otherwise, the memory manager purges the content of the audio spooler directory with the goal of freeing a specific amount of memory. With memory available, the memory manager signals the download manager to commence operations.

[86] Fig. 16 provides an overview of an embodiment of a download manager process. The contents of the spooler directory are compared with the virtual audio stream descriptor and the user's current position in the audio stream. In particular, the spooler content is examined for the first small audio file that is needed to make the audio stream continuous beyond the then current position in the audio stream. If this file is missing, its size and the amount of available memory is obtained. This small audio file is then downloaded and the integrity of the file verified for size. The download manager continues to run until either memory is exhausted, or the end of the audio stream is reached. If the player is stopped while the download manager is running, the process stopping the player will stop the download manager.

[87] Referring to Figs. 17, 18, and 19, process flow overviews for using the software product are provided. More specifically, Fig. 17 shows an embodiment of a general process for using the

software product, from start-up through various navigation steps and associated logic. A series of navigation buttons shown at the bottom of the diagram provide the user with the ability to navigate to various displays. Fig. 18 shows an embodiment of a process for using the standard control buttons. Fig. 19 shows an embodiment of a general process for loading the actual audio stream.

[88] In summary, the software product provides the means to deliver large volume audio streams from a central library to the end user, to maintain bookmarks for each audio stream opened and being read regardless of the number of audio streams opened, to switch audio streams anywhere and anytime, to receive library based announcements and updates, to play spooled audio segments even when network service is unavailable, and to provide active management of network resources that balances load between the main library and all mirror sites on the network, and thus ensures fast, reliable service.

[89] Of course, the above embodiments have been provided as examples only. It will be appreciated by those of ordinary skill in the art that various modifications, alternate configurations, and/or equivalents will be employed without departing from the spirit and scope of the invention. Accordingly, the scope of the invention is therefore intended to be limited solely by the scope of the appended claims.

CLAIMS:

1. A method of providing files for storage in a network accessible library for use in the transmission of digital audio data, comprising the steps of:

a) segmenting an audio stream into a plurality of small digital audio files using natural language gaps in the audio stream;
b) determining at least one of a start time, an end time, and a play time of each small digital audio file within the audio stream; and
c) creating a descriptor for identifying the audio stream and for ordering the plurality of small digital audio files, the descriptor including the at least one of a start time, an end time, and a play time of each small digital audio file within the audio stream.

2. A method according to claim 1, comprising the steps of:

d) repeating steps a) to c) for a plurality of other audio streams; and
e) storing the plurality of small digital audio files for each audio stream in the plurality of other audio streams in a different directory in the network accessible library.

3. A method according to claim 2, comprising the step of creating a catalog index to facilitate navigation of the network accessible library.

4. A method according to claim 3, comprising the step of storing a cover art image in each of the different directories, the cover art image selected to represent the corresponding audio stream.

5. A method according to any of claims 1 to 4, wherein step (a) includes searching for a frame, which when played, has a decibel level below a predetermined limit.

6. A method according to any of claims 1 to 4, wherein step (a) comprises segmenting the audio stream into a plurality of randomly sized digital audio files.

7. A method according to any of claims 1 to 4, wherein step (a) includes selecting a maximum size for each of the small digital audio files in dependence upon an expected time to transmit, load, and begin playing a digital audio file of said maximum size.

8. A method according to claim 7, wherein the maximum size for each of the small digital audio files is selected such that the expected time to transmit, load, and begin playing is less than about 5 seconds.

9. A method according to any of claims 1 to 4, wherein step (c) includes manually entering at least one of a title, subtitle, author, theme, plot, performer, publisher, copyright holder, ISBN number, and 'Vchip' rating of the audio stream into the descriptor.

10. A method according to claim 9, wherein step (c) includes manually entering internal media marks, the internal media marks including a label and a time offset in the audio stream corresponding to at least one of a table of contents, chapter markers, a content index, a list of figures, a list of illustrations, a list of tables, footnotes, quotations, and cross-references.

11. A method according to claim 9, wherein step (c) includes manually entering a network location of the plurality of small digital audio files into the descriptor.

12. A method for the transmission of digital audio data, comprising the steps of:

a) selecting the audio stream from the network accessible library defined in any of claims 1 to 11;
b) determining a first small digital audio file in the plurality of small digital audio files to be transmitted;
c) transmitting the first small digital audio file from the network accessible library to a client; and
d) using a media player, playing the first small digital audio file.

13. A method according to claim 12, comprising the step of:

e) simultaneously transmitting one or more subsequent small digital audio files from the plurality of small digital audio files from the network accessible library to the client, while playing the first small digital audio file.

14. A method according to claim 13, comprising the step of:

f) transmitting and playing successive small digital audio files on demand until available memory space is exhausted or until all small digital audio files in the plurality have been transmitted.

15. A method according to claim 14, comprising the step of:

g) purging a plurality of already played small digital audio files to increase available memory space.

16. A method according to claim 12, wherein step (b) comprises transmitting the descriptor from the network accessible library to the client.

17. A method according to claim 12, wherein step (a) comprises selecting the audio stream using a bookmark.

18. A method according to any of claims 12 to 16, wherein step (b) comprises the step of using a time offset from one of the descriptor and a bookmark to select the first small digital audio file to be transmitted.

19. A method according to claim 18, wherein step (d) comprises the step of using the time offset to determine a local time offset within the first small digital audio file from which to begin playback.

20. A method according to claim 18, comprising the step of using another time offset to rewind or fast forward through the audio stream.

21. A method according to claim 18, wherein step (b) comprises using a time offset from the descriptor, and wherein the time offset is selected via a label cross-referenced to the time offset, the label including at least one of a table of contents, an index, a list of figures, a list of illustrations, a list of tables, footnotes, quotations, and cross-references.

22. A method according to claim 12, comprising the steps of:

e) determining a numeric value representing a current time offset into the audio stream, while playing the small digital audio file; and

f) creating a bookmark using the current time offset and information in the descriptor for identifying the audio stream.

23. A method according to claim 22, wherein the bookmark is created upon one of stopping playback and receiving a request from a user.

24. A method according to claim 22, wherein the information in the descriptor for identifying the audio stream includes the current time offset, a descriptor identifier, and a title of the audio stream.

25. A method according to claim 22, wherein a predetermined value is subtracted from the current time offset.

26. A method according to claim 22, wherein, as successive small digital audio files are played, the current time offset is updated.

27. A method according to claim 26, wherein the current time offset is verified against information in the descriptor pertaining to the successive small digital files, and wherein the current time offset is reset in dependence on the verification.

28. A method according to claim 12, comprising the steps of:

determining an amount of memory available for receiving transmitted small digital audio files;

determining the severity of a purge process required;

obtaining a list of small digital audio files corresponding to the audio stream currently resident with the client;

determining small digital audio files in the list for being retained during the purge process in dependence upon rules predetermined for memory management and the determined severity; and

purging all small digital audio files not determined to be retained.

29. A method according to claim 28, wherein step (b) comprises using a bookmark to point to the descriptor of the audio stream, the bookmark including a time offset in the audio stream, and wherein the list of small digital audio files to be retained includes small digital audio files with time offsets close to the time offset of the bookmark.

30. A method according to claim 12, wherein step (b) comprises using a unique identifier that is stored on a network based server to provide a list of network-based resources capable providing the descriptor corresponding to the audio stream.

31. A method according to claim 30, wherein the unique identifier is an ISBN number.

32. A method according to claim 30, wherein the unique identifier is obtained from one of a bookmark structure, a card catalog structure, and an advertising structure.

33. A method according to claim 30, comprising the steps of:

transmitting the unique identifier from the client to the network based server; and,

receiving the list of network-based resources from the network based server, the network based server obtaining the list by searching a database to find a reference structure identified by the unique identifier.

34. A method according to claim 12, comprising the steps of:

maintaining a list of servers having copies of files from the network-based library and historical transfer rates thereof;

comparing the historical transfer rate for each server;

selecting the fastest server in the list;

setting a floating average value representing transaction rate to zero;

monitoring transaction times for the selected server and updating the floating average transaction rate;

increasing the floating average transfer rate by predetermined large value in dependence upon an unavailability of the selected server; and

updating the historical transfer rate for the selected server in dependence upon the floating average transaction rate exceeding a predetermined value.

35. A method according to claim 34, comprising the steps of:

at arbitrary time intervals, calculating an average value of the historical transfer rates for all servers on the list of servers and subtracting a predetermined small value from the historical transfer rate for each server that has an historical value exceeding the calculated average.

36. A method for the transmission of digital audio data, comprising the steps of:

a) selecting an audio stream, the audio stream stored as a plurality of small digital audio files, each small digital audio file corresponding to a segment of the audio stream bounded by natural language gaps in the audio stream;
b) determining a first small digital audio file in the plurality of small digital audio files to be transmitted;
c) transmitting the first small digital audio file from a server to a client;
d) using a media player, playing the transmitted first small digital audio file;
e) determining subsequent small digital audio files in the plurality of small digital audio files to be transmitted;
f) transmitting the subsequent small digital audio files from the server to the client; and,
g) using the media player, playing the transmitted subsequent small digital audio files such that, to a user, the transition therebetween is apparently seamless.

37. A method according to claim 36, wherein step (a) comprises selecting the audio stream using one of a bookmark and a card catalog, wherein each of the bookmark and the card catalog is cross-referenced to a descriptor including at least one of a start time, an end time, and a play time of each small digital audio file within the audio stream.

38. A method according to claim 36, wherein steps (b) and (d) comprise using a time offset and the descriptor.

39. A method according to claim 38, wherein the time offset corresponds to at least one of a start of the audio stream, a bookmarked position, and a chapter marker.

40. A method according to any of claims 36 to 39, wherein the natural language gaps include gaps between words read from a same paragraph.

41. A method for creating a bookmark for use in the transmission of digital audio data, comprising the steps of:

a) listening to an audio stream;
b) determining a current position within the audio stream;
c) determining a time offset from a start of the audio stream to the current position; and,
d) creating a bookmark for the current position including the time offset.

42. A method according to claim 41, comprising the steps of using the bookmark and a descriptor defining at least one of a start time, an end time, and a play time of a plurality of stored small digital audio files corresponding to the audio stream, to begin play of the audio stream from the bookmarked position.

43. A system for the transmission of digital audio data comprising:

a server for storing audio streams, each audio stream stored as a plurality of small digital audio files, each small digital audio file corresponding to a segment of the corresponding audio stream bounded by natural language gaps in the audio stream;

a client for playing selected audio streams stored on the server; and

a network for connecting the server and the client and facilitating transmission of the small digital audio files from the server to the client,

wherein at least one of the server and the client provides a descriptor for each audio stream stored on the server, each descriptor including at least one of a start time, an end time, and a play time of the plurality of small digital audio files of the corresponding audio stream, each descriptor providing means for the client to begin playing the selected audio stream from any position therein without significant delay.

44. A computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to:

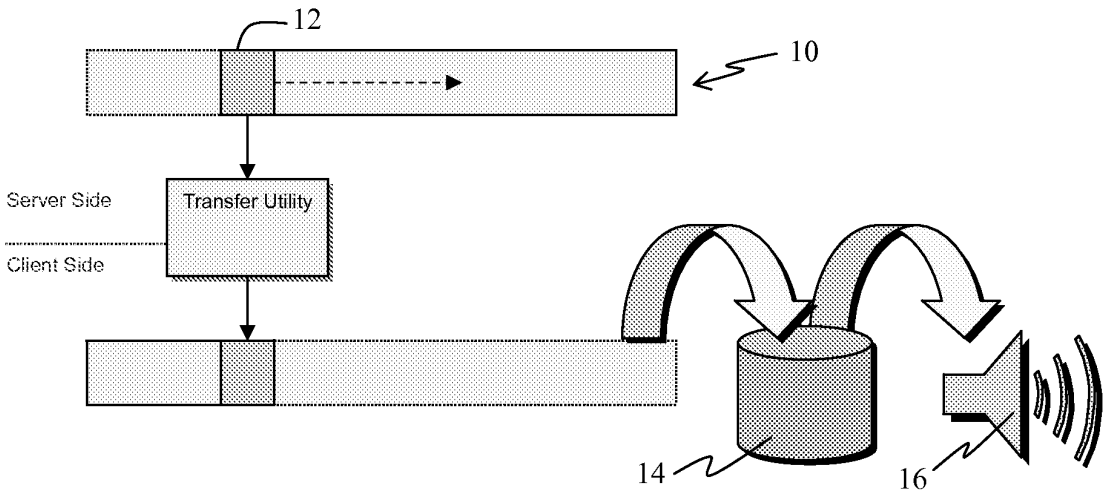
download at least part of a selected audio stream stored on a network accessible server, the selected audio stream stored as a plurality of small digital audio files, each small digital audio file corresponding to a segment of the selected audio stream bounded by natural language gaps in the selected audio stream; and

begin playing the downloaded audio stream using a media player without significant delay and such the transition between successive small digital audio files appears seamless to a user of the media player.

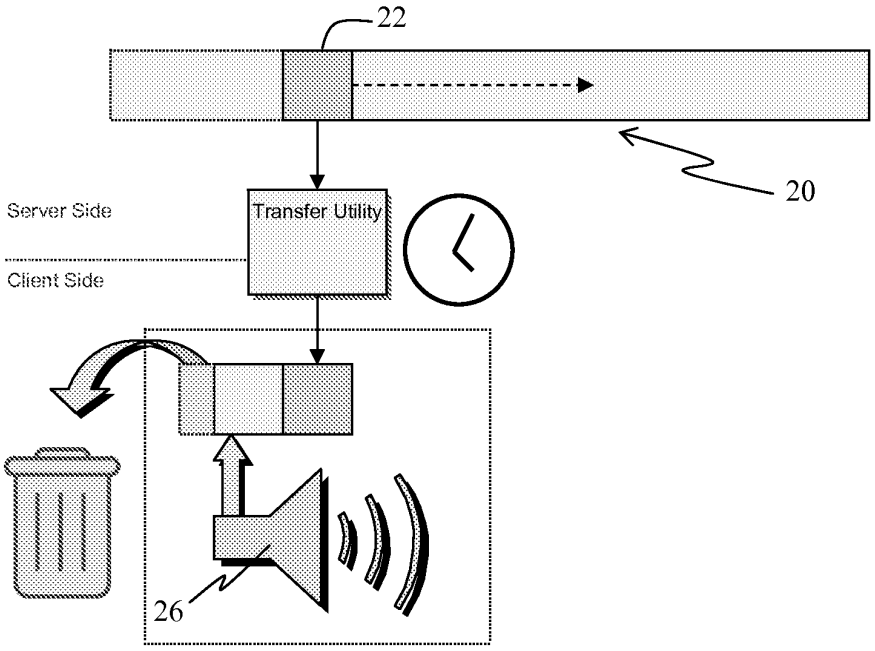
45. A computer readable storage medium according to claim 44, wherein play is begun from a predetermined position within the selected audio stream, the predetermined position determined using a time offset in the selected audio stream, the time offset obtained from one of a bookmark, a catalog index, and an advertising structure.

Abstract

A system, method and computer-readable code for segmenting an audio stream into a plurality of small digital audio files using gaps in the natural language of the audio stream is provided. The small digital audio files are transmitted, loaded, and played in a specific order, such that from the user's perspective, the audio stream is reproduced in an apparently seamless manner. This is done without reassembling the audio stream, either in whole or in part. The small digital audio files are created using natural language gaps, and are generally small enough to ensure that a first small digital audio file can be downloaded and played without significant delay, while successive small digital audio files are downloaded to be played in the future. Accordingly, the user receives audio-on-demand in a timely manner.



(Prior art)
Fig. 1



(Prior art)
Fig. 2

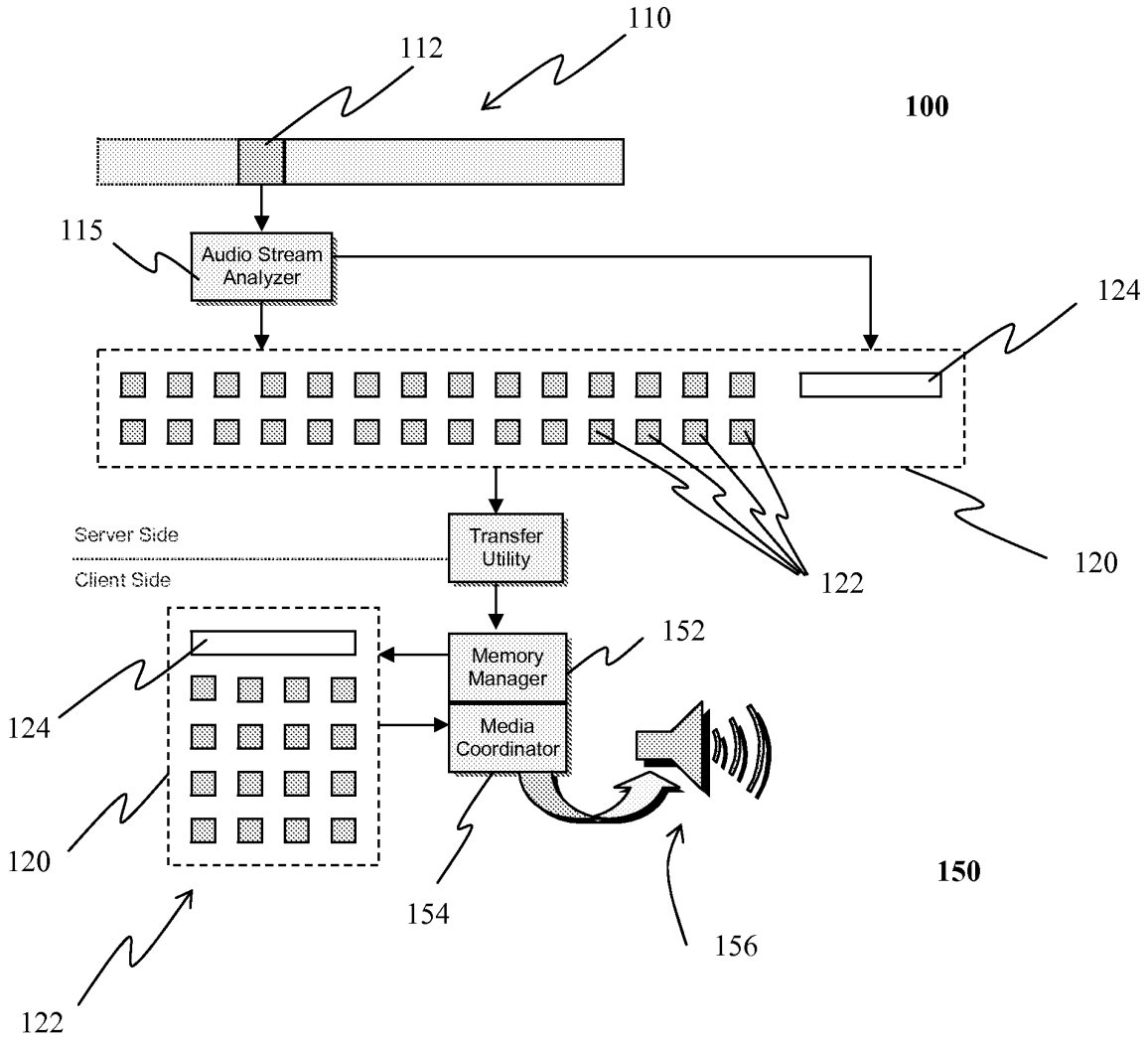

110
112
100
115
Audio Stream Analyzer
124
Server Side
Client Side
Transfer Utility
122
120
152
Memory Manager
Media Coordinator
124
120
154
156
150
122

Fig. 3

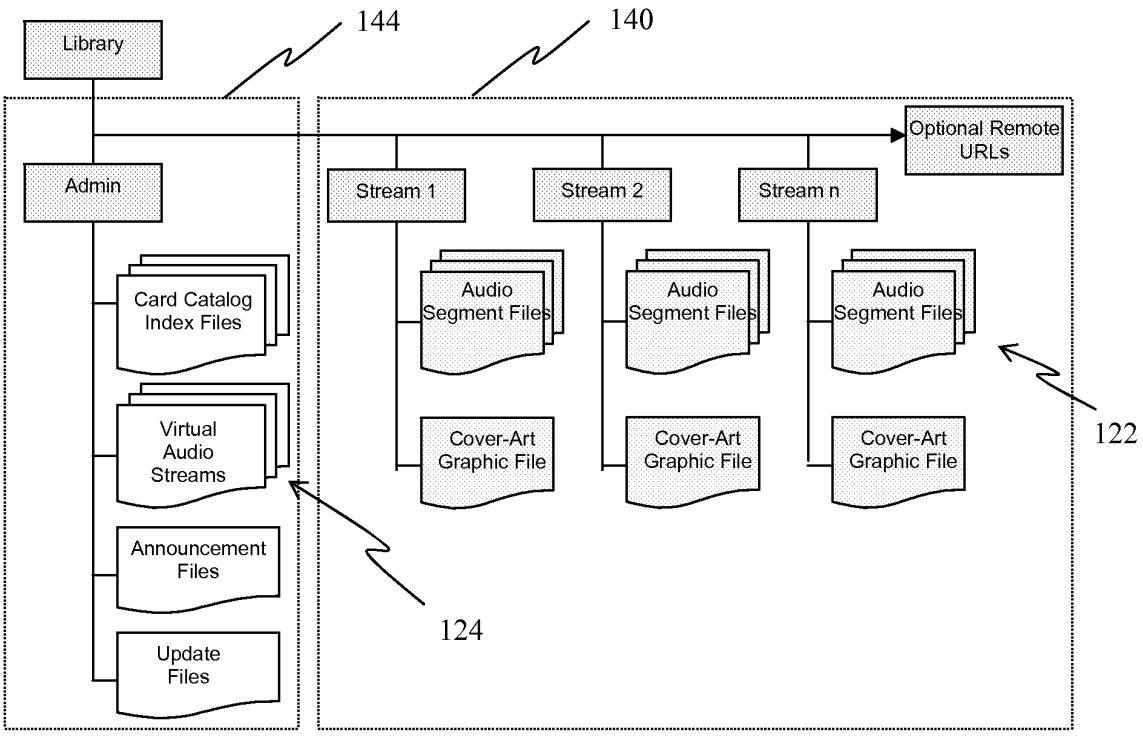


Fig. 4

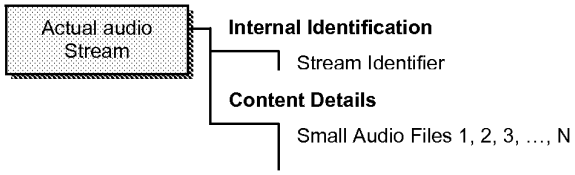


Fig. 5a

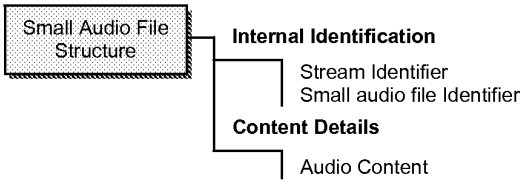


Fig. 5b

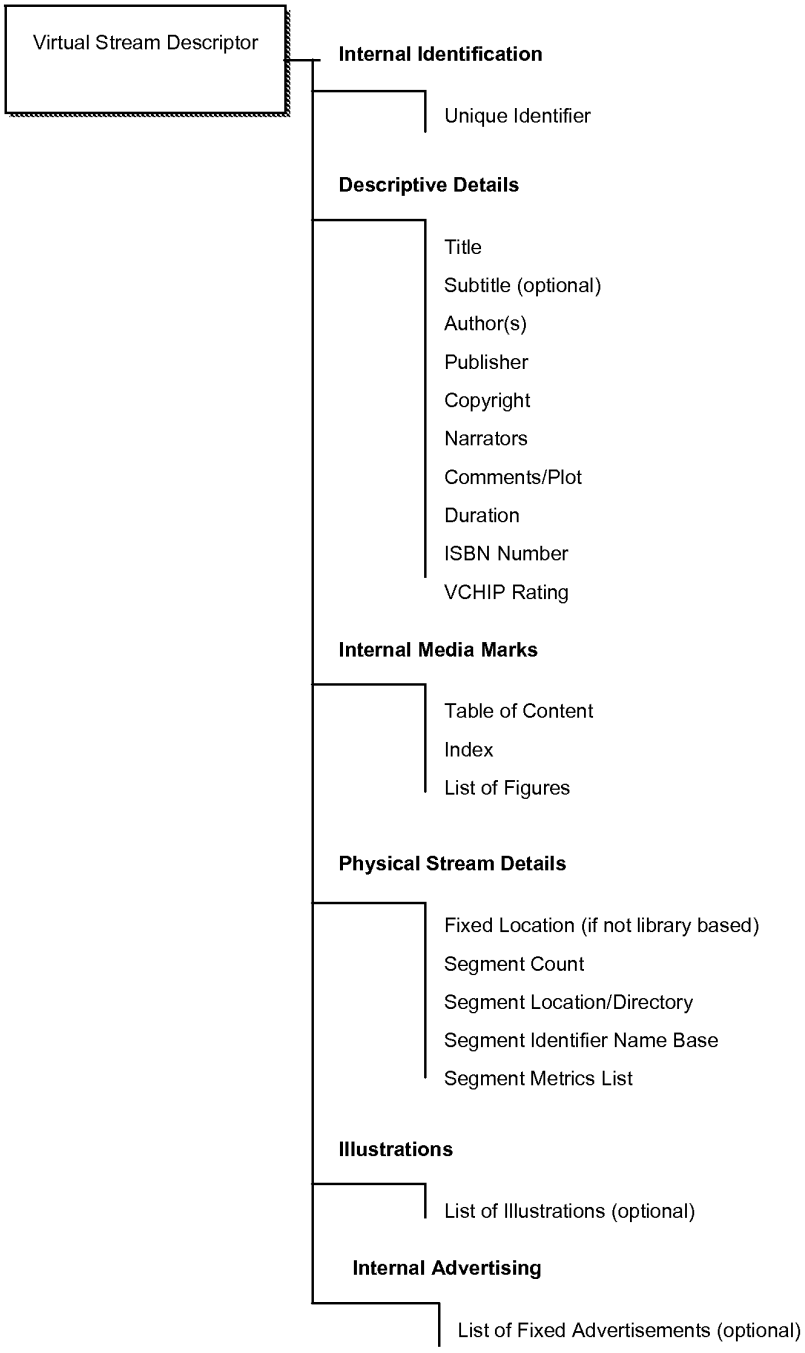

Virtual Stream Descriptor
Internal Identification
Unique Identifier
Descriptive Details
Title
Subtitle (optional)
Author(s)
Publisher
Copyright
Narrators
Comments/Plot
Duration
ISBN Number
VCHIP Rating
Internal Media Marks
Table of Content
Index
List of Figures
Physical Stream Details
Fixed Location (if not library based)
Segment Count
Segment Location/Directory
Segment Identifier Name Base
Segment Metrics List
Illustrations
List of Illustrations (optional)
Internal Advertising
List of Fixed Advertisements (optional)

Fig. 5c

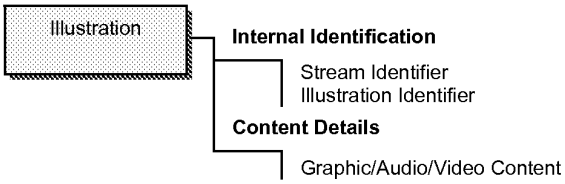


Fig. 5d

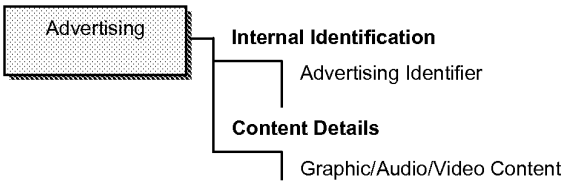


Fig. 5e

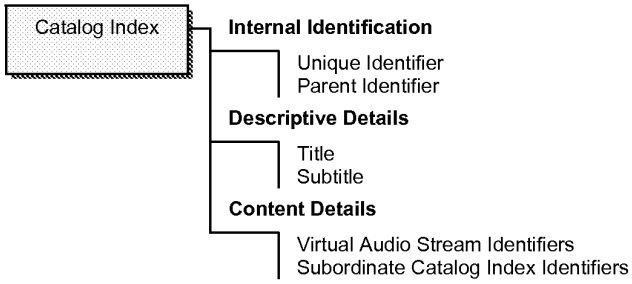


Fig. 5f

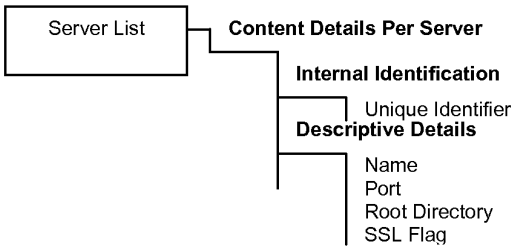


Fig. 5g

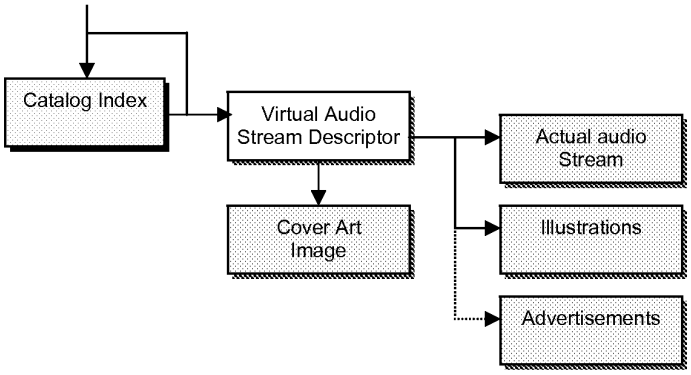

Catalog Index
Virtual Audio Stream Descriptor
Actual audio Stream
Cover Art Image
Illustrations
Advertisements

Fig. 6

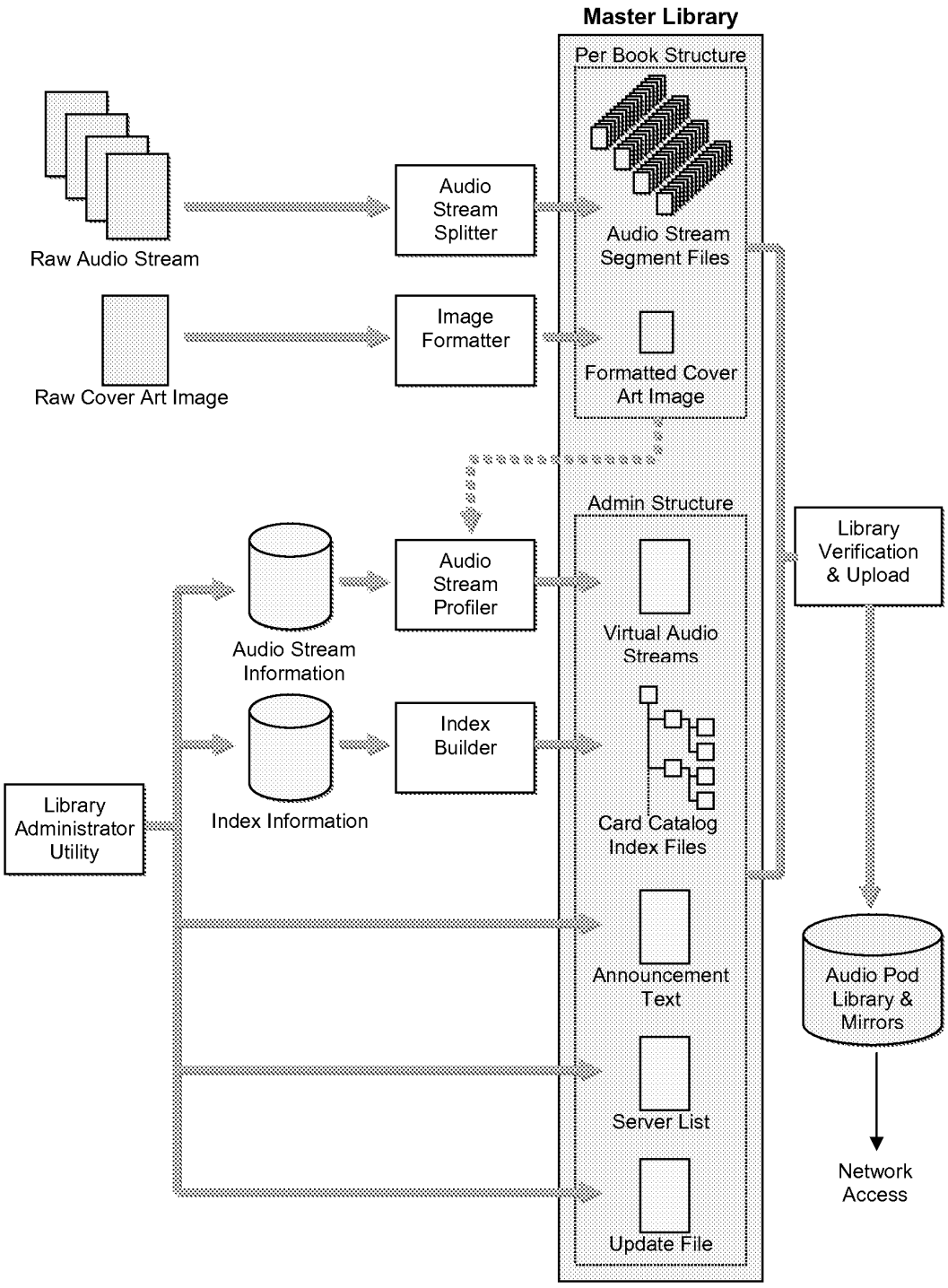

Master Library
Per Book Structure
Raw Audio Stream
Audio Stream Splitter
Audio Stream Segment Files
Raw Cover Art Image
Image Formatter
Formatted Cover Art Image
Admin Structure
Audio Stream Profiler
Audio Stream Information
Virtual Audio Streams
Library Verification & Upload
Index Builder
Index Information
Card Catalog Index Files
Library Administrator Utility
Announcement Text
Audio Pod Library & Mirrors
Server List
Network Access
Update File

Fig. 7

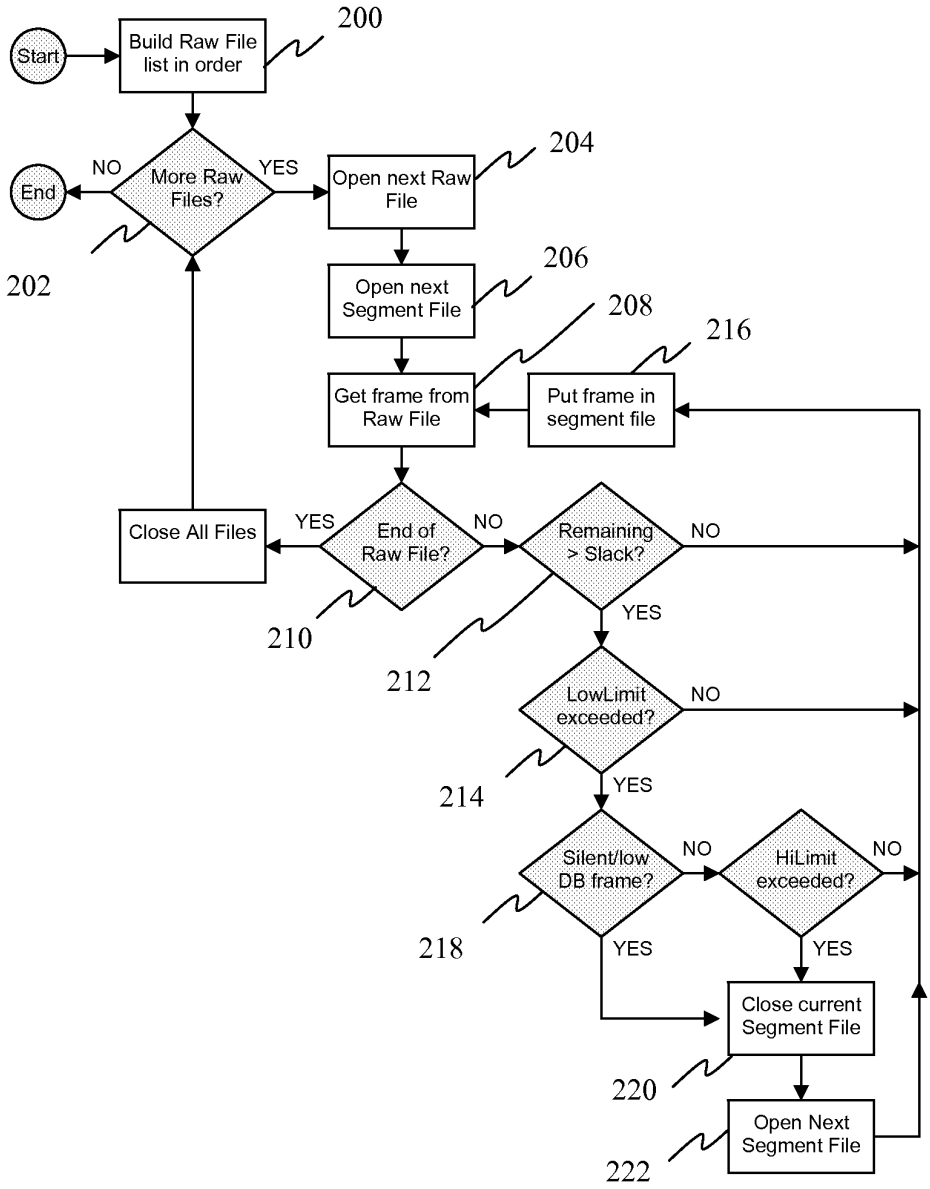

Start
Build Raw File list in order
200
End
NO
More Raw Files?
YES
202
Open next Raw File
204
Open next Segment File
206
Get frame from Raw File
208
Put frame in segment file
216
Close All Files
YES
End of Raw File?
NO
210
Remaining > Slack?
NO
YES
212
LowLimit exceeded?
NO
YES
214
Silent/low DB frame?
NO
HiLimit exceeded?
NO
218
YES
YES
Close current Segment File
220
Open Next Segment File
222

Fig. 8

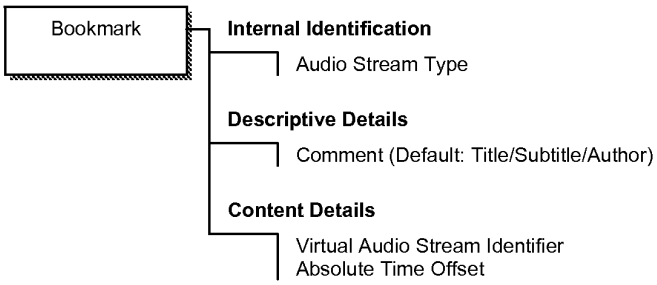


Fig. 9

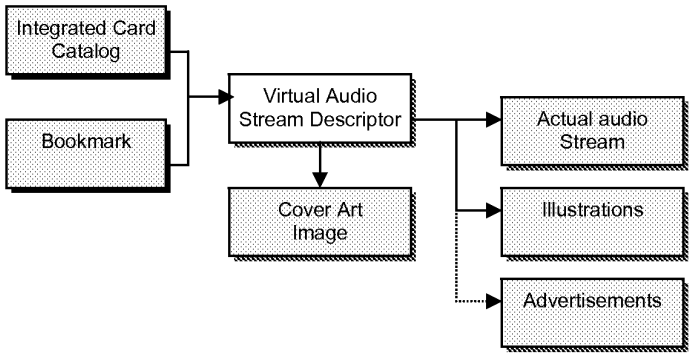


Fig. 10

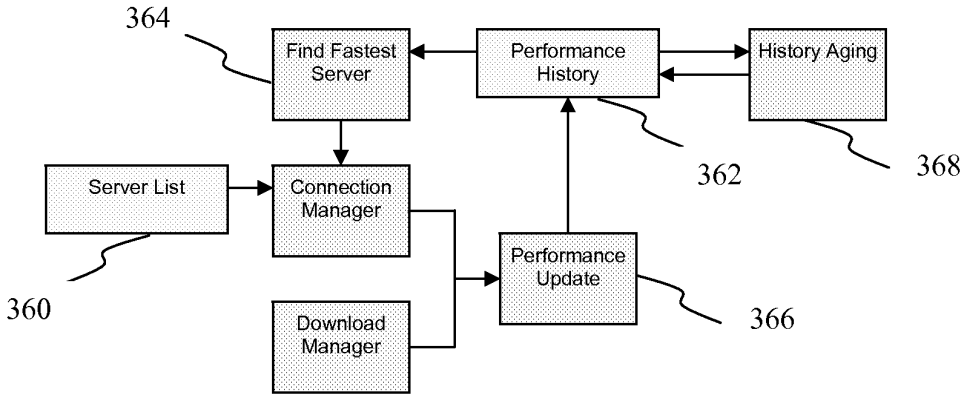


Fig. 11

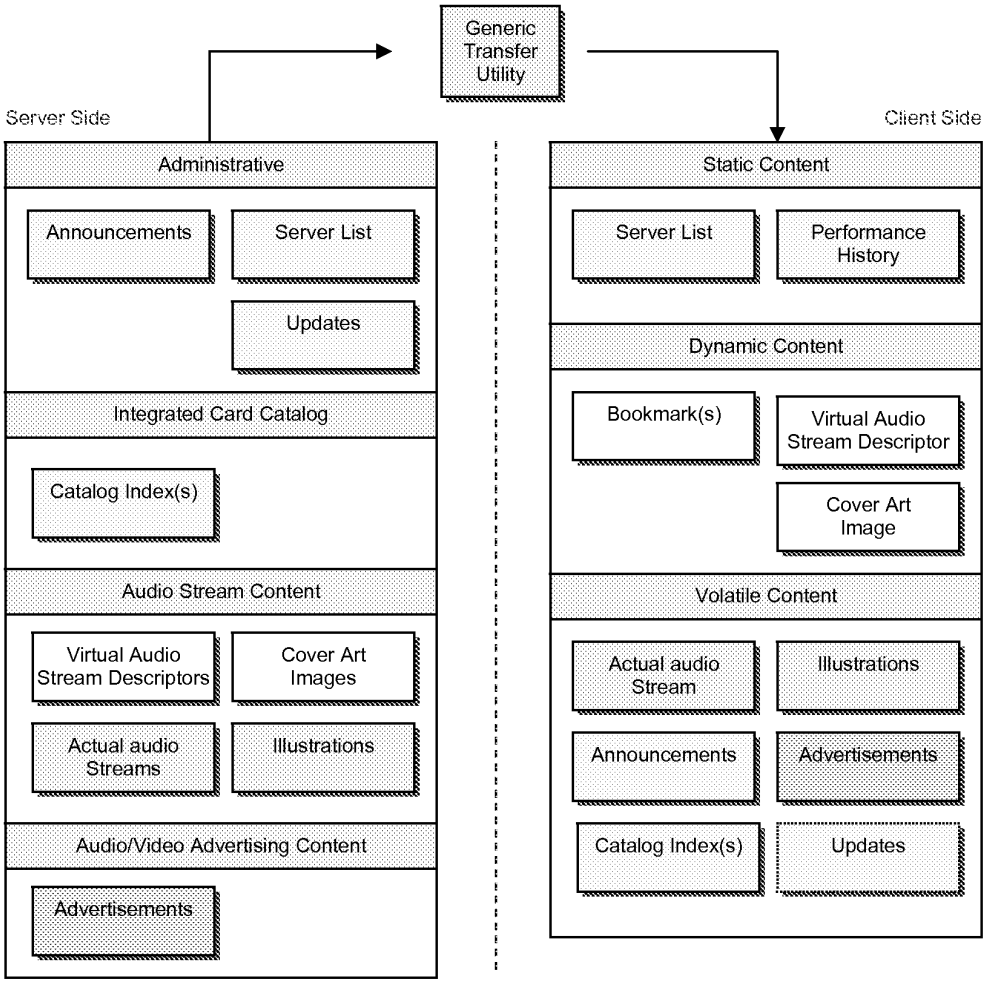

Generic Transfer Utility
Server Side
Client Side
Administrative
Announcements
Server List
Updates
Integrated Card Catalog
Catalog Index(s)
Audio Stream Content
Virtual Audio Stream Descriptors
Cover Art Images
Actual audio Streams
Illustrations
Audio/Video Advertising Content
Advertisements
Static Content
Server List
Performance History
Dynamic Content
Bookmark(s)
Virtual Audio Stream Descriptor
Cover Art Image
Volatile Content
Actual audio Stream
Illustrations
Announcements
Advertisements
Catalog Index(s)
Updates

Fig. 12

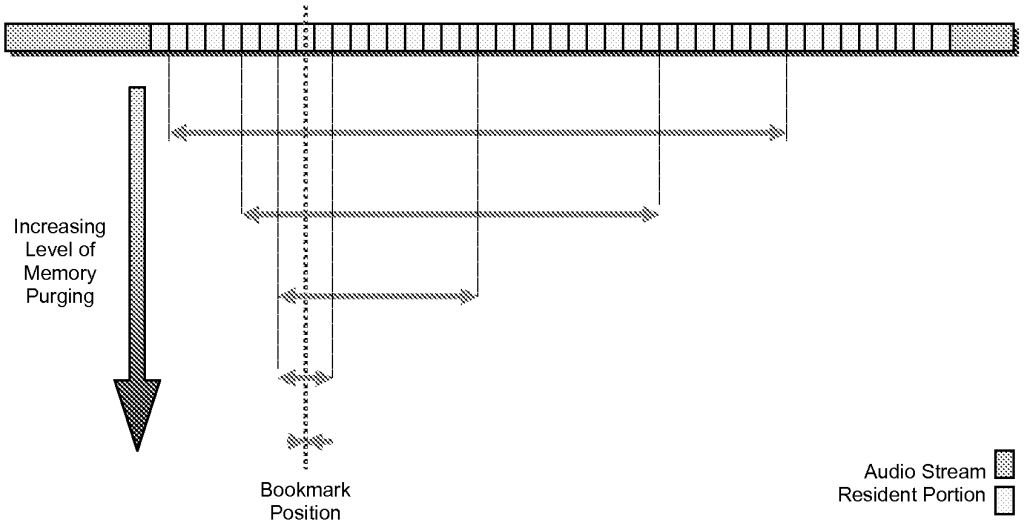

Increasing
Level of
Memory
Purging
Bookmark
Position
Audio Stream
Resident Portion

Fig. 13

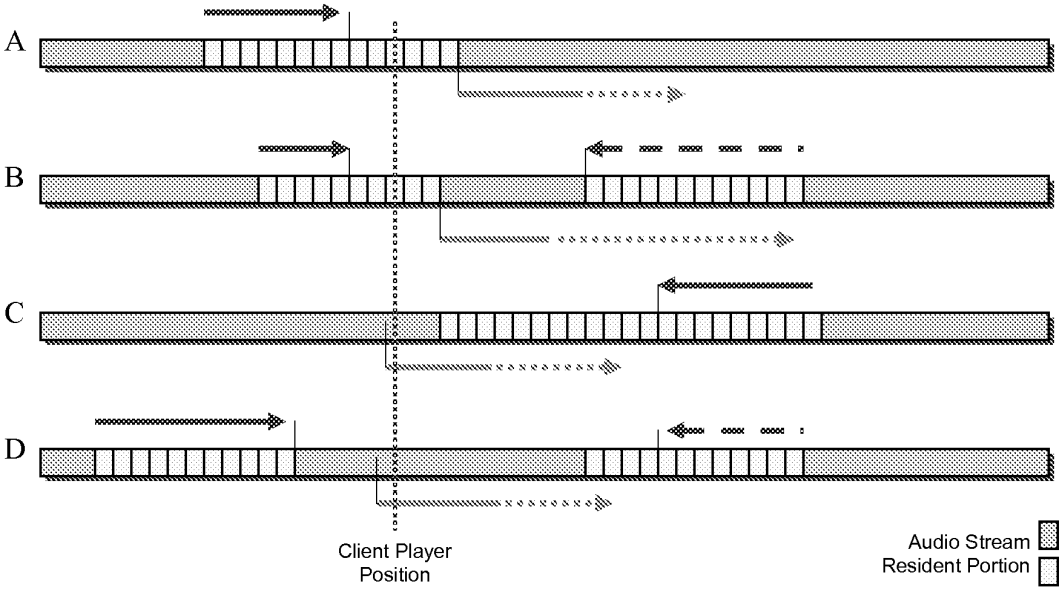

A
B
C
D
Client Player
Position
Audio Stream
Resident Portion

Fig. 14

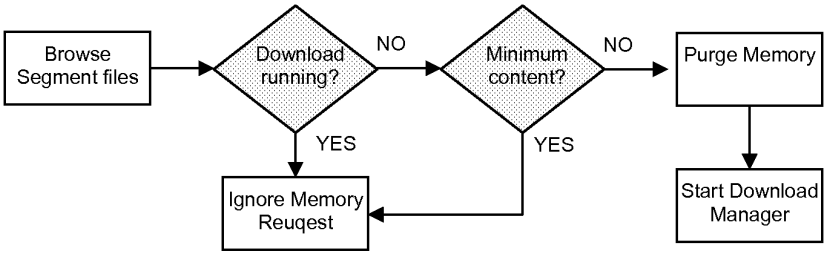

Browse Segment files
Download running?
NO
Minimum content?
NO
Purge Memory
YES
YES
Ignore Memory Reuqest
Start Download Manager

Fig. 15

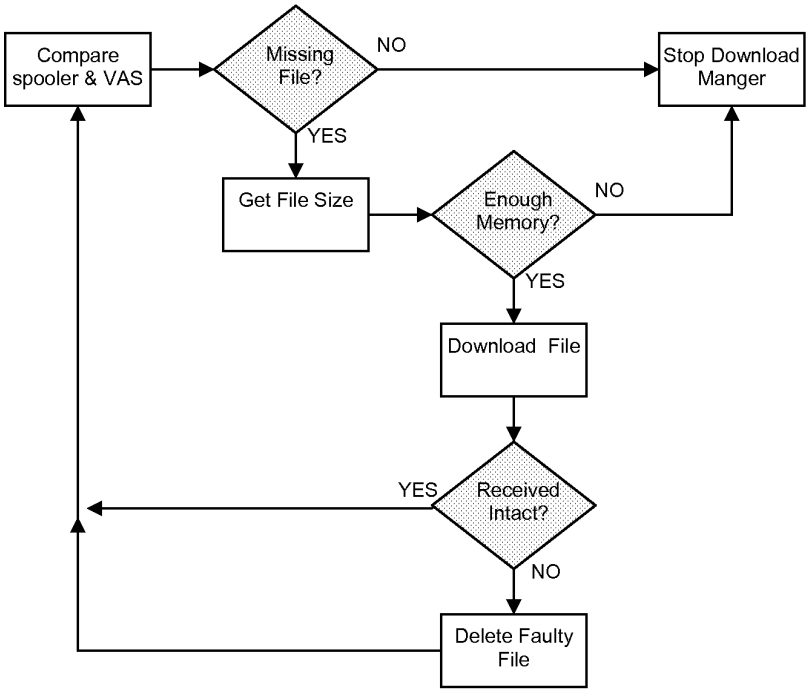

Compare spooler & VAS
Missing File?
NO
Stop Download Manger
YES
Get File Size
Enough Memory?
NO
YES
Download File
YES
Received Intact?
NO
Delete Faulty File

Fig. 16

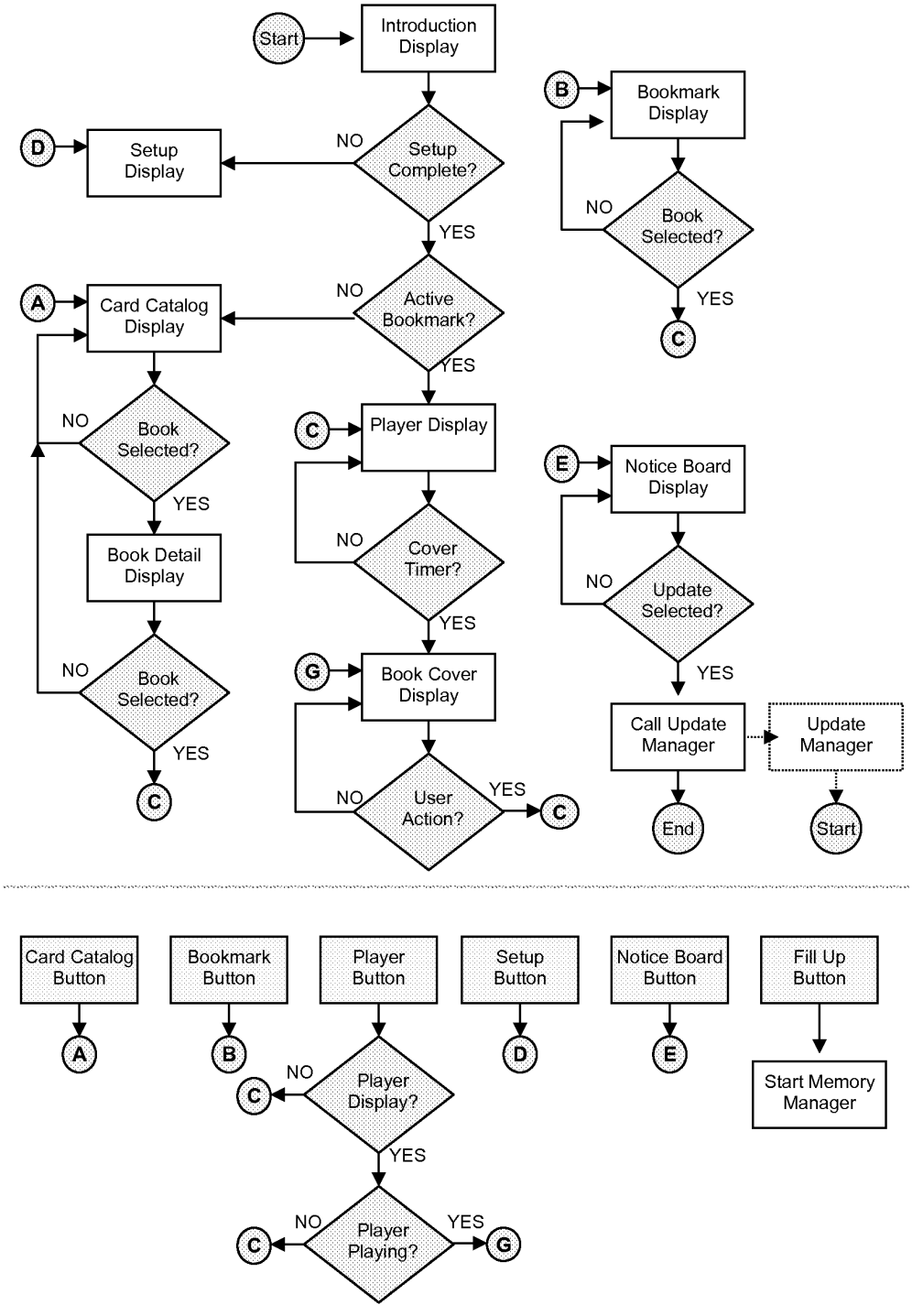

Start
Introduction Display
Setup Complete?
NO
Setup Display
D
YES
Active Bookmark?
NO
Card Catalog Display
A
YES
Book Selected?
NO
YES
Book Detail Display
Book Selected?
NO
YES
C
B
Bookmark Display
Book Selected?
NO
YES
C
C
Player Display
Cover Timer?
NO
YES
G
Book Cover Display
User Action?
NO
YES
C
E
Notice Board Display
Update Selected?
NO
YES
Call Update Manager
Update Manager
End
Start
Card Catalog Button
Bookmark Button
Player Button
Setup Button
Notice Board Button
Fill Up Button
A
B
D
E
Start Memory Manager
Player Display?
NO
C
YES
Player Playing?
NO
C
YES
G

Fig. 17

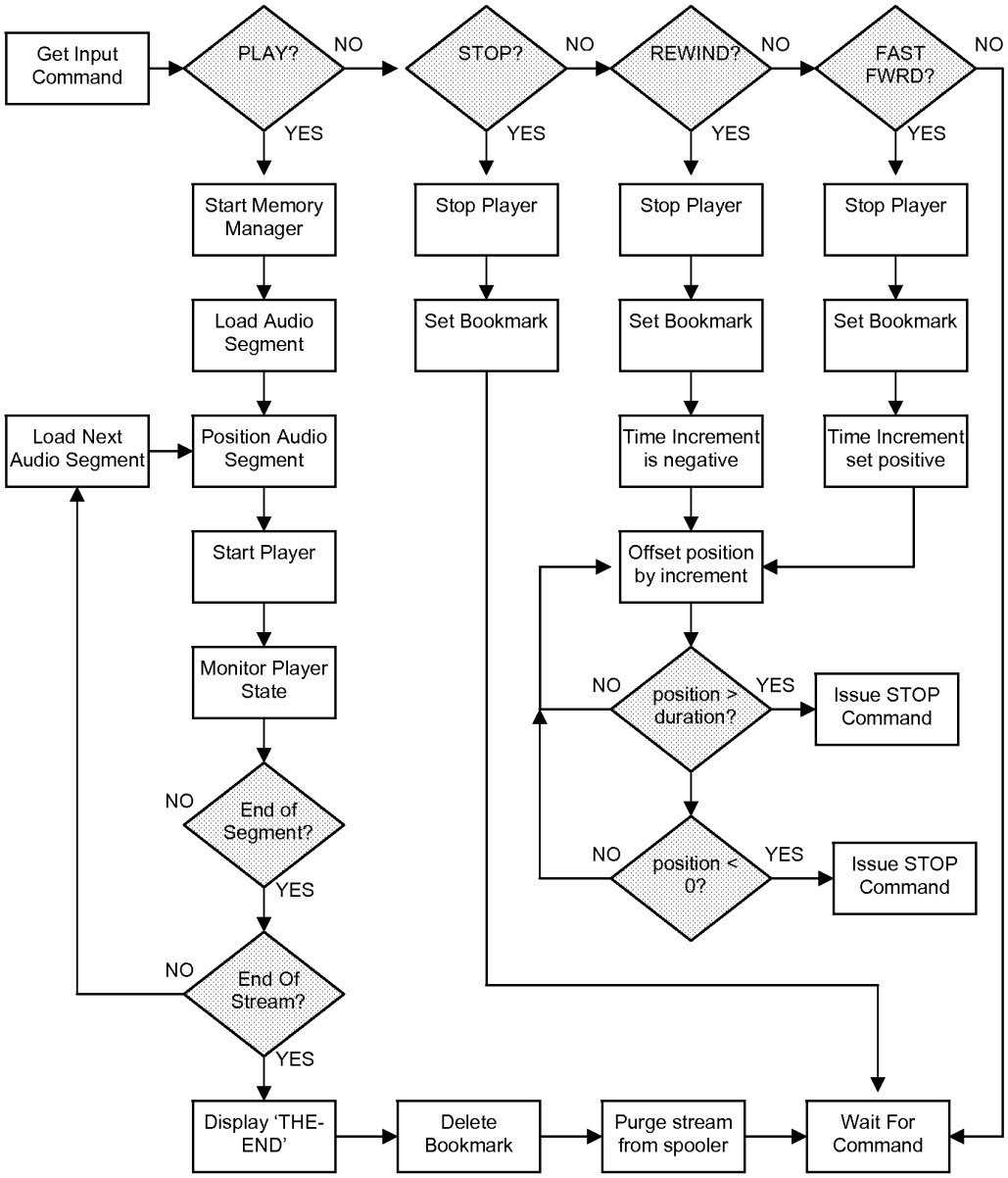

Get Input Command
PLAY?
NO
YES
STOP?
NO
YES
REWIND?
NO
YES
FAST FWRD?
NO
YES
Start Memory Manager
Load Audio Segment
Position Audio Segment
Start Player
Monitor Player State
End of Segment?
NO
YES
End Of Stream?
NO
YES
Load Next Audio Segment
Stop Player
Set Bookmark
Stop Player
Set Bookmark
Time Increment is negative
Stop Player
Set Bookmark
Time Increment set positive
Offset position by increment
position > duration?
NO
YES
Issue STOP Command
position < 0?
NO
YES
Issue STOP Command
Display 'THE-END'
Delete Bookmark
Purge stream from spooler
Wait For Command

Fig. 18

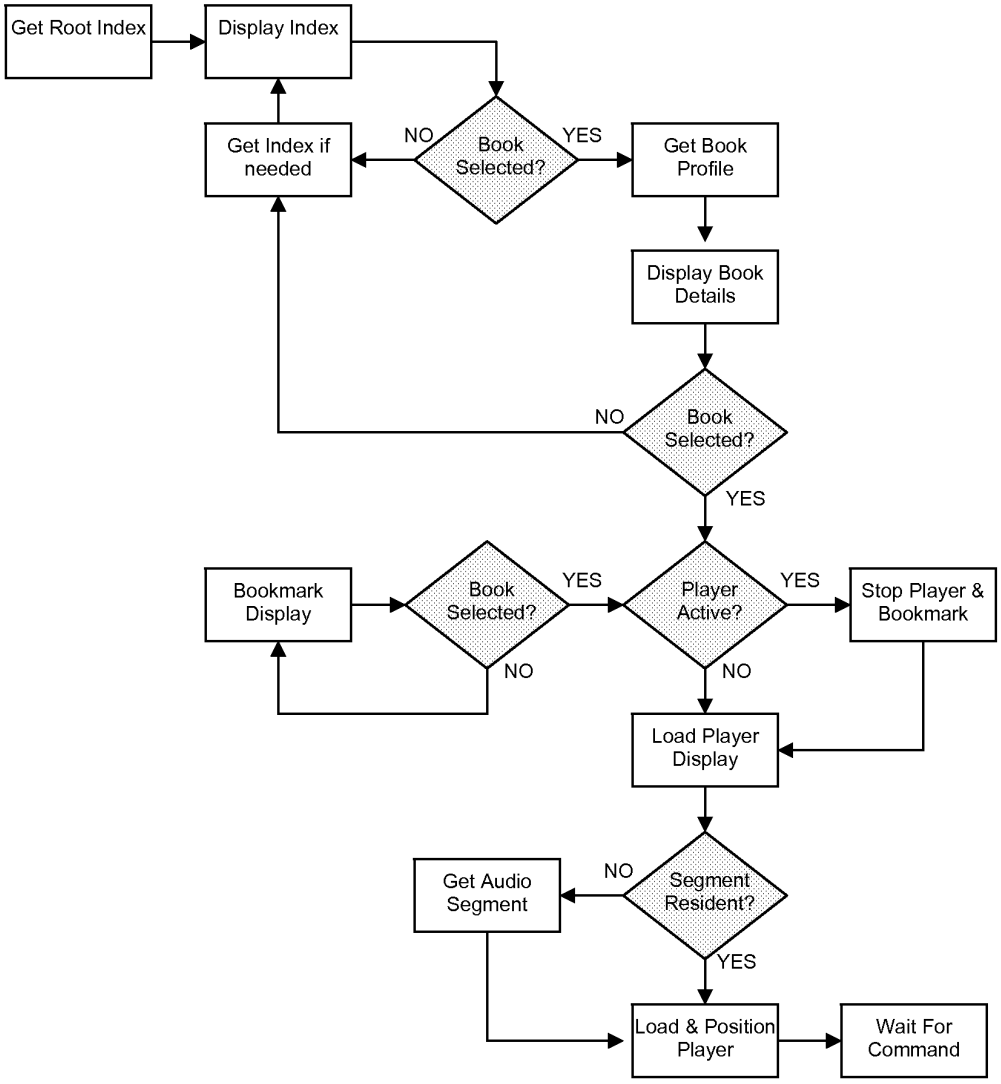

Get Root Index
Display Index
Get Index if needed
NO
Book Selected?
YES
Get Book Profile
Display Book Details
NO
Book Selected?
YES
Bookmark Display
Book Selected?
YES
Player Active?
YES
Stop Player & Bookmark
NO
NO
Load Player Display
Get Audio Segment
NO
Segment Resident?
YES
Load & Position Player
Wait For Command

Fig. 19

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of: McCue et al **File No.: 141-1 US/PCT CON**

This application is a Rule 53 Continuation of US Serial No. 12/096,933 FILED June 11, 2008 **Art Unit: Unassigned** **Examiner: Unassigned**

Confirmation No.: Unassigned

For: TRANSMISSION OF DIGITAL AUDIO DATA

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

PRELIMINARY AMENDMENT

Dear Sir:

Prior to examining the above-identified patent application on the merits and calculating the fees due at filing, please enter the following amendments and consider the remarks set out below.

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

Amendments to the Claims are reflected in the listing of claims, which begins on page 3 of this paper.

Remarks begin on page 8 of this paper.

Amendments to the Specification

Please replace the Specification of the newly filed application filed herewith with the attached replacement, amended Specification. A marked-up copy of the specification showing the amendments as well as a clean copy incorporating the amendments are both submitted herewith.

No new matter has been added.

Amendments to the Claims

1-45 (cancelled)

46. (New) A non-transitory computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to:

send a request to a network-based server, the request including a unique identifier for identifying an audio stream;

load a list of library servers received from the network-based server, the list of library servers determined in dependence upon the unique identifier;

maintain service level statistics for each library server in the list of library servers;

select a first library server from the list of library servers in dependence upon the service level statistics, the first library server having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream; and

download a first digital audio file from the plurality of digital audio files for playback with a media player.

47. (New) The non-transitory computer readable storage medium according to claim 46, wherein the unique identifier is an ISBN number.

48. (New) The non-transitory computer readable storage medium according to claim 47, wherein a size of each digital audio file in the plurality of digital audio files is selected in dependence upon network throughput rates.

49. (New) The non-transitory computer readable storage medium according to claim 48, wherein the unique identifier is obtained from one of a bookmark structure, a card catalog structure, and an advertising structure.

50. (New) The non-transitory computer readable storage medium according to claim 46, wherein the unique identifier is obtained from one of a bookmark structure, a card catalog structure, and an advertising structure.

51. (New) The non-transitory computer readable storage medium according to claim 46, wherein the service level statistics include historical transfer rates for each library server in the list of library servers.

52. (New) The non-transitory computer readable storage medium according to claim 51, wherein the computer code is further configured to cause said computer to:

compare the historical transfer rates of all library servers on the list of library servers;

select the fastest library server on the list of library servers;

initialize a floating average value representing transfer rate;

monitor transaction times for the fastest library server and update the floating average transfer rate;

increase the floating average transfer rate by a first predetermined value in dependence upon an unavailability of the fastest library server; and

update the historical transfer rate for the fastest server in dependence upon the floating average transfer rate exceeding a predetermined value.

53. (New) The non-transitory computer readable storage medium according to claim 52, wherein the computer code is further configured to cause said computer to:

at arbitrary time intervals, calculate an average value of the historical transfer rates for all library servers on the list of servers and subtract a second predetermined value from the historical transfer rate for each library server that has a historical value exceeding the calculated average.

54. (New) The non-transitory computer readable storage medium according to claim 52, wherein the first library server is the fastest library server.

55. (New) The non-transitory computer readable storage medium according to claim 46, wherein the computer code is further configured to cause said computer to:

select a second library server from the list of library servers in dependence upon the service level statistics, the second library server having a copy of the plurality of digital audio files; and

download a second other digital audio file from the second library server for playback with the media player.

56. (New) The non-transitory computer readable storage medium according to claim 46, wherein the request includes login information.

57. (New) The non-transitory computer readable storage medium according to claim 46, wherein the computer code is configured to cause said computer to:

download a descriptor file from the first library server, the descriptor file for ordering the plurality of digital audio files, the descriptor file including at least one of a start time, an end time, and a play time of each digital audio file in the plurality of digital audio files within the audio stream,

wherein the computer determines the first digital audio file for playback using a time offset external to the descriptor file and the at least one of the start time, end time, and play time of each digital audio file in the plurality of digital audio files.

58. (New) A non-transitory computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to:

determine a first position within an audio stream playing on a media player;

determine a time offset using a point in time of the first position from a beginning of the audio stream;

create a bookmark for the first position, the bookmark including a file, the file including a unique identifier for identifying the audio stream and including the time offset,

wherein the bookmark is for positioning the audio stream to the first position using the time offset.

59. (New) The non-transitory computer readable storage medium according to claim 58, wherein the first position is determined when the media player is stopped while playing the audio stream.

60. (New) The non-transitory computer readable storage medium according to claim 58, wherein the first position is determined in response to a make bookmark command.

61. (New) The non-transitory computer readable storage medium according to claim 58, wherein the time offset is determined by subtracting a predetermined value from the point in time of the first position from the beginning of the audio stream.

62. (New) The non-transitory computer readable storage medium according to claim 58, wherein the computer code is further configured to cause said computer to:

transfer the bookmark to another computer.

63. (New) The non-transitory computer readable storage medium according to claim 62, wherein the other computer is for loading a digital audio file including the first position for playback by an other media player, the media player and the other media player using one of the same audio formats and different audio formats.

64. (New) The non-transitory computer readable storage medium according to claim 58,

wherein the audio stream is stored as a plurality of digital audio files in a library, each digital audio file including a different segment of the audio stream, and wherein the computer code is further configured to cause said computer to:

determine a first digital audio file from the plurality of digital audio files to be loaded for playback with the media player from the first position, the first digital audio file selected using the time offset and a descriptor file, the descriptor file for ordering the plurality of digital audio files and including at least one of a start time, an end time, and a play time of each digital audio file in the plurality of digital audio files within the audio stream;

determine if the first digital audio file is resident with the computer;

download the first digital audio file from the library in dependence upon whether the first digital audio file is already resident with the computer; and

load the first digital audio file for playback with the media player from the first position.

65. (New) A non-transitory computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to:

download a first digital audio file stored in a library, the library connected to the computer via a network, the first digital audio file selected from a plurality of digital audio files stored in the library, each digital audio file in the plurality of digital audio files including a

different segment of an audio stream, a size of each digital audio file in the plurality of digital audio files selected in dependence upon network throughput rates and to allow each digital audio file in the plurality of digital audio files to be downloaded and begin playing in less than about 5 seconds, the first digital audio file selected in dependence upon a predetermined position within the audio stream.

66. A non-transitory computer readable storage medium according to claim 65, wherein the computer code is further configured to cause said computer to:

download successive digital audio files in the plurality of digital audio files from the library; and

successively play the first digital audio file and the successive digital audio files using a media player to reproduce an experience of a contiguous audio stream without reconstruction of the audio stream.

67. (New) A non-transitory computer readable storage medium according to claim 66, wherein the computer code is further configured to cause said computer to:

determine numeric values representing current time offsets into the audio stream while the first digital audio file and the successive digital audio files are successively played; and

purge the downloaded digital audio files in dependence upon an amount of memory available, a current time offset, and time-offsets provided in bookmarks resident on the computer.

REMARKS

Claims 1-45 have been cancelled. New claims 46-65 have been added. No new subject matter has been added.

The specification has been amended to include cross-reference to related patent applications, to correct typographical and/or other minor errors in the specification (e.g., in paragraphs [46], [52], and [69]), and to make the Summary of the Invention consistent with the new claims. No new subject matter has been added.

The title of the application has been amended.

Entry and consideration of this Preliminary Amendment and early and favorable action on the merits are respectfully requested.

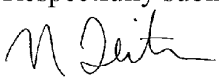
Should any minor informalities need to be addressed, the Examiner is encouraged to contact the undersigned attorney at the telephone number listed below.

The Commissioner is hereby authorized to charge any fees which may be required to our VISA Account.

The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment, to Deposit Account No: 50-2810.

Please associate this application with Customer No: 24949.

Respectfully submitted,



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~~SEGMENTATION AND TRANSMISSION OF AUDIO STREAMS~~ TRANSMISSION OF DIGITAL AUDIO DATA

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is a National Stage Entry of Application PCT/CA2006/002046 filed December 12, 2006, which claims priority from US Pat. Appl. Ser. No. 60/749,632 filed December 13, 2005, both of which are incorporated herein by reference for all purposes. This application is a continuation of U.S. Pat. Appl. No. 12/096,933 filed June 11, 2008, which was the National Stage of International Application No. PCT/CA2006/002046 filed December 12, 2006, which claims priority from US Pat. Appl. Ser. No. 60/749,632 filed December 13, 2005, all of which are hereby incorporated herein by reference in their entireties.

TECHNICAL FIELD

[0002] The present application relates generally to the transmission of digital audio data, and in particular, to a system, method, and computer-readable code for the delivery of digital audio data on demand.

BACKGROUND OF THE INVENTION

[0003] Traditionally, there have been two different approaches for delivering digital audio data. In the first approach, the digital audio data is mass downloaded. More specifically, and as shown schematically in Fig. 1, one or more files corresponding to an entire audio stream 10 is transmitted one frame 12 at a time from the server to the client. Once the entire audio stream 10 has been received and reassembled to form a continuous, contiguous audio stream, it is stored in storage 14 prior to being transmitted to a media player 16.

[0004] In the second approach, streaming technology is used to deliver the digital audio data 'just-in-time'. More specifically, and as shown schematically in Fig. 2, an entire audio stream 20 is transmitted one frame 22 at a time from the server to the client, where it is received and reassembled, in part, to provide a continuous, contiguous audio stream (i.e., a small portion of audio stream continuity is preserved). Once each frame is played by the media player 26, it is then discarded from the buffer.

[0005] Small audio streams, or audio-video streams, which for example correspond to individual songs, very short movies, and music videos, are typically transmitted using the first approach. In terms of the delivery of these smaller streams of media, the delays experienced by the users are generally tolerated because they are relatively short in nature. Typically, time delays are measured as one or two minutes, and although possible, tend not to exceed this.

[0006] The delivery of larger audio streams, which for example include books and radio shows, presents a problem for the user community. Whereas a single song that plays for 4 minutes may take 1 minute to download, an audio book that plays for 12 hours may take 3 to 4 hours to download. Although the general performance is relatively the same in terms of throughput rate, users of this media complain about the hours of waiting to receive and use the media selected.

[0007] While streaming technology obviates the waiting associated with mass download, any degradation experienced in the delivery of the content in real time introduces interruptions in the audio stream, causing breaks and interruptions in the users experience of that audio stream. Moreover, since the digital audio data is not stored, repositioning within the audio stream (e.g., using rewind or fast forward functions) interrupts the just-in-time nature of content delivery, and thus, may introduce significant delays and/or be inefficient. For example, in the case of rewinding a streamed audio stream, the content associated with the new position selected in the audio stream will need to be downloaded a second time and the future content temporarily stored in the buffer will be discarded.

[0008] In both of the existing technologies, great effort is made to reassemble the audio stream into a continuous, contiguous audio stream prior to being presented to the media player. In the case of the mass download approach, the entire audio stream is downloaded and reassembled prior to use. In streaming technologies, a very small portion of the audio stream is downloaded and reassembled prior to use with additional content delivered and already played content discarded continuously, to maintain a very small portion of continuity in the audio stream. Notably, this reconstruction of the audio stream complicates the digital audio data delivery and increases delivery time.

[0009] In addition, in both of the existing technologies, the user has limited tracking options. For example, 'The Godfather' is an audio book that, as commercially released, contains 24 MP3

files that require 80 megabytes of storage and plays at normal speed for a total of almost 9 hours. In order to use these files with existing mass download technology, the user must manually keep track of which file is currently being listened to and where one is in that particular file.

[0010] Tracking problems also develop if the users audio player automatically changes files, if the user is listening to multiple audio streams and/or if the user listens to audio streams on more than one client device (e.g. if a user is listening to the audio stream at work and wants to resume play at home). It can be particularly difficult and time consuming for the user to resume listening to an audio stream at a specific position.

SUMMARY OF THE INVENTION

[0011] The instant invention obviates some of the above-described disadvantages by segmenting an audio stream into a plurality of small digital audio files using gaps in the natural language of the audio stream. These small digital audio files are transmitted, loaded, and played, in a specific order, such that from the user's perspective, the audio stream is reproduced in an apparently seamless manner. Advantageously, this is done without reassembling the audio stream, either in whole or in part. Further advantageously, since the small digital audio files are created using natural language gaps, they can be sufficiently small to ensure that a first small digital audio file is downloaded and played without significant delay, while successive small digital audio files are downloaded to be played in the future. Accordingly, the user receives the audio-on-demand in a timely manner.

[0012] The instant invention further obviates some of the above-described disadvantages by providing a virtual audio stream descriptor, which includes a record of the position of each small digital audio file in the audio stream, to increase tracking options. More specifically, the virtual audio stream descriptor and one or more predetermined time offsets into the audio stream are used to position or reposition the audio stream at will. The predetermined time offsets are typically provided via internal media marks, external media marks, and/or rewind/fast-forward functions.

~~**[13]** In accordance with one aspect of the instant invention there is provided a method of providing files for storage in a network accessible library for use in the transmission of digital~~

~~audio data, comprising the steps of: a) segmenting an audio stream into a plurality of small digital audio files using natural language gaps in the audio stream; b) determining at least one of a start time, an end time, and a play time of each small digital audio file within the audio stream; and c) creating a descriptor for identifying the audio stream and for ordering the plurality of small digital audio files, the descriptor including the at least one of a start time, an end time, and a play time of each small digital audio file within the audio stream.~~

~~**[14]** In accordance with another aspect of the instant invention there is provided a method for the transmission of digital audio data, comprising the steps of: a) selecting the audio stream from the network accessible library; b) determining a first small digital audio file in the plurality of small digital audio files to be transmitted; c) transmitting the first small digital audio file from the network accessible library to a client; and d) using a media player, playing the first small digital audio file.~~

~~**[15]** In accordance with another aspect of the instant invention there is provided a method for the transmission of digital audio data, comprising the steps of: a) selecting an audio stream, the audio stream stored as a plurality of small digital audio files, each small digital audio file corresponding to a segment of the audio stream bounded by natural language gaps in the audio stream; b) determining a first small digital audio file in the plurality of small digital audio files to be transmitted; c) transmitting the first small digital audio file from a server to a client; d) using a media player, playing the transmitted first small digital audio file; e) determining subsequent small digital audio files in the plurality of small digital audio files to be transmitted; f) transmitting the subsequent small digital audio files from a server to a client; and, g) using the media player, playing the transmitted subsequent small digital audio files such that, to a user, the transition therebetween is apparently seamless.~~

~~**[16]** In accordance with another aspect of the instant invention there is provided a method for creating a bookmark for use in the transmission of digital audio data, comprising the steps of: a) listening to an audio stream; b) determining a current position within the audio stream; c) determining a time offset from a start of the audio stream to the current position; and, d) creating a bookmark for the current position including the time offset.~~

[0013] In accordance with one aspect of the instant invention there is provided a non-transitory computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to: send a request to a network-based server, the request including a unique identifier for identifying an audio stream; load a list of library servers received from the network-based server, the list of library servers determined in dependence upon the unique identifier; maintain service level statistics for each library server in the list of library servers; select a first library server from the list of library servers in dependence upon the service level statistics, the first library server having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream; and download a first digital audio file from the plurality of digital audio files for playback with a media player.

[0014] In accordance with one aspect of the instant invention there is provided a non-transitory computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to: determine a first position within an audio stream playing on a media player; determine a time offset using a point in time of the first position from a beginning of the audio stream; create a bookmark for the first position, the bookmark including a file, the file including a unique identifier for identifying the audio stream and including the time offset, wherein the bookmark is for positioning the audio stream to the first position using the time offset.

[0015] In accordance with one aspect of the instant invention there is provided a non-transitory computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to: download a first digital audio file stored in a library, the library connected to the computer via a network, the first digital audio file selected from a plurality of digital audio files stored in the library, each digital audio file in the plurality of digital audio files including a different segment of an audio stream, a size of each digital audio file in the plurality of digital audio files selected in dependence upon network throughput rates and to allow each digital audio file in the plurality of digital audio files to be downloaded and begin playing in less than about 5 seconds, the first digital audio file selected in dependence upon a predetermined position within the audio stream.

[0016] In accordance with another aspect of the instant invention there is provided a system for the transmission of digital audio data comprising: a server for storing audio streams, each audio stream stored as a plurality of small digital audio files, each small digital audio file corresponding to a segment of the corresponding audio stream bounded by natural language gaps in the audio stream; a client for playing selected audio streams stored on the server; and a network for connecting the server and the client and facilitating transmission of the small digital audio files from the server to the client, wherein at least one of the server and the client provides a descriptor for each audio stream stored on the server, each descriptor including at least one of a start time, an end time, and a play time of the plurality of small digital audio files of the corresponding audio stream, each descriptor providing means for the client to begin play of the selected audio stream from any position therein without significant delay.

[0017] In accordance with another aspect of the instant invention there is provided a system a computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to: download at least part of a selected audio stream stored on a network accessible server, the selected audio stream stored as a plurality of small digital audio files, each small digital audio file corresponding to a segment of the selected audio stream bounded by natural language gaps in the selected audio stream; and begin playing the downloaded audio stream using a media player without significant delay and such the transition between successive small digital audio files appears seamless to a user of the media player.

BRIEF DESCRIPTION OF THE DRAWINGS

[0018] Further features and advantages of the present invention will become apparent from the following detailed description, taken in combination with the appended drawings, in which:

[0019] FIG. 1 is a schematic diagram showing the prior art mass download of an audio stream;

[0020] FIG. 2 is a schematic diagram showing prior art streaming of an audio stream;

[0021] FIG. 3 is a schematic diagram illustrating the transmission of an audio stream in accordance with one embodiment of the instant invention;

[0022] FIG. 4 is a schematic diagram of one embodiment of a network based library;

[0023] FIG. 5a shows an embodiment of an actual audio stream structure;

[0024] FIG. 5b shows an embodiment of a small digital audio file structure;

[0025] FIG. 5c shows an embodiment of a virtual audio stream descriptor structure;

[0026] FIG. 5d shows an embodiment of an illustration structure;

[0027] FIG. 5e shows an embodiment of an advertising structure;

[0028] FIG. 5f shows an embodiment of a catalog index structure;

[0029] FIG. 5g shows an embodiment of a server list structure;

[0030] FIG. 6 is a schematic diagram showing card catalog index structure relationships;

[0031] FIG. 7 is a schematic diagram illustrating one embodiment of a library creation process;

[0032] FIG. 8 is a schematic diagram illustrating one embodiment of an audio stream splitter process;

[0033] FIG. 9 shows an embodiment of a bookmark structure;

[0034] FIG. 10 is a schematic diagram showing virtual audio stream structure relationships;

[0035] FIG. 11 is a schematic diagram illustrating one embodiment of a performance management process;

[0036] FIG. 12 is a schematic diagram illustrating information transfer and client memory status;

[0037] FIG. 13 is a schematic diagram illustrating one embodiment of a bookmarked audio stream purge process;

[0038] FIG. 14 is a schematic diagram illustrating one embodiment of an active audio stream purging process;

[0039] FIG. 15 is a schematic diagram illustrating one embodiment of a memory manager process;

[0040] FIG. 16 is a schematic diagram illustrating one embodiment of a download manager process;

[0041] FIG. 17 is a flow diagram illustrating one embodiment of a process for using the software product;

[0042] FIG. 18 is a flow diagram illustrating one embodiment of the player control process; and

[0043] FIG. 19 is a flow diagram illustrating one embodiment of the general functional process.

[0044] It will be noted that throughout the appended drawings, like features are identified by like reference numerals.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

[0045] Referring to Fig. 3, there is shown a system for transmitting digital audio data in accordance with one embodiment of the instant invention. The system includes a server 100, a client 150, and a network (not shown) for connecting the server 100 and the client 150.

[0046] On the server side 100, an audio stream analyser 115 is provided for analysing large digital audio files 110 frame by frame 112, and for segmenting the large digital audio files 110 into a plurality of small audio files 122. More specifically, the audio stream analyser 115 locates areas of silence or low decibel levels, hereafter referred to as gaps, within the audio stream. When these natural language gaps are found, and after more than a specific amount of content has been processed, that content is written to a small audio file. This parsing process is repeated until the entire audio stream has been split, or segmented, into the plurality of small audio files 122. In general, the size of each small audio file is selected such that it can be transferred from the server 100 to the client 150 in a period of time that ~~that~~ does not cause appreciable consternation on behalf of the user. For example, as a benchmark for success, this time frame is similar to that used in the telephone industry when a subscriber lifts a receiver and waits for a dial tone. Accordingly, a two second wait is considered to be close to the maximum tolerable delay, with the optimal target being in the sub-second range. The actual size range of the small audio files will be dependent on the network throughput rates. As a result, as network speed increases, the upper limit on the size of the segments will also increase.

[0047] The audio stream analyser 115 also analyses each small digital audio file to determine the start time, end time, and/or play time of the small digital audio file within the audio stream 110. This information is recorded in an index file 124 (e.g., an XML document). The index file 124, which is a virtual description of the actual audio stream, provides the information needed by a media player to reproduce the experience of a contiguous audio stream for the user without reconstructing the audio stream. The term 'actual audio stream' as used herein, refers to the plurality of small digital audio files that comprise the entire audio stream, and that when played sequentially, provide an apparently seamless audio experience. According to one embodiment, each of the small digital audio files is named using a number (e.g., eight-digit decimal number) that indicates its logical order in the actual audio stream.

[0048] In addition to providing actual stream details (i.e., the information for locating and managing the plurality of small digital audio files), the virtual audio stream descriptor 124 also typically includes descriptive details used to describe the content of the audio stream, such as the title and/or ISBN. Optionally, the virtual audio stream descriptor 124 also includes internal media marks, illustrations related to the audio stream, and/or internal advertising. Internal media marks are used to identify a specific point in time in the audio stream that is offset from the beginning of the audio stream. More specifically, they generally point to a time offset associated with some user readable tag such as a table of contents, an index, a list of tables, a list of figures, footnotes, quotations, a list of illustrations, etc. Illustrations related to the audio stream and/or internal advertising may include graphics, static images, moving images, and/or other audio-visual content that is displayed for a fixed duration.

[0049] In general, the virtual audio stream descriptor 124 and the actual audio stream 122 will be stored together in a same location 120 on the server 100. For example, according to one embodiment the plurality of small audio files 122 and the virtual audio stream descriptor 124 are stored in a same directory of a library residing on one or more servers on the Internet. According to the embodiment illustrated in Fig. 4, the plurality of small audio files 122 and the virtual audio stream descriptor 124 are stored in the same library, but in different areas. More specifically, the virtual audio stream descriptors 124 are stored in an area for administrative files 144, whereas the plurality of small audio files 122 is stored in an area for actual audio streams 140. The area for actual audio streams 140 includes *n* directories for storing *n* audio streams, each with a

corresponding cover art image. The cover art image, which is a graphic file, is intended to provide a user with a familiar look and feel of a book cover and/or to provide easy recognition. Optionally, one or more of the *n* directories is located at a remote URL.

[0050] The administrative files, which include the virtual audio stream descriptors 124, typically use the electronic equivalent of a card catalog to provide a simple, easy to use method of navigation and access of the actual audio streams. In general, these card catalog index files (e.g., XML documents) will include a hierarchical structure of cascading indexes that relate in various ways. For example, according to one embodiment the card catalogue will include indices based on keywords such as historical, detective, suspense, action, etc. The references contained in each index point to other index structures or to a specific virtual stream descriptor. Each index structure contains a reference to its parent index structure, thus allowing navigation in both directions (i.e., up and down the branch of hierarchy). Each media entry may appear within the structure of the entire index multiple times, to allow reference and/or navigation from many points. The structure of the index is such that endless navigation loops caused by circular definitions are not possible.

[0051] The administrative files also optionally include announcements, updates, and a server list (not shown). Announcements, which for example may be in an XML file, are typically informative or instructive in nature. The updates, which may include programs, data files, instruction files, setup files, and/or other text, typically contain information for providing a maintenance update. The server list (not shown), which may also be an XML document, typically contains a list of servers that are available on the network and that can provide general library and content information. In general, each server listed will be a mirror of the primary server (also included in the list).

[0052] Figs. 5a-g show examples of data structures of: a) an actual audio stream, b) a small digital audio file, c) a virtual stream descriptor, d) illustrations, e) advertising, f) a card catalog, and g) a server list, respectively. Fig. 6, which shows the structure relationships, demonstrates that the actual audio stream, illustration, advertisement, and cover art image structure (not shown) are each referenced as a target structure from the virtual audio stream descriptor. Each of the actual audio stream, illustration, and cover art image structures also contain a reference

identifier back to its parent structure. In contrast, the announcement structure (not shown) is functionally independent of other information bearing structures.

[0053] An embodiment of a process used to create an audio book library is shown in Fig. 7. The audio stream, in raw form, is acquired from either a publisher or is imported from an audio media or conversion routine. The raw files are analysed using natural language gaps and are segmented into the plurality of small digital audio files (i.e., segment files) that form the actual audio stream. Book cover art is imported and formatted, if required. The plurality of small digital audio files and cover art image are placed in a unique directory, which is local or at some remote URL. Audio stream information that describes the audio stream is manually entered using the library administrator utility to create a virtual audio stream descriptor for each audio stream. Information that describes the location and structure of the actual audio stream is provided using the audio stream profiler. The administrator utility is also used to build a series of integrated index files that make up the card catalog for the library, and to provide tools to maintain updates, server lists and announcements. Preferably, this master library is replicated on a number of mirror sites that are also made available on the network. Following updates to the master library, an automated verification utility ensures that network accessible copies of the library (i.e., the one or more mirror sites) are also updated to ensure the integrity of the system.

[0054] Referring to Fig. 8, the segmentation of the raw files is discussed in further detail. In a first step, 200, the list of original raw audio files is built in logical order. These files are processed one at a time. More specifically, after confirming the existence of a raw file 202, the raw file is opened 204, a segment file is opened 206, and a frame is obtained from the raw file 208. Assuming the frame does not correspond to the end of the raw file 210, and that the segment file has not reached an arbitrary minimum size 214 (e.g., 100 kilobytes), the frame is written to the segment file 216. After this limit is reached, audio frames are analysed looking for a period of silence or low decibel levels 218. If this period of silence is found, or if the upper size limit (e.g., 250 kilobytes) of the segment file is exceeded, the current segment file is closed 220 and a new output small audio file is opened 222. In the event that the unprocessed raw file content is less than a slack limit 212 (e.g., 25 kilobytes), the testing for silence and the upper limit testing is not performed and the remaining audio frames are written to the then current segment file. According to one embodiment, this method is used to find periods of silence

between chapters, paragraphs, sentences, phrases, words, and/or at punctuation marks. Optionally, the audio stream splitter/analyser 115 searches for long periods of silence, which are subsequently truncated. For example, periods of silence that exceed 2 seconds in length have been found to make users assume that a problem exists in the delivery or replay of the audio stream. In order to eliminate these user concerns, periods of silence that exceed 2 seconds in length can be truncated, and the audio content that has been truncated, discarded.

[0055] Referring again to Fig. 3, the client side includes a memory manager 152, a download manager (not shown), a media coordinator 154, and a media player 156. The memory manager 152 is a complex memory manager used to maintain the integrity of the actual audio stream, which is transferred from the server 100 to the client 150 using a standard transfer utility (e.g., FTP). The function of the memory manager 152 is to ensure that there is sufficient memory available to receive large numbers of small digital audio files, to ensure that sufficient audio content is available when needed, and to ensure that a quantity of already heard audio content is maintained (e.g., so a user can rewind the audio stream to review recently heard content without repeated downloads). The download manager is responsible for obtaining the small audio files that make up the audio stream. The media coordinator 154 delivers the plurality of small digital audio files in the appropriate order to the media player 156. The memory manager 152, download manager (not shown), and media coordinator 154, are all part of an integrated, network-based software product used to control the media player 156.

[0056] According to one embodiment, the software product is a user-friendly interface that allows the user to select an audio stream, to download a small digital audio file representing a selected part of the selected audio stream, to play the small digital audio file relatively quickly (e.g., within 2 to 5 seconds), and to download and play the logically next small digital audio file such that the transition between successive small audio files is apparently seamless.

[0057] According to one embodiment, the software product includes computer-readable code that allows the user to use a plurality of navigation buttons to access a network-based library card catalog, bookmarks, cover art images, and/or announcements/updates. As discussed above, a network-based library card catalog, which may index audio streams in a hierarchical fashion such that there are many possible paths to reach a single audio stream, is typically stored on a

network-based library for the navigation thereof. According to one embodiment, once the navigation button for the card catalogue is selected the user is able browse through a series of keywords describing a plurality of audio streams, to select an audio stream from the network based card catalogue, to load a profile of the selected audio stream, and/or to download the selected audio stream. According to one embodiment, the profile includes information obtained from the descriptive details entered into the virtual audio stream descriptor.

[0058] Bookmarks are external media marks (i.e., external to the virtual audio stream descriptor) that allow the user to identify and/or access an audio stream at any point within that audio stream. Similar to internal media marks, each bookmark provides a time offset from the beginning of the audio stream. In other words, if an audio stream starts at time zero and continues for some elapsed time to a maximum duration, the bookmark identifies a specific point in time in the audio stream that is offset from the beginning of that audio stream. The bookmark also identifies and/or points to the virtual audio stream descriptor of the target audio stream (e.g., in a local directory or at some network address). Using the time offset and the information in the virtual audio stream descriptor, the software product is able to select the appropriate small audio file to be played. Moreover, the exact position within the small audio file can also be calculated as a local offset to ensure correct positioning within that small audio file.

[0059] Bookmarks are typically, but not always, created by the client software. For example, if the media player is stopped in the middle of an audio stream, a bookmark is created and stored. Alternatively, the user creates a bookmark using a 'make bookmark' command. More than one bookmark may be created for each audio stream. The bookmark identifies the bookmarked audio stream and the time offset of the bookmarked position. Optionally, to assist the user of the audio stream in 'picking up where you left off', a predetermined time (e.g., 30 seconds) is subtracted from the time offset of the bookmarked position and stored as the new time offset. Optionally, the predetermined time is listener selectable. Fig. 9 shows an example of a data structure for an external bookmark, whereas Fig. 10 illustrates the structure relationships. Notably, the virtual audio stream descriptor may be addressed from either the integrated card catalog or the bookmark. Optionally, the virtual audio stream descriptor is addressed in another manner.

[0060] Since the bookmark only contains references to the audio stream, and does not contain any part of the audio stream itself, the bookmark can be transferred from client to client or from server to client without violating the copyright of the work product contained within the audio stream. For example, a user can bookmark an audio stream at an interesting point and e-mail that bookmark to friends without violating copyright. Clearly, the ability to position an audio stream at some arbitrary point without the need for that media to be resident provides great flexibility. Moreover, the nature of the bookmark makes it independent of the physical structure of the audio stream. This allows changes in media and format without corrupting the integrity of the mark or the audio stream. Examples of such changes include changing bit and scan rates in MP3 files, changing from MP3 to .wav format, changes to the actual audio stream, small audio file structure, and/or reformatting of the audio stream itself. According to one embodiment, the bookmark is an XML document.

[0061] The bookmark navigation button allows the user to view a list of bookmarks corresponding to open audio streams (e.g., a book that has been accessed and partially read), to select a bookmark, and to play the audio stream at the bookmarked position. For example, the software product may list the bookmarked audio streams in the descending order of the date and time that the audio steam was last read.

[0062] According to one embodiment, the software product includes computer-readable code that allows the user to use a plurality of standard player control buttons to begin playing the audio stream, stop playing the audio stream, and/or fast forward within the audio stream. Notably, the rewind and fast-forward control buttons do not actually act on the audio stream. Rather, these two functions are used to advance or retard the time offset that indicates the then current position in the audio stream. For example, rewind will cause this offset to decrease to a minimum of zero (e.g., seconds), whereas fast forward will increase the time offset to a maximum of the upper limit of the audio stream duration. Accordingly, the user is able to fast forward and rewind through the audio stream, even if the audio content is not resident. In particular, after the time offset has been adjusted to where the user desires, if the relevant small audio file is not resident, it is obtained from the library, again in the 2 to 5 second range. The small audio file is then loaded, positioned and played.

[0063] According to one embodiment, the software product includes computer-readable code that provides a number of different displays, including for example, a basic display, an introduction display, a bookmark display, a library card catalog display, a book details display, a book player display, and a book cover display. These displays provide appeal and/or familiarity to the user. For example, the basic display may provide a decorative skin or frame to standardize the appearance of the software product when played on different platforms (e.g., desktop, laptop, personal data assistant, cell phone, dedicated device, etc), whereas the introduction display may appear during the start up of the program. Other displays, such as the bookmark display, library card catalog display, and/or book details displays may provide the navigation buttons. The book player display may show the book that is currently loaded into the player, the book title, author, copyright, and/or book length. The book player display may also provide the standard player control buttons discussed above. Optionally, the book player provides a content level indicator, which is a measure of the amount of continuous content that is resident beyond the current position in the book, and/or a positive feedback feature, which is used to inform the user that the player is active. According to one embodiment, the navigation and/or control buttons are selected using standard data entry techniques, which for example, may use a mouse, keyboard, touch pad, and/or touch sensitive screen. If the latter is provided, a virtual keyboard is typically provided.

[0064] According to one embodiment, the software product also provides a number of other displays including a set-up display, a notes display, a quotations display, and/or a contact list display. The set-up display allows the user to enter/change user account name, password, default server information, DNS name of server, communication ports of the server, and/or secure sockets. The notes display allows the user to enter or select personal notes, which may be edited and/or e-mailed to other clients. In general, the note file may include a unique numerical identification of the audio stream, a tag to the audio stream, a user defined title, comments, the author of the comments, and/or the date and time the note was created. The quotation display allows the user to enter or select various quotations, which may also be edited and/or e-mailed to other clients. In general, the quotation file may include a unique numerical identification of the audio stream, the start and end point of the quotation in the audio stream, a user defined title, and user defined comments. The contact list display allows the user to maintain a list of names and e-mail address used by the software product.

[0065] According to one embodiment, the software product includes computer-readable code that provides client-based performance management. The performance level of the digital audio data delivery is an important factor in ensuring the integrity of the audio stream available to the user. The purpose of client-based performance management is to ensure that the client software receives service at or above minimum levels. According to one embodiment, this service is automated and is provided transparently to the user utilizing any then current available network resource to do so. In other words, the user is not aware of the source of the service or the mechanics of accessing that service.

[0066] For performance management purposes, the client software views the network and library server as a single entity. To ensure performance levels, the client software maintains statistics for service level for each library server. These server statistics are used when attempting to find the historically fastest server. This file is created and maintained in the client only. If service levels fall below a minimum acceptable level, the client software goes through the list of servers described above to determine which server has the best historical record of service. The client software selects this new server as the primary provider. Notably, using performance management may result in the user receiving small digital audio files from more than one server for the same audio stream.

[0067] The performance management logic is built into lower level functions that perform various network and library based functions. These include 1) Logging in to a server; 2) Obtaining a file from the server; 3) Obtaining file size and creation dates. Referring to Fig. 11, the initial steps taken by the client software are to load the list of servers 360 available for use and the historical transfer statistics 362. The fastest server from the list is then selected 364 as the primary server. If the server is not available or fails to respond, the next fastest server is selected. The process continues until a server is reached. If no servers are available, the default server entered is used. Servers that are found to be slow or are continually in error will have their transfer rate increased based on one of two values 366. The value is either the total elapsed time of the transaction with the server or an error value equal to a predetermined transaction delay (e.g., one minute). As time goes on, these operational statistics are aged 368 to reduce the effect of errors or network delays. Servers are slowly aged until such time as their statistics are not less than the average for all servers. The result of the aging process means that, assuming no

additional delays or errors, the operational average will decrease to some baseline average that will be greater than the fastest servers but still make the aged servers available in the future. With the then current fastest server established, that server is used as the target of all library operations. A connection must be established to the network in order to communicate. Each operation including, but not limited to login, get file and get file size are timed to see how long each transaction takes. This testing is built right into the lower level logic of the client software. In the event that a server is failed out as a result of error or degradation, a new server is selected to take its place. This server replacement occurs in the same manner that is customarily used for a non-fatal error. That is, the transaction is retried following the server replacement process without the upper levels of client software logic or the user becoming aware that it has occurred. In this way, the client software is able to balance network and server loads on the basis of performance without intervention from any other level.

[0068] According to one embodiment, the software product uses a universal ISBN server, which is designed to provide a simplified means to locate network-based library services from one or more suppliers on a network. The ISBN server may be located on the Internet for global access or on various intranets for use by various public or private organizations. The purpose of the ISBN server is to receive a request from a client device and return a list of one or more servers. The request from the client device will include a unique ISBN number or other unique identifier. The ISBN server will look up the unique identifier in a preloaded database and assemble or extract a list of servers capable of supporting library services for that identifier. This list is then returned to the client device. Upon receipt of the list of library servers, a selection is made from that list as the preferred provider of library service (e.g., as discussed with regards to client based performance management). The selected server is then accessed to acquire the virtual audio stream descriptor that goes with the unique identifier originally provided by the client.

[0069] Preferably, the software product, including the computer-readable code, is stored on a computer readable storage medium on the client side 150 of the system ~~150~~. The computer readable code is then used to access information structures and files that reside on one or more servers on the server side of the system 100 (e.g., within a server farm). Information transfer from client to server is accomplished using industry standard server software, tools and utilities. A summary of various types of information, structures or files is provided in Table 1.

Information Type	Content
Administrative	Contains information, structures and files that are used to facilitate access to media contained within the library and maintain the operational environment status of the client software.
Announcements	Contains announcements that could be used in a number of ways, typically to inform users and keep them up to date on current or upcoming events or news.
Server List	Contains the primary server site and a list of library mirror sites capable of maintaining audio stream continuity for the consumer in the event of degraded or interrupted service.
Performance History	Contains a list of historical throughput performance and failure rate metrics for the library primary and mirror sites. Present only on the client platform.
Updates	Contains the actual files and information needed to perform network-based updates while online using automated routines provided.
Catalog Index	Contains the cross-reference information needed to access subordinate catalog indexes and to access virtual audio stream descriptors.
Virtual Reference	Contains information, structures and files used to provide access to and delivery of specific audio streams.
Bookmark	Contains the information needed to restart a specific audio stream at a specific point.
Virtual Audio Stream Descriptor	Contains the information that describes all aspects of an audio stream and the information needed to access and use the actual audio stream.
Cover Art Image	Contains a graphic or image that is used to represent the entire audio stream to the user in their own mind similar to the task accomplished by the cover art graphics on a printed book.
Actual audio	Contains the actual media content and supportive graphics and/or audio/video content
Actual audio Stream	Contains one or more small audio files that comprise the entire audio stream and that when played in order form a seamless audio experience.
Illustrations	If present, contains one or more graphic, image, video or audio/video portions of multimedia content intended for use with and in support of the actual audio stream.
Ancillary	Contains other information, structures and files used in the delivery of content not considered actual content within audio streams.
Advertisements	If present, contains one or more graphic, image, video or audio/video portions of multimedia content intended to be used before, during and after presentation of any audio stream subject to the requirements described in the virtual audio stream descriptor.

Table 1. Various types of information, structures, and files

[0070] Fig. 12 shows the information, structures and files contained on the server side generally grouped by function. The same information, structures and files are grouped differently on the client side and, in particular, are grouped by their requirement for retention. More specifically, this schematic diagram illustrates that as information is transferred from the server to the client, it is typically organized based on the priorities defined for the memory manager. The structures used are considered more or less expendable subject to their content. Static structures contain information needed to establish and maintain connections with the servers on the network. The term static indicates that the structures, once defined, remain in place although the content thereof may change. The memory manager will preserve these structures at all costs. The volatile structures include those whose existence is short lived. The memory manager will balance the need for space with the need to retain content surrounding active bookmarks. As the demands for space increase, the content surrounding bookmarks becomes less and less. The structures that are considered dynamic are semi-permanent structures that typically exist for the duration that an audio stream remains open and bookmarked. The memory manager will make every effort to ensure that these structures are preserved, but may remove them as a final option to obtain space. Typically, the last structures to be purged are the oldest bookmark structures.

[0071] According to one embodiment, the static files are contained in a root directory, while the volatile files are contained in a spooler directory. A list of possible static and/or volatile files that may be used by the software product is provided in Table 2.

Filename(s)	**Contents**
Static Files	
Audio Pod Directory	The directory that contains all files that are static in their existence
Spooler Directory	The directory that contains all files that are volatile in their existence
AudioPod.exe	The Audio Pod executable image
AudioPod.xml	The Audio Pod startup initialization file; in XML format
UpdateManager.exe	The Audio Pod Update Manager executable image
ServerList.xml	The list of libraries, mirrors and servers that are available on the network as targets for the Audio Pod Performance/Load manager; in XML format
ServerStats.xml	The historical rate of response statistics for all library servers;

	in XML format
BookMarks.xml	The list of active bookmarks; in XML format
TheEnd.mp3	The audio stream to be played on completion of an audio stream (book)
ErrorAlert.mp3	The audio stream to play when the Audio Pod must attract the attention of the user while listening to another audio stream (book)
Volatile Files	
Small Audio Files	Audio files that make up the various open audio streams (book); in MP3 format
Cover Art Graphic Files	Graphic files that contain images of book covers; in jpg graphic format
Card Catalog Index Files	Files containing Card Catalog indexes; in XML format
Book Profiles	Files containing Book Profiles; in XML format
Announcement File	File containing a notice or announcement; in XML format
Update File	File containing components needed to perform an update to the Audio Pod and/or any of its' components

Table 2. List of Possible Static and Volatile Files

[0072] As discussed above, a memory purge process is used to remove volatile files to ensure that a requested level of free memory is made available. This process works directly on the contents of the spooler directory. The purging process takes different approaches when dealing with the active audio stream, bookmarked audio streams, and ancillary or support files. A demand for a significant quantity of memory is made at the opening of a new audio stream, or reopening a bookmarked audio stream. The size of the demand is subject to the ultimate size of memory available, the size of the audio stream being accessed and the volume of content from the subject audio stream that may already be resident. In the event that sufficient memory is not available, memory is purged in the following order.

1. Ancillary or support files that are considered volatile are removed from memory.
2. Virtual audio streams, supporting files and related audio content for any audio stream for which there is no bookmark are deleted.
3. Bookmarked audio streams are purged with increasing levels of severity until the memory demands are met.

4. The content of dynamic memory including virtual audio stream descriptors, and supporting files are deleted, starting with the oldest.

[0073] When purging bookmarked audio streams, the purging process attempts to retain as much resident content as is possible. The purge process focuses on the bookmark position within the audio stream. Some resident content is retained within the audio stream preceding the bookmarked position. This is to allow the user the ability to rewind the audio stream in an attempt to pick up where they left off. However, this quantity of content is not large and generally will not exceed 5 minutes. The main effort is to preserve as much resident content of the audio stream that follows the position. In order to satisfy the demand for memory, most, if not all, bookmarked audio streams will have some future content purged. In the event that sufficient memory cannot be obtained with an initial purge of content, the level of severity of the purge will be increased and the purge process repeated. The volume of resident content in the bookmarked audio streams is reduced. This reduction is most severe in content preceding bookmarked positions. As the levels of severity increase further, the quantity of content preceding the bookmarked positions prevents further gains through purging, and content that follows the bookmarked positions is aggressively purged. The purging process continues, reducing the quantity of content surrounding bookmarked positions until, at the ultimate extreme, no content remains. Under normal circumstances, the demand for memory will be met and this situation is expected never to arise. This process is shown in Fig. 13.

[0074] When the demand for memory is met, the selected audio stream becomes the focus of the purging process. The effort becomes one of ensuring that sufficient content is maintained around the current player position to ensure a continuous replay of the audio stream. As the player position approaches the end of available resident content, the current audio stream is purged to make room for additional content. Every attempt is made to preserve some content preceding the current player position to allow the user to rewind a few minutes to pick up the story in the event of interruption. Referring to Fig. 14, A shows the normally expected state of memory with already heard content purged and future content loaded as the player position approaches the end of resident content, whereas B-D shows the state of memory that may result when internal media marks, external bookmarks, rewind, or fast forward functions are used. In these situations, the media player position may be outside of resident content or may result in a discontinuity of

resident content. In each situation, the content that precedes the current player position typically is purged prior to purging any content that follows the current player position.

[0075] According to one embodiment of the instant invention, a method of using the software product to transmit digital audio data is described as follows. A user selects an audio stream. Examples of audio streams include audio books, magazines, newscasts, radio shows, lectures, museum tours, etc, or parts thereof. The audio stream typically is selected from a card catalog, a bookmark, or other means. In general, the actual audio format of the sound information is not important.

[0076] Once an audio stream has been selected, a demand is raised to the memory manager for enough space to work with the virtual audio stream descriptor (e.g., about 250K bytes). In normal operation, this quantity of memory is routinely expected to be available resulting in no action taken by the memory manager.

[0077] The software product ensures that the virtual audio stream descriptor has been downloaded. More specifically, the volatile memory is checked for the existence of this structure and, if it is not resident, it is downloaded. A demand is then raised to the memory manager for the lesser of two quantities of memory. The first value is 75 percent of available memory. The second is the ultimate size of the actual audio stream minus the amount of any memory currently consumed by any small audio files that may already be resident.

[0078] The desired position within the actual audio stream is then ascertained. The default position is assumed to correspond a time offset of zero. If the method of selection was a bookmark, or an internal media mark, then the offset position is obtained from that structure. The offset is validated to be in the range from zero to the maximum duration of the audio stream, a value obtained from the virtual audio stream descriptor. The time offset is compared against the list of small audio file metrics stored in the virtual audio stream descriptor. When the time offset falls between the start and end times of a specific small audio file, that small audio file is identified as the target small audio file. A local time offset is calculated by subtracting the start time of that small audio file from the time offset that was the subject of the search. This local offset is retained for use when positioning the target small audio file.

[0079] If the target small audio file is not resident, then it is downloaded. The small audio file is loaded into the media player and the media player is positioned to the calculated local time offset. When the media player is started, the download manager is signalled to commence operations. The download manager purges the current audio stream and then examines the virtual audio stream and the content of volatile memory. Small audio files are downloaded sequentially. When the end of the audio stream is reached, downloading stops. If memory is exhausted and the download manager indicates that enough continuous audio content is resident, downloading stops. Otherwise, a demand for additional memory is raised with the memory manager, and the process is repeated.

[0080] As the media player advances through the audio stream, the small audio files are successively loaded and played until the end of the audio stream is reached. The current position in the actual audio stream is tracked. If the current position in the actual audio stream approaches the end of resident audio content and the entire audio stream is not downloaded, then the current audio stream is purged to make memory available for new content, and the download manager is started. New content is downloaded until the end of the audio stream is reached or memory is exhausted. This process is repeated as often as is necessary. In this manner, the software product can process complete audio streams that exceed the size of memory available.

[0081] The small audio files are contained within a common spooling area. As the spooling area fills with small audio files, the quantity of unheard audio increases. This quantity is displayed to the user. As a result, the invention can continue to play through resident unheard small audio files even during periods when out of network contact with the library. The memory manager will detect when network service is restored and continue processing as normal.

[0082] If the media player is stopped, a bookmark is created and stored. The bookmark identifies the audio stream and the time offset of the bookmarked position. The offset value stored is the current position in the audio stream less an arbitrary time. This allows the listener to 'pick up the story' when the listener resumes the current audio stream. If the listener changes the time offset into the audio stream using the rewind and fast forward buttons, or any of the media marks that may be available, the new offset position is used to position the audio stream as described above.

[0083] When the end of the audio stream is reached, any bookmarks are removed from dynamic memory. Without a bookmark, the memory manager will purge the audio stream and all references at the next signal to commence operations.

[0084] This approach allows many audio streams to be opened and bookmarked at one time. Given the actual size of these large audio streams, it will be necessary to have a memory manager capable of ensuring sufficient space is available for the most active audio streams while preserving as much physical content surrounding active bookmarks as is possible. The need to preserve actual audio content around bookmarks becomes clear when considering levels of degradation associated with the acquisition of content across the network. The ultimate goal is to have as near zero delay as is possible when resuming an audio stream. Retaining sufficient media allows audio streams to start virtually instantly, and then acquire media content as needed.

[0085] Fig. 15 provides an overview of the memory manager process in greater detail. When activated, the memory manager first checks to see if there is sufficient audio content already resident (e.g., enough for about 5 minutes play time). If there is enough content, the remainder of the audio stream is resident or the download manager is running, then no action is taken. Otherwise, the memory manager purges the content of the audio spooler directory with the goal of freeing a specific amount of memory. With memory available, the memory manager signals the download manager to commence operations.

[0086] Fig. 16 provides an overview of an embodiment of a download manager process. The contents of the spooler directory are compared with the virtual audio stream descriptor and the user's current position in the audio stream. In particular, the spooler content is examined for the first small audio file that is needed to make the audio stream continuous beyond the then current position in the audio stream. If this file is missing, its size and the amount of available memory is obtained. This small audio file is then downloaded and the integrity of the file verified for size. The download manager continues to run until either memory is exhausted, or the end of the audio stream is reached. If the player is stopped while the download manager is running, the process stopping the player will stop the download manager.

[0087] Referring to Figs. 17, 18, and 19, process flow overviews for using the software product are provided. More specifically, Fig. 17 shows an embodiment of a general process for using the

software product, from start-up through various navigation steps and associated logic. A series of navigation buttons shown at the bottom of the diagram provide the user with the ability to navigate to various displays. Fig. 18 shows an embodiment of a process for using the standard control buttons. Fig. 19 shows an embodiment of a general process for loading the actual audio stream.

[0088] In summary, the software product provides the means to deliver large volume audio streams from a central library to the end user, to maintain bookmarks for each audio stream opened and being read regardless of the number of audio streams opened, to switch audio streams anywhere and anytime, to receive library based announcements and updates, to play spooled audio segments even when network service is unavailable, and to provide active management of network resources that balances load between the main library and all mirror sites on the network, and thus ensures fast, reliable service.

[0089] Of course, the above embodiments have been provided as examples only. It will be appreciated by those of ordinary skill in the art that various modifications, alternate configurations, and/or equivalents will be employed without departing from the spirit and scope of the invention. Accordingly, the scope of the invention is therefore intended to be limited solely by the scope of the appended claims.

TRANSMISSION OF DIGITAL AUDIO DATA

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is a continuation of U.S. Pat. Appl. No. 12/096,933 filed June 11, 2008, which was the National Stage of International Application No. PCT/CA2006/002046 filed December 12, 2006, which claims priority from US Pat. Appl. Ser. No. 60/749,632 filed December 13, 2005, all of which are hereby incorporated herein by reference in their entireties.

TECHNICAL FIELD

[0002] The present application relates generally to the transmission of digital audio data, and in particular, to a system, method, and computer-readable code for the delivery of digital audio data on demand.

BACKGROUND OF THE INVENTION

[0003] Traditionally, there have been two different approaches for delivering digital audio data. In the first approach, the digital audio data is mass downloaded. More specifically, and as shown schematically in Fig. 1, one or more files corresponding to an entire audio stream 10 is transmitted one frame 12 at a time from the server to the client. Once the entire audio stream 10 has been received and reassembled to form a continuous, contiguous audio stream, it is stored in storage 14 prior to being transmitted to a media player 16.

[0004] In the second approach, streaming technology is used to deliver the digital audio data 'just-in-time'. More specifically, and as shown schematically in Fig. 2, an entire audio stream 20 is transmitted one frame 22 at a time from the server to the client, where it is received and reassembled, in part, to provide a continuous, contiguous audio stream (i.e., a small portion of audio stream continuity is preserved). Once each frame is played by the media player 26, it is then discarded from the buffer.

[0005] Small audio streams, or audio-video streams, which for example correspond to individual songs, very short movies, and music videos, are typically transmitted using the first approach. In terms of the delivery of these smaller streams of media, the delays experienced by the users are

generally tolerated because they are relatively short in nature. Typically, time delays are measured as one or two minutes, and although possible, tend not to exceed this.

[0006] The delivery of larger audio streams, which for example include books and radio shows, presents a problem for the user community. Whereas a single song that plays for 4 minutes may take 1 minute to download, an audio book that plays for 12 hours may take 3 to 4 hours to download. Although the general performance is relatively the same in terms of throughput rate, users of this media complain about the hours of waiting to receive and use the media selected.

[0007] While streaming technology obviates the waiting associated with mass download, any degradation experienced in the delivery of the content in real time introduces interruptions in the audio stream, causing breaks and interruptions in the users experience of that audio stream. Moreover, since the digital audio data is not stored, repositioning within the audio stream (e.g., using rewind or fast forward functions) interrupts the just-in-time nature of content delivery, and thus, may introduce significant delays and/or be inefficient. For example, in the case of rewinding a streamed audio stream, the content associated with the new position selected in the audio stream will need to be downloaded a second time and the future content temporarily stored in the buffer will be discarded.

[0008] In both of the existing technologies, great effort is made to reassemble the audio stream into a continuous, contiguous audio stream prior to being presented to the media player. In the case of the mass download approach, the entire audio stream is downloaded and reassembled prior to use. In streaming technologies, a very small portion of the audio stream is downloaded and reassembled prior to use with additional content delivered and already played content discarded continuously, to maintain a very small portion of continuity in the audio stream. Notably, this reconstruction of the audio stream complicates the digital audio data delivery and increases delivery time.

[0009] In addition, in both of the existing technologies, the user has limited tracking options. For example, 'The Godfather' is an audio book that, as commercially released, contains 24 MP3 files that require 80 megabytes of storage and plays at normal speed for a total of almost 9 hours. In order to use these files with existing mass download technology, the user must manually keep track of which file is currently being listened to and where one is in that particular file.

[0010] Tracking problems also develop if the users audio player automatically changes files, if the user is listening to multiple audio streams and/or if the user listens to audio streams on more than one client device (e.g. if a user is listening to the audio stream at work and wants to resume play at home). It can be particularly difficult and time consuming for the user to resume listening to an audio stream at a specific position.

Summary of the Invention

[0011] The instant invention obviates some of the above-described disadvantages by segmenting an audio stream into a plurality of small digital audio files using gaps in the natural language of the audio stream. These small digital audio files are transmitted, loaded, and played, in a specific order, such that from the user's perspective, the audio stream is reproduced in an apparently seamless manner. Advantageously, this is done without reassembling the audio stream, either in whole or in part. Further advantageously, since the small digital audio files are created using natural language gaps, they can be sufficiently small to ensure that a first small digital audio file is downloaded and played without significant delay, while successive small digital audio files are downloaded to be played in the future. Accordingly, the user receives the audio-on-demand in a timely manner.

[0012] The instant invention further obviates some of the above-described disadvantages by providing a virtual audio stream descriptor, which includes a record of the position of each small digital audio file in the audio stream, to increase tracking options. More specifically, the virtual audio stream descriptor and one or more predetermined time offsets into the audio stream are used to position or reposition the audio stream at will. The predetermined time offsets are typically provided via internal media marks, external media marks, and/or rewind/fast-forward functions.

[0013] In accordance with one aspect of the instant invention there is provided a non-transitory computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to: send a request to a network-based server, the request including a unique identifier for identifying an audio stream; load a list of library servers received from the network-based server, the list of library servers determined in dependence upon the unique identifier; maintain service level statistics for each library server in the list of

library servers; select a first library server from the list of library servers in dependence upon the service level statistics, the first library server having a plurality of digital audio files, each digital audio file in the plurality of digital audio files including a different segment of the audio stream; and download a first digital audio file from the plurality of digital audio files for playback with a media player.

[0014] In accordance with one aspect of the instant invention there is provided a non-transitory computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to: determine a first position within an audio stream playing on a media player; determine a time offset using a point in time of the first position from a beginning of the audio stream; create a bookmark for the first position, the bookmark including a file, the file including a unique identifier for identifying the audio stream and including the time offset, wherein the bookmark is for positioning the audio stream to the first position using the time offset.

[0015] In accordance with one aspect of the instant invention there is provided a non-transitory computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to: download a first digital audio file stored in a library, the library connected to the computer via a network, the first digital audio file selected from a plurality of digital audio files stored in the library, each digital audio file in the plurality of digital audio files including a different segment of an audio stream, a size of each digital audio file in the plurality of digital audio files selected in dependence upon network throughput rates and to allow each digital audio file in the plurality of digital audio files to be downloaded and begin playing in less than about 5 seconds, the first digital audio file selected in dependence upon a predetermined position within the audio stream.

[0016] In accordance with another aspect of the instant invention there is provided a system for the transmission of digital audio data comprising: a server for storing audio streams, each audio stream stored as a plurality of small digital audio files, each small digital audio file corresponding to a segment of the corresponding audio stream bounded by natural language gaps in the audio stream; a client for playing selected audio streams stored on the server; and a network for connecting the server and the client and facilitating transmission of the small digital

audio files from the server to the client, wherein at least one of the server and the client provides a descriptor for each audio stream stored on the server, each descriptor including at least one of a start time, an end time, and a play time of the plurality of small digital audio files of the corresponding audio stream, each descriptor providing means for the client to begin play of the selected audio stream from any position therein without significant delay.

[0017] In accordance with another aspect of the instant invention there is provided a system a computer readable storage medium including computer readable code, which when executed by a computer, causes said computer to: download at least part of a selected audio stream stored on a network accessible server, the selected audio stream stored as a plurality of small digital audio files, each small digital audio file corresponding to a segment of the selected audio stream bounded by natural language gaps in the selected audio stream; and begin playing the downloaded audio stream using a media player without significant delay and such the transition between successive small digital audio files appears seamless to a user of the media player.

Brief Description of the Drawings

[0018] Further features and advantages of the present invention will become apparent from the following detailed description, taken in combination with the appended drawings, in which:

[0019] FIG. 1 is a schematic diagram showing the prior art mass download of an audio stream;

[0020] FIG. 2 is a schematic diagram showing prior art streaming of an audio stream;

[0021] FIG. 3 is a schematic diagram illustrating the transmission of an audio stream in accordance with one embodiment of the instant invention;

[0022] FIG. 4 is a schematic diagram of one embodiment of a network based library;

[0023] FIG. 5a shows an embodiment of an actual audio stream structure;

[0024] FIG. 5b shows an embodiment of a small digital audio file structure;

[0025] FIG. 5c shows an embodiment of a virtual audio stream descriptor structure;

[0026] FIG. 5d shows an embodiment of an illustration structure;

[0027] FIG. 5e shows an embodiment of an advertising structure;

[0028] FIG. 5f shows an embodiment of a catalog index structure;

[0029] FIG. 5g shows an embodiment of a server list structure;

[0030] FIG. 6 is a schematic diagram showing card catalog index structure relationships;

[0031] FIG. 7 is a schematic diagram illustrating one embodiment of a library creation process;

[0032] FIG. 8 is a schematic diagram illustrating one embodiment of an audio stream splitter process;

[0033] FIG. 9 shows an embodiment of a bookmark structure;

[0034] FIG. 10 is a schematic diagram showing virtual audio stream structure relationships;

[0035] FIG. 11 is a schematic diagram illustrating one embodiment of a performance management process;

[0036] FIG. 12 is a schematic diagram illustrating information transfer and client memory status;

[0037] FIG. 13 is a schematic diagram illustrating one embodiment of a bookmarked audio stream purge process;

[0038] FIG. 14 is a schematic diagram illustrating one embodiment of an active audio stream purging process;

[0039] FIG. 15 is a schematic diagram illustrating one embodiment of a memory manager process;

[0040] FIG. 16 is a schematic diagram illustrating one embodiment of a download manager process;

[0041] FIG. 17 is a flow diagram illustrating one embodiment of a process for using the software product;

[0042] FIG. 18 is a flow diagram illustrating one embodiment of the player control process; and

[0043] FIG. 19 is a flow diagram illustrating one embodiment of the general functional process.

[0044] It will be noted that throughout the appended drawings, like features are identified by like reference numerals.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

[0045] Referring to Fig. 3, there is shown a system for transmitting digital audio data in accordance with one embodiment of the instant invention. The system includes a server 100, a client 150, and a network (not shown) for connecting the server 100 and the client 150.

[0046] On the server side 100, an audio stream analyser 115 is provided for analysing large digital audio files 110 frame by frame 112, and for segmenting the large digital audio files 110 into a plurality of small audio files 122. More specifically, the audio stream analyser 115 locates areas of silence or low decibel levels, hereafter referred to as gaps, within the audio stream. When these natural language gaps are found, and after more than a specific amount of content has been processed, that content is written to a small audio file. This parsing process is repeated until the entire audio stream has been split, or segmented, into the plurality of small audio files 122. In general, the size of each small audio file is selected such that it can be transferred from the server 100 to the client 150 in a period of time that does not cause appreciable consternation on behalf of the user. For example, as a benchmark for success, this time frame is similar to that used in the telephone industry when a subscriber lifts a receiver and waits for a dial tone. Accordingly, a two second wait is considered to be close to the maximum tolerable delay, with the optimal target being in the sub-second range. The actual size range of the small audio files will be dependent on the network throughput rates. As a result, as network speed increases, the upper limit on the size of the segments will also increase.

[0047] The audio stream analyser 115 also analyses each small digital audio file to determine the start time, end time, and/or play time of the small digital audio file within the audio stream 110. This information is recorded in an index file 124 (e.g., an XML document). The index file 124, which is a virtual description of the actual audio stream, provides the information needed by a media player to reproduce the experience of a contiguous audio stream for the user without

reconstructing the audio stream. The term 'actual audio stream' as used herein, refers to the plurality of small digital audio files that comprise the entire audio stream, and that when played sequentially, provide an apparently seamless audio experience. According to one embodiment, each of the small digital audio files is named using a number (e.g., eight-digit decimal number) that indicates its logical order in the actual audio stream.

[0048] In addition to providing actual stream details (i.e., the information for locating and managing the plurality of small digital audio files), the virtual audio stream descriptor 124 also typically includes descriptive details used to describe the content of the audio stream, such as the title and/or ISBN. Optionally, the virtual audio stream descriptor 124 also includes internal media marks, illustrations related to the audio stream, and/or internal advertising. Internal media marks are used to identify a specific point in time in the audio stream that is offset from the beginning of the audio stream. More specifically, they generally point to a time offset associated with some user readable tag such as a table of contents, an index, a list of tables, a list of figures, footnotes, quotations, a list of illustrations, etc. Illustrations related to the audio stream and/or internal advertising may include graphics, static images, moving images, and/or other audio-visual content that is displayed for a fixed duration.

[0049] In general, the virtual audio stream descriptor 124 and the actual audio stream 122 will be stored together in a same location 120 on the server 100. For example, according to one embodiment the plurality of small audio files 122 and the virtual audio stream descriptor 124 are stored in a same directory of a library residing on one or more servers on the Internet. According to the embodiment illustrated in Fig. 4, the plurality of small audio files 122 and the virtual audio stream descriptor 124 are stored in the same library, but in different areas. More specifically, the virtual audio stream descriptors 124 are stored in an area for administrative files 144, whereas the plurality of small audio files 122 is stored in an area for actual audio streams 140. The area for actual audio streams 140 includes *n* directories for storing *n* audio streams, each with a corresponding cover art image. The cover art image, which is a graphic file, is intended to provide a user with a familiar look and feel of a book cover and/or to provide easy recognition. Optionally, one or more of the *n* directories is located at a remote URL.

[0050] The administrative files, which include the virtual audio stream descriptors 124, typically use the electronic equivalent of a card catalog to provide a simple, easy to use method of navigation and access of the actual audio streams. In general, these card catalog index files (e.g., XML documents) will include a hierarchical structure of cascading indexes that relate in various ways. For example, according to one embodiment the card catalogue will include indices based on keywords such as historical, detective, suspense, action, etc. The references contained in each index point to other index structures or to a specific virtual stream descriptor. Each index structure contains a reference to its parent index structure, thus allowing navigation in both directions (i.e., up and down the branch of hierarchy). Each media entry may appear within the structure of the entire index multiple times, to allow reference and/or navigation from many points. The structure of the index is such that endless navigation loops caused by circular definitions are not possible.

[0051] The administrative files also optionally include announcements, updates, and a server list (not shown). Announcements, which for example may be in an XML file, are typically informative or instructive in nature. The updates, which may include programs, data files, instruction files, setup files, and/or other text, typically contain information for providing a maintenance update. The server list (not shown), which may also be an XML document, typically contains a list of servers that are available on the network and that can provide general library and content information. In general, each server listed will be a mirror of the primary server (also included in the list).

[0052] Figs. 5a-g show examples of data structures of: a) an actual audio stream, b) a small digital audio file, c) a virtual stream descriptor, d) illustrations, e) advertising, f) a card catalog, and g) a server list, respectively. Fig. 6, which shows the structure relationships, demonstrates that the actual audio stream, illustration, advertisement, and cover art image structure (not shown) are each referenced as a target structure from the virtual audio stream descriptor. Each of the actual audio stream, illustration, and cover art image structures also contain a reference identifier back to its parent structure. In contrast, the announcement structure (not shown) is functionally independent of other information bearing structures.

[0053] An embodiment of a process used to create an audio book library is shown in Fig. 7. The audio stream, in raw form, is acquired from either a publisher or is imported from an audio media or conversion routine. The raw files are analysed using natural language gaps and are segmented into the plurality of small digital audio files (i.e., segment files) that form the actual audio stream. Book cover art is imported and formatted, if required. The plurality of small digital audio files and cover art image are placed in a unique directory, which is local or at some remote URL. Audio stream information that describes the audio stream is manually entered using the library administrator utility to create a virtual audio stream descriptor for each audio stream. Information that describes the location and structure of the actual audio stream is provided using the audio stream profiler. The administrator utility is also used to build a series of integrated index files that make up the card catalog for the library, and to provide tools to maintain updates, server lists and announcements. Preferably, this master library is replicated on a number of mirror sites that are also made available on the network. Following updates to the master library, an automated verification utility ensures that network accessible copies of the library (i.e., the one or more mirror sites) are also updated to ensure the integrity of the system.

[0054] Referring to Fig. 8, the segmentation of the raw files is discussed in further detail. In a first step, 200, the list of original raw audio files is built in logical order. These files are processed one at a time. More specifically, after confirming the existence of a raw file 202, the raw file is opened 204, a segment file is opened 206, and a frame is obtained from the raw file 208. Assuming the frame does not correspond to the end of the raw file 210, and that the segment file has not reached an arbitrary minimum size 214 (e.g., 100 kilobytes), the frame is written to the segment file 216. After this limit is reached, audio frames are analysed looking for a period of silence or low decibel levels 218. If this period of silence is found, or if the upper size limit (e.g., 250 kilobytes) of the segment file is exceeded, the current segment file is closed 220 and a new output small audio file is opened 222. In the event that the unprocessed raw file content is less than a slack limit 212 (e.g., 25 kilobytes), the testing for silence and the upper limit testing is not performed and the remaining audio frames are written to the then current segment file. According to one embodiment, this method is used to find periods of silence between chapters, paragraphs, sentences, phrases, words, and/or at punctuation marks. Optionally, the audio stream splitter/analyser 115 searches for long periods of silence, which are subsequently truncated. For example, periods of silence that exceed 2 seconds in length have

been found to make users assume that a problem exists in the delivery or replay of the audio stream. In order to eliminate these user concerns, periods of silence that exceed 2 seconds in length can be truncated, and the audio content that has been truncated, discarded.

[0055] Referring again to Fig. 3, the client side includes a memory manager 152, a download manager (not shown), a media coordinator 154, and a media player 156. The memory manager 152 is a complex memory manager used to maintain the integrity of the actual audio stream, which is transferred from the server 100 to the client 150 using a standard transfer utility (e.g., FTP). The function of the memory manager 152 is to ensure that there is sufficient memory available to receive large numbers of small digital audio files, to ensure that sufficient audio content is available when needed, and to ensure that a quantity of already heard audio content is maintained (e.g., so a user can rewind the audio stream to review recently heard content without repeated downloads). The download manager is responsible for obtaining the small audio files that make up the audio stream. The media coordinator 154 delivers the plurality of small digital audio files in the appropriate order to the media player 156. The memory manager 152, download manager (not shown), and media coordinator 154, are all part of an integrated, network-based software product used to control the media player 156.

[0056] According to one embodiment, the software product is a user-friendly interface that allows the user to select an audio stream, to download a small digital audio file representing a selected part of the selected audio stream, to play the small digital audio file relatively quickly (e.g., within 2 to 5 seconds), and to download and play the logically next small digital audio file such that the transition between successive small audio files is apparently seamless.

[0057] According to one embodiment, the software product includes computer-readable code that allows the user to use a plurality of navigation buttons to access a network-based library card catalog, bookmarks, cover art images, and/or announcements/updates. As discussed above, a network-based library card catalog, which may index audio streams in a hierarchical fashion such that there are many possible paths to reach a single audio stream, is typically stored on a network-based library for the navigation thereof. According to one embodiment, once the navigation button for the card catalogue is selected the user is able browse through a series of keywords describing a plurality of audio streams, to select an audio stream from the network

based card catalogue, to load a profile of the selected audio stream, and/or to download the selected audio stream. According to one embodiment, the profile includes information obtained from the descriptive details entered into the virtual audio stream descriptor.

[0058] Bookmarks are external media marks (i.e., external to the virtual audio stream descriptor) that allow the user to identify and/or access an audio stream at any point within that audio stream. Similar to internal media marks, each bookmark provides a time offset from the beginning of the audio stream. In other words, if an audio stream starts at time zero and continues for some elapsed time to a maximum duration, the bookmark identifies a specific point in time in the audio stream that is offset from the beginning of that audio stream. The bookmark also identifies and/or points to the virtual audio stream descriptor of the target audio stream (e.g., in a local directory or at some network address). Using the time offset and the information in the virtual audio stream descriptor, the software product is able to select the appropriate small audio file to be played. Moreover, the exact position within the small audio file can also be calculated as a local offset to ensure correct positioning within that small audio file.

[0059] Bookmarks are typically, but not always, created by the client software. For example, if the media player is stopped in the middle of an audio stream, a bookmark is created and stored. Alternatively, the user creates a bookmark using a 'make bookmark' command. More than one bookmark may be created for each audio stream. The bookmark identifies the bookmarked audio stream and the time offset of the bookmarked position. Optionally, to assist the user of the audio stream in 'picking up where you left off', a predetermined time (e.g., 30 seconds) is subtracted from the time offset of the bookmarked position and stored as the new time offset. Optionally, the predetermined time is listener selectable. Fig. 9 shows an example of a data structure for an external bookmark, whereas Fig. 10 illustrates the structure relationships. Notably, the virtual audio stream descriptor may be addressed from either the integrated card catalog or the bookmark. Optionally, the virtual audio stream descriptor is addressed in another manner.

[0060] Since the bookmark only contains references to the audio stream, and does not contain any part of the audio stream itself, the bookmark can be transferred from client to client or from server to client without violating the copyright of the work product contained within the audio

stream. For example, a user can bookmark an audio stream at an interesting point and e-mail that bookmark to friends without violating copyright. Clearly, the ability to position an audio stream at some arbitrary point without the need for that media to be resident provides great flexibility. Moreover, the nature of the bookmark makes it independent of the physical structure of the audio stream. This allows changes in media and format without corrupting the integrity of the mark or the audio stream. Examples of such changes include changing bit and scan rates in MP3 files, changing from MP3 to .wav format, changes to the actual audio stream, small audio file structure, and/or reformatting of the audio stream itself. According to one embodiment, the bookmark is an XML document.

[0061] The bookmark navigation button allows the user to view a list of bookmarks corresponding to open audio streams (e.g., a book that has been accessed and partially read), to select a bookmark, and to play the audio stream at the bookmarked position. For example, the software product may list the bookmarked audio streams in the descending order of the date and time that the audio steam was last read.

[0062] According to one embodiment, the software product includes computer-readable code that allows the user to use a plurality of standard player control buttons to begin playing the audio stream, stop playing the audio stream, and/or fast forward within the audio stream. Notably, the rewind and fast-forward control buttons do not actually act on the audio stream. Rather, these two functions are used to advance or retard the time offset that indicates the then current position in the audio stream. For example, rewind will cause this offset to decrease to a minimum of zero (e.g., seconds), whereas fast forward will increase the time offset to a maximum of the upper limit of the audio stream duration. Accordingly, the user is able to fast forward and rewind through the audio stream, even if the audio content is not resident. In particular, after the time offset has been adjusted to where the user desires, if the relevant small audio file is not resident, it is obtained from the library, again in the 2 to 5 second range. The small audio file is then loaded, positioned and played.

[0063] According to one embodiment, the software product includes computer-readable code that provides a number of different displays, including for example, a basic display, an introduction display, a bookmark display, a library card catalog display, a book details display, a

book player display, and a book cover display. These displays provide appeal and/or familiarity to the user. For example, the basic display may provide a decorative skin or frame to standardize the appearance of the software product when played on different platforms (e.g., desktop, laptop, personal data assistant, cell phone, dedicated device, etc), whereas the introduction display may appear during the start up of the program. Other displays, such as the bookmark display, library card catalog display, and/or book details displays may provide the navigation buttons. The book player display may show the book that is currently loaded into the player, the book title, author, copyright, and/or book length. The book player display may also provide the standard player control buttons discussed above. Optionally, the book player provides a content level indicator, which is a measure of the amount of continuous content that is resident beyond the current position in the book, and/or a positive feedback feature, which is used to inform the user that the player is active. According to one embodiment, the navigation and/or control buttons are selected using standard data entry techniques, which for example, may use a mouse, keyboard, touch pad, and/or touch sensitive screen. If the latter is provided, a virtual keyboard is typically provided.

[0064] According to one embodiment, the software product also provides a number of other displays including a set-up display, a notes display, a quotations display, and/or a contact list display. The set-up display allows the user to enter/change user account name, password, default server information, DNS name of server, communication ports of the server, and/or secure sockets. The notes display allows the user to enter or select personal notes, which may be edited and/or e-mailed to other clients. In general, the note file may include a unique numerical identification of the audio stream, a tag to the audio stream, a user defined title, comments, the author of the comments, and/or the date and time the note was created. The quotation display allows the user to enter or select various quotations, which may also be edited and/or e-mailed to other clients. In general, the quotation file may include a unique numerical identification of the audio stream, the start and end point of the quotation in the audio stream, a user defined title, and user defined comments. The contact list display allows the user to maintain a list of names and e-mail address used by the software product.

[0065] According to one embodiment, the software product includes computer-readable code that provides client-based performance management. The performance level of the digital audio

data delivery is an important factor in ensuring the integrity of the audio stream available to the user. The purpose of client-based performance management is to ensure that the client software receives service at or above minimum levels. According to one embodiment, this service is automated and is provided transparently to the user utilizing any then current available network resource to do so. In other words, the user is not aware of the source of the service or the mechanics of accessing that service.

[0066] For performance management purposes, the client software views the network and library server as a single entity. To ensure performance levels, the client software maintains statistics for service level for each library server. These server statistics are used when attempting to find the historically fastest server. This file is created and maintained in the client only. If service levels fall below a minimum acceptable level, the client software goes through the list of servers described above to determine which server has the best historical record of service. The client software selects this new server as the primary provider. Notably, using performance management may result in the user receiving small digital audio files from more than one server for the same audio stream.

[0067] The performance management logic is built into lower level functions that perform various network and library based functions. These include 1) Logging in to a server; 2) Obtaining a file from the server; 3) Obtaining file size and creation dates. Referring to Fig. 11, the initial steps taken by the client software are to load the list of servers 360 available for use and the historical transfer statistics 362. The fastest server from the list is then selected 364 as the primary server. If the server is not available or fails to respond, the next fastest server is selected. The process continues until a server is reached. If no servers are available, the default server entered is used. Servers that are found to be slow or are continually in error will have their transfer rate increased based on one of two values 366. The value is either the total elapsed time of the transaction with the server or an error value equal to a predetermined transaction delay (e.g., one minute). As time goes on, these operational statistics are aged 368 to reduce the effect of errors or network delays. Servers are slowly aged until such time as their statistics are not less than the average for all servers. The result of the aging process means that, assuming no additional delays or errors, the operational average will decrease to some baseline average that will be greater than the fastest servers but still make the aged servers available in the future.

With the then current fastest server established, that server is used as the target of all library operations. A connection must be established to the network in order to communicate. Each operation including, but not limited to login, get file and get file size are timed to see how long each transaction takes. This testing is built right into the lower level logic of the client software. In the event that a server is failed out as a result of error or degradation, a new server is selected to take its place. This server replacement occurs in the same manner that is customarily used for a non-fatal error. That is, the transaction is retried following the server replacement process without the upper levels of client software logic or the user becoming aware that it has occurred. In this way, the client software is able to balance network and server loads on the basis of performance without intervention from any other level.

[0068] According to one embodiment, the software product uses a universal ISBN server, which is designed to provide a simplified means to locate network-based library services from one or more suppliers on a network. The ISBN server may be located on the Internet for global access or on various intranets for use by various public or private organizations. The purpose of the ISBN server is to receive a request from a client device and return a list of one or more servers. The request from the client device will include a unique ISBN number or other unique identifier. The ISBN server will look up the unique identifier in a preloaded database and assemble or extract a list of servers capable of supporting library services for that identifier. This list is then returned to the client device. Upon receipt of the list of library servers, a selection is made from that list as the preferred provider of library service (e.g., as discussed with regards to client based performance management). The selected server is then accessed to acquire the virtual audio stream descriptor that goes with the unique identifier originally provided by the client.

[0069] Preferably, the software product, including the computer-readable code, is stored on a computer readable storage medium on the client side 150 of the system. The computer readable code is then used to access information structures and files that reside on one or more servers on the server side of the system 100 (e.g., within a server farm). Information transfer from client to server is accomplished using industry standard server software, tools and utilities. A summary of various types of information, structures or files is provided in Table 1.

Information Type	Content
Administrative	Contains information, structures and files that are used to facilitate access to media contained within the library and maintain the operational environment status of the client software.
Announcements	Contains announcements that could be used in a number of ways, typically to inform users and keep them up to date on current or upcoming events or news.
Server List	Contains the primary server site and a list of library mirror sites capable of maintaining audio stream continuity for the consumer in the event of degraded or interrupted service.
Performance History	Contains a list of historical throughput performance and failure rate metrics for the library primary and mirror sites. Present only on the client platform.
Updates	Contains the actual files and information needed to perform network-based updates while online using automated routines provided.
Catalog Index	Contains the cross-reference information needed to access subordinate catalog indexes and to access virtual audio stream descriptors.
Virtual Reference	Contains information, structures and files used to provide access to and delivery of specific audio streams.
Bookmark	Contains the information needed to restart a specific audio stream at a specific point.
Virtual Audio Stream Descriptor	Contains the information that describes all aspects of an audio stream and the information needed to access and use the actual audio stream.
Cover Art Image	Contains a graphic or image that is used to represent the entire audio stream to the user in their own mind similar to the task accomplished by the cover art graphics on a printed book.
Actual audio	Contains the actual media content and supportive graphics and/or audio/video content
Actual audio Stream	Contains one or more small audio files that comprise the entire audio stream and that when played in order form a seamless audio experience.
Illustrations	If present, contains one or more graphic, image, video or audio/video portions of multimedia content intended for use with and in support of the actual audio stream.
Ancillary	Contains other information, structures and files used in the delivery of content not considered actual content within audio streams.
Advertisements	If present, contains one or more graphic, image, video or audio/video portions of multimedia content intended to be used before, during and after presentation of any audio stream subject to the requirements described in the virtual audio stream descriptor.

Table 1. Various types of information, structures, and files

[0070] Fig. 12 shows the information, structures and files contained on the server side generally grouped by function. The same information, structures and files are grouped differently on the client side and, in particular, are grouped by their requirement for retention. More specifically, this schematic diagram illustrates that as information is transferred from the server to the client, it is typically organized based on the priorities defined for the memory manager. The structures used are considered more or less expendable subject to their content. Static structures contain information needed to establish and maintain connections with the servers on the network. The term static indicates that the structures, once defined, remain in place although the content thereof may change. The memory manager will preserve these structures at all costs. The volatile structures include those whose existence is short lived. The memory manager will balance the need for space with the need to retain content surrounding active bookmarks. As the demands for space increase, the content surrounding bookmarks becomes less and less. The structures that are considered dynamic are semi-permanent structures that typically exist for the duration that an audio stream remains open and bookmarked. The memory manager will make every effort to ensure that these structures are preserved, but may remove them as a final option to obtain space. Typically, the last structures to be purged are the oldest bookmark structures.

[0071] According to one embodiment, the static files are contained in a root directory, while the volatile files are contained in a spooler directory. A list of possible static and/or volatile files that may be used by the software product is provided in Table 2.

Filename(s)	**Contents**
Static Files	
Audio Pod Directory	The directory that contains all files that are static in their existence
Spooler Directory	The directory that contains all files that are volatile in their existence
AudioPod.exe	The Audio Pod executable image
AudioPod.xml	The Audio Pod startup initialization file; in XML format
UpdateManager.exe	The Audio Pod Update Manager executable image
ServerList.xml	The list of libraries, mirrors and servers that are available on the network as targets for the Audio Pod Performance/Load manager; in XML format
ServerStats.xml	The historical rate of response statistics for all library servers; in XML format
BookMarks.xml	The list of active bookmarks; in XML format

TheEnd.mp3	The audio stream to be played on completion of an audio stream (book)
ErrorAlert.mp3	The audio stream to play when the Audio Pod must attract the attention of the user while listening to another audio stream (book)
Volatile Files	
Small Audio Files	Audio files that make up the various open audio streams (book); in MP3 format
Cover Art Graphic Files	Graphic files that contain images of book covers; in jpg graphic format
Card Catalog Index Files	Files containing Card Catalog indexes; in XML format
Book Profiles	Files containing Book Profiles; in XML format
Announcement File	File containing a notice or announcement; in XML format
Update File	File containing components needed to perform an update to the Audio Pod and/or any of its' components

Table 2. List of Possible Static and Volatile Files

[0072] As discussed above, a memory purge process is used to remove volatile files to ensure that a requested level of free memory is made available. This process works directly on the contents of the spooler directory. The purging process takes different approaches when dealing with the active audio stream, bookmarked audio streams, and ancillary or support files. A demand for a significant quantity of memory is made at the opening of a new audio stream, or reopening a bookmarked audio stream. The size of the demand is subject to the ultimate size of memory available, the size of the audio stream being accessed and the volume of content from the subject audio stream that may already be resident. In the event that sufficient memory is not available, memory is purged in the following order.

1. Ancillary or support files that are considered volatile are removed from memory.

2. Virtual audio streams, supporting files and related audio content for any audio stream for which there is no bookmark are deleted.

3. Bookmarked audio streams are purged with increasing levels of severity until the memory demands are met.

4. The content of dynamic memory including virtual audio stream descriptors, and supporting files are deleted, starting with the oldest.

[0073] When purging bookmarked audio streams, the purging process attempts to retain as much resident content as is possible. The purge process focuses on the bookmark position within the audio stream. Some resident content is retained within the audio stream preceding the bookmarked position. This is to allow the user the ability to rewind the audio stream in an attempt to pick up where they left off. However, this quantity of content is not large and generally will not exceed 5 minutes. The main effort is to preserve as much resident content of the audio stream that follows the position. In order to satisfy the demand for memory, most, if not all, bookmarked audio streams will have some future content purged. In the event that sufficient memory cannot be obtained with an initial purge of content, the level of severity of the purge will be increased and the purge process repeated. The volume of resident content in the bookmarked audio streams is reduced. This reduction is most severe in content preceding bookmarked positions. As the levels of severity increase further, the quantity of content preceding the bookmarked positions prevents further gains through purging, and content that follows the bookmarked positions is aggressively purged. The purging process continues, reducing the quantity of content surrounding bookmarked positions until, at the ultimate extreme, no content remains. Under normal circumstances, the demand for memory will be met and this situation is expected never to arise. This process is shown in Fig. 13.

[0074] When the demand for memory is met, the selected audio stream becomes the focus of the purging process. The effort becomes one of ensuring that sufficient content is maintained around the current player position to ensure a continuous replay of the audio stream. As the player position approaches the end of available resident content, the current audio stream is purged to make room for additional content. Every attempt is made to preserve some content preceding the current player position to allow the user to rewind a few minutes to pick up the story in the event of interruption. Referring to Fig. 14, A shows the normally expected state of memory with already heard content purged and future content loaded as the player position approaches the end of resident content, whereas B-D shows the state of memory that may result when internal media marks, external bookmarks, rewind, or fast forward functions are used. In these situations, the media player position may be outside of resident content or may result in a discontinuity of resident content. In each situation, the content that precedes the current player position typically is purged prior to purging any content that follows the current player position.

[0075] According to one embodiment of the instant invention, a method of using the software product to transmit digital audio data is described as follows. A user selects an audio stream. Examples of audio streams include audio books, magazines, newscasts, radio shows, lectures, museum tours, etc, or parts thereof. The audio stream typically is selected from a card catalog, a bookmark, or other means. In general, the actual audio format of the sound information is not important.

[0076] Once an audio stream has been selected, a demand is raised to the memory manager for enough space to work with the virtual audio stream descriptor (e.g., about 250K bytes). In normal operation, this quantity of memory is routinely expected to be available resulting in no action taken by the memory manager.

[0077] The software product ensures that the virtual audio stream descriptor has been downloaded. More specifically, the volatile memory is checked for the existence of this structure and, if it is not resident, it is downloaded. A demand is then raised to the memory manager for the lesser of two quantities of memory. The first value is 75 percent of available memory. The second is the ultimate size of the actual audio stream minus the amount of any memory currently consumed by any small audio files that may already be resident.

[0078] The desired position within the actual audio stream is then ascertained. The default position is assumed to correspond a time offset of zero. If the method of selection was a bookmark, or an internal media mark, then the offset position is obtained from that structure. The offset is validated to be in the range from zero to the maximum duration of the audio stream, a value obtained from the virtual audio stream descriptor. The time offset is compared against the list of small audio file metrics stored in the virtual audio stream descriptor. When the time offset falls between the start and end times of a specific small audio file, that small audio file is identified as the target small audio file. A local time offset is calculated by subtracting the start time of that small audio file from the time offset that was the subject of the search. This local offset is retained for use when positioning the target small audio file.

[0079] If the target small audio file is not resident, then it is downloaded. The small audio file is loaded into the media player and the media player is positioned to the calculated local time offset. When the media player is started, the download manager is signalled to commence

operations. The download manager purges the current audio stream and then examines the virtual audio stream and the content of volatile memory. Small audio files are downloaded sequentially. When the end of the audio stream is reached, downloading stops. If memory is exhausted and the download manager indicates that enough continuous audio content is resident, downloading stops. Otherwise, a demand for additional memory is raised with the memory manager, and the process is repeated.

[0080] As the media player advances through the audio stream, the small audio files are successively loaded and played until the end of the audio stream is reached. The current position in the actual audio stream is tracked. If the current position in the actual audio stream approaches the end of resident audio content and the entire audio stream is not downloaded, then the current audio stream is purged to make memory available for new content, and the download manager is started. New content is downloaded until the end of the audio stream is reached or memory is exhausted. This process is repeated as often as is necessary. In this manner, the software product can process complete audio streams that exceed the size of memory available.

[0081] The small audio files are contained within a common spooling area. As the spooling area fills with small audio files, the quantity of unheard audio increases. This quantity is displayed to the user. As a result, the invention can continue to play through resident unheard small audio files even during periods when out of network contact with the library. The memory manager will detect when network service is restored and continue processing as normal.

[0082] If the media player is stopped, a bookmark is created and stored. The bookmark identifies the audio stream and the time offset of the bookmarked position. The offset value stored is the current position in the audio stream less an arbitrary time. This allows the listener to 'pick up the story' when the listener resumes the current audio stream. If the listener changes the time offset into the audio stream using the rewind and fast forward buttons, or any of the media marks that may be available, the new offset position is used to position the audio stream as described above.

[0083] When the end of the audio stream is reached, any bookmarks are removed from dynamic memory. Without a bookmark, the memory manager will purge the audio stream and all references at the next signal to commence operations.

[0084] This approach allows many audio streams to be opened and bookmarked at one time. Given the actual size of these large audio streams, it will be necessary to have a memory manager capable of ensuring sufficient space is available for the most active audio streams while preserving as much physical content surrounding active bookmarks as is possible. The need to preserve actual audio content around bookmarks becomes clear when considering levels of degradation associated with the acquisition of content across the network. The ultimate goal is to have as near zero delay as is possible when resuming an audio stream. Retaining sufficient media allows audio streams to start virtually instantly, and then acquire media content as needed.

[0085] Fig. 15 provides an overview of the memory manager process in greater detail. When activated, the memory manager first checks to see if there is sufficient audio content already resident (e.g., enough for about 5 minutes play time). If there is enough content, the remainder of the audio stream is resident or the download manager is running, then no action is taken. Otherwise, the memory manager purges the content of the audio spooler directory with the goal of freeing a specific amount of memory. With memory available, the memory manager signals the download manager to commence operations.

[0086] Fig. 16 provides an overview of an embodiment of a download manager process. The contents of the spooler directory are compared with the virtual audio stream descriptor and the user's current position in the audio stream. In particular, the spooler content is examined for the first small audio file that is needed to make the audio stream continuous beyond the then current position in the audio stream. If this file is missing, its size and the amount of available memory is obtained. This small audio file is then downloaded and the integrity of the file verified for size. The download manager continues to run until either memory is exhausted, or the end of the audio stream is reached. If the player is stopped while the download manager is running, the process stopping the player will stop the download manager.

[0087] Referring to Figs. 17, 18, and 19, process flow overviews for using the software product are provided. More specifically, Fig. 17 shows an embodiment of a general process for using the software product, from start-up through various navigation steps and associated logic. A series of navigation buttons shown at the bottom of the diagram provide the user with the ability to navigate to various displays. Fig. 18 shows an embodiment of a process for using the standard

control buttons. Fig. 19 shows an embodiment of a general process for loading the actual audio stream.

[0088] In summary, the software product provides the means to deliver large volume audio streams from a central library to the end user, to maintain bookmarks for each audio stream opened and being read regardless of the number of audio streams opened, to switch audio streams anywhere and anytime, to receive library based announcements and updates, to play spooled audio segments even when network service is unavailable, and to provide active management of network resources that balances load between the main library and all mirror sites on the network, and thus ensures fast, reliable service.

[0089] Of course, the above embodiments have been provided as examples only. It will be appreciated by those of ordinary skill in the art that various modifications, alternate configurations, and/or equivalents will be employed without departing from the spirit and scope of the invention. Accordingly, the scope of the invention is therefore intended to be limited solely by the scope of the appended claims.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE PATENT APPLICATION OF: McCue et al.		**OUR FILE NO:**	**141-1 US/PCT CON**
SERIAL NUMBER:	**New Application**	**GROUP:**	**New Application**
FILED:	**New Application**	**EXAMINER:**	**New Application**

TITLE: TRANSMISSION OF DIGITAL AUDIO DATA

Information Disclosure Statement #2

August 17, 2012

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

Dear Sir:

Transmitted herewith is an Information Disclosure Statement (Form PTO-1449A) in the above-captioned application with references. In accordance with current USPTO procedures published 05 AUG 2003, in 1276 OG 55, copies of the U.S. patent documents cited in the form 1449 are not attached.

Certification

X_____ This Information Disclosure Statement is submitted within three months of:

(i) the filing date of the above-identified U.S .National Patent application, or
(ii) the date of entry into the U.S. National Stage of the above-identified International Application, or
(iii) the date of entry into the U.S. National Stage of the International Application that has been assigned the above-identified U.S. Patent application number, whichever applies.

_____ This Information Disclosure Statement is submitted prior to the mailing date of the first Office Action on the merits received by Applicant in the above-identified application.

_____ This Information Disclosure Statement is submitted after three months from

(i) the filing date of the above-identified U.S. National Patent application, or
(ii) after three months from entry into the U.S. National Stage of the above-identified International Application; or
(iii) the date of entry into the U.S. National Stage of the International Application that has been assigned the above-identified U.S. Patent application number, whichever applies; and after the mailing date of the first Office Action on the merits of the above-identified application, but prior to issuance of the earlier of any Final Action or Notice of Allowance sent in such application. The certification under 37 C.F.R. §1.97(e) is submitted separately or below, or the fee required under 37 C.F.R. §1.97(c) and § 1.17(p) is submitted herewith.

_____ This Information Disclosure Statement is submitted after the earlier of the mailing date of a final rejection or Notice of Allowance sent in this application but before payment of the Issue Fee. The certification required under 37 C.F.R. § 1.97(e) is submitted separately or below. A petition to the Commissioner and the appropriate fee pursuant to §1.17(i) (1) are submitted herewith.

_____ A certification under 37 C.F.R §1.97 is submitted herewith separately from this paper.

_____ It is hereby certified that each item of information contained in this statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement.

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

The Commissioner is hereby authorized to charge any fees which may be required to our VISA Account.

The Commissioner is hereby authorized to charge any further fees which may be required, or credit any overpayment to Deposit Account No: 50-2810.

Please associate this application with Customer No: 24949

Yours very truly,

Neil Teitelbaum
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Form PTO 1449A U.S. Department of Commerce Patent and Trademark Office Information Disclosure Statement by Applicant	ATTY. DOCKET NUMBER: 141-1 US/PCT CON	SERIAL NUMBER: New Application
	APPLICANT: McCue et al.	
	FILING DATE: New Application	GROUP: New Application

U.S. Patent Documents

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILIN APPL
		20070067267	Mar 22, 2007	Ives	1	1	
		20090171750	Jul 2, 2009	Zhou et al	705	14.53	

Foreign Patent Documents

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO

Other Documents (Including Author, Title, Date Pertinent Pages, Etc.)

		EPUB Media Overlays 3.0", International Digital Publishing Forum, (http://idpf.org/epub/30/spec/epub30-mediaoverlays-20110516.html), 16 May 2011

EXAMINER	DATE CONSIDERED

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

Electronic Patent Application Fee Transmittal

Application Number:	
Filing Date:	
Title of Invention:	TRANSMISSION OF DIGITAL AUDIO DATA
First Named Inventor/Applicant Name:	John McCue
Filer:	Neil Teitelbaum/Melanie Budarick
Attorney Docket Number:	141-1 US/PCT CON

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Utility filing Fee (Electronic filing)	4011	1	95	95
Utility Search Fee	2111	1	310	310
Utility Examination Fee	2311	1	125	125
Pages:				
Claims:				
Claims in excess of 20	2202	2	30	60
Miscellaneous-Filing:				
Petition:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**590**

Electronic Acknowledgement Receipt	
EFS ID:	13521317
Application Number:	13588084
International Application Number:	
Confirmation Number:	4986
Title of Invention:	TRANSMISSION OF DIGITAL AUDIO DATA
First Named Inventor/Applicant Name:	John McCue
Customer Number:	24949
Filer:	Neil Teitelbaum/Melanie Budarick
Filer Authorized By:	Neil Teitelbaum
Attorney Docket Number:	141-1 US/PCT CON
Receipt Date:	17-AUG-2012
Filing Date:	
Time Stamp:	11:53:36
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$590
RAM confirmation Number	8587
Deposit Account	502810
Authorized User	BUDARICK,MELANIE
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

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Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal of New Application	141-1USPCTCONApplnCoverLtr.pdf	114675 cf1ed5108a97c419fbe52d28098adb3b6b063898	no	2
Warnings:					
Information:					
2	Oath or Declaration filed	141-1USPCTCONDeclarationSigned.pdf	61437 18e63602a98d7b89f553d912859395419582 1e66	no	3
Warnings:					
Information:					
3		141-1USPCTCONSpecificationfromParent.pdf	207414 6e8a76ce1eb4fc36d4fcf8461b73e7635efb07a4	yes	33

Multipart Description/PDF files in .zip description

Document Description	Start	End
Specification	1	24
Claims	25	32
Abstract	33	33

Warnings:					
Information:					
4	Drawings-only black and white line drawings	141-1USPCTCONFiguresFinal.pdf	147686 c431861af6440a08f45a3e4fbaddd7bd04687b5c	no	15
Warnings:					
Information:					
5		141-1USPCTCONPreliminaryamendment.pdf	91264 6c81b861e2c5a08004858b462956d4e2ab645e30	yes	8

Multipart Description/PDF files in .zip description

Document Description	Start	End
Preliminary Amendment	1	2
Claims	3	7

	Applicant Arguments/Remarks Made in an Amendment		8	8	
Warnings:					
Information:					
6	Specification	141-1USPCTCONSpecificationshowingamendments.pdf	197017 00e2de0c0c58be020be26b5c27623d7a9bedae08	no	25
Warnings:					
Information:					
7	Specification	141-1USPCTCONSpecificationCleanVersion.pdf	175604 15d0e75cbd2f1fa85ec2b616b8dc219456b9c223	no	24
Warnings:					
Information:					
8	Information Disclosure Statement (IDS) Form (SB08)	141-1USPCTCONIDS1.pdf	121378 bee38e19e76b99c470bde5b4fd9daeba06a2dc4a	no	4
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
9	Information Disclosure Statement (IDS) Form (SB08)	141-1USPCTCONIDS2.pdf	116629 4f4c6f35123f4f8d8ee2ef802035b39d52f23481	no	3
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
10	Non Patent Literature	EPUBMediaOverlays30.pdf	584080 4252b10eb45e0400d4bc5de6d6facfa77f8162d1	no	35
Warnings:					
Information:					
11	Fee Worksheet (SB06)	fee-info.pdf	36598 77dc53d016dce11a1d3cb4fd4f87daa5b995a9bc	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1853782		

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE PATENT APPLICATION OF: McCue et al.		**OUR FILE NO:**	**141-1 US/PCT CON**
SERIAL NUMBER:	**New Application**	**GROUP:**	**New Application**
FILED:	**New Application**	**EXAMINER:**	**New Application**

TITLE: TRANSMISSION OF DIGITAL AUDIO DATA

Information Disclosure Statement #1

August 17, 2012

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

Dear Sir:

Attached is a Form PTO-1449 listing several references for consideration in the examination of the above-identified application. A copy of each reference may be found in parent application, Serial No: 12/096,933 filed on June 11, 2008. It is requested that these references be considered by the Examiner and officially made of record in accordance with the provisions of 37 CFR 1.97 and Section 609 of the MPEP.

Certification

X This Information Disclosure Statement is submitted within three months of:

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(ii) the date of entry into the U.S. National Stage of the above-identified International Application, or
(iii) the date of entry into the U.S. National Stage of the International Application that has been assigned the above-identified U.S. Patent application number, whichever applies.

_____ This Information Disclosure Statement is submitted prior to the mailing date of the first Office Action on the merits received by Applicant in the above-identified application.

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(i) the filing date of the above-identified U.S. National Patent application, or
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(iii) the date of entry into the U.S. National Stage of the International Application that has been assigned the above-identified U.S. Patent application number, whichever applies; and after the mailing date of the first Office Action on the merits of the above-identified application, but prior to issuance of the earlier of any Final Action or Notice of Allowance sent in such application. The certification under 37 C.F.R. §1.97(e) is submitted separately or below, or the fee required under 37 C.F.R. §1.97(c) and § 1.17(p) is submitted herewith.

_____ This Information Disclosure Statement is submitted after the earlier of the mailing date of a final rejection or Notice of Allowance sent in this application but before payment of the Issue Fee. The certification required under 37 C.F.R. § 1.97(e) is submitted separately or below. A petition to the Commissioner and the appropriate fee pursuant to §1.17(i) (1) are submitted herewith.

_____ A certification under 37 C.F.R §1.97 is submitted herewith separately from this paper.

_____ It is hereby certified that each item of information contained in this statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement.

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

The Commissioner is hereby authorized to charge any fees which may be required to our VISA Account.

The Commissioner is hereby authorized to charge any further fees which may be required, or credit any overpayment to Deposit Account No: 50-2810.

Please associate this application with Customer No: 24949

Yours very truly,

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Form PTO 1449A U.S. Department of Commerce Patent and Trademark Office Information Disclosure Statement by Applicant	ATTY. DOCKET NUMBER: 141-1 US/PCT CON	SERIAL NUMBER: New Application
	APPLICANT: McCue et al.	
	FILING DATE: New Application	GROUP: New Application

U.S. Patent Documents

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILIN APPL
		5586264	Dec 17, 1996	Belknap et al	395	200.08	
		6621980	Sep 16, 2003	Gould et al	386	69	
		6850982	Feb 1, 2005	Siegel	709	227	
		7242809	Jul 10, 2001	Hunter et al	382	224	
		20020184189	Dec 5, 2002	Hay et al	707	1	
		20030091338	May 15, 2003	Snow et al	386	96	
		20030172346	Sep 11, 2003	Gould et al	715	501.1	
		2003 221194	Nov 27, 2003	Thiagarajan et al	725	55	
		20050061873	Mar 24, 2005	Pirillo	235	380	
		20050091062	Apr 28, 2005	Burges et al	704	273	
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		20050245243	Nov 3, 2005	Zuniga	455	414.3	
		20050250439	Nov 10, 2005	Leslie	455	11.1	
		2006 140162	Jun 29, 2006	Vasa	370	338	
		20060236219	Oct 19, 2006	Grigorovitch et al	715	500.1	
		20060242550	Oct 26, 2006	Rahman et al	715	500.1	
		20060271989	Nov 30, 2006	Glaser et al	725	111	
		2007 041356	Feb 22, 2007	Fontijn	370	352	
		20070083911	Apr 12, 2007	Madden et al	725	135	
		20100281509	Nov 4, 2010	Yu et al.	725	100	
		20110118858	May 19, 2011	Rottler et al.	700	94	

Foreign Patent Documents

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO

Other Documents (Including Author, Title, Date Pertinent Pages, Etc.)

		"SpeechSkimmer: A System for Interactively Skimming Recorded Speech" by Barry Arons, MIT Media Lab, ACM Transactions on Computer-Human Interaction, Vol. 4, No. 1, March 1997, Pages 3-38

EXAMINER	DATE CONSIDERED

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

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