UNITED STATES PATENT AND TRADEMARK OFFICE

NOTICE OF ALLOWANCE AND FEE(S) DUE

86000   7590   09/03/2019
Fox Rothschild LLP / G. Nelson
997 Lennox Drive
Building 3
Lawrenceville, NJ 08648

EXAMINER
LE, RONG

ART UNIT	PAPER NUMBER
2421	

DATE MAILED: 09/03/2019

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/152,606	10/05/2018	Edwin A. HERNANDEZ-MONDRAGON	162774.00111	9537

TITLE OF INVENTION: METHOD, SYSTEM, AND APPARATUS FOR MULTIMEDIA CONTENT DELIVERY TO CABLE TV AND SATELLITE OPERATORS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$500	$0.00	$0.00	$500	12/03/2019

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: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PTOL-85 (Rev. 02/11)

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (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)

86000   7590   09/03/2019

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997 Lennox Drive
Building 3
Lawrenceville, NJ 08648

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 transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

	(Typed or printed name)
	(Signature)
	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/152,606	10/05/2018	Edwin A. HERNANDEZ-MONDRAGON	162774.00111	9537

TITLE OF INVENTION: METHOD, SYSTEM, AND APPARATUS FOR MULTIMEDIA CONTENT DELIVERY TO CABLE TV AND SATELLITE OPERATORS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$500	$0.00	$0.00	$500	12/03/2019

EXAMINER	ART UNIT	CLASS-SUBCLASS
LE, RONG	2421	725-139000

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 03-09 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 must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). 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. Fees submitted: ❏ Issue Fee ❏ Publication Fee (if required) ❏ Advance Order - # of Copies _____

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

❏ Electronic Payment via EFS-Web   ❏ Enclosed check   ❏ Non-electronic payment by credit card (Attach form PTO-2038)

❏ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

❏ Applicant certifying micro entity status. See 37 CFR 1.29

❏ Applicant asserting small entity status. See 37 CFR 1.27

❏ Applicant changing to regular undiscounted fee status.

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.
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.
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 (08-18) Approved for use through 01/31/2020   OMB 0651-0033   U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/152,606	10/05/2018	Edwin A. HERNANDEZ-MONDRAGON	162774.00111	9537

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Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

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 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, 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. 16/152,606	Applicant(s) HERNANDEZ-MONDRAGON, Edwin A.
	Examiner RONG LE	Art Unit 2421 / AIA (FITF) Status Yes

-- 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 07/16/2019.

    ☐ 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 24-25,27-29,31-35 and 37-39 . 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 _____ .

/RONG LE/
Primary Examiner, Art Unit 2421

DETAILED ACTION

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the

first inventor to file provisions of the AIA.

Miscellaneous

Claims pending: 24-25, 27-29, 31-35, 37-39

Claims amended: 24, 28, 32

Claims cancelled: 1-23, 26, 30, 36

New claims: 39

Allowable Subject Matter

Claims 24-25, 27-29, 31-35, 37-39 are allowed.

The following is an examiner's statement of reasons for allowance: Claim(s) 24, 28, 32,

and 39 (and their respective dependent claims) is/are allowable. Claim(s) 24-25, 27-29, 31-35,

37-39 comprise a unique combination of elements that are not taught or suggested by the art

of record when considering the claims as a whole, specifically with regard to a method

implemented by a computer which receive from a content provider, a request for media stream

to be playback on a broadcast media channel, wherein the media stream includes a plurality of

multimedia items of different types.

The method consists of obtaining content corresponding to the multimedia items from

plural sources offering the content in one or more format(s), rendering a web page by a

browser using the content generating a temporal sequence of screen captures of the rendered

web page, wherein each screen capture defines all the content of the web page at a specific

time, and at least two adjacent screen captures illustrate a dynamic change of at least a portion

of the content over time, assembling the media stream using the temporal sequence of screen

captures, and providing the media stream to the content provider for broadcast on the

broadcast media channel, wherein the media stream corresponds to at least one of an HTTP

live stream (HLS), an HTTP playlist, and a Real-time Streaming Transport (RTSP) stream; and

wherein the web page is rendered in parallel in multiple threads.

Any comments considered necessary by applicant must be submitted no later than the

payment of the issue fee and, to avoid processing delays, should preferably accompany the

issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for

Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to RONG LE whose telephone number is (571)270-7637. The

examiner can normally be reached on M-F (9 am - 6pm).

Examiner interviews are available via telephone, in-person, and video conferencing

using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is

encouraged to use the USPTO Automated Interview Request (AIR) at

http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Nathan Flynn can be reached on 5712721915. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private

PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you

would like assistance from a USPTO Customer Service Representative or access to the

automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/RONG LE/
Primary Examiner, Art Unit 2421

AMENDMENTS TO THE CLAIMS

Listing of Claims

1. – 23. (Canceled)

24.   (Currently Amended) A computer-implemented method, comprising:

receiving, from a content provider, a request for at least one media stream for playback on a broadcast media channel, wherein the at least one media stream includes a plurality of multimedia items of different types;

obtaining content corresponding to the plurality of multimedia items from at least one source offering the content in at least one first format;

rendering a web page by a browser using the content;

generating a temporal sequence of screen captures of the rendered web page, where each screen capture defines all the content of the web page at a given time, and at least two adjacent screen captures illustrate a dynamic change of at least a portion of the content over time;

assembling the at least one media stream using the temporal sequence of screen captures; and

providing the at least one media stream to the content provider for broadcast on the broadcast media channel;

wherein the at least one media stream corresponds to at least one of an HTTP live stream (HLS), an HTTP playlist, and a Real-time Streaming Transport (RTSP) stream; and

wherein the web page is rendered in parallel in multiple threads.

25.   (Previously Presented) The method according to claim 24, wherein the at least one media stream is interacted with MPEG two way control messages.

26.   (Canceled)

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27.   (Previously Presented) The method according to claim 24, wherein MPEG messages are sent to a service provider via a unicast address.

28.   (Currently Amended) A computer-implemented method, comprising:

receiving, from a content provider, a request for at least one media stream for playback on a broadcast media channel, wherein the at least one media stream includes a plurality of multimedia items of different types;

obtaining content corresponding to the plurality of multimedia items from at least one source offering the content in at least one first format;

rendering a web page by a browser using the content;

generating a temporal sequence of screen captures of the rendered web page, where each screen capture defines all the content of the web page at a given time, and at least two adjacent screen captures illustrate a dynamic change of at least a portion of the content over time;

assembling the at least one media stream using the temporal sequence of screen captures; and

providing the at least one media stream to the content provider for broadcast on the broadcast media channel;

wherein assembling the at least one media stream comprises inserting at least one MPEG packet including metadata corresponding to the multimedia item; and

wherein the web page is rendered in parallel in multiple threads.

29.   (Previously Presented) The computer-implemented method of claim 28, wherein the at least one media stream is interacted with MPEG two way control messages.

30.   (Canceled)

31.   (Previously Presented) The computer-implemented method of claim 28, wherein MPEG messages are sent to a service provider via a unicast address.

32.   (Currently Amended) A system, comprising:

a multicast server configured to generate parameters relating to at least one of video

content, image content and audio content, and configured to output the parameters via MPEG

outputs;

a caching server communicatively coupled to the multicast server, and configured to

receive and store the parameters,

create a temporal sequence of screen captures of a rendered web page, where each

said screen capture defines content of the rendered web page at a given time, and at least

two adjacent screen captures in the temporal sequence illustrate a dynamic change of at

least a portion of the video content, image content or audio content over time,

assemble the temporal sequence of screen captures, and

provide at least one of the video content, image content and audio content to the

multicast server for generating a multicast stream with MPEG encoded video and audio;

and

a monitoring system configured to maintain generation of video and audio files, even in

failure cases.

33.   (Previously Presented) The system according to claim 32, further comprising multiple

servers for load balancing and fault-tolerance.

34.   (Previously Presented) The system according to claim 32, wherein the multicast server is

selected to communicate a multicast stream available for a broadband network.

35.   (Previously Presented) The system according to claim 32, wherein the video content is

encoded in a video streaming format so as to generate a unicast stream.

36.   (Canceled)

37.   (Previously Presented) The system according to claim 32, wherein the system generates

audio MPEG files and add metadata in an MPEG frame.

38.   (Previously Presented) The system according to claim 32, wherein the system generates

MPEG metadata that is interacted with two way broadcast TV systems.

39.   (New) A computer-implemented method, comprising:

receiving, from a content provider, a request for at least one media stream for playback on a

broadcast media channel, wherein the at least one media stream includes a plurality of multimedia

items of different types;

obtaining content corresponding to the plurality of multimedia items from at least one source

offering the content in at least one first format;

rendering a web page by a browser using the content;

generating a temporal sequence of screen captures of the rendered web page, where each

screen capture defines all the content of the web page at a given time, and at least two adjacent

screen captures illustrate a dynamic change of at least a portion of the content over time;

assembling the at least one media stream using the temporal sequence of screen captures;

and

providing the at least one media stream to the content provider for broadcast on the

broadcast media channel;

wherein the at least one media stream corresponds to at least one of an HTTP live stream

(HLS), an HTTP playlist, and a Real-time Streaming Transport (RTSP) stream; and

wherein the web page is rendered in parallel in virtual instances or virtual machines.

AMENDMENTS TO THE CLAIMS

Listing of Claims

1. – 23. (Canceled)

24.   (New) A computer-implemented method, comprising:

receiving, from a content provider, a request for at least one media stream for playback on a broadcast media channel, wherein the at least one media stream includes a plurality of multimedia items of different types;

obtaining content corresponding to the plurality of multimedia items from at least one source offering the content in at least one first format;

rendering a web page by a browser using the content;

generating a temporal sequence of screen captures of the rendered web page, where each screen capture defines all the content of the web page at a given time, and at least two adjacent screen captures illustrate a dynamic change of at least a portion of the content over time;

assembling the at least one media stream using the temporal sequence of screen captures; and

providing the at least one media stream to the content provider for broadcast on the broadcast media channel;

wherein the at least one media stream corresponds to at least one of an HTTP live stream (HLS), an HTTP playlist, and a Real-time Streaming Transport (RTSP) stream.

25.   (New) The method according to claim 24, wherein the at least one media stream is interacted with MPEG two way control messages.

26.   (New) The method according to claim 24, wherein the web page is rendered in parallel in multiple threads.

27.   (New) The method according to claim 24, wherein MPEG messages are sent to a service provider via a unicast address.

28.   (New) A computer-implemented method, comprising:

receiving, from a content provider, a request for at least one media stream for playback on a broadcast media channel, wherein the at least one media stream includes a plurality of multimedia items of different types;

obtaining content corresponding to the plurality of multimedia items from at least one source offering the content in at least one first format;

rendering a web page by a browser using the content;

generating a temporal sequence of screen captures of the rendered web page, where each screen capture defines all the content of the web page at a given time, and at least two adjacent screen captures illustrate a dynamic change of at least a portion of the content over time;

assembling the at least one media stream using the temporal sequence of screen captures; and

providing the at least one media stream to the content provider for broadcast on the broadcast media channel;

wherein assembling the at least one media stream comprises inserting at least one MPEG packet including metadata corresponding to the multimedia item.

29.   (New) The computer-implemented method of claim 28, wherein the at least one media stream is interacted with MPEG two way control messages.

30.   (New) The computer-implemented method of claim 28, wherein the web page is rendered in parallel in multiple threads.

31.   (New) The computer-implemented method of claim 28, wherein MPEG messages are sent to a service provider via a unicast address.

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32.   (New) A system, comprising:

a multicast server configured to generate parameters relating to at least one of video content, image content and audio content, and configured to output the parameters via MPEG outputs;

a caching server communicatively coupled to the multicast server, and configured to

receive and store the parameters,

create a temporal sequence of screen captures of a rendered web page, where each said screen capture defines content of the rendered web page at a given time, and at least two adjacent screen captures in the temporal sequence illustrate a dynamic change of at least a portion of the video content, image content or audio content over time,

assemble the temporal sequence of screen captures, and

provide at least one of the video content, image content and audio content to the multicast server for generating a multicast stream with MPEG encoded video and audio.

33.   (New) The system according to claim 32, further comprising multiple servers for load balancing and fault-tolerance.

34.   (New) The system according to claim 32, wherein the multicast server is selected to communicate a multicast stream available for a broadband network.

35.   (New) The system according to claim 32, wherein the video content is encoded in a video streaming format so as to generate a unicast stream.

36.   (New) The system according to claim 32, further comprising a monitoring system configured to maintain generation of video and audio files, even in failure cases.

37.   (New) The system according to claim 32, wherein the system generates audio MPEG files and add metadata in an MPEG frame.

38.   (New) The system according to claim 32, wherein the system generates MPEG metadata that is interacted with two way broadcast TV systems.