



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/967,832	10/17/2022	Michael Sheppard	81125399US07	8517
191621	7590	12/26/2023		
The Nielsen Company (US), LLC Intellectual Property Docketing 675 Avenue of the Americas New York, NY 10010			EXAMINER KURIEN, CHRISTEN A	
			ART UNIT 2421	PAPER NUMBER
			NOTIFICATION DATE 12/26/2023	DELIVERY MODE 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):

IPDocketing@nielsen.com
justin.cook@nielsen.com
nielsendocket@anaqua.com



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	ISSUE DATE	PATENT NO.
17/967,832	26-Dec-2023	11856250

The Nielsen Company (US), LLC
Intellectual Property Docketing
675 Avenue of the Americas
New York, NY 10010

EGRANT NOTIFICATION

Your electronic patent grant (eGrant) is now available, which can be accessed via Patent Center at <https://patentcenter.uspto.gov>

The electronic patent grant is the official patent grant under 35 U.S.C. 153. For more information, please visit <https://www.uspto.gov/electronicgrants>



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/967,832	12/26/2023	11856250	81125399US07	8517

191621 7590 12/06/2023
The Nielsen Company (US), LLC
Intellectual Property Docketing
675 Avenue of the Americas
New York, NY 10010

ISSUE NOTIFICATION

The projected patent number and issue date are specified above. The patent will issue electronically. The electronically issued patent is the official patent grant pursuant to 35 U.S.C. § 153. The patent may be accessed on or after the issue date through Patent Center at <https://patentcenter.uspto.gov/>. The patent will be available in both the public and the private sides of Patent Center. Further assistance in electronically accessing the patent, or about Patent Center, is available by calling the Patent Electronic Business Center at 1-888-217-9197.

The USPTO is implementing electronic patent issuance with a transition period, during which period the USPTO will mail a ceremonial paper copy of the electronic patent grant to the correspondence address of record. Additional copies of the patent (i.e., certified and presentation copies) may be ordered for a fee from the USPTO's Certified Copy Center at <https://certifiedcopycenter.uspto.gov/index.html>. The Certified Copy Center may be reached at (800)972-6382.

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 Center (<https://patentcenter.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 Patents Stakeholder Experience (OPSE), Stakeholder Support Division (SSD) at (571)-272-4200.

INVENTOR(s) (Please see PATENT CENTER site <https://patentcenter.uspto.gov> for additional inventors):

Michael Sheppard, Brooklyn, NY;
Jonathan Sullivan, Hurricane, UT;
Peter Lipa, Tucson, AZ;
Alejandro Terrazas, Santa Cruz, CA;

APPLICANT(s) (Please see PATENT CENTER site <https://patentcenter.uspto.gov> for additional applicants):

The Nielsen Company (US), LLC, New York, NY;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit [SelectUSA.gov](https://selectusa.gov).



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/967,832	10/17/2022	Michael Sheppard	81125399US07	8517
191621	7590	11/30/2023		
The Nielsen Company (US), LLC Intellectual Property Docketing 675 Avenue of the Americas New York, NY 10010			EXAMINER KURIEN, CHRISTEN A	
			ART UNIT 2426	PAPER NUMBER
			NOTIFICATION DATE 11/30/2023	DELIVERY MODE 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):

IPDocketing@nielsen.com
justin.cook@nielsen.com
nielsendocket@anaqua.com

Response to Rule 312 Communication	Application No. 17/967,832	Applicant(s) Sheppard et al.	
	Examiner CHRISTINE A KURIEN	Art Unit 2421	AIA (FITF) Status Yes
-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --			
1. ☒ The amendment filed on <u>14 November 2023</u> under 37 CFR 1.312 has been considered, and has been: a) ☒ entered. b) ☐ entered as directed to matters of form not affecting the scope of the invention. c) ☐ disapproved because the amendment was filed after the payment of the issue fee. Any amendment filed after the date the issue fee is paid must be accompanied by a petition under 37 CFR 1.313(c)(1) and the required fee to withdraw the application from issue. d) ☐ disapproved. See explanation below. e) ☐ entered in part. See explanation below. f) ☐ not entered because the supplemental or corrected Application Data sheet (ADS) ☐ was not accompanied by a petition to accept an unintentionally delayed claim under 37 CFR 1.55 or 27 CFR 1.78; ☐ did not identify the information being changed in accordance with 37 CFR 1.76(c)(2); ☐ was not properly signed in accordance with 37 CFR 1.76(e) (or 37 CFR 1.33(b) for applications filed prior to September 16, 2012). _____			
/NATHAN J FLYNN/ Supervisory Patent Examiner, Art Unit 2421			

OK TO ENTER: /C.A.K/
IN THE UNITED STATES PATENT & TRADEMARK OFFICE

First Inventor: Michael Sheppard
US App. No.: 17/967,832
Confirmation No.: 8517
Filed: October 17, 2022
For: METHODS AND APPARATUS TO DETERMINE A DURATION
OF MEDIA PRESENTATION BASED ON TUNING SESSION
DURATION
Docket No.: 81125399US07
Art Unit: 2421
Examiner: CHRISTEN A KURIEN

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

AMENDMENT AFTER NOTICE OF ALLOWANCE
PURSUANT TO 37 C.F.R. § 1.312

Dear Commissioner:

Please enter the following amendments and consider the following remarks:

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

Amendments to the Claims begin on page 3 of this paper.

Remarks begin on page 11 of this paper.

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

First Inventor: Michael Sheppard
US App. No.: 17/967,832
Confirmation No.: 8517
Filed: October 17, 2022
For: METHODS AND APPARATUS TO DETERMINE A DURATION
OF MEDIA PRESENTATION BASED ON TUNING SESSION
DURATION
Docket No.: 81125399US07
Art Unit: 2421
Examiner: CHRISTEN A KURIEN

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

AMENDMENT AFTER NOTICE OF ALLOWANCE

PURSUANT TO 37 C.F.R. § 1.312

Dear Commissioner:

Please enter the following amendments and consider the following remarks:

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

Amendments to the Claims begin on page 3 of this paper.

Remarks begin on page 11 of this paper.

AMENDMENTS TO THE SPECIFICATION

Please amend paragraph [0001] of the specification as follows:

[0001] This patent arises from a continuation of U.S. Patent Application Serial No. 16/860,026, now U.S. Patent No. 11,432,025, filed April 27, 2020, which is a continuation of U.S. Patent Application Serial No. 15/990,729, filed May 28, 2018, now U.S. Patent No. 10,638,177, which is a continuation of U.S. Patent Application Serial No. 15/011,455, filed January 29, 2016, now U.S. Patent No. 9,986,272, which claims the benefit of U.S. Provisional Patent Application No. 62/239,126, entitled “METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION” filed October 8, 2015. U.S. Patent Application Serial No. 16/860,026, U.S. Patent Application Serial No. 15/990,729, U.S. Patent Application Serial No. 15/011,455, and U.S. Provisional Patent Application No. 62/239,126 are hereby incorporated herein by reference in their entirety.

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A computing system comprising:
machine readable instructions; and
processor circuitry to execute the machine readable instructions to at least:

access respective tuning session data from a plurality of media presentation devices, corresponding ones of the plurality of media presentation devices in respective ones of media presentation environments, the respective ones of the media presentation environments including at least one media output device to present media from a corresponding one of the media presentation devices, the respective tuning session data from respective ones of the media presentation devices indicative of a tuning session having a tuning session duration, wherein the tuning session duration is indicative of an amount of time between interactions with a corresponding one of the plurality of media presentation devices, wherein presentation session data is available for a first subset of the media presentation environments, and wherein presentation session data is not available for a second subset of the media presentation environments;

access, for ones of the first subset of the media presentation environments, respective presentation session data indicative of a presentation session duration during which media corresponding to a respective tuning session was presented on the respective at least one media output device by the media presentation device within a respective tuning session duration;

generate a model relating the respective tuning session durations to corresponding presentation session durations from ones of the first subset of the media presentation environments;

based on the model, determine, for a given one of the media presentation environments in the second subset of the media presentation environments, an expected presentation session duration for a given tuning session having a given tuning session duration; and

output the expected presentation session duration for the given tuning session from the given one of the media presentation environments.

2. (Original) The computing system of claim 1, wherein the processor circuitry is to:

- access, from the first subset of the media presentation environments, additional tuning session data and additional media presentation data indicative of additional tuning session durations and additional media presentation session durations, respectively; and
- update the model with the additional tuning session durations and additional media presentation data.

3. (Original) The computing system of claim 2, wherein the processor circuitry is to:

- subsequent to determining the expected the presentation session duration, based on the model, for the given tuning session having the given tuning session duration, determine, for another given one of the media presentation environments in the second subset of the media presentation environments, another expected presentation session duration for another given tuning session having another given tuning session duration based on the updated model; and
- output the other expected presentation session duration for the other given tuning session from the other given one of the media presentation environments.

4. (Original) The computing system of claim 1, wherein the processor circuitry is to determine the expected presentation session duration for the given tuning session based on the model by determining the expected presentation session duration based on multiple ones of the tuning session durations and corresponding ones of the presentation session durations of the ones of the first subset of the media presentation environments, the multiple ones of the tuning session durations being within a threshold extent of similarity of the given tuning session duration.

5. (Original) The computing system of claim 4, wherein the threshold extent of similarity is a threshold of time similarity in which each of the tuning session durations of the multiple ones of the tuning session durations of the ones of the first subset of the media presentation environments are within a time threshold of the given tuning session duration.

6. (Original) The computing system of claim 5, wherein the expected presentation session duration for the given presentation session is a weighted average of the presentation session durations of the multiple ones of the tuning session durations of the ones of the first subset of the media presentation environments.

7. (Original) The computing system of claim 5, wherein the time threshold is four minutes.

8. (Original) The computing system of claim 4, wherein the expected presentation session duration for the given presentation session is a conditional probability of the presentation session durations of the multiple ones of the tuning session durations of the ones of the first subset of the media presentation environments, indicated by the model.

9. (Original) The computing system of claim 1, wherein the processor circuitry is to:

determine that a number of tuning session durations related by the model to corresponding presentation session durations from the first subset of the media presentation environments is at least a threshold number of tuning session durations, and

determine the expected presentation session duration for the given tuning session having the given tuning session duration based on the model in response to the determination that the number of tuning session durations related by the model to corresponding presentation session durations from the first subset of the media presentation environments is at least the threshold number of tuning session durations.

10. (Original) The computing system of claim 9, wherein the threshold number is five hundred tuning session durations.

11. (Currently amended) A non-transitory computer-readable medium comprising instructions to cause processor circuitry to at least:

access respective tuning session data from each of a plurality of media presentation devices, corresponding ones of the media presentation devices in respective ones of media presentation environments, the respective media presentation environments including at least one media output device to present media from a corresponding one of the media presentation

devices, the respective tuning session data from respective ones of the media presentation devices indicative of a tuning session having a tuning session duration, wherein the tuning session duration is indicative of an amount of time between interactions with a corresponding one of the media presentation devices, wherein presentation session data is available for a first subset of the media presentation environments, and wherein presentation session data is not available for a second subset of the media presentation environments;

access, for ones of the first subset of the media presentation environments, respective presentation session data indicative of a presentation session duration during which media corresponding to a respective tuning session was presented by the respective at least one media output device by the media presentation device within a respective tuning session duration;

generate a model relating the respective tuning session durations to corresponding presentation session durations from the ones of the first subset of the media presentation environments;

based on the model, determine, for a given one of the media presentation environments in the second subset of the media presentation environments, an expected presentation session duration for a given tuning session having a given tuning session duration; and

output the expected presentation session duration for the given tuning session from the given one of the media presentation environments.

12. (Original) The non-transitory computer-readable medium of claim 11, wherein the instructions cause the processor circuitry to determine the expected presentation session duration, based on the model, for the given tuning session by determining the expected presentation session duration based on multiple ones of the tuning session durations and corresponding ones of the presentation session durations of the ones of the first subset of the media presentation environments, the multiple ones of the tuning session durations being within a threshold extent of similarity of the given tuning session duration,

wherein the threshold extent of similarity is a threshold of time similarity in which each of the tuning session durations of the multiple ones of the tuning session durations of the ones of the first subset of the media presentation environments are within a time threshold of the given tuning session duration, and

wherein the expected presentation session duration for the given presentation session is a weighted average of the presentation session durations of the multiple ones of the tuning session durations of the ones of the first subset of the media presentation environments.

13. (Original) The non-transitory computer-readable medium of claim 11, wherein the instructions cause the processor circuitry to determine the expected presentation session duration for the given tuning session based on the model by determining the expected presentation session duration based on multiple ones of the tuning session durations and corresponding ones of the presentation session durations of the ones of the first subset of the media presentation environments, the multiple ones of the tuning session durations being within a threshold extent of similarity of the given tuning session duration, and

wherein the expected presentation session duration for the given presentation session is a conditional probability of the presentation session durations of the multiple ones of the tuning session durations of the ones of the first subset of the media presentation environments.

14. (Original) The non-transitory computer-readable medium of claim 11, the instructions cause the processor circuitry to:

determine that a number of tuning session durations related by the model to corresponding presentation session durations from the first subset of the media presentation environments is at least a threshold number of tuning session durations, and

determine the expected presentation session duration for the given tuning session having the given tuning session duration based on the model in response to the determination that the number of tuning session durations related by the model to corresponding presentation session durations from the first subset of the media presentation environments is at least the threshold number of tuning session durations.

15. (Currently amended) A system comprising:
processor circuitry; and
a computer-readable medium including instructions to cause the processor circuitry to
at least:

access respective tuning session data from a plurality of set-top boxes,
corresponding ones of the set-top boxes in respective ones of media presentation

environments, the respective media presentation environments including at least one television to present media from a corresponding one of the set-top boxes, the respective tuning session data from respective ones of the set-top boxes indicative of a tuning session having a tuning session duration, the tuning session duration indicative of an amount of time between interactions with a corresponding one of the set-top boxes, wherein on/off durations are available for a first subset of the media presentation environments, and wherein on/off durations are not available for a second subset of the media presentation environments;

access, for ones of the first subset of the media presentation environments, respective on/off durations corresponding to respective tuning sessions, the on/off duration indicative of an amount of time that the respective television was turned on during the respective tuning session;

generate a model relating the respective tuning session durations to corresponding on/off durations from the ones of the first subset of the media presentation environments;

based on the model, determine, for a given one of the media presentation environments in the second subset of the media presentation environments, an expected on/off duration for a given tuning session having a given tuning session duration; and

cause presentation of the expected on/off duration for the given tuning session from the given one of the media presentation environments.

16. (Original) The system of claim 15, wherein the processor circuitry is to: access, from additional ones of the first subset of the media presentation environments, additional tuning session data indicative of additional tuning session durations and additional on/off durations indicative of an amount of time that the respective television was turned on during the additional tuning session; and update the model with the additional tuning session durations and additional on/off durations.

17. (Original) The system of claim 16, wherein the processor circuitry is to: subsequent to determining the expected on/off duration, based on the model, for the given tuning session having the given tuning session duration, determine, for another given

one of the media presentation environments in the second subset of the media presentation environments, another expected on/off duration for another given tuning session having another given tuning session duration based on the updated model; and

output the other expected on/off duration for the other given tuning session from the other given one of the media presentation environments.

18. (Original) The system of claim 15, wherein the processor circuitry is to determine the expected on/off duration for the given tuning session based on the model by determining the expected on/off duration based on multiple ones of the tuning session durations and corresponding ones of the on/off durations of the ones of the first subset of the media presentation environments, the multiple ones of the tuning session durations being within a threshold extent of similarity of the given tuning session duration.

19. The system of claim 18, wherein the threshold extent of similarity is a threshold of time similarity in which each of the tuning session durations of the multiple ones of the tuning session durations of the ones of the first subset of the media presentation environments are within a time threshold of the given tuning session duration.

20. (Original) The system of claim 19, wherein the expected on/off duration for the given tuning session is a weighted average of the on/off durations of the multiple ones of the tuning session durations of the ones of the first subset of the media presentation environments.

21. (Original) The system of claim 18, wherein the expected on/off duration for the given tuning session is a conditional probability of the on/off durations of the multiple ones of the tuning session durations of the ones of the first subset of the media presentation environments, indicated by the model.

22. (Original) The system of claim 15, wherein the processor circuitry is to:
determine that a number of tuning session durations related by the model to
corresponding on/off durations from the first subset of the media presentation
environments is at least a threshold number of tuning session durations, and

determine the expected on/off duration for the given tuning session having the given tuning session duration based on the model in response to the determination that the number of tuning session durations related by the model to corresponding on/off durations from the first subset of the media presentation environments is at least the threshold number of tuning session durations.

23. (Original) The system of claim 22, wherein the threshold number is five hundred tuning session durations.

REMARKS

A Notice of Allowance has been issued in this application. The Applicant respectfully submits the amendments and requests entry thereof pursuant to 37 C.F.R. § 1.312. By way of these amendments, paragraph [0001] of the specification has been amended to include the corresponding U.S. Patent No. of U.S. Pat. App. No. 16/860,026, and claims 1, 11, and 15 have been amended to correct clerical errors.

No new matter has been added. The amendments do not present new issues regarding patentability, and, thus, no additional search or examination is necessary.

CONCLUSION

The Commissioner is hereby authorized to charge any deficiency in the amount enclosed or any additional fees or refund any overpayment which may be required under 37 CFR 1.16 or 1.17 to deposit account no. 604967.

Respectfully Submitted,
The Nielsen Company (US), LLC

Date: November 14, 2023

/James L. Korenchan/

James L. Korenchan
Attorney of Record
Registration No.: 70,760

Customer No. 191621
The Nielsen Company (US), LLC
675 Avenue of the Americas
New York, US



UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #
17/967,832

RECEIPT DATE / TIME
11/14/2023 10:35:21 AM Z ET

ATTORNEY DOCKET #
81125399US07

Title of Invention

METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION

Application Information

APPLICATION TYPE Utility - Nonprovisional Application
under 35 USC 111(a)

PATENT # -

CONFIRMATION # 8517

FILED BY J ames Korenchan

PATENT CENTER # 63232819

FILING DATE 10/17/2022

CUSTOMER # 191621

FIRST NAMED INVENTOR Michael Sheppard

CORRESPONDENCE ADDRESS -

AUTHORIZED BY -

Documents

TOTAL DOCUMENTS: 6

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
2023-11-14_Comments on Reasons for Allowance_81125399US07.pdf	2	Post Allowance Communication - Incoming	81 KB
2023-11-14_Issue Fee Transmittal_81125399US07.pdf	1	Issue Fee Payment (PTO-85B)	98 KB
2023-11-14_312 Amendment_81125399US07.pdf	11	-	122 KB
2023-11-14_312 (1-1)	1	Amendment after Notice of	95 KB

Amendment_81125399US07-A.NA.pdf			Allowance (Rule 312)	
2023-11-14_312 Amendment_81125399US07-SPEC.pdf	(2-2)	1	Specification	95 KB
2023-11-14_312 Amendment_81125399US07-CLM.pdf	(3-10)	8	Claims	113 KB
2023-11-14_312 Amendment_81125399US07-REM.pdf	(11-11)	1	Applicant Arguments/Remarks Made in an Amendment	95 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
2023-11-14_Comments on Reasons for Allowance_81125399US07.pdf	73E0DA3BCC4EE580B7E0BF021C999469699110654C40D26C4 EA7C4EDB9ADF6A94BDD15BF74241DEA8C9F28DDEDC746AC B67D4D37D0F90C78150A775EE919C29F
2023-11-14_Issue Fee Transmittal_81125399US07.pdf	C5679EA44673DF61EAF23D3277304F809A8A2D4D4B1DABF1F FCDA0C78C1488723078A8D063D39C0FBB999C1700F19508A5 C685AB33AD510CA993E86BAA8CB80D
2023-11-14_312 Amendment_81125399US07.pdf	D97CAD862E043AF1CACB2D13E6708557871E1BD6D1E57AB6 3488AAAB97466C20AC1018C1FC4CDB0328245739F07EF139F 02126E1AFF90EEE99392F1E019CB67D
2023-11-14_312 Amendment_81125399US07- A.NA.pdf	62DB9F52FF1862B13891EFE10F949537ADA4406BF47566E55B 0D789C6E6BF6B35F7F8B2C0A05223C1D6C85920AD73092889 484FBBA196A73E9BF5A62AFF64A6B
2023-11-14_312 Amendment_81125399US07- SPEC.pdf	C0A6FD98A3E518FBD61CB18D2C225832130F11AB91C77442F D94C97B79CA8A03E66648530B0CA58A56B7D9D043925C4E4A 43A9A69839158456DEC40550AAB072

2023-11-14_312 Amendment_81125399US07- CLM.pdf	5E340F250088FA09402C4AE8EE373C4450D31A296AB882B67D 7233E5141FFF7238CAC4434A7906FAA9B2C06FF7BCCCB9E63 135EB62017A9AEC D63F5F03FFBBD2
2023-11-14_312 Amendment_81125399US07- REM.pdf	D9B0A7E2C808204C62D4CC416CF6896FFBE0C232C8C685DB 861F5202950D2E7D9BBE2DD198D85A063F1A466515F177F1E3 DF48CAFE7795316CFB57C0C9070692

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 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.



ELECTRONIC PAYMENT RECEIPT

APPLICATION #
17/967,832

RECEIPT DATE / TIME
11/14/2023 10:35:21 AM Z ET

ATTORNEY DOCKET #
81125399US07

Title of Invention

METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	8517	FILED BY	J ames Korenchan
PATENT CENTER #	63232819	AUTHORIZED BY	-
CUSTOMER #	191621	FILING DATE	10/17/2022
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Michael Sheppard

Payment Information

PAYMENT METHOD DA / 604967	PAYMENT TRANSACTION ID E2023ADA35437050	PAYMENT AUTHORIZED BY J ames Korenchan
PRE-AUTHORIZED ACCOUNT 604967	PRE-AUTHORIZED CATEGORY 37 CFR 1.16 (National application filing, search, and examination fees); 37 CFR 1.17 (Patent application and reexamination processing fees); 37 CFR 1.19 (Document supply fees); 37 CFR 1.20 (Post Issuance fees); 37 CFR 1.21 (Miscellaneous fees and charges)	

FEE CODE	DESCRIPTION	ITEM PRICE(\$)	QUANTITY	ITEM TOTAL(\$)
1501	UTILITY ISSUE FEE	1200.00	1	1200.00
TOTAL AMOUNT:				\$1,200.00

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 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 & TRADEMARK OFFICE

First Inventor: SHEPPARD, Michael et al.
US App. No.: 17/967,832
Confirmation No.: 8517
Filed: October 17, 2022
For: METHODS AND APPARATUS TO DETERMINE A DURATION
OF MEDIA PRESENTATION BASED ON TUNING SESSION
DURATION
Docket No.: 81125399US07
Art Unit: 2421
Examiner: KURIEN, CHRISTEN A

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

COMMENTS ON STATEMENT OF REASONS FOR ALLOWANCE

Applicant expresses appreciation for the Examiner's allowance of this application.

Applicant understands that the Examiner has thoroughly examined the claims and prior art of record and has concluded that the art of record, whether considered alone or in combination, fails to disclose or suggest the entirety of each combination of steps and/or structure recited by each of the allowed claims, that the Examiner has found each claim as a whole to patentably distinguish over the art of record, and that patentability of the claims does not necessarily rest on only the aspects that the Examiner listed in the statement of reasons for allowance or has otherwise acknowledged as persuasive. Further, any remarks in support of patentability of one claim should not be imputed to any other claim, including claims in other applications, even if similar

terminology is used. Moreover, Applicant does not acquiesce in the Examiner's assertions that the prior art teaches certain features.

Respectfully Submitted,

The Nielsen Company (US), LLC

/James L. Korenchan/

Date: November 14, 2023

James L. Korenchan
Attorney of Record
Registration No.: 70,760

Customer No. 191621
The Nielsen Company (US), LLC
675 Avenue of the Americas
New York, US

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 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. **Because electronic patent issuance may occur shortly after issue fee payment, any desired continuing application should preferably be filed prior to payment of this issue fee in order not to jeopardize copendency.**

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

191621 7590 09/19/2023
The Nielsen Company (US), LLC
Intellectual Property Docketing
675 Avenue of the Americas
New York, NY 10010

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.
17/967,832	10/17/2022	Michael Sheppard	81125399US07	8517

TITLE OF INVENTION: METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1200	\$0.00	\$0.00	\$1200	12/19/2023

EXAMINER	ART UNIT	CLASS-SUBCLASS
KURIEN, CHRISTEN A	2426	725-014000

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/AIA/122 or PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or 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,

1 _____

(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.

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

The Nielsen Company (US), LLC

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

New York, NY

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)

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

☒ Electronic Payment via Patent Center or 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. 604967

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 /James L. Korenchan/

Date November 14, 2023

Typed or printed name James L. Korenchan

Registration No. 70,760



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/967,832	10/17/2022	Michael Sheppard	81125399US07	8517
191621	7590	11/03/2023		
The Nielsen Company (US), LLC Intellectual Property Docketing 675 Avenue of the Americas New York, NY 10010			EXAMINER KURIEN, CHRISTEN A	
			ART UNIT 2421	PAPER NUMBER
			NOTIFICATION DATE 11/03/2023	DELIVERY MODE 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):

IPDocketing@nielsen.com
justin.cook@nielsen.com
nielsendocket@anaqua.com

Response to Rule 312 Communication	Application No. 17/967,832	Applicant(s) Sheppard et al.	
	Examiner CHRISTINE A KURIEN	Art Unit 2421	AIA (FITF) Status Yes
-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --			
1. ☒ The amendment filed on <u>27 September 2023</u> under 37 CFR 1.312 has been considered, and has been: a) ☐ entered. b) ☒ entered as directed to matters of form not affecting the scope of the invention. c) ☐ disapproved because the amendment was filed after the payment of the issue fee. Any amendment filed after the date the issue fee is paid must be accompanied by a petition under 37 CFR 1.313(c)(1) and the required fee to withdraw the application from issue. d) ☐ disapproved. See explanation below. e) ☐ entered in part. See explanation below. f) ☐ not entered because the supplemental or corrected Application Data sheet (ADS) ☐ was not accompanied by a petition to accept an unintentionally delayed claim under 37 CFR 1.55 or 27 CFR 1.78; ☐ did not identify the information being changed in accordance with 37 CFR 1.76(c)(2); ☐ was not properly signed in accordance with 37 CFR 1.76(e) (or 37 CFR 1.33(b) for applications filed prior to September 16, 2012). _____			
/CHRISTINE A KURIEN/ Examiner, Art Unit 2421		/NATHAN J FLYNN/ Supervisory Patent Examiner, Art Unit 2421	

OK TO ENTER: /C.A.K/

1/11

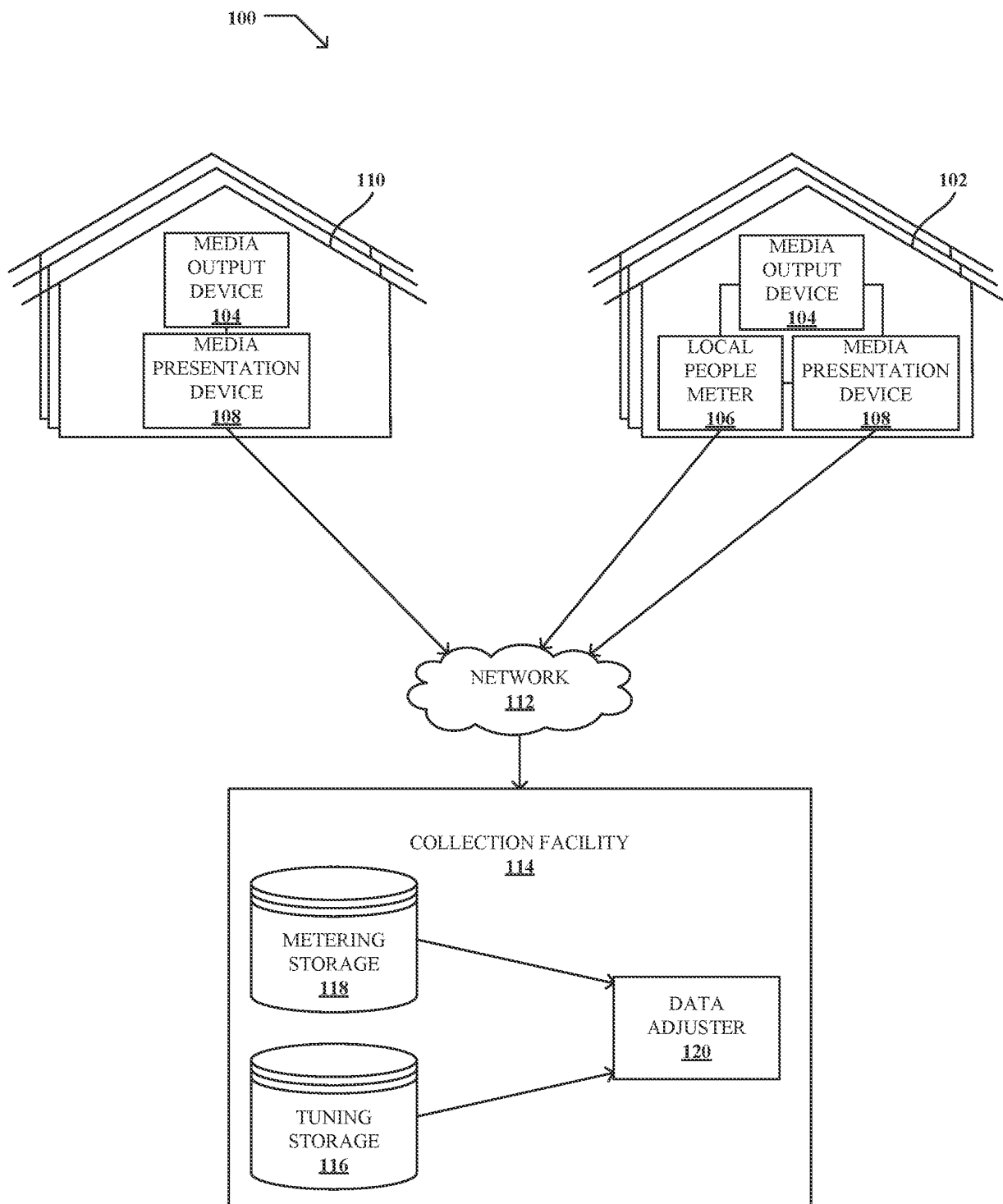


FIG. 1

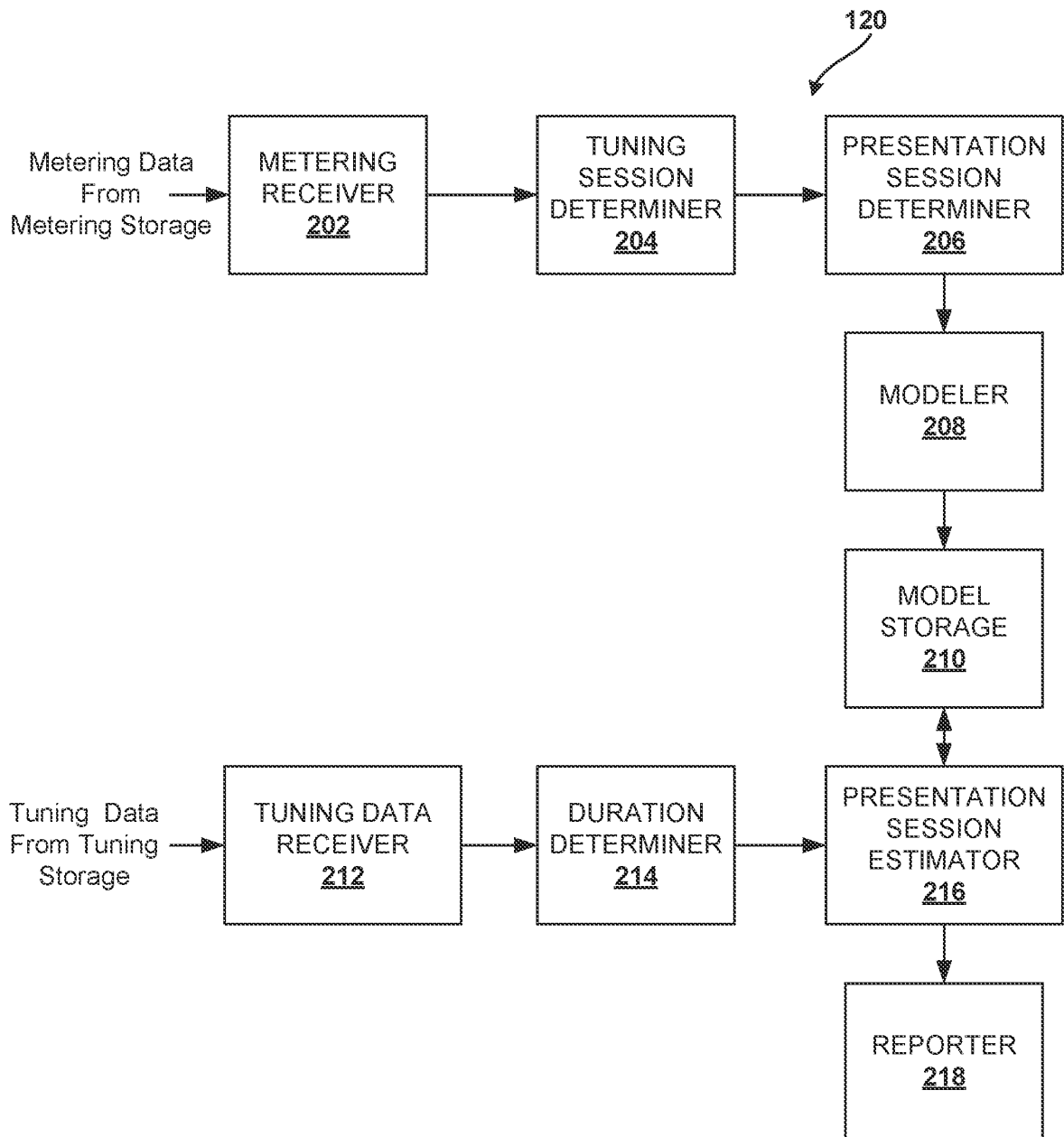


FIG. 2

3/11

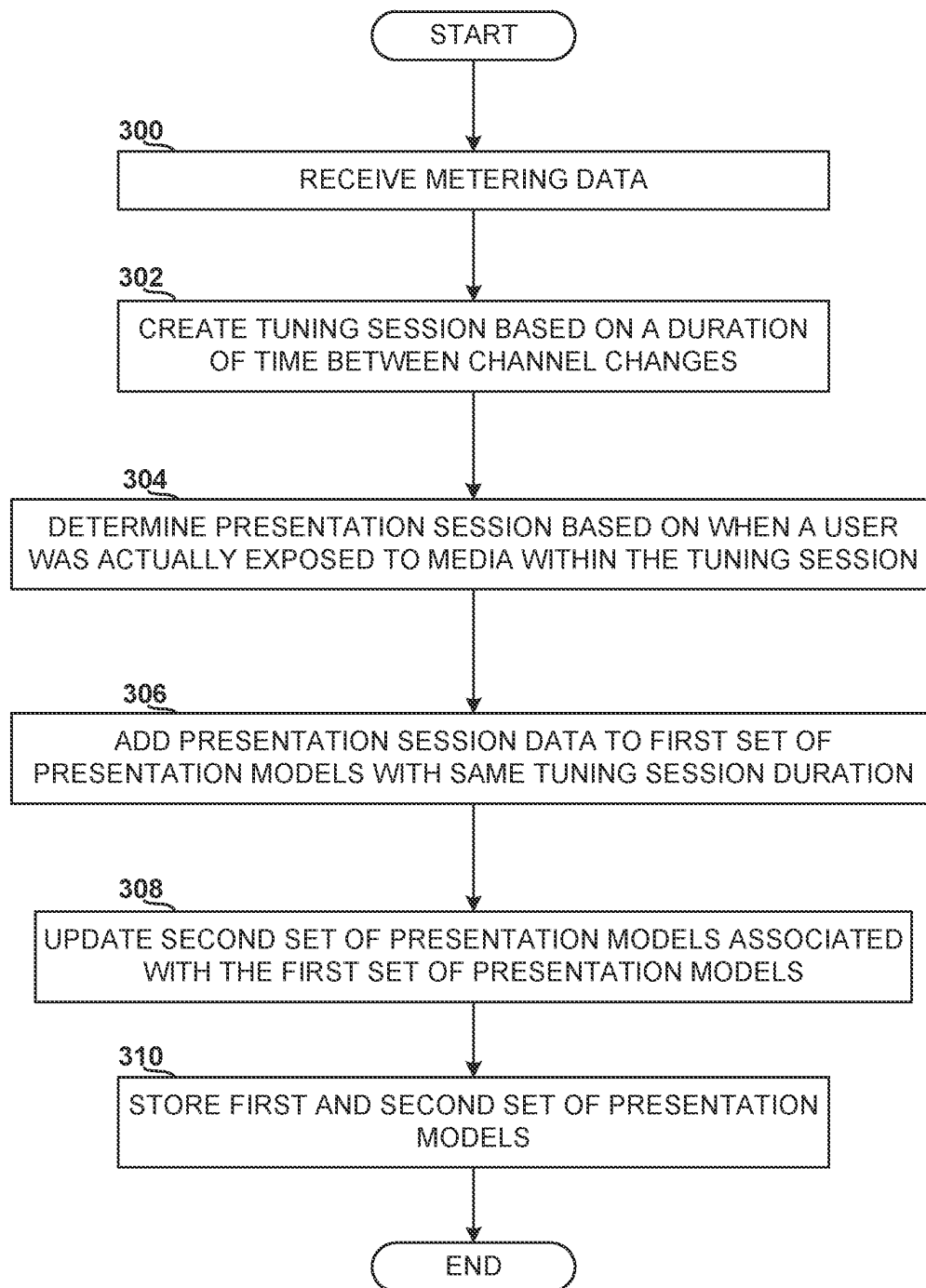


FIG. 3

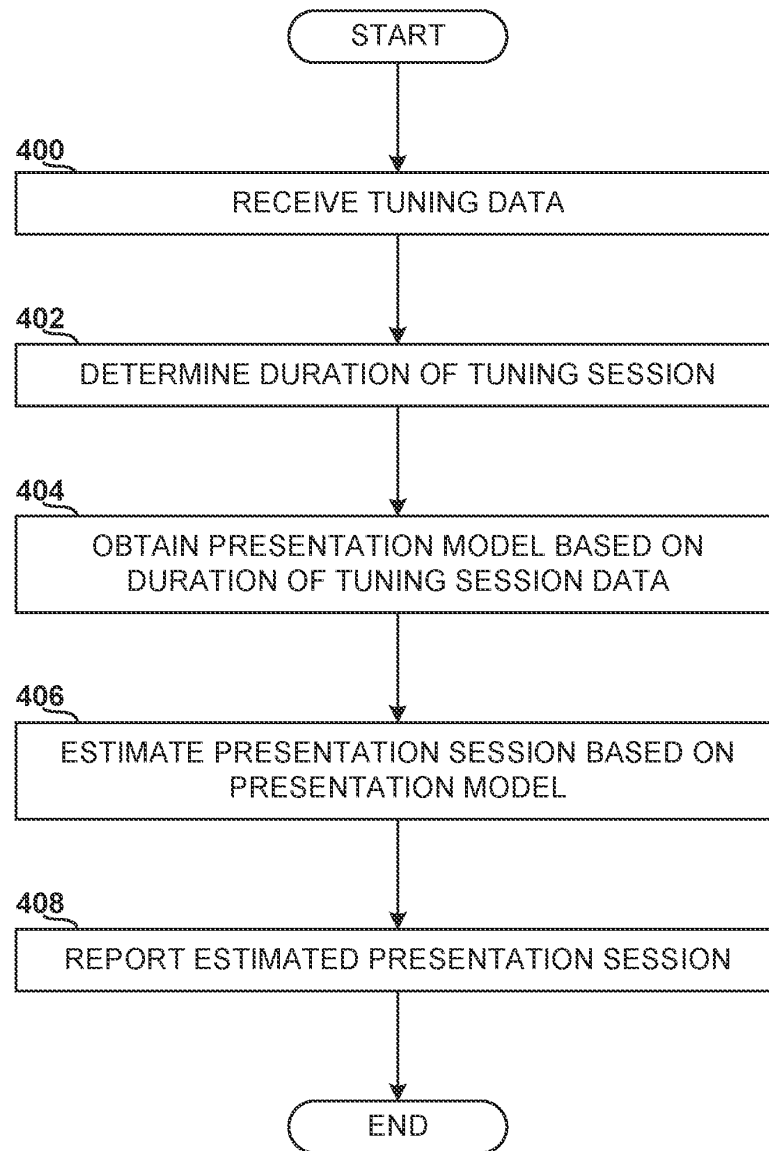


FIG. 4

5/11

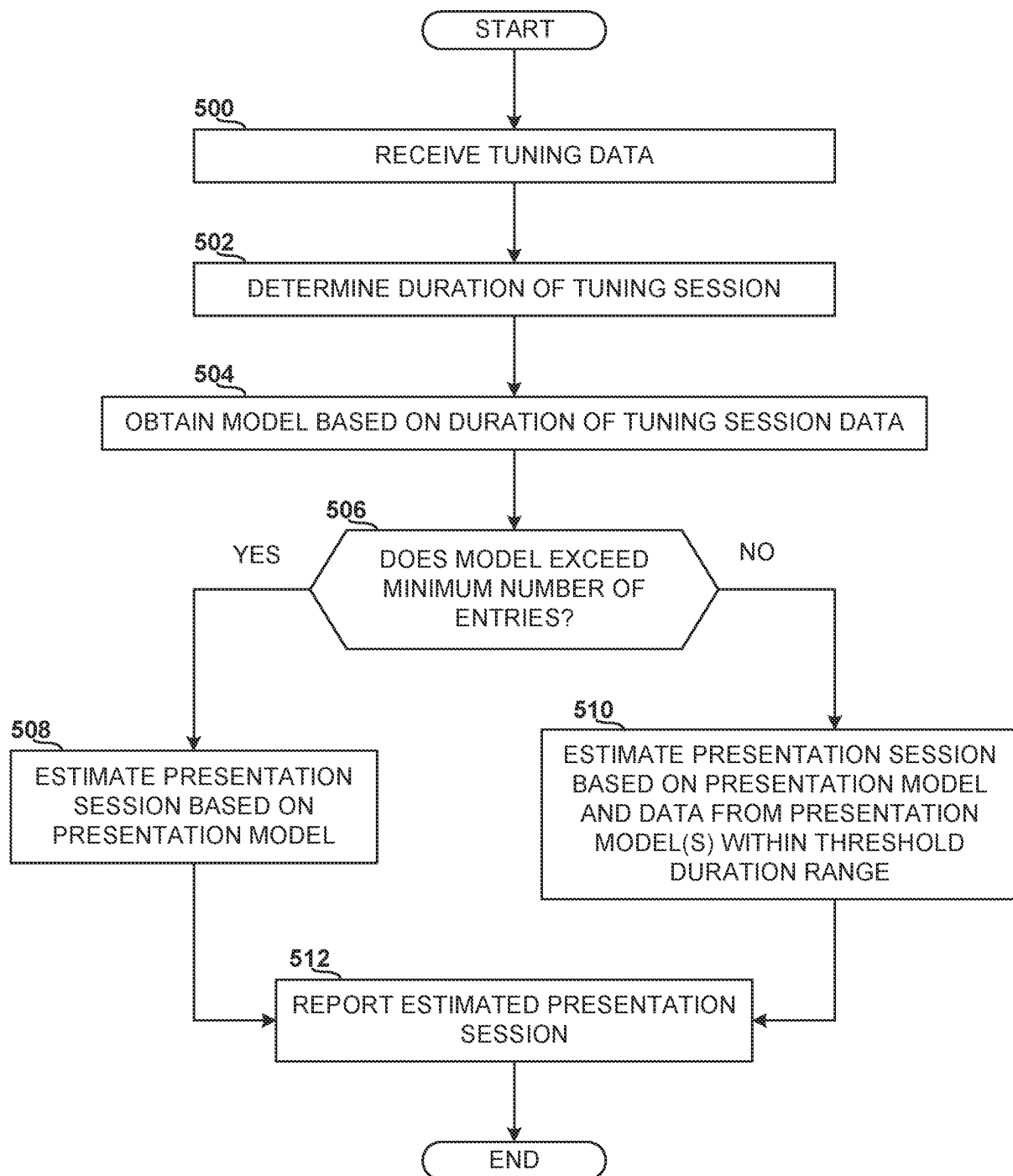


FIG. 5

600

602 Household ID

604 Tuner Key

606 Start Time

608 End Time

610 Station Key

612 Genre

614 Presentation Weight Date Key

616 Valid Data Flag

618 Source

620

50006	186242092	2014-12-01 00:00:00	2014-12-01 00:25:00	294984	N/A	17427	1	0
50006	186242092	2014-12-01 00:34:00	2014-12-01 02:56:00	287552	Non-Media	17427	1	0
50006	186242092	2014-12-01 04:52:00	2014-12-01 05:46:00	287552	Non-Media	17427	1	0
50006	186242092	2014-12-01 20:50:00	2014-12-01 21:35:00	287552	Non-Media	17427	1	0
50006	186242092	2014-12-01 22:41:00	2014-12-01 23:24:00	294984	N/A	17427	1	0
50006	186242092	2014-12-01 23:29:00	2014-12-01 23:59:00	294984	N/A	17427	1	0
50006	186242092	2014-12-02 15:20:00	2014-12-02 15:33:00	349855	Gen. Ent.	17428	1	0
50006	186242092	2014-12-03 14:49:00	2014-12-03 14:53:00	348488	Gen. Ent.	17429	1	0
50006	186242092	2014-12-03 22:21:00	2014-12-03 22:21:00	287552	Non-Media	17429	1	0
50006	186242092	2014-12-03 22:27:00	2014-12-03 22:30:00	288298	N/A	17429	1	0
50006	186242092	2014-12-03 23:37:00	2014-12-03 23:48:00	287552	Non-Media	17429	1	0
50006	186242092	2014-12-04 00:00:00	2014-12-04 00:23:00	287552	Non-Media	17430	1	0
50006	186242092	2014-12-04 23:00:00	2014-12-04 23:47:00	287552	Non-Media	17430	1	0
50006	186242092	2014-12-04 23:55:00	2014-12-05 01:40:00	287552	Non-Media	17431	1	0

FIG. 6

7/11

620 {

Household			Station			Presentation Valid		
ID	Tuner Key	Start Time	End Time	Key	Genre	Date Key	Weight Flag	Source
50006	186242092	2014-12-01 00:00:00	2014-12-01 00:25:00	294984	N/A	17427	1	0
50006	186242092	2014-12-01 00:34:00	2014-12-01 02:56:00	287552	Non-Media	17427	1	0
50006	186242092	2014-12-01 04:52:00	2014-12-01 05:46:00	287552	Non-Media	17427	1	0
50006	186242092	2014-12-01 20:50:00	2014-12-01 21:35:00	287552	Non-Media	17427	1	0
50006	186242092	2014-12-01 22:41:00	2014-12-01 23:24:00	294984	N/A	17427	1	0

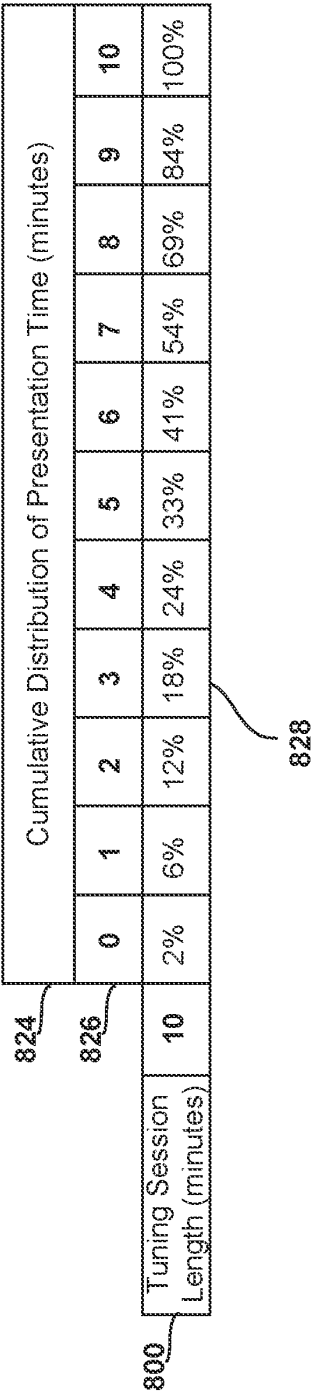
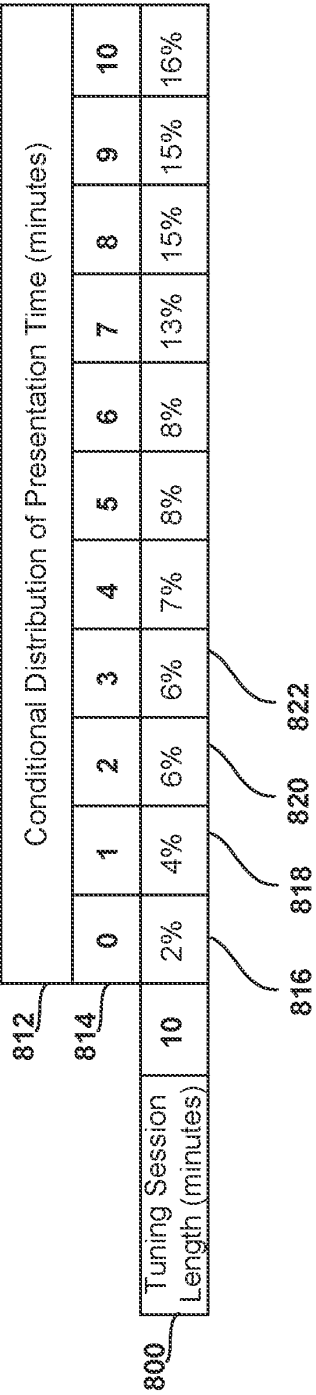
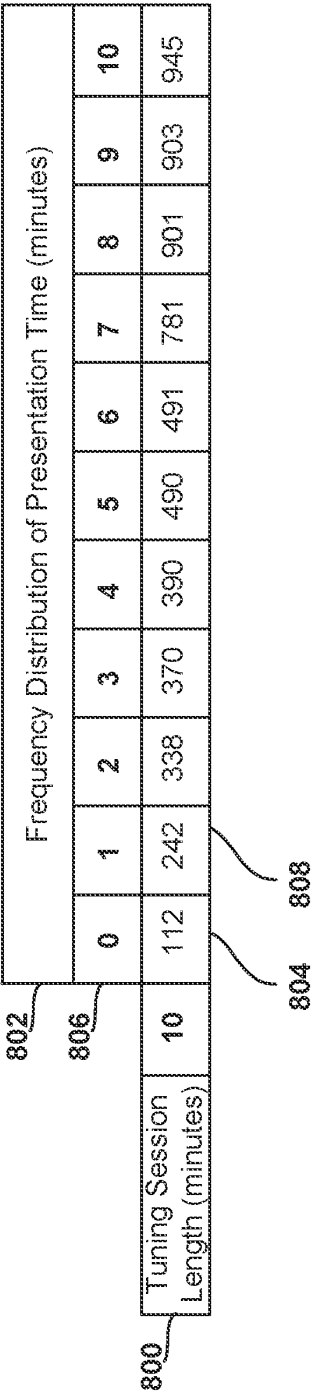
FIG. 7A

00:25:00	Turned the TV off after watching previous station
00:34:00	Turned TV back on and within the same minute changed channel
02:56:00	Turned TV off
04:52:00	Turned TV on (same channel)
05:46:00	Turned TV off
20:50:00	Turned TV on (same channel)
21:35:00	Turned TV off
22:41:00	Turned TV on and changed channel

FIG. 7B

Tuning Session:	00:34:00 to 22:41:00 (1,327 minutes)
Presentation Sessions:	00:34:00 - 2:56:00 (142 minutes)
	04:52:00 - 5:46:00 (54 minutes)
	20:50:00 - 21:35:00 (45 minutes)

FIG. 7C



9/11

Frequency Distribution of Media Presented at Set Times (minutes)													
	at 0	at 1	at 2	at 3	at 4	at 5	at 6	at 7	at 8	at 9	at 10		
800	10	5851	5852	5619	5290	4500	4411	4521	4530	3749	2848	2945	

830

832

834

FIG. 8D

Conditional Distribution of Media Presented at Set Times (minutes)													
	at 0	at 1	at 2	at 3	at 4	at 5	at 6	at 7	at 8	at 9	at 10		
10	100%	98%	94%	88%	75%	74%	76%	76%	63%	48%	49%		
Tuning Session Length (minutes)													

836

838

800

840

FIG. 8E

Title: "Methods and apparatus to determine a duration of media presentation based on tuning session duration"

Inventor(s): Michael Sheppard, Jonathan Sullivan, Peter Lipa, Alex Terrazas
Attorney Docket No.: 20004/125399US07

10/11

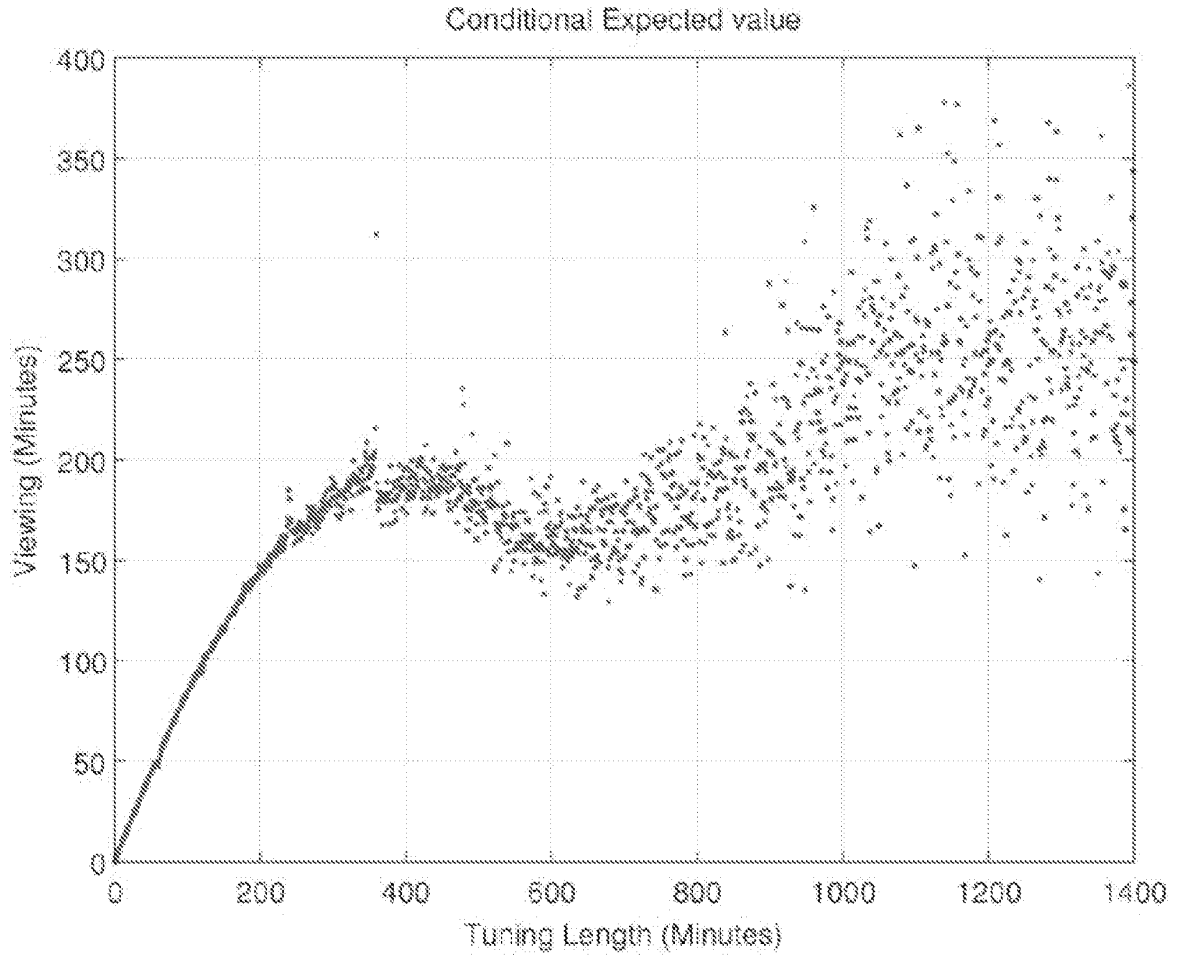


FIG. 9

11/11

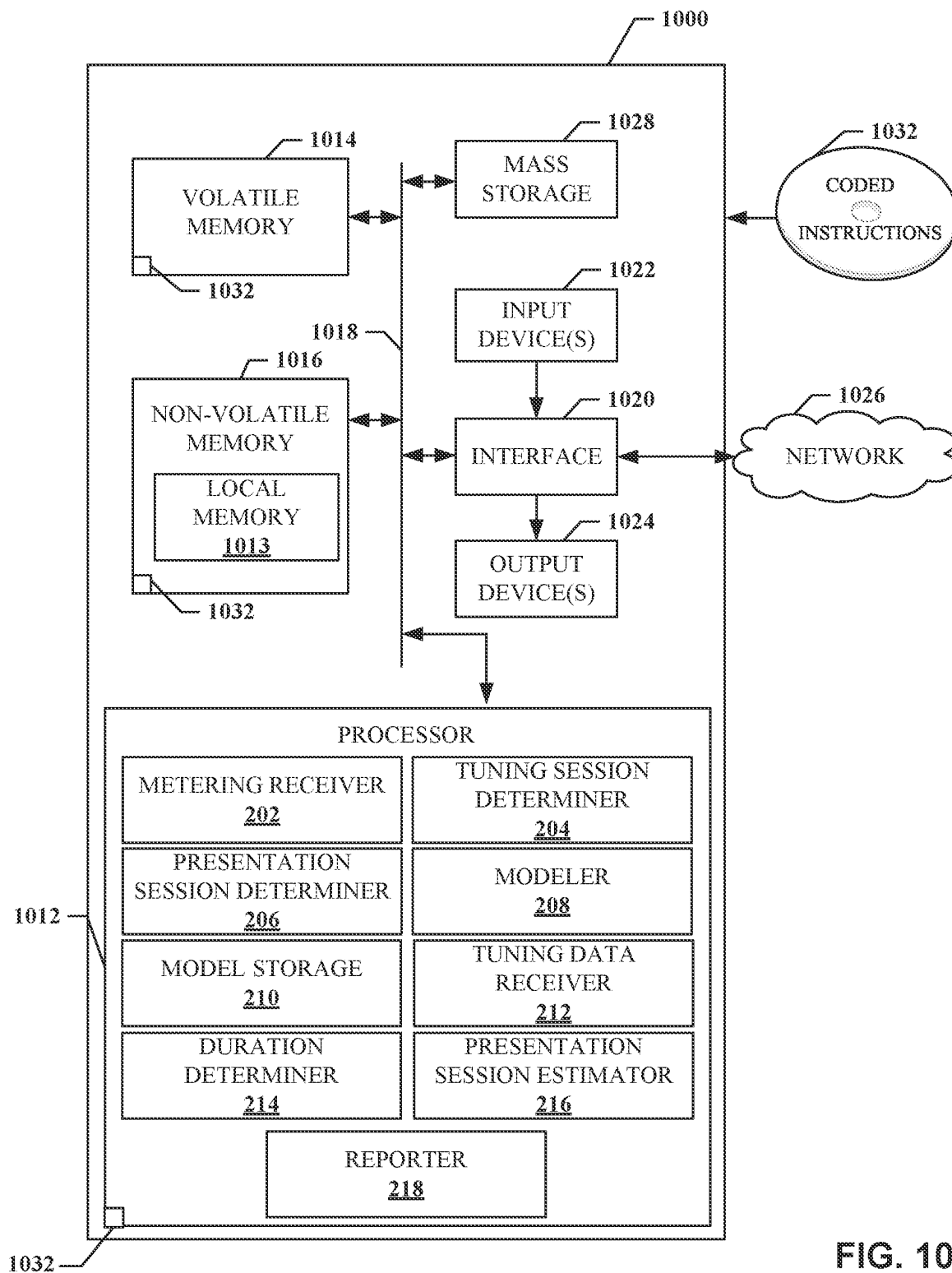


FIG. 10



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
17/967,832	10/17/2022	Michael Sheppard	81125399US07

CONFIRMATION NO. 8517

191621
The Nielsen Company (US), LLC
Intellectual Property Docketing
675 Avenue of the Americas
New York, NY 10010

**PUB REQUEST ACCEPTANCE
LETTER**



OC000000063227363

Date Mailed: 10/16/2023

NOTICE OF ACCEPTANCE OF PUBLICATION REQUEST

The request for voluntary publication, amended publication, early publication, redacted publication, republication, corrected publication or revised publication has been received for this application. The request, including payment of any necessary fee(s), is in compliance with 37 CFR 1.215, 1.217, 1.219 or 1.221.

The projected publication date is 01/25/2024.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/dddurham/



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/967,832	10/17/2022	Michael Sheppard	81125399US07	8517
191621	7590	10/03/2023		
The Nielsen Company (US), LLC Intellectual Property Docketing 675 Avenue of the Americas New York, NY 10010			EXAMINER KURIEN, CHRISTEN A	
			ART UNIT 2426	PAPER NUMBER
			NOTIFICATION DATE 10/03/2023	DELIVERY MODE 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):

IPDocketing@nielsen.com
justin.cook@nielsen.com
nielsendocket@anaqua.com



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

The Nielsen Company (US), LLC Intellectual Property Docketing
675 Avenue of the Americas
New York, NY 10010

First Named Inventor: Sheppard et al.

Appl. No.: 17/967,832

Filing Date: October 17, 2022

Title: **METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION
BASED ON TUNING SESSION DURATION**

Attorney Docket No.: 81125399US07

Pub. No.: 20230042182A1

Pub. Date: February 9, 2023

This is a decision on the request for republication of patent application publication under 37 CFR 1.221(a), filed on September 27, 2023 for the above-identified application.

The request under 37 CFR 1.221(a) is DISMISSED.

37 CFR 1.221(a) requires “a copy of the application in compliance with the Office electronic filing system requirements and be accompanied by the publication fee set forth in § 1.18(d) and the processing fee set forth in § 1.17(i)”. If the request for republication does not comply with the electronic filing system requirements, the republication will not take place and the publication fee set forth in § 1.18(d) will be refunded. The processing fee will be retained.

The applicant did not supply a copy of the application in compliance with the Office electronic filing system, as required by 37 CFR 1.221(a) because **the applicant submitted the papers as a “Document for an existing application”, which are entered into the application file, and not as a “Pre-Grant Publication” submission.** The request for republication does not comply with the electronic filing system requirements, thus republication will not take place.

Any request for republication under 37 CFR 1.221(a), must be submitted via the EFS system, as a Pre-Grant publication submission and must include a copy of the application in compliance with the Office electronic filing system requirements. The applicant is directed to the following

website for additional instructions on how to submit a Pre-Grant Publication submission via the electronic filing system:

<http://www.uspto.gov/patents/process/file/efs/guidance/index.jsp>

http://www.uspto.gov/ebc/portal/efs/pgpub_quickstart.pdf

Any questions or requests for reconsideration of the decision should be addressed as follows:

By mail to: Mail Stop PGPUB
 Commissioner for Patents
 P.O. Box 1450
 Alexandria, Va. 22313-1450

By facsimile: 571-273-8300

Telephone inquiries regarding this correspondence should be directed to The Office of Data Management at 571-272-4200.

/DESHAWN D DURHAM/
Office of Data Management
United States Patent & Trademark Office

METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION

RELATED APPLICATIONS

[0001] This patent arises from a continuation of U.S. Patent Application Serial No. 16/860,026, filed April 27, 2020, which is a continuation of U.S. Patent Application Serial No. 15/990,729, filed May 28, 2018, now U.S. Patent No. 10,638,177, which is a continuation of U.S. Patent Application Serial No. 15/011,455, filed January 29, 2016, now U.S. Patent No. 9,986,272, which claims the benefit of U.S. Provisional Patent Application No. 62/239,126, entitled “METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION” filed October 8, 2015. U.S. Patent Application Serial No. 16/860,026, U.S. Patent Application Serial No. 15/990,729, U.S. Patent Application Serial No. 15/011,455, and U.S. Provisional Patent Application No. 62/239,126 are hereby incorporated herein by reference in their entirety.

FIELD OF THE DISCLOSURE

[0001] This disclosure relates generally to media audience measurement, and, more particularly, to methods and apparatus to determine a duration of media presentation based on tuning session duration.

BACKGROUND

[0002] Determining a size and demographics of an audience of a media presentation helps media providers and distributors schedule programming and determine a price for advertising presented during the programming. In addition, accurate estimates of audience demographics enable advertisers to target advertisements to certain types and sizes of audiences. To collect these demographics, an audience measurement entity enlists a plurality of media consumers (often called panelists) to cooperate in an audience measurement study (often called a panel) for a predefined length of time. The media consumption habits and demographic data associated with these enlisted media consumers are collected and used to statistically determine the size and demographics of the entire audience of the media presentation. In some examples, this collected data (e.g., data collected via measurement devices) may be supplemented with survey information, for example, recorded manually by the presentation audience members.

[0003] The process of enlisting and retaining participants for purposes of audience measurement is often a difficult and costly aspect of the audience measurement process. For example, participants are typically carefully selected and screened for particular characteristics so that the population of participants is representative of the overall presentation population. Additionally, the participants are required to perform specific tasks that enable the collection of the data, such as, for example, periodically self-identifying while consuming media programming.

BRIEF DESCRIPTION OF THE DRAWINGS

[0004] FIG. 1 is a block diagram of an example environment in which media presentation information is collected from media presentation locations and is analyzed by an example collection facility to determine durations of media presentation in accordance with the teachings of this disclosure.

[0005] FIG. 2 is a block diagram of an example implementation of the data adjuster of FIG. 1.

[0006] FIGS. 3-5 are flowcharts illustrating example machine readable instructions that may be executed to implement the example data adjuster of FIGS. 1 and/or 2.

[0007] FIG. 6 is an example table of measurement data collected by the example local people meter of FIG. 1.

[0008] FIGS. 7A-7C are tables of example tuning session data and presentation session data collected by the example local people meter of FIG. 1 in accordance with the teachings of this disclosure.

[0009] FIGS. 8A-8E are tables of statistical models generated by the data adjuster of FIGS. 1 and/or 2 based on data from the local people meters of FIG. 1 in accordance with the teachings of this disclosure.

[0010] FIG. 9 is an example graph illustrating expected total presentation session durations generated by the generated by the data adjuster of FIGS. 1 and/or 2 based on received tuning session durations in accordance with the teachings of this disclosure.

[0011] FIG. 10 is a block diagram of an example processing system capable of executing the example machine readable instructions of FIGS. 3-5 to implement the example data adjuster of FIGS. 1 and/or 2.

DETAILED DESCRIPTION

[0012] Audience measurement entities seek to understand the composition and size of audiences of media, such as television programming. Such information allows audience measurement entity researchers to, for example, report advertising delivery and/or targeting statistics to advertisers that target their media (e.g., advertisements) to audiences. Additionally, such information helps to establish advertising prices commensurate with audience exposure and demographic makeup (referred to herein collectively as “audience configuration”). One way to gather media presentation information is to gather media presentation information from media output devices (e.g., gathering television presentation data from a set-top box (STB) connected to a television). As used herein media presentation includes media output regardless of whether or not an audience member is present (e.g., media output by a media output device at which no audience is present, media exposure to an audience member(s), etc.).

[0013] A media presentation device (e.g., STB) provided by a service provider (e.g., a cable television service provider, a satellite television service provider, an over the top service provider, a music service provider, a movie service provider, a streaming media provider, etc.) or purchased by a consumer may contain processing capabilities to monitor, store, and transmit tuning data (e.g., which television channels are tuned on the

media presentation device at a particular time) to an audience measurement entity (e.g., The Nielsen Company (US), LLC.) to analyze media presentation activity. The tuning data is based on data received from the media presentation device while the media presentation device is on (e.g., powered on, switched on, and/or tuned to a media channel, streaming, etc.). However, tuning data may include extraneous data that may not accurately reflect media presentation when, for example, the media presentation device is configured to output media via a media output device (e.g., a television), but the media output device is turned off, not receiving the media from the media presentation device, etc. For example, tuning data may include data related to a STB that outputs television media via a television while the television is off, disconnected, turned to input other than the STB, etc. In another example, the tuning data collected by the media presentation device may not accurately reflect media actually exposed to an audience when the media presentation device is attempting to present the media but no audience members are present (e.g., a STB and/or a television is on and/or presenting media while no person is present to consume the media). To develop a more accurate estimation of the actual media presentation by the media presentation device, methods and apparatus disclosed herein analyze measurement data (e.g., tuning data) collected from media presentation devices (that may inaccurately reflect the media actually presented to an audience).

[0014] To determine aspects of media presentation data (e.g., which household member is currently consuming a particular media and the demographics of that household member), market researchers may perform audience measurement by

enlisting a subset media consumers as panelists. Panelists are audience members (e.g., household members, users, panelists, etc.) enlisted to be monitored, who divulge and/or otherwise share their media activity and/or demographic data to facilitate a market research study. An audience measurement entity typically monitors media presentation activity (e.g., viewing, listening, etc.) of the panelist members via audience measurement system(s), such as a metering device(s) and/or a local people meter (LPM). Audience measurement typically include determining the identity of the media being presented on a media output device (e.g., a television, a radio, a computer, etc.), determining data related to the media (e.g., presentation duration data, timestamps, channel data, etc.), determining demographic information of an audience, and/or determining which members of a household are associated with (e.g., have been exposed to) a media presentation. For example, an LPM in communication with an audience measurement entity communicates audience measurement (e.g., metering) data to the audience measurement entity. As used herein, the phrase “in communication,” including variances thereof, encompasses direct communication and/or indirect communication through one or more intermediary components and does not require direct physical (e.g., wired) communication and/or constant communication, but rather additionally includes selective communication at periodic or aperiodic intervals, as well as one-time events.

[0015] In some examples, metering data (e.g., including media presentation data) collected by an LPM or other meter is stored in a memory and transmitted via network, such as the Internet, to a datastore managed by the audience measurement entity. Typically, such metering data is combined with additional metering data collected from

a plurality of LPMs monitoring a plurality of panelist households. Example disclosed herein process the collected and/or aggregated metering data to determine model(s) based on a period of time between channel changes (referred to herein as tuning sessions). The metering data and/or the model(s) may include, but are not limited to, a number of minutes a household media presentation device was tuned to a particular channel, a number of minutes a household media presentation device was used (e.g., consumed) by a household panelist member and/or a visitor (e.g., a presentation session), demographics of the audience (which may be statistically projected based on the panelist data), information indicative of when the media presentation device is on or off, and/or information indicative of interactions with the media presentation device (e.g., channel changes, station changes, volume changes, etc.). As used herein a channel may be a tuned frequency, selected stream, an address for media (e.g., a network address), and/or any other identifier for a source and/or carrier of media.

[0016] In an effort to transform collected tuning data from media presentation devices (e.g., STBs) into media presentation data (e.g., to account for data including when the media output device is off or not used and/or when an audience member is not present), examples disclosed herein estimate presentation data from collected tuning data based on models determined from the metering data received from LPMs. Examples disclosed herein include determining a first tuning session based on a period of time between channel changes of a first media presentation device. Such examples further include determining first presentation session data within the determined first tuning session. Such examples further include determining a model relating the first

tuning session with the first presentation session data. Such examples further include determining a second tuning session for tuning data from a second media presentation device. Such examples further include selecting the model for the second tuning session, based on a match of a first duration of the second tuning session and a second duration associated with the model. Such examples further include estimating second presentation session data for the second tuning session based on the model.

[0017] FIG. 1 is a block diagram of an example environment 100 in which tuning data is collected from an example media presentation location 110 and is analyzed by an example collection facility 114 to estimate presentation session for tuning sessions within the tuning data. The example environment 100 includes a first example media presentation location 102, example media output devices 104, an example LPM 106, example media presentation devices 108, the second media presentation location 110, an example network 112, the example collection facility 114, an example data adjuster 120, an example tuning storage 116, and an example metering storage 118. According to the illustrated example, the collection facility 114 collects audience measurement (e.g., metering) data from the example LPM 106. The example data adjuster 120 creates model(s) based on the collected metering data. The example data adjuster 120 uses the models to estimate presentation sessions based on tuning data from the example media presentation device 108. For example, the data adjuster 120 of the illustrated example estimates media presentation session(s) for tuning sessions received from the example media presentation device 108 of the example media presentation location 110 that does not include a device to collect and/or send media

presentation data (e.g., media presentation locations that do not include the example LPM 106 to the collection facility 104).

[0018] The example first media presentation location 102 is a location that has been statistically selected to develop media ratings data for a population/demographic of interest. According to the example of FIG. 1, person(s) of the household have registered with a metering device (e.g., the example local people meter 106) and provided the demographic information. Alternatively, the first example media presentation location 102 may be additional and/or alternative types of environments such as, for example, a room in a non-statistically selected household, a theater, a restaurant, a tavern, a retail location, an arena, etc. In some examples, the environment 100 may include a plurality of first media presentation locations 102 for which metering data is collected.

[0019] In the illustrated example of FIG. 1, the first media presentation location 102 includes the example media output device 104. The example media output device 104 of FIG. 1 is a television. Alternatively, the media output device 104 may be any other type of device for outputting media such as, for example, a radio, a computer monitor, a video game console, and/or any other device capable of presenting media to a user.

[0020] The example LPM 106 is in communication with the example media output device 104 to collect and/or capture signals emitted externally by the media output device 104. The LPM 106 may be coupled with the media output device 104 via wired and/or wireless connection. The example LPM 106 may be implemented in connection with additional and/or alternative types of media presentation devices such

as, for example, a radio, a computer monitor, a video game console, and/or any other device capable to present media to a user. The LPM 106 may be a portable people meter, a cell phone, a computing device, a sensor, and/or any other device capable of metering user exposure to media. The media presentation location 102 may include a plurality of LPMs 106. In such examples, the plurality of the LPMs 106 may be used to monitor media exposure for multiple users and/or media output devices 104.

[0021] In some examples, the example LPM 106 includes a set of buttons assigned to audience members to determine which of the audience members is watching the example media output device 104. The LPM 106 may periodically prompt the audience members via a set of LEDs, a display screen, and/or an audible tone, to indicate that the audience member is present at the example first media presentation location 102 by pressing an assigned button. To decrease the number of prompts and, thus, the number of intrusions imposed upon the media consumption experience of the audience members, the LPM 106 prompts only when unidentified audience members are located in the first media presentation location 102 and/or only after the LPM 106 detects a channel change and/or a change in state of the media output device 104. In other examples, the LPM 106 may include at least one sensor (e.g., a camera, 3-dimensional sensor, etc.) and/or be communicatively coupled to at least one sensor that detects a presence of the user in the first example media presentation location 102. The example LPM 106 transmits metering data to a media researcher and/or a marketing entity. The example metering data includes the media presentation data (e.g., data related to media presented while the media output device 104 is on and a user is

present). The metering data may further include a household identification, a tuner key, a presentation start time, a presentation end time, a channel key, etc., as further described in FIG. 6.

[0022] The media presentation device 108 of the illustrated example of FIG. 1 is installed by a service provider (e.g., cable media service provider, a radio frequency (RF) media provider, a satellite media service provider, etc.) to present media to an audience member through the example media output device 104. In the illustrated example of FIG. 1, the example media presentation device 108 is a STB. Alternatively, the example media presentation device 108 may be an over the top device, a video game console, a digital video recorder (DVR), a digital versatile disc (DVD) player, a receiver, a router, a server, and/or any device that receives media from a service provider. In some examples, the media presentation device 108 may implement a DVR and/or DVD player. The example media presentation device 108 includes a unique serial number that, when associated with subscriber information, allows an audience measurement entity, a marketing entity, and/or any other entity to ascertain specific subscriber behavior information. Additionally, the example media presentation device 108 transmits tuning data (e.g., data related to tuned channels while the media presentation device 108 is on) to the example collection facility 114. Although the example media output device 104, the example LPM 106, and the example media presentation device 108 in the first example media presentation location 102 are separate devices, one or more of the media output device 104, the LPM 106, and/or the media presentation device 108 may be combined.

[0023] The example second media presentation location 110 includes the example media output device 104 and the example media presentation device 108, but does not include the example LPM 106. Accordingly, media presentation data is not collected at the example second media presentation location 110. However, tuning data is collected by the example media presentation device 108. Such tuning data includes data collected by the media presentation device 108 (e.g., which channel the media presentation device 108 was tuned to) but may not include presentation session information from the example media presentation device 108 (e.g., information related to when the media output device 104 is powered on and/or an audience member is present). Therefore tuning data from the example LPM 106 may be misleading. In some examples, the second media presentation location 110 may include a second plurality of media presentation locations 110.

[0024] Metering data from the example LPM 106 and/or tuning data from the example media presentation device 108 is transmitted to the example collection facility 114 via the example network 112. The example network 112 may be implemented using any type of public or private network such as, but not limited to, the Internet, a telephone network, a local area network (LAN), a cable network, and/or a wireless network. To enable communication via the network 112, the example media presentation device 108 includes a communication interface that enables a connection to an Ethernet, a digital subscriber line (DSL), a telephone line, a coaxial cable, or any wireless connection, etc.

[0025] The example collection facility 114 receives, processes, stores, and/or reports presentation data related to metering data received from the LPM 106 and/or tuning data from the media presentation device 108 periodically and/or upon a request by the collection facility 114. In some examples, the collection facility 114 receives the tuning data from a service provider associated with the media presentation device 108 instead of and/or in addition to obtaining the example tuning data from the example media presentation device 108.

[0026] According to the illustrated example, the collection facility 114 is hosted by an audience measurement entity. Alternatively the collector facility may be hosted by any other entity or may be co-hosted by an audience measurement entity and another entity(ies). For example, tuning data may be collected from the example media presentation devices 108 by a media provider (e.g., a cable television provider, a satellite television provider, etc.) and metering data may be collected from the example LPM(s) 106 by an audience measurement entity cooperating with the media provider to gain access to the tuning data. The example collection facility 114 includes the example tuning storage 116 and the example metering storage 118.

[0027] The example tuning storage 116 is a database that stores tuning data received from the example media presentation device 108 and the example metering storage 118 is a database that stores metering data from the example LPM(s) 106. The example tuning storage 116 and metering storage 118 may be implemented by any one of more of a database, a server, and/or any other data structure to store data. According to the illustrated example, the example tuning storage 116 and the example metering

storage 118 are communicatively coupled with the first example media presentation location(s) 102 and the second example media presentation location(s) 110 via the example network 112. Alternatively, the example tuning storage 116 and/or the example metering storage 118 may receive data in any other manner (e.g., tuning data and/or media presentation data may be collected by a third-party and transferred to the collection facility 114 via the network 112 or any other path).

[0028] The example data adjuster 120 processes metering data (e.g., metering data received from the metering storage 118) to create a tuning session(s) (e.g., based on a period of time between channel changes) and a presentation session(s) (e.g., based on when the media was presented by the media presentation device 108 on the media output device 104). The example data adjuster 120 integrates demographic data with the compiled presentation data to generate demographic statistical information. The data adjuster 120 of the illustrated example generates models to estimate presentation session data for a received tuning session received from the example media presentation devices 108. When the example collection facility 114 receives tuning data from the example media presentation devices 108 and/or from a service provider associated with the media presentation devices 108, the example data adjuster 120 estimates and reports presentation session data based on a comparison of the tuning data and the generated models, as further described in FIG. 2.

[0029] In operation, there are two steps to estimating presentation session(s) for tuning data received from the example media presentation device 108. The first step is a model generation step that includes generating models based on determined tuning

session(s) and presentation session(s) from metering data. The second step is a media presentation estimation step that includes estimating presentation sessions for received tuning data.

[0030] During the model generation step, the example LPM 106 collects metering data at the media presentation location 102. As previously described, the metering data includes data related to media presented to and/or exposed to audience members of the media presentation device 108. In some examples, the metering data includes demographics for the users of the media output device 104, data related to the media presented by the media presentation device 108, timestamps for the media exposure, data related to channel changes, data related to media output device 104 on/off status, etc. The example LPM 106 transmits the metering data to the example collection facility 114 via the example network 112 to be stored in the example metering storage 118. As previously described, the metering data is received (e.g., from the LPM 106) periodically and/or upon a request by the collection facility 114. Typically, multiple of the LPMs 106 associated with respective ones of the media presentation locations 102 will send the metering data to the example metering storage 118.

[0031] The example data adjuster 120 analyzes the metering data from the example metering storage 118 to create tuning sessions and presentation sessions based on the metering data. The data adjuster 120 determines tuning session(s) based on a period of time between channel changes indicated in the metering data. The example data adjuster 120 also determines presentation session(s) for the determined tuning session(s) based on a time and/or date of when the media was actually viewed by a user

(e.g., the media output device 104 was detected as being on and a user was determined to be present to view the media output device 104). After the tuning session(s) and the presentation session(s) are determined, the data adjuster 120 of the illustrated example creates and/or updates a model based on a duration(s) of the tuning session(s), as further described in conjunction with FIG. 2.

[0032] During the media presentation estimation step, the media presentation device 108 collects tuning data related to which channel a media presentation device 108 is tuned to while the media presentation device 108 is on. As previously described, the tuning data does not include presentation session data (e.g., data related to media presented while the media output device 104 is on and a user is present). The example media presentation device 108 transmits the tuning data to the example tuning storage 116 of the example collection facility 114 via the example network 112. As previously described, the tuning data is received (e.g., from the media presentation device 108) periodically and/or upon a request by the collection facility 114. In some examples, the tuning data may be collected by the service provider associated with the media presentation device 108. In such examples, the service provider may transmit the tuning data directly to the example collection facility 114 to be stored in the tuning storage 116.

[0033] The example data adjuster 120 determines a duration of a tuning session from the received tuning data. The example data adjuster 120 estimates presentation session data for the tuning session based on the created models. For example, the data adjuster 120 may estimate a 120-minute presentation session based on receiving a 180-minute tuning session. The example data adjuster 120 generates reports based on the

estimated presentation session data. The reports may be generated at preset times (e.g., hourly, daily, monthly, etc.) and/or may be initiated by user request. Additionally, the reports may include data from one or more media presentation locations (e.g., such as the first and second media presentation locations 102, 110). In some examples, the reports may include demographic and/or other statistical information, as further described in FIGS. 8A-9.

[0034] FIG. 2 is block diagram of an example implementation of the example data adjuster 120 of FIG. 1 to estimate presentation sessions for tuning data based on models generated from metering data. The example data adjuster 120 includes an example metering receiver 202, and example tuning session determiner 204, an example presentation session determiner 206, an example modeler 208, an example model storage 210, an example tuning data receiver 212, an example duration determiner 214, an example presentation session estimator 216, and an example reporter 218.

[0035] The example metering receiver 202 of FIG. 2 receives metering data from the example LPM 106 and sends the received metering data to the example tuning session determiner 204 for further processing. In some examples, the metering receiver 202 receives metering data from the example metering storage 118. In some examples, the metering receiver 202 receives metering data from the example LPM(s) 106. In some examples, the metering receiver 202 receives metering data from both the example metering storage 118 and the example LPM(s) 106. The metering receiver 202 may include a network adapter and/or server for receiving metering data from the example

metering storage 118 and/or the example LPM(s) 106 (e.g., via the example network 112) through a wired and/or wireless connection.

[0036] The example tuning session determiner 204 analyzes metering data received via the example metering receiver 202 to create a tuning session(s) based on a period of time between channel changes. Alternatively, the tuning session determiner 204 may generate the created tuning session(s) based on a period of time between any interaction with the media output device 104, the LPM 106, and/or the media presentation device 108. According to the illustrated example, the example tuning session determiner 204 determines a new tuning session for each channel change identified in the metering creates a new tuning session. In this manner, a tuning session is representative of the period of time between each channel change. For example, if the metering data includes a first channel change at 4:00 PM and a second subsequent channel change at 5:30 PM on the same day, the example tuning session determiner 204 creates a 90-minute tuning session representative of the period from 4:00PM to 5:30 PM. Once a tuning session(s) has been determined from the metering data, the example tuning session determiner 204 sends data for the determined tuning session(s) to the example presentation session determiner 206.

[0037] The example presentation session determiner 206 receives data for a tuning session(s) received from the example tuning session determiner 204 and further analyzes created tuning session(s) to determine a presentation session(s) within the tuning session(s). The presentation sessions are determined based on when the media presentation device 108 is actually presenting media to an audience member (e.g., the

example media output device 104 is on and/or an audience member is present). In some examples, the metering data may include user identifiers identifying which user is located in the example media presentation location 102 while the example media output device 104 is on. In such examples, the presentation session determiner 206 may not credit a duration as a presentation session if an audience member is not present while the media output device 104 is on. Once the presentation session(s) is determined, the example presentation session determiner 206 transmits the created tuning session data and the determined presentation session data to the example modeler 208.

[0038] The example modeler 208 creates and/or updates models based on tuning session data and presentation session data received from the example. The example modeler 208 integrates the presentation session data in a model with a corresponding tuning session length. For example, if the example tuning session determiner 204 determines presentation session data from a 500-minute tuning session, the example modeler 208 will store the corresponding presentation session data in a 500-minute tuning session model. In some examples, the example modeler 208 updates the model based on the total presentation session for the tuning session. For example, if the 500-minute tuning session includes a total presentation session of 320 minutes, the example modeler 208 will update the 500-minute tuning session model to include the 320 minute presentation session, as further described in FIG. 8A. In some examples, the example modeler 208 updates the model based on durations associated with the presentation session for the tuning session. For example, if during the 500 minute tuning session, there were two presentation sessions (e.g., from the 0 minute mark to the 200 minute

mark and from the 380 minute mark to the 500 minute mark), the example modeler 208 will update the 500-minute tuning session model to include data from the periods of time (e.g., 0-200 minutes and 380-500 minutes) associated with the presentation sessions, as further described in FIG. 8D. Additionally, the example modeler 208 may update the model based on various conditional probabilities associated with the presentation session(s), as further described in FIG. 8B, 8C, 8E, and 9. Once the example modeler 208 has created and/or updated a model, the example modeler 208 stores the model in the example modal storage 210.

[0039] The example model storage 210 of FIG. 2 stores models created and/or updated by the example modeler 208. In some examples, the model storage 210 includes hardware, software, or firmware to store data locally in the example data adjuster 120. Alternatively, the model storage 210 is located outside the example data adjuster 120 (e.g., in a database and/or a cloud). The models stored in the example model storage 210 may be updated (e.g., based on additional metering data) and/or used to estimate presentation sessions (e.g., based on the tuning data).

[0040] The example tuning data receiver 212 of FIG. 2 receives tuning data from the example media presentation device 108 and/or a service provider and sends the received tuning data to the example duration determiner 214 for further processing. In some examples, the tuning data receiver 212 receives metering data from the example tuning storage 116. Alternatively, the tuning data receiver 212 may receive metering data from the example media presentation device(s) 108. In some examples, the tuning data receiver 212 receives metering data from both the example tuning storage 116 and

the example media presentation device(s) 108. The tuning data receiver 212 may include a network adapter and/or server for receiving metering data from the example tuning storage 116 and/or the example media presentation device(s) 108 (e.g., via the example network 112) via a wired and/or wireless connection.

[0041] The example duration determiner 214 analyzes tuning data to determine a duration of a tuning session from the media presentation device 108. As previously described, a tuning session is based on a period time between channel changes of the media presentation device 108. The tuning data does not include presentation session data. To estimate accurate presentation session for the tuning data, the example duration determiner 214 determines the duration of the tuning session so that an appropriate model may be retrieved to determine the estimate. The example duration determiner 214 transmits tuning data including the tuning session duration to the example presentation session estimator 216 for further processing.

[0042] The example presentation session estimator 216 estimates presentation session for tuning data received from the example tuning data receiver 212 via the example duration determiner 214 based on presentation session data from a model stored in the example model storage 210. The presentation session estimator 216 retrieves, from the example model storage 210, a model with a tuning session length that matches determined tuning session duration determined by the example duration determiner 214. For example, if the tuning data received from the example model storage 210 a 500 minute tuning session, the presentation session estimator 216 retrieves the 500-minute tuning session model from the example memory 210. Since the tuning data does not

differentiate between time when the media output device 104 is on and the media output device 104 is off and/or when an audience member is present, the example presentation session estimator 216 estimates presentation sessions to account for periods of time when the media presentation device is on but the media output device 104 is off and/or an audience member is not present. The example presentation session estimator 216 may estimate additional presentation session data based on, for example, an initial presentation session (e.g., the first presentation session in the tuning session), a final presentation session (e.g., the last presentation session in the tuning session, and/or a total presentation session (e.g., the total presentation minutes in the tuning session) based on the data stored in the corresponding model. For example, the presentation session estimator 216 may receive a 200-minute model(s) while estimating a presentation session for a 200-minute tuning session. The presentation session estimator 216 may estimate, based on the 200-minute model, an initial tuning session of 60 minutes, an final presentation session of 30 minutes, and an total presentation session estimate of 90 minutes based on user and/or administrator settings. In some examples, the settings may be based on statistical analysis (e.g., expected value, weighted average, standard deviation, minimum and/or maximum percentages of presentation sessions from the model(s) etc.).

[0043] In some examples, the example presentation session estimator 216 bins (e.g., groups) data from multiple models within a threshold range when the number of entries in a particular model does not satisfy a minimum threshold number of entries. For example, if a 65-minute tuning duration is determined from tuning data and the 65-

minute tuning session model does not meet a threshold number (e.g., minimum) of entries, the example presentation session estimator 216 may group data from models of similar tuning session length within a threshold range. For example, if the threshold range is 4 minutes, the data from the 63-minute tuning session model, the 64-minute tuning session model, the 66-minute tuning session model, and the 67-minute tuning session model may be combined with the data from the 65-minute tuning session model. In this manner, the number of entries may be increased until the threshold number of entries is satisfied. In some examples, the threshold number of entries for a model and the minimum threshold range may be set and/or adjusted by a user and/or an administrator.

[0044] The example reporter 218 of FIG. 2 generates reports of data received, determined, and/or generated by the example data adjuster 120. The example reporter 218 generates reports including media presentation session data, the metering data from the example LPM 106, tuning data from the media presentation device 108, data relating models generated by the example modeler 208, presentation session estimator 216 settings, and/or any other data relating to the LPM 106 and/or the media presentation device 108. The reports may include statistical analysis including conditional distributions, cumulative distributions, expected values, etc. For example, the reports may illustrate that 15% of 200-minute tuning sessions from media presentation devices 108 include only 120 minutes of presentation time, that 35% of the 200-minute tuning session was being presented at the 158th minute, that the expected total presentation minutes for the 200-minute tuning session is 150 minutes, etc. The reports may be

preset and/or customized by a user and/or administrator to include information relevant to the user and/or administrator.

[0045] While an example manner of implementing the example data adjuster 120 of FIG. 1 is illustrated in FIG. 2, one or more elements, processes and/or devices illustrated in FIG. 2 may be combined, divided, re-arranged, omitted, eliminated and/or implemented in any other way. Further, the example metering receiver 202, the example tuning session determiner 204, the example presentation session determiner 206, the example modeler 208, the example model storage 210, the example tuning data receiver 212, the example duration determiner 214, the example presentation session estimator 216, the example reporter 218, and/or, more generally, the example the example data adjuster 120, of FIG. 2 may be implemented by hardware, machine readable instructions, software, firmware and/or any combination of hardware, machine readable instructions, software and/or firmware. Thus, for example, any of the example metering receiver 202, the example tuning session determiner 204, the example presentation session determiner 206, the example modeler 208, the example model storage 210, the example tuning data receiver 212, the example duration determiner 214, the example presentation session estimator 216, the example reporter 218, and/or, more generally, the example the example data adjuster 120, of FIG. 2 could be implemented by one or more analog or digital circuit(s), logic circuit(s), programmable processor(s), application specific integrated circuit(s) (ASIC(s)), programmable logic device(s) (PLD(s)) and/or field programmable logic device(s) (FPLD(s)). When reading any of the apparatus or system claims of this patent to cover a purely software and/or firmware implementation,

at least one the example metering receiver 202, the example tuning session determiner 204, the example presentation session determiner 206, the example modeler 208, the example model storage 210, the example tuning data receiver 212, the example duration determiner 214, the example presentation session estimator 216, the example reporter 218, and/or, more generally, the example the example data adjuster 120, of FIG. 2 is/are hereby expressly defined to include a tangible computer readable storage device or storage disk such as a memory, a digital versatile disk (DVD), a compact disk (CD), a Blu-ray disk, etc. storing the software and/or firmware. Further still, the example data adjuster 120 of FIG. 2 may include one or more elements, processes and/or devices in addition to, or instead of, those illustrated in FIG. 2, and/or may include more than one of any or all of the illustrated elements, processes and devices.

[0046] Flowcharts representative of example machine readable instructions for implementing the example data adjuster 120 of FIG. 2 are shown in FIG. 3-5. In the examples, the machine readable instructions comprise a program for execution by a processor such as the processor 1012 shown in the example processor platform 1000 discussed below in connection with FIG. 10. The program may be embodied in software stored on a tangible computer readable storage medium such as a CD-ROM, a floppy disk, a hard drive, a digital versatile disk (DVD), a Blu-ray disk, or a memory associated with the processor 1012, but the entire program and/or parts thereof could alternatively be executed by a device other than the processor 1012 and/or embodied in firmware or dedicated hardware. Further, although the example program is described with reference to the flowcharts illustrated in FIGS. 3-5, many other methods of implementing the

example data adjuster 120 of FIG. 2 may alternatively be used. For example, the order of execution of the blocks may be changed, and/or some of the blocks described may be changed, eliminated, or combined.

[0047] As mentioned above, the example processes of FIGS. 3-5 may be implemented using coded instructions (e.g., computer and/or machine readable instructions) stored on a tangible computer readable storage medium such as a hard disk drive, a flash memory, a read-only memory (ROM), a compact disk (CD), a digital versatile disk (DVD), a cache, a random-access memory (RAM) and/or any other storage device or storage disk in which information is stored for any period (e.g., for extended time periods, permanently, for brief instances, for temporarily buffering, and/or for caching of the information). As used herein, the term tangible computer readable storage medium is expressly defined to include any type of computer readable storage device and/or storage disk and to exclude propagating signals and to exclude transmission media. As used herein, "tangible computer readable storage medium" and "tangible machine readable storage medium" are used interchangeably. Additionally or alternatively, the example processes of FIGS. 3-5 may be implemented using coded instructions (e.g., computer and/or machine readable instructions) stored on a non-transitory computer and/or machine readable medium such as a hard disk drive, a flash memory, a read-only memory, a compact disk, a digital versatile disk, a cache, a random-access memory and/or any other storage device or storage disk in which information is stored for any period (e.g., for extended time periods, permanently, for brief instances, for temporarily buffering, and/or for caching of the information). As

used herein, the term non-transitory computer readable medium is expressly defined to include any type of computer readable storage device and/or storage disk and to exclude propagating signals and to exclude transmission media. As used herein, when the phrase "at least" is used as the transition term in a preamble of a claim, it is open-ended in the same manner as the term "comprising" is open ended.

[0048] The example machine readable instructions illustrated in FIG. 3 may be executed to cause the example data adjuster 120 of FIG. 2 to create a model based on metering data and determine presentation session data from tuning data of the example media presentation device(s) 108 (e.g., the model generation step) in conjunction with FIGS. 7-9.

[0049] At block 300, the metering receiver 202 receives metering data from the example LPM 106. As previously described, the metering data contains detailed media exposure data for the example media presentation location 102 (e.g., for media from the example media presentation device 108 output by the example media output device 104. Example metering data is illustrated and further described in FIG. 6. At block 302, the tuning session determiner 204 creates a tuning session based on a period of time between channel changes. Alternatively, the example tuning session determiner 204 may create a tuning session based on any other events at the example media presentation location (e.g., a volume change, a detected user presence, etc.). Once the tuning session has been created, the example presentation session determiner 206 determines presentation sessions within the tuning session (block 304). Alternatively, presentation sessions may be determined prior to or in parallel with the creation of the tuning session.

An example of presentation sessions within a tuning session is illustrated and further described in FIGS. 7A-7C.

[0050] At block 306, the example modeler 208 adds the presentation session data to a first set of models based on the tuning session length. For example, based on the determined tuning sessions, the example modeler 208 updates the example models by adding the presentation data to the first set of models (e.g., such as frequency distribution of total presentation time and frequency distribution of media presented at set times, as further described in FIGS. 8A and 8D). For example, if there are 50 minutes of total presentation session time for a 75-minute tuning session, the example modeler 208 adds a count for the total 50 minutes presentation session to a frequency distribution model for a 75-minute tuning session, as further described in FIG. 8A. Additionally, if the example modeler 208 determines that the 75-minute tuning session contains two presentation sessions (e.g., from 0-30 minutes and from 55-75 minutes), the example modeler 208 may update a 75-minute frequency distribution model based on every minute of the two presentation sessions (e.g., adds a count at 0 minute bucket, at a 1 minute bucket, at a 2 minute bucket, ..., at a 30 minute bucket, at a 55 minute bucket, ..., at a 75 minute bucket), as further described in FIG. 8D. Once the example modeler 208 updates the first set of models, the example modeler 208 updates a second set of models associated with the first set of models (block 308). For example, there may be various models (e.g., such as models of conditional distribution of total presentation time, models of cumulative distribution of total presentation time, models of conditional distribution of media presented at set times, models of conditional

expected value, etc., as further described in FIGS. 8B, 8C, 8E, and 9) that are calculated based on the first set of models. For example, a 75-minute conditional distribution model is based on a number of counts in one bucket divided by the total number of counts. In such examples, the conditional probability for a 20-minute tuning session may include 100 counts for a presentation session totaling 15 minutes and the 20-minute tuning session may have a total of 500 counts, therefore the conditional probability for a 15 minute total presentation session based on a 20-minute tuning session is 20% (e.g., $100/500$). However if additional metering data is received, the conditional data is calculated based on updates to the first set of models. For example, if 500 more 20-minute tuning sessions are added to the first set of models and none of the 500 20-minute tuning sessions include 15-minute total presentation sessions, the conditional probability for a 15-minute total presentation session would lower to 10% (e.g., $100/1000$). In such examples, the presentation session data is first added to the first set of models and then the second set of models may be updated (e.g., re-calculated) based on the updated first set. At block 310, once the models have been updated, the models are stored in the example model storage 210 to be used by the presentation session estimator 216, as further described in FIG. 4.

[0051] The example machine readable instructions illustrated in FIG. 4 may be executed to cause the example data adjuster 120 of FIG. 2 to estimate presentation sessions from tuning data from the example media presentation device 108 (e.g., the media presentation estimation step).

[0052] At block 400, the example tuning data receiver 212 receives tuning data from the example media presentation device 108. As previously described, the tuning data includes data relating to which channel the media presentation device 108 was tuned to while the media presentation device 108 is on. Tuning data may be inaccurate because tuning data assumes that the media output device 104 is on and a viewer is present whenever the media presentation device is on. Therefore, tuning data does not provide presentation session data (e.g., data related to when the media output device 104 is on and a user is present) within a tuning session.

[0053] At block 402, the example duration determiner 214 determines a duration of a tuning session based on the tuning data. Once the duration the tuning session has been determined, the example presentation session estimator 216 retrieves a corresponding model from the example model storage 210 (block 404). Since the example models are divided by tuning session durations, the presentation session estimator 216 retrieves a model that corresponds to (e.g., matches with) the duration the received tuning session. At block 406, the example presentation session estimator 216 estimates presentation session data (e.g., a total estimated presentation session, a period for a presentation session at the beginning and/or end of the tuning session, and/or any other data based on the stored models as further described in FIGS. 8A-E) based on user settings. For example, a user may create setting for an initial presentation session based a when the total percentage of users in a model drops below 80%. In such examples, if a 10 minute tuning session is received from the example tuning data receiver 212, the presentation session estimator 216 receives a 10-minute model (e.g., such as the

conditional distribution of media presented at set times model of FIG. 8E). Since the 4th minute of the model of FIG. 8E is the first time that the conditional percentage drops below 80% (e.g., at the 4th minute it is 75%), the presentation session estimator 216 estimates an initial presentation session from the 0th minute to the 3rd minute. As previously described, the user settings may be preset or configured based on user and/or administrator preferences. At block 408, the example reporter 218 generates a report including the estimated presentation session data. Additionally, the report may include the tuning data, the metering data, demographic data, any and/or all of the stored models, and/or any other data related to the LPM 106 and/or the media presentation device 108. As previously described, the data reported on the reporter may be preset or customized.

[0054] The example machine readable instructions illustrated in FIG. 5 include alternative instructions to cause the example data adjuster 120 of FIG. 2 to estimate presentation sessions from tuning data from the example media presentation device 108. The example machine readable instructions cause the example data adjuster 120 of FIG. 2 to bin (e.g., group) models based on tuning session durations.

[0055] At block 500, the example tuning data receiver 212 receives tuning data from the example media presentation device 108. As previously described, the tuning data includes data relating to which channel the media presentation device 108 was tuned to while the media presentation device 108 is powered on. Tuning data may be inaccurate because tuning data assumes that the media output device 104 is on and a viewer is present whenever the media presentation device is on. Therefore, tuning data

does not provide presentation session data (e.g., data related to when the media output device 104 is on and a user is present) within a tuning session.

[0056] At block 502, the example duration determiner 214 determines a duration of a tuning session based on the tuning data. Once the duration the tuning session has been determined, the example presentation session estimator 216 retrieves a corresponding model from the example model storage 210 (block 504). Since example the models are divided by tuning session durations, the presentation session estimator 216 retrieves a model that corresponds to (e.g., matches with) the duration the received tuning session.

[0057] At block 506, the presentation session estimator 216 determines if the obtained model exceeds a minimum number of entries. The minimum number of entries may be predetermined and/or based on user and/or administrator preferences. If a model has a limited number of entries (e.g., small sample size), the presentation session estimator 216 may inaccurately estimate presentation session data. As previously described, the example presentation session estimator 216 may bin (e.g., group) similar models together to increase the number of entries above the minimum number of entries. If the model does exceed the minimum number of entries, the example presentation session estimator 216 estimates presentation session data (e.g., a total estimated presentation session, a period for a presentation session at the beginning and/or end of the tuning session, and/or any other data based on the stored models as further described in FIGS. 8A-E) (block 508) based on user settings. For example, a user may create setting for an initial presentation session based a when the total percentage of users in a

model drops below 80%. In such examples, if a 10 minute tuning session is received from the example tuning data receiver 212, the presentation session estimator 216 receives a 10-minute model (e.g., such as the conditional distribution of media presented at set times model of FIG. 8E). Since the 4th minute of the model of FIG. 8E is the first time that the conditional percentage drops below 80% (e.g., at the 4th minute it is 75%), the presentation session estimator 216 estimates an initial presentation session from the 0th minute to the 3rd minute. As previously described, the user settings may be preset or configured based on user and/or administrator preferences.

[0058] If the model does not exceed the minimum number of entries, the example presentation session estimator 216 estimates presentation session data based on the model and data from other models within a threshold duration range (block 510). In this manner, the example presentation session estimator 216 can increase the number of entries by gathering data from models with similar tuning session durations. For example, if a threshold range is 5 minutes and a 30-minute tuning session model does not meet the minimum number of entries, the presentation session estimator 216 may combine entries from the 28-minute tuning session model, the 29-minute tuning session model, the 30-minute tuning session model, the 32-minute tuning session model, and the 33-minute tuning session model. In some examples, the presentation session estimator 216 may add entries from one model at a time until the minimum threshold is met. The threshold range and/or the minimum number of entries may be preset and/or based on user and/or administrator preferences. Once, the minimum threshold is met, the example presentation session estimator 216 estimates presentation session data based on

the binned (e.g., grouped) models (e.g., a total estimated presentation session, an duration for a presentation session at the beginning and/or end of the tuning session, and/or any other data based on the stored models as further described in FIGS. 8A-E). At block 512, the example reporter 218 generates a report including the estimated presentation session data. Additionally, the report may include the tuning data, the metering data, demographic data, any and/or all of the stored models, presentation session data prior to binning, and/or any other data related to the LPM 106 and/or the media presentation device 108.

[0059] FIG. 6 is an illustration of example metering data 600 from the example LPM 106. The example metering data 600 includes a household identification (ID) 602, a tuner key 604, a start presentation time 606, an end presentation time 608, a channel key 610, a genre 612, a presentation weight date key 614, a valid data flag 616, and a source 618.

[0060] The example household ID 602 of FIG. 6 identifies which example media presentation location 102 transmitted the metering data 600. In this example, there is one household ID 602, namely '30006.' However, there may be many household IDs from various media presentation locations 102 within the metering data 600. The example tuner key 604 is an identification number for the media output device 104. Since there may be the media presentation location 102 with multiple media presentation devices 102, the tuner key 604 identifies which media output device 104 was being used. The example start time 606 is a timestamp based on a start of a presentation session (e.g., when the media presentation device 108 was actually presenting media on the

media output device 104). The example end time 608 is a timestamp based an end of a presentation session. The example channel key 610 identifies a channel tuned by the media presentation device 108. The example genre 612 identifies the genre of the media tuned to on the media presentation device 108 during the presentation session. The example presentation weight date key 614 is a code representative of a date of the end time 608. The example valid data flag 616 is a Boolean value that identifies whether the metering data is valid. The metering data may not be valid if there is an error in the metering data (e.g., the metering data is corrupted, the metering data is missing information, etc.). The example source 618 identifies a source (e.g., a videocassette recorder (VCR), DVD, cable, antenna, video game counsel, etc.) of the media presentation device 618. The source 618 may change if, for example, the user is watching a DVD. Additionally, the metering data 600 may contain additional columns for data related to other aspects of audience member data. For example, the metering data may contain data identifying whether or not a user(s) is present, demographics relating to the user(s), and/or an identifier for the user(s) present during a presentation session. Alternatively, the metering data may only display data while a user is present and omit any data while the user is not present. For example, the example LPM 106 may adjust the example metering data 600 so that the metering data 600 does not include data from time durations when a user is not present.

[0061] When the example metering data 600 of FIG. 6 is received by the example collection facility 114 from the example LPM 106, the example tuning session determiner 204 tuning sessions based on a period time between channel changes by

analyzing the metering data 600. The example columns 620 represent data from a period time between channel changes. In this example, the tuning session determiner 204 identifies the example columns 620 as an example tuning session as further described in in FIGS 7A-C.

[0062] FIGS. 7A-C illustrate an example of determining a tuning session and presentation sessions within the tuning session based on the example metering data 600 of FIG. 6. In the illustrated example, the tuning session determiner 204 determines tuning session based on a period of time between channel changes. FIG. 7A displays the columns 620 from the example metering data 600 of FIG. 6. FIG. 7B displays information that may be extracted from the example columns 620 to determine the tuning session and the presentation sessions. For example, based on the information from the example columns 620, the presentation session determiner 206 determines that at time 00:25:00 media output device '186242092' from household '50006' was turned off after watching a channel associated with '294984.' At time 00:34:00, the media output device '186242092' was turned on and the channel was changed to a channel associated with a channel key '2875552.' At time 02:26:00, the media output device '186242092' was turned off. At time 04:52:00, the media output device '186242092' was turned back on while remaining on the channel associated with the channel key '2875552.' At time 05:46:00, the media output device '186242092' was turned off. At time 20:50:00, the media output device '186242092' was turned back on while remaining on the channel associated with the channel key '2875552.' At time 21:35:00, the media output device '186242092' was turned off. At time 22:41:00, the media

output device '186242092' was turned back on and the channel was changed to a channel associated with the channel key '294984.'

[0063] FIG. 7C illustrates an example tuning session and example presentation sessions determined for the metering data from columns 620 of FIG. 7A. Since the channel was changed at 00:34:00 and then again at 22:41:00, the example tuning session determiner 204 generates an example tuning session of 1,327 minutes (e.g., the period of time between channel changes). Once the tuning session is created, the presentation session determiner 206 determines presentation sessions based on the periods of time that media from the media output device '186242092' was actually presented within the tuning session (e.g., the media output device '186242092' was on and a user was viewing the media output device '186242092'). For example, the presentation session determiner 206 analysis the start and end times from the metering data from columns 620 to determine when the media output device 104 was on and when the media output device 104 was off. The presentation sessions only include periods of time while the media output device 104 is on. In some examples, the metering data in columns 620 may only include data when a user is present. In such examples, the presentation sessions are based on when the media output device 104 is on. In some examples, the metering data in columns 620 may include additional data such as data related to the presence of audience members. In such examples, the presentation session determiner 206 may need to determine if, and/or which, audience members are present while the media output device 104 is on. Based on the example columns 620, the presentation session determiner 206 determines that the presentation session periods are 00:34:00-

02:56:00 (e.g., 142 minutes), 04:52:00-0:5:46:00 (e.g., 54 minutes), and 20:50:00-21:35:00 (e.g., 45 minutes). The total presentation time for the 1,327 minute tuning session is 238 minutes (e.g., $142+54+42=238$). In this example, once the example presentation session determiner 206 determines presentation session data based on the created tuning session, the example modeler 208 adds the presentation session data to a model corresponding to a tuning session duration 1,327 minutes, as further described in FIGS. 8A-8E.

[0064] FIGS. 8A-E display example models displaying various distributions based on presentation session data for an example 10-minute tuning session. The example models of 8A-E are based on a total of 5963 10-minute tuning sessions collected from metering data of the example LPM 106 in FIG. 2, as previously described in FIGS. 7A-C.

[0065] FIG. 8A displays an example model of an example frequency distribution of total presentation time based on the gathered 10-minute tuning session. Additionally, other models may be created for tuning sessions of varying lengths (e.g., 1-minute tuning session, 5-minute tuning session, 60-minute tuning session, 720-minute tuning session, etc.). Alternatively, one model may be generated with multiple rows representing multiple tuning session lengths.

[0066] The example model of FIG. 8A includes an example frequency distribution of presentation times 802 broken into one minute intervals for the example 10-minute tuning session 800. In some examples, the presentation times 802 represent a range of times. For example, the example presentation time '0' labeled 806 may include

all time from 00:00:00 to 00:00:59, 00:00:00 to 00:00:29, or any other range. The ranges may be predetermined and/or may be customized by a user and/or an administrator. Alternatively, the frequency distribution presentation times 802 may be broken into any duration of intervals (e.g., thirty second intervals, 2 minute intervals, 5 minute intervals, etc.).

[0067] To generate and/or update the example model of FIG. 8A, the example collection facility 114 of FIG. 1 collects metering data from the example LPM 106. Once the example data adjuster 120 breaks the metering data into tuning sessions and presentation sessions, the example data adjuster 120 populates the model(s) based on the tuning session data and presentation session data. The example frequency distribution of FIG. 8A is populated based on presentation session data from tuning sessions of 10 minute length. Each of the 5,963 collected 10-minute tuning sessions are represented in a presentation duration bucket based on the total presentation time of the tuning session (e.g., the amount time within the 10-minute tuning session 800 that media was presented). The example of FIG. 8A includes 112 instances of a total presentation time of 0 minutes labeled 804 for a 10-minute tuning session 800, 242 instances of a total presentation time of 1 minute labeled 808 for a 10-minute tuning session 800, etc. As additional metering data is processed by the example data adjuster 120, the example model is updated to represent the additional monitored data.

[0068] Various statistical calculations (e.g., weighted average, standard deviation, etc.) can additionally be determined by the example modeler 208 based on the

data from the frequency distribution of FIG. 8A. For example, an expected value (e.g., weighted average) may be calculated using the following formula:

$$\text{[0069]} \quad \bar{x} = \frac{\sum_{i=1}^n w_i \cdot x_i}{\sum_{i=1}^n w_i}$$

[0070] Where $\bar{x}$ is the expected value, w_i is the number of instances in presentation bucket i , and x_i is the number of presentation minutes of presentation bucket i .

[0071] The example model of FIG. 8A has an expected value of 6.58, as shown below:

$$\text{[0072]} \quad \frac{0(112)+1(242)+2(338)+3(370)+4(390)+5(490)+6(491)+7(781)+8(901)+9(903)+10(945)}{5963} =$$

6.58

[0073] The example expected value is the number of expected total presentation minutes given a 10-minute tuning session. In other words, given a received 10-minute tuning session from a media presentation device, it is expected that a total of 6.58 minutes of the 10 minutes were actually presented to a user. The expected value for each tuning session length can be plotted on a graph, as further described in FIG. 9.

[0074] FIG. 8B displays an example model of an example conditional distribution of presentation time based on the example frequency distribution of FIG. 8A. Additionally other models may be created for conditional distribution of presentation time for tuning sessions of varying lengths (e.g., 1-minute session, 5-minute tuning session, 60-minute tuning session, 720-minute tuning session, etc.) Alternatively,

one model may be generated with multiple rows representing varying tuning session lengths.

[0075] The example model of FIG. 8B includes an example conditional distribution of presentation times 812 broken into one minute intervals for an example 10-minute tuning session 800. In some examples, the presentation times 812 represent a range of times. For example, the example presentation time '0' labeled 814 may include all time from 00:00:00 to 00:00:59, 00:00:00 to 00:00:29, or any other range. The ranges may be predetermined or may be customized by an administrator. Alternatively, the conditional distribution 812 may be broken into any duration of intervals (e.g., thirty second intervals, 2 minute intervals, 5 minute intervals, etc.).

[0076] Conditional distribution buckets contain conditional percentages based on the frequency distributions of FIG. 8A. The conditional percentages in the example conditional distribution buckets are calculated by dividing each frequency distribution bucket by a total number of tuning sessions modeled for a tuning session length. For example, the conditional distribution percentage for a 0-minute presentation session 814 within a 10-minute tuning session 800 is calculating by dividing the 112 instances of the 0-minute presentation session labeled 806 by the total number of 10-minute tuning sessions 800 (e.g., $112+242+338+370+390+490+491+781+901+903+945 = 5963$ total sessions) as shown below:

$$\text{[0077]} \quad \frac{112}{5963} = 2\%$$

[0078] 2% is placed in the conditional distribution bucket for the 0-minute presentation session 816 within a 10 minute tuning session 800. Other example conditional distribution buckets are calculated in a similar manner. For example, FIG. 8B illustrates that 4% of the 10-minute tuning sessions contain a total presentation time of 1 minute, 8% of the 10-minute tuning sessions contain a total presentation time of 5 minutes, 16% of the 10-minute tuning sessions contain a total presentation time of 10 minutes, etc.

[0079] FIG. 8C is an example model of an example cumulative distribution of presentation time based on the example conditional distribution of FIG. 8B. Additionally other models may be created for conditional distribution of presentation time for tuning sessions of varying lengths (e.g., 1-minute session, 5-minute tuning session, 60-minute tuning session, 720-minute tuning session, etc.) Alternatively, one model may be generated with multiple rows representing varying tuning session lengths.

[0080] The example model of FIG. 8C includes an example cumulative distribution of presentation times 824 broken into one minute intervals for an example 10-minute tuning session 800. In some examples, the presentation times 824 represent a range of times. For example, the example presentation time '0' labeled 826 may include all time from 00:00:00 to 00:00:59, 00:00:00 to 00:00:29, or any other range. The ranges may be predetermined or may be customized by an administrator. Alternatively, the example cumulative distribution 824 may be broken into any duration of intervals (e.g., thirty second intervals, 2 minute intervals, 5 minute intervals, etc.).

[0081] Cumulative distribution buckets contain cumulative percentages based on the conditional distribution of FIG. 8B. The cumulative percentages in the example cumulative distribution buckets are calculated by adding the percentage in a selected conditional distribution bucket with the percentages in all the conditional distribution buckets prior to the selected conditional distribution bucket. For example, the cumulative distribution bucket for a 3-minute presentation session within a 10-minute tuning session 800 is calculated by adding the percentage in the 3 minute conditional distribution bucket 822 for a 10-minute tuning session 800 (e.g., 6%) with the percentage in the 2-minute (e.g., 6%) conditional distribution bucket 720, 1-minute (e.g., 4%) conditional distribution bucket 818, and 0-minute (e.g., 2%) conditional distribution bucket 816 and for a 10-minute tuning session 800 as shown below:

[0082] $6\% + 6\% + 4\% + 2\% = 18\%$

[0083] 18% is placed in the 3-minute cumulative distribution bucket 828 and the other example cumulative distribution buckets are calculated in a similar manner. The percentages in each cumulative distribution buckets represent the total percentage of presentation times of up to a particular length of time. For example, 54% of the 10-minute tuning sessions contained a total presentation sessions of 8 minutes or less. Alternatively, a cumulative distribution may be calculated based on the frequency distribution of FIG. 8A. In this manner, the cumulative distribution calculated using the frequency distribution of FIG. 8A as appose to the conditional distribution percentages of FIG. 8B. The distributions models of FIGS. 8A, 8B, and 8C may be used to adjust

tuning data from a STB in order to determine a total presentation session for the tuning data from the STB, as further described in FIG. 9.

[0084] FIG. 8D displays an example model of an example frequency distribution of media output device presented at set times 830 during a 10-minute tuning session 800. Additionally, other models may be created for tuning sessions of varying lengths (e.g., 1-minute tuning session, 5-minute tuning session, 60-minute tuning session, 720-minute tuning session, etc.). Alternatively, one model may be generated with multiple rows representing the varying tuning session lengths.

[0085] The example model of FIG. 8D includes an example frequency distribution of media output devices presented at set times 830 broken into one minute intervals for an example 10-minute tuning session 800. Alternatively, the frequency distribution 830 may be broken into any duration of intervals (e.g., thirty second intervals, 2 minute intervals, 5 minute intervals, etc.). If a user of the media presentation device was presentation the media presentation device at the designated time, the instance is counted in a corresponding frequency distribution bucket. In some examples, the blocks can represent a range of times. For example, the blocks may be broken up so that if a user was exposed to media by the media presentation device 108 within the 00:00:00-00:00:29 window, the instance would be counted in the 'at 0' frequency distribution bucket 832.

[0086] To generate and/or update the example model of FIG. 8D, the example collection facility 114 of FIG. 1 collects metering data from the example LPM 106. Once the example data adjuster 120 breaks the metering data into tuning sessions and

presentation sessions, the example data adjuster 120 populates the model(s) based on tuning session data and presentation session data. The example model of the example frequency distribution of media output devices presenting at set times of FIG. 8D is populated based on presentation session data from tuning sessions of 10 minute length. Each of the 5963 gathered 10-minute tuning sessions are analyzed to determine how many media presentation device 108 were actually presenting media on media output device 104 at set times of the 10-minute tuning session. For example, a 10-minute tuning session containing presentation sessions from 00:00-05:30 and from 08:45-10:00 would be entered as being watched in the at 0, at 1, at 2, at 3, at 4, at 5, at 9, and at 10 minute frequency distribution blocks.

[0087] FIG. 8E displays an example model of an example conditional distribution of media output devices presenting media at set times 836 during a 10-minute tuning session 800. Additionally, other models may be created for tuning sessions of varying lengths (e.g., 1-minute tuning session, 5-minute tuning session, 60-minute tuning session, 720-minute tuning session, etc.). Alternatively, one model may be generated with multiple rows representing rows representing the varying tuning session lengths.

[0088] The example model of FIG. 8E includes an example conditional distribution of media output devices presenting media at set times 836 broken into one minute intervals for an example 10-minute tuning session 800. Alternatively, the conditional distribution at set times 836 may be broken into any duration of intervals (e.g., thirty second intervals, 2 minute intervals, 5 minute intervals, etc.). If a user of the

media presentation device was presentation the media presentation device at the designated time, the instance is counted in a corresponding conditional distribution bucket. In some examples, the blocks can represent a range of times. For example, the blocks may be broken up so that if a user was exposed to media by the media presentation device 108 within the 00:00:00-00:00:29 window, the instance would be counted in the 'at 0' conditional distribution bucket labeled 838.

[0089] Conditional distribution buckets contain conditional percentages based on the frequency distributions 830 of FIG. 8D. The conditional percentages in the example conditional distribution buckets are calculated based on dividing each frequency distribution bucket by a total number of tuning sessions modeled for a tuning session length. For example, the conditional distribution percentage at the fifth minute for the example 10 minute-tuning session 800 is calculating by dividing the 4411 presentation instances at the fifth minute 834 by the total number of 10-minute tuning sessions (e.g., 5963 total sessions) as shown below:

$$\text{[0090]} \quad \frac{4411}{5963} = 74\%$$

[0091] 74% is placed in the at 5 minute conditional bucket 840 for a 10 minute tuning session. Other example conditional distribution buckets 820 are calculated in a similar manner. The conditional distribution of FIG. 8B illustrates that 100% of the total 10-minute tuning sessions were presenting media at the zeroth minute, 88% of the total 10-minute tuning sessions were presenting media at the third minute, 49% of the total 10-minute tuning sessions were presenting media at the tenth minute, etc. Additionally,

a report may be generated including any of the example models or combination of the example models. The distributions models of FIGS. 8D and 8E may be used to adjust tuning data from a STB based on an initial presentation session, an ending presentation session, and/or any other presentation session information for the tuning data of the STB, as previously described in FIG. 4.

[0092] FIG. 9 is an example graph of expected total presentation session values based on various tuning sessions generated from metering data of the LPM 106 of FIG. 1. The example data adjuster 120 determines an expected total presentation session by calculating a weighted average of the total presentation sessions of a selected tuning session length. For example, as previously described in FIG. 5A, the example expected value for the 10-minute tuning session of FIG. 5A was 6.58. Therefore, the example graph of FIG. 9 will have a coordinate (e.g., (10, 6.58)) to represent the expected value for the 10-minute tuning session. The example graph contains a point for every tracked tuning session (e.g., a 1 minute tuning session, 10 minute tuning session, 200 minute tuning session, etc.). A report may be generated including the example graph.

[0093] FIG. 10 is a block diagram of an example processor platform 1000 capable of executing the instructions of FIGS. 3-5 to implement the example data adjuster 120 of FIG. 1. The processor platform 1000 can be, for example, a server, a personal computer, a mobile device (e.g., a cell phone, a smart phone, a tablet such as an iPadTM), a personal digital assistant (PDA), an Internet appliance, or any other type of computing device.

[0094] The processor platform 1000 of the illustrated example includes a processor 1012. The processor 1012 of the illustrated example is hardware. For example, the processor 1012 can be implemented by integrated circuits, logic circuits, microprocessors or controllers from any desired family or manufacturer.

[0095] The processor 1012 of the illustrated example includes a local memory 1013 (e.g., a cache). The example processor 1012 of FIG. 10 executes the instructions of FIGS. 3-5 to the example metering receiver 202, the example tuning session determiner 204, the example presentation session determiner 206, the example modeler 208, the example model storage 210, the example tuning data receiver 212, the example duration determiner 214, the example presentation session estimator 216, the example reporter 218 of FIG. 2 to implement the example data adjuster 120. The processor 1012 of the illustrated example is in communication with a main memory including a volatile memory 1014 and a non-volatile memory 1016 via a bus 1018. The volatile memory 1014 may be implemented by Synchronous Dynamic Random Access Memory (SDRAM), Dynamic Random Access Memory (DRAM), RAMBUS Dynamic Random Access Memory (RDRAM) and/or any other type of random access memory device. The non-volatile memory 1016 may be implemented by flash memory and/or any other desired type of memory device. Access to the main memory 1014, 1016 is controlled by a memory controller.

[0096] The processor platform 1000 of the illustrated example also includes an interface circuit 1012. The interface circuit 1012 may be implemented by any type of

interface standard, such as an Ethernet interface, a universal serial bus (USB), and/or a PCI express interface.

[0097] In the illustrated example, one or more input devices 1022 are connected to the interface circuit 1012. The input device(s) 1022 permit(s) a user to enter data and commands into the processor 1012. The input device(s) can be implemented by, for example, a sensor, a microphone, a camera (still or video), a keyboard, a button, a mouse, a touchscreen, a track-pad, a trackball, isopoint and/or a voice recognition system.

[0098] One or more output devices 1024 are also connected to the interface circuit 1012 of the illustrated example. The output devices 1024 can be implemented, for example, by display devices (e.g., a light emitting diode (LED), an organic light emitting diode (OLED), a liquid crystal display, a cathode ray tube display (CRT), a touchscreen, a tactile output device, and/or speakers). The interface circuit 1012 of the illustrated example, thus, typically includes a graphics driver card, a graphics driver circuit or a graphics driver processor.

[0099] The interface circuit 1012 of the illustrated example also includes a communication device such as a transmitter, a receiver, a transceiver, a modem and/or network interface card to facilitate exchange of data with external machines (e.g., computing devices of any kind) via a network 1026 (e.g., an Ethernet connection, a digital subscriber line (DSL), a telephone line, coaxial cable, a cellular telephone system, etc.).

[00100] The processor platform 1000 of the illustrated example also includes one or more mass storage devices 1028 for storing software and/or data. Examples of such mass storage devices 1028 include floppy disk drives, hard drive disks, compact disk drives, Blu-ray disk drives, RAID systems, and digital versatile disk (DVD) drives.

[00101] The coded instructions 1032 of FIGS. 3-5 may be stored in the mass storage device 1028, in the volatile memory 1014, in the non-volatile memory 1016, and/or on a removable tangible computer readable storage medium such as a CD or DVD.

[00102] From the foregoing, it should be appreciated that the above disclosed methods, apparatus, and articles of manufacture estimate presentation session from tuning data based on metering data. Media presentation device data may have extraneous information leading to inaccurate audience measurement data. For example, STB data does not account for when a television is off and the television is on, or when the television is on, but no one is watching the media presentation device. Methods and apparatus described herein estimate presentation sessions for tuning data to account for the extraneous information. Since LPMs can determine more accurate information including when a media presentation device is on and when a user is actually watching the media presentation device, metering data from the LPM are analyzed to create models used to accurately adjust media presentation device data.

[00103] Using the examples disclosed herein, media presentation device data may be more accurately analyzed based on data from a plurality of LPMs. In some

examples, models are created from metering data of LPMs initial presentation session, a final presentation session, and a total presentation session within a tuning session. In such examples, presentation sessions for tuning data from media monitoring devices may be estimated based on data in corresponding models. In this manner, reports may be generated to include the estimated presentation session for a tuning session of a media presentation device.

[00104] From the foregoing, persons of ordinary skill in the art will appreciate that the above disclosed methods and apparatus may be realized within a single device or across two cooperating devices, and could be implemented by software, hardware, and/or firmware to implement the data adjuster disclosed herein.

[00105] Although certain example methods, apparatus and articles of manufacture have been described herein, the scope of coverage of this patent is not limited thereto. On the contrary, this patent covers all methods, apparatus and articles of manufacture fairly falling within the scope of the appended claims either literally or under the doctrine of equivalents.

What is claimed is:

1. A computing system comprising:
machine readable instructions; and
processor circuitry to execute the machine readable instructions to at least:
access respective tuning session data from a plurality of media
presentation devices, corresponding ones of the plurality of media presentation
devices in respective ones of media presentation environments, the respective
ones of the media presentation environments including at least one media output
device to present media from a corresponding one of the media presentation
devices, the respective tuning session data from respective ones of the media
presentation devices indicative of a tuning session having a tuning session
duration, the tuning session duration is indicative of an amount of time between
interactions with a corresponding one of the plurality of media presentation
devices, presentation session data is available for a first subset of the media
presentation environments, presentation session data is not available for a second
subset of the media presentation environments;
access, for ones of the first subset of the media presentation
environments, respective presentation session data indicative of a presentation
session duration during which media corresponding to a respective tuning
session was presented on the respective at least one media output device by the
media presentation device within a respective tuning session duration;

generate a model relating the respective tuning session durations to corresponding presentation session durations from ones of the first subset of the media presentation environments;

based on the model, determine, for a given one of the media presentation environments in the second subset of the media presentation environments, an expected presentation session duration for a given tuning session having a given tuning session duration; and

output the expected presentation session duration for the given tuning session from the given one of the media presentation environments.

2. The computing system of claim 1, wherein the processor circuitry is to: access, from the first subset of the media presentation environments, additional tuning session data and additional media presentation data indicative of additional tuning session durations and additional media presentation session durations, respectively; and

update the model with the additional tuning session durations and additional media presentation data.

3. The computing system of claim 2, wherein the processor circuitry is to: subsequent to determining the expected the presentation session duration, based on the model, for the given tuning session having the given tuning session duration, determine, for another given one of the media presentation environments in the second

subset of the media presentation environments, another expected presentation session duration for another given tuning session having another given tuning session duration based on the updated model; and

output the other expected presentation session duration for the other given tuning session from the other given one of the media presentation environments.

4. The computing system of claim 1, wherein the processor circuitry is to determine the expected presentation session duration for the given tuning session based on the model by determining the expected presentation session duration based on multiple ones of the tuning session durations and corresponding ones of the presentation session durations of the ones of the first subset of the media presentation environments, the multiple ones of the tuning session durations being within a threshold extent of similarity of the given tuning session duration.

5. The computing system of claim 4, wherein the threshold extent of similarity is a threshold of time similarity in which each of the tuning session durations of the multiple ones of the tuning session durations of the ones of the first subset of the media presentation environments are within a time threshold of the given tuning session duration.

6. The computing system of claim 5, wherein the expected presentation session duration for the given presentation session is a weighted average of the

presentation session durations of the multiple ones of the tuning session durations of the ones of the first subset of the media presentation environments.

7. The computing system of claim 5, wherein the time threshold is four minutes.

8. The computing system of claim 4, wherein the expected presentation session duration for the given presentation session is a conditional probability of the presentation session durations of the multiple ones of the tuning session durations of the ones of the first subset of the media presentation environments, indicated by the model.

9. The computing system of claim 1, wherein the processor circuitry is to:
determine that a number of tuning session durations related by the model to corresponding presentation session durations from the first subset of the media presentation environments is at least a threshold number of tuning session durations, and
determine the expected presentation session duration for the given tuning session having the given tuning session duration based on the model in response to the determination that the number of tuning session durations related by the model to corresponding presentation session durations from the first subset of the media presentation environments is at least the threshold number of tuning session durations.

10. The computing system of claim 9, wherein the threshold number is five hundred tuning session durations.

11. A non-transitory computer-readable medium comprising instructions to cause processor circuitry to at least:

- access respective tuning session data from each of a plurality of media presentation devices, corresponding ones of the media presentation devices in respective ones of media presentation environments, the respective media presentation environments including at least one media output device to present media from a corresponding one of the media presentation devices, the respective tuning session data from respective ones of the media presentation devices indicative of a tuning session having a tuning session duration, the tuning session duration is indicative of an amount of time between interactions with a corresponding one of the media presentation devices, presentation session data is available for a first subset of the media presentation environments, and presentation session data is not available for a second subset of the media presentation environments;
- access, for ones of the first subset of the media presentation environments, respective presentation session data indicative of a presentation session duration during which media corresponding to a respective tuning session was presented by the respective at least one media output device by the media presentation device within a respective tuning session duration;

generate a model relating the respective tuning session durations to corresponding presentation session durations from the ones of the first subset of the media presentation environments;

based on the model, determine, for a given one of the media presentation environments in the second subset of the media presentation environments, an expected presentation session duration for a given tuning session having a given tuning session duration; and

output the expected presentation session duration for the given tuning session from the given one of the media presentation environments.

12. The non-transitory computer-readable medium of claim 11, wherein the instructions cause the processor circuitry to determine the expected presentation session duration, based on the model, for the given tuning session by determining the expected presentation session duration based on multiple ones of the tuning session durations and corresponding ones of the presentation session durations of the ones of the first subset of the media presentation environments, the multiple ones of the tuning session durations being within a threshold extent of similarity of the given tuning session duration,

wherein the threshold extent of similarity is a threshold of time similarity in which each of the tuning session durations of the multiple ones of the tuning session durations of the ones of the first subset of the media presentation environments are within a time threshold of the given tuning session duration, and

wherein the expected presentation session duration for the given presentation session is a weighted average of the presentation session durations of the multiple ones of the tuning session durations of the ones of the first subset of the media presentation environments.

13. The non-transitory computer-readable medium of claim 11, wherein the instructions cause the processor circuitry to determine the expected presentation session duration for the given tuning session based on the model by determining the expected presentation session duration based on multiple ones of the tuning session durations and corresponding ones of the presentation session durations of the ones of the first subset of the media presentation environments, the multiple ones of the tuning session durations being within a threshold extent of similarity of the given tuning session duration, and

wherein the expected presentation session duration for the given presentation session is a conditional probability of the presentation session durations of the multiple ones of the tuning session durations of the ones of the first subset of the media presentation environments.

14. The non-transitory computer-readable medium of claim 11, the instructions cause the processor circuitry to:

determine that a number of tuning session durations related by the model to corresponding presentation session durations from the first subset of the media presentation environments is at least a threshold number of tuning session durations, and

determine the expected presentation session duration for the given tuning session having the given tuning session duration based on the model in response to the determination that the number of tuning session durations related by the model to corresponding presentation session durations from the first subset of the media presentation environments is at least the threshold number of tuning session durations.

15. A system comprising:
 - processor circuitry; and
 - a computer-readable medium including instructions to cause the processor circuitry to at least:
 - access respective tuning session data from a plurality of set-top boxes, corresponding ones of the set-top boxes in respective ones of media presentation environments, the respective media presentation environments including at least one television to present media from a corresponding one of the set-top boxes, the respective tuning session data from respective ones of the set-top boxes indicative of a tuning session having a tuning session duration, the tuning session duration indicative of an amount of time between interactions with a corresponding one of the set-top boxes, on/off durations are available for a first subset of the media presentation environments, on/off durations are not available for a second subset of the media presentation environments;
 - access, for ones of the first subset of the media presentation environments, respective on/off durations corresponding to respective tuning

sessions, the on/off duration indicative of an amount of time that the respective television was turned on during the respective tuning session;

generate a model relating the respective tuning session durations to corresponding on/off durations from the ones of the first subset of the media presentation environments;

based on the model, determine, for a given one of the media presentation environments in the second subset of the media presentation environments, an expected on/off duration for a given tuning session having a given tuning session duration; and

cause presentation of the expected on/off duration for the given tuning session from the given one of the media presentation environments.

16. The system of claim 15, wherein the processor circuitry is to:
- access, from additional ones of the first subset of the media presentation environments, additional tuning session data indicative of additional tuning session durations and additional on/off durations indicative of an amount of time that the respective television was turned on during the additional tuning session; and
- update the model with the additional tuning session durations and additional on/off durations.

17. The system of claim 16, wherein the processor circuitry is to:

subsequent to determining the expected on/off duration, based on the model, for the given tuning session having the given tuning session duration, determine, for another given one of the media presentation environments in the second subset of the media presentation environments, another expected on/off duration for another given tuning session having another given tuning session duration based on the updated model; and output the other expected on/off duration for the other given tuning session from the other given one of the media presentation environments.

18. The system of claim 15, wherein the processor circuitry is to determine the expected on/off duration for the given tuning session based on the model by determining the expected on/off duration based on multiple ones of the tuning session durations and corresponding ones of the on/off durations of the ones of the first subset of the media presentation environments, the multiple ones of the tuning session durations being within a threshold extent of similarity of the given tuning session duration.

19. The system of claim 18, wherein the threshold extent of similarity is a threshold of time similarity in which each of the tuning session durations of the multiple ones of the tuning session durations of the ones of the first subset of the media presentation environments are within a time threshold of the given tuning session duration.

20. The system of claim 19, wherein the expected on/off duration for the given tuning session is a weighted average of the on/off durations of the multiple ones of the tuning session durations of the ones of the first subset of the media presentation environments.

21. The system of claim 18, wherein the expected on/off duration for the given tuning session is a conditional probability of the on/off durations of the multiple ones of the tuning session durations of the ones of the first subset of the media presentation environments, indicated by the model.

22. The system of claim 15, wherein the processor circuitry is to:
determine that a number of tuning session durations related by the model to corresponding on/off durations from the first subset of the media presentation environments is at least a threshold number of tuning session durations, and
determine the expected on/off duration for the given tuning session having the given tuning session duration based on the model in response to the determination that the number of tuning session durations related by the model to corresponding on/off durations from the first subset of the media presentation environments is at least the threshold number of tuning session durations.

23. The system of claim 22, wherein the threshold number is five hundred tuning session durations.

ABSTRACT

Methods, apparatus, systems, and articles of manufacture are disclosed to determine a duration of media presentation based on tuning session duration. Example apparatus a receiver to obtain a first tuning session duration indicative of an amount of time between channel changes of a first media presentation device at a first media presentation location, a presentation session estimator to select a model from storage, the model selected based on a match of the first tuning session duration and a second tuning session duration, the model including a relation between the second tuning session duration and a first presentation session duration of media presented on a second media presentation device at a second media presentation location, and estimate a second presentation session duration of media presented within the first tuning session duration based on the model.

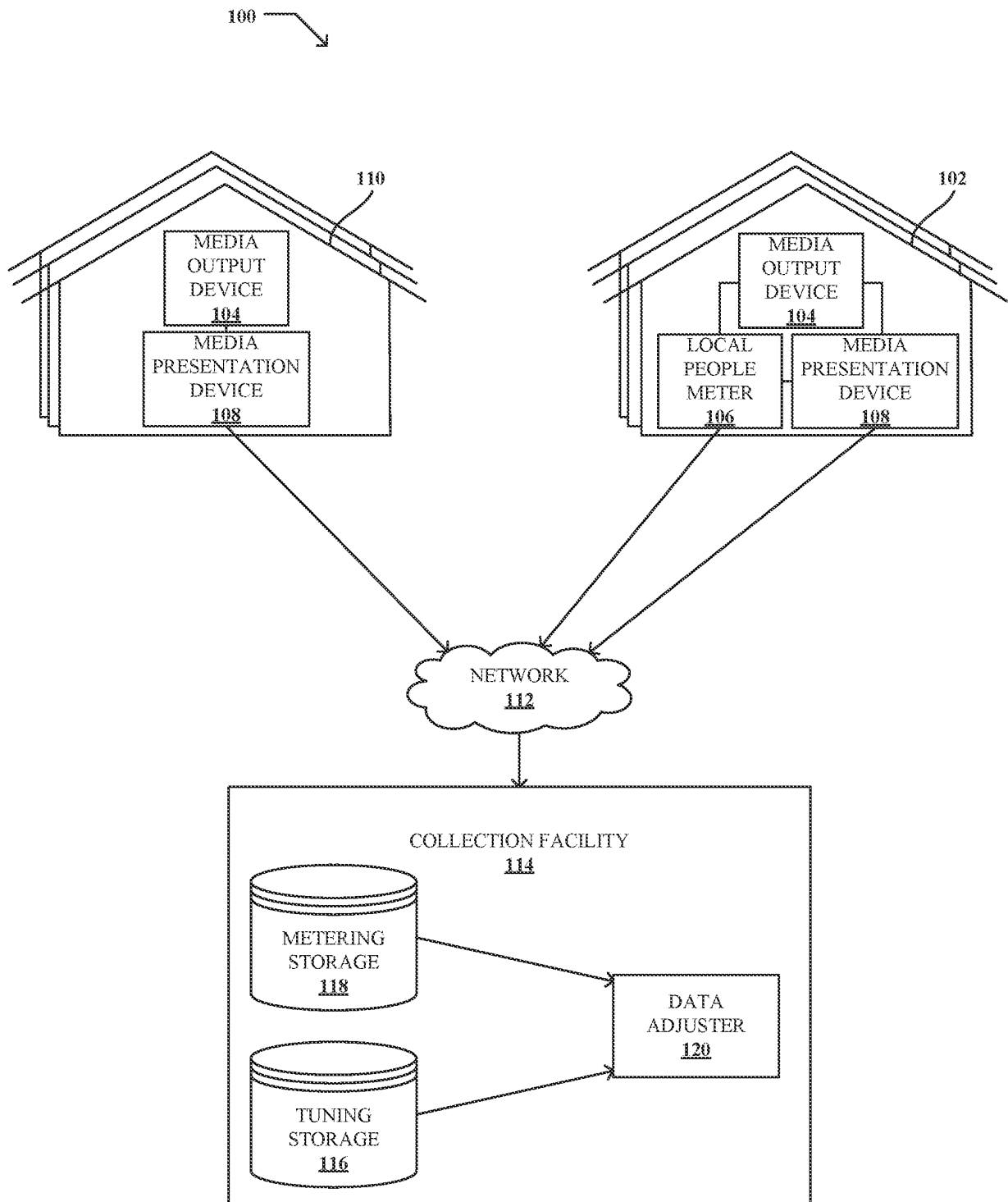


FIG. 1

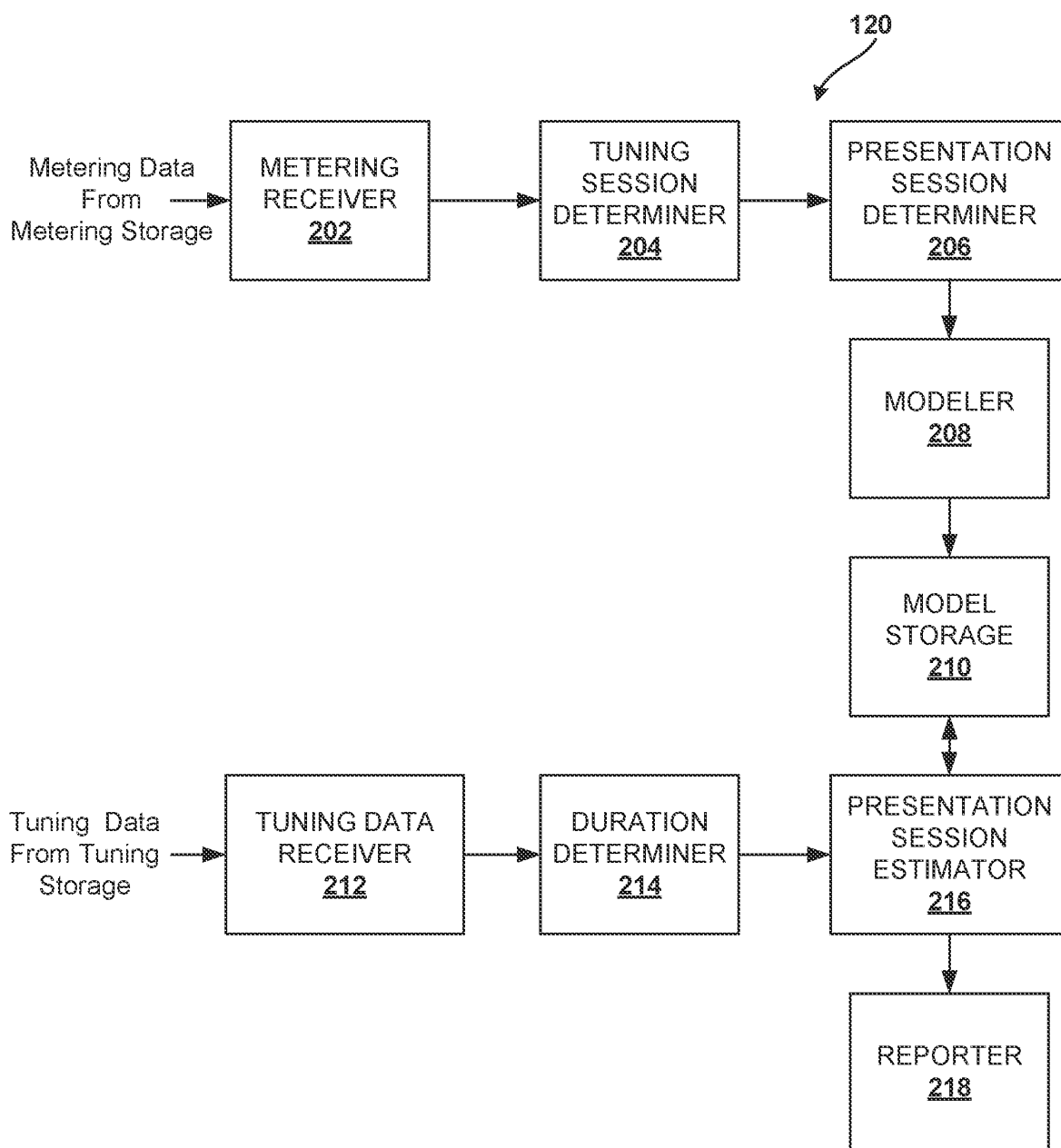


FIG. 2

3/11

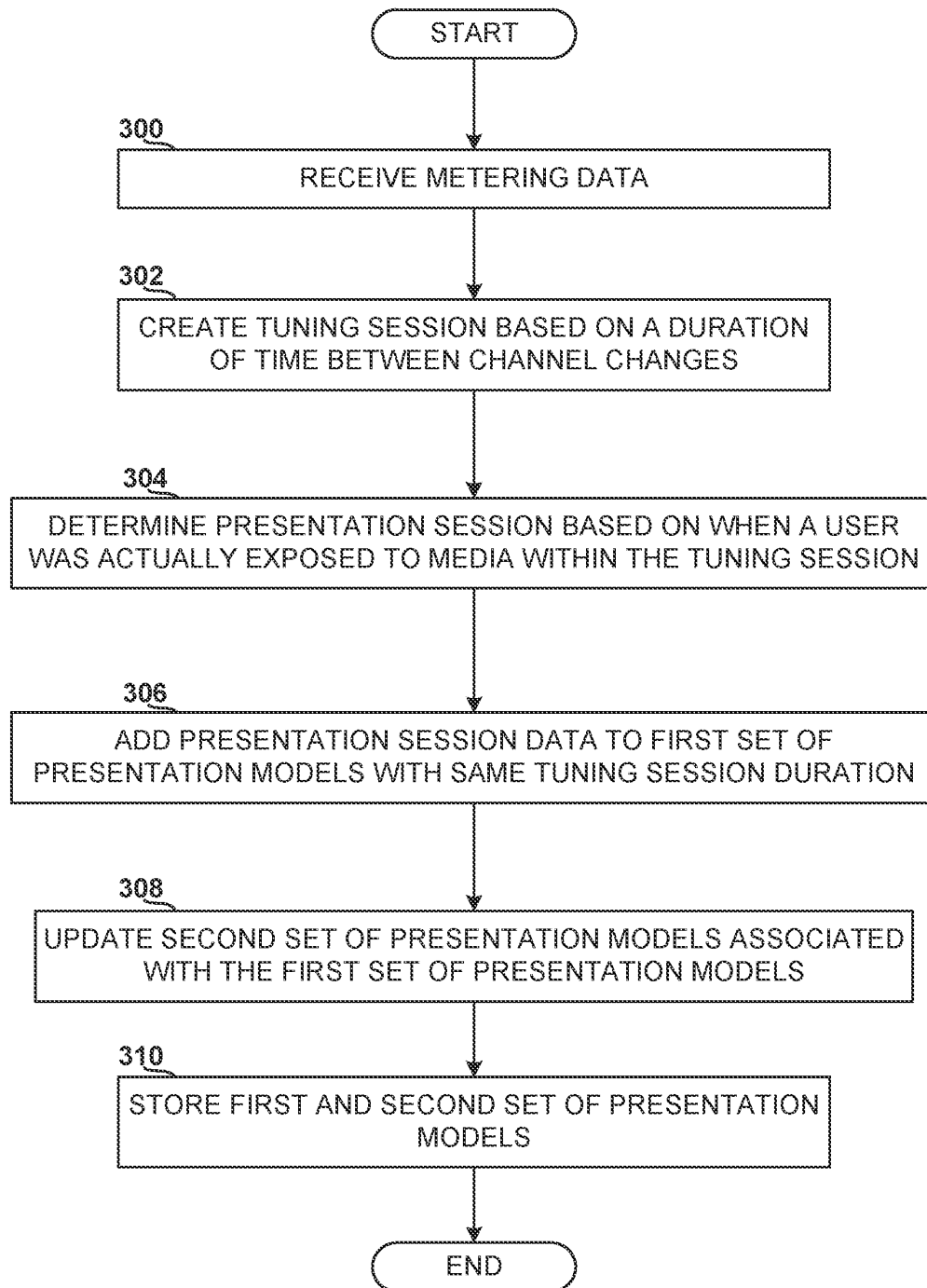


FIG. 3

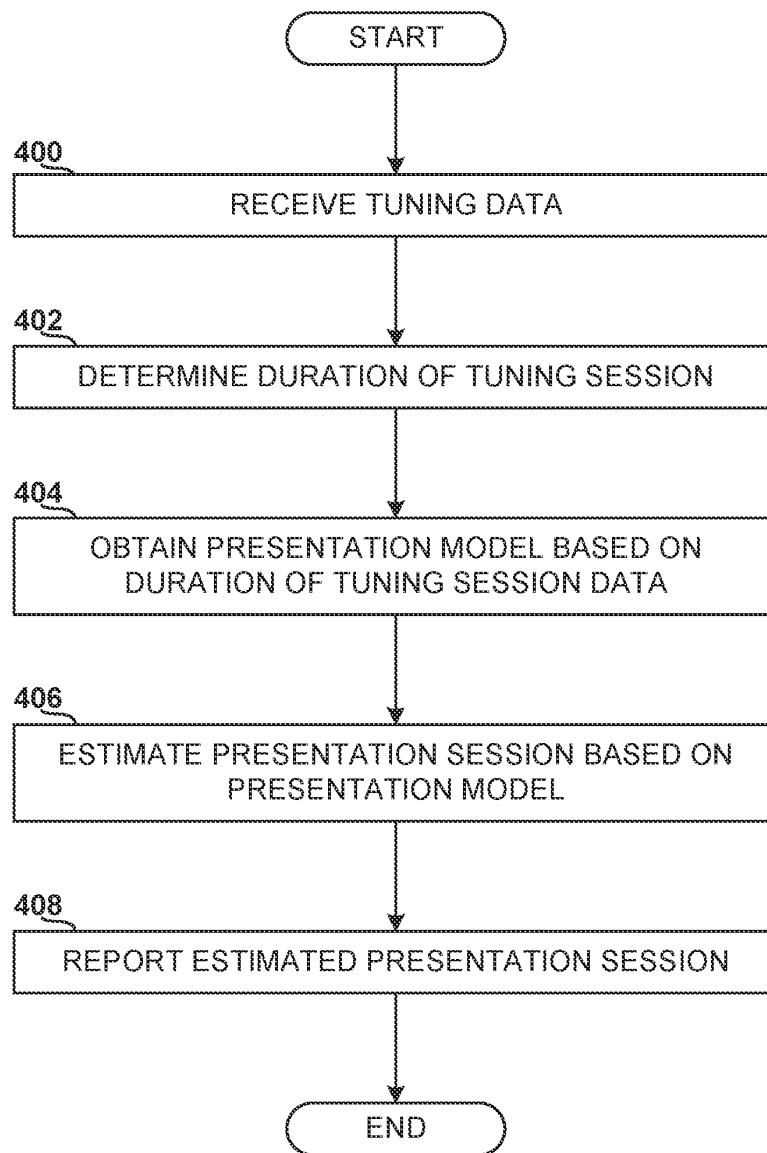


FIG. 4

5/11

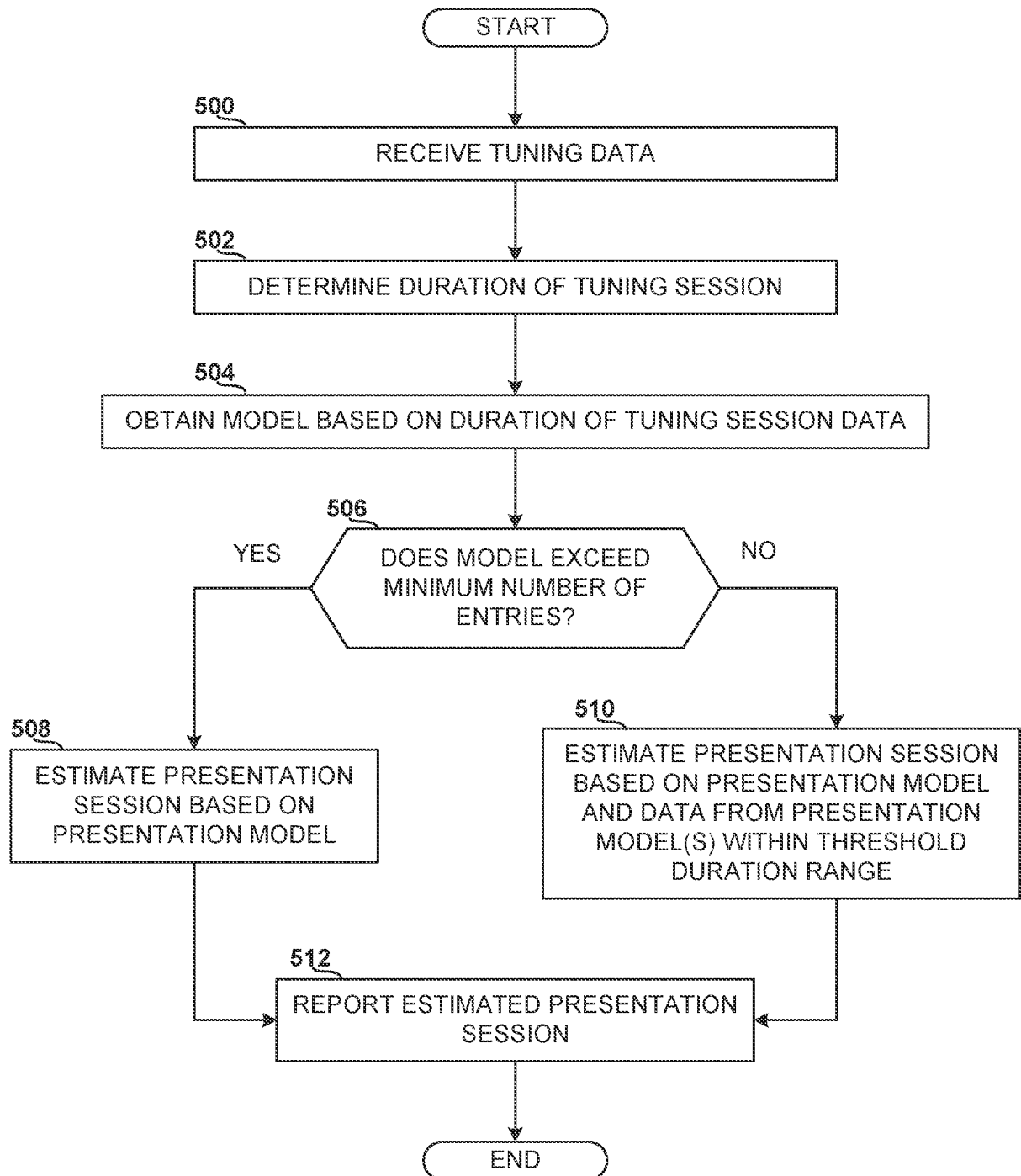


FIG. 5

600

602 Household ID

604 Tuner Key

606 Start Time

608 End Time

610 Station Key

612 Genre

614 Presentation Weight Date Key

616 Valid Data Flag

618 Source

620

50006	186242092	2014-12-01 00:00:00	2014-12-01 00:25:00	294984	N/A	17427	1	0
50006	186242092	2014-12-01 00:34:00	2014-12-01 02:56:00	287552	Non-Media	17427	1	0
50006	186242092	2014-12-01 04:52:00	2014-12-01 05:46:00	287552	Non-Media	17427	1	0
50006	186242092	2014-12-01 20:50:00	2014-12-01 21:35:00	287552	Non-Media	17427	1	0
50006	186242092	2014-12-01 22:41:00	2014-12-01 23:24:00	294984	N/A	17427	1	0
50006	186242092	2014-12-01 23:29:00	2014-12-01 23:59:00	294984	N/A	17427	1	0
50006	186242092	2014-12-02 15:20:00	2014-12-02 15:33:00	349855	Gen. Ent.	17428	1	0
50006	186242092	2014-12-03 14:49:00	2014-12-03 14:53:00	348488	Gen. Ent.	17429	1	0
50006	186242092	2014-12-03 22:21:00	2014-12-03 22:21:00	287552	Non-Media	17429	1	0
50006	186242092	2014-12-03 22:27:00	2014-12-03 22:30:00	288298	N/A	17429	1	0
50006	186242092	2014-12-03 23:37:00	2014-12-03 23:48:00	287552	Non-Media	17429	1	0
50006	186242092	2014-12-04 00:00:00	2014-12-04 00:23:00	287552	Non-Media	17430	1	0
50006	186242092	2014-12-04 23:00:00	2014-12-04 23:47:00	287552	Non-Media	17430	1	0
50006	186242092	2014-12-04 23:55:00	2014-12-05 01:40:00	287552	Non-Media	17431	1	0

FIG. 6

7/11

620 {

Household			Station			Presentation Valid		
ID	Tuner Key	Start Time	End Time	Key	Genre	Date Key	Weight	Data Flag Source
50006	186242092	2014-12-01 00:00:00	2014-12-01 00:25:00	294984	N/A	17427	1	0
50006	186242092	2014-12-01 00:34:00	2014-12-01 02:56:00	287552	Non-Media	17427	1	0
50006	186242092	2014-12-01 04:52:00	2014-12-01 05:46:00	287552	Non-Media	17427	1	0
50006	186242092	2014-12-01 20:50:00	2014-12-01 21:35:00	287552	Non-Media	17427	1	0
50006	186242092	2014-12-01 22:41:00	2014-12-01 23:24:00	294984	N/A	17427	1	0

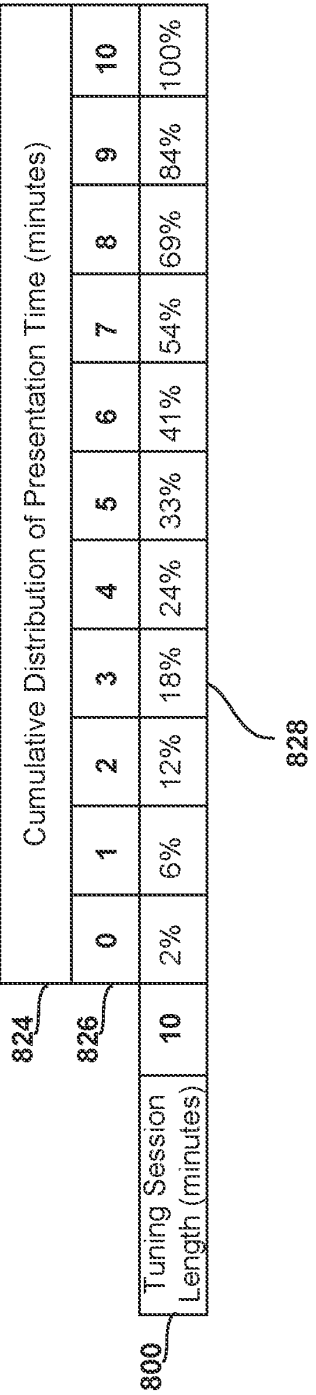
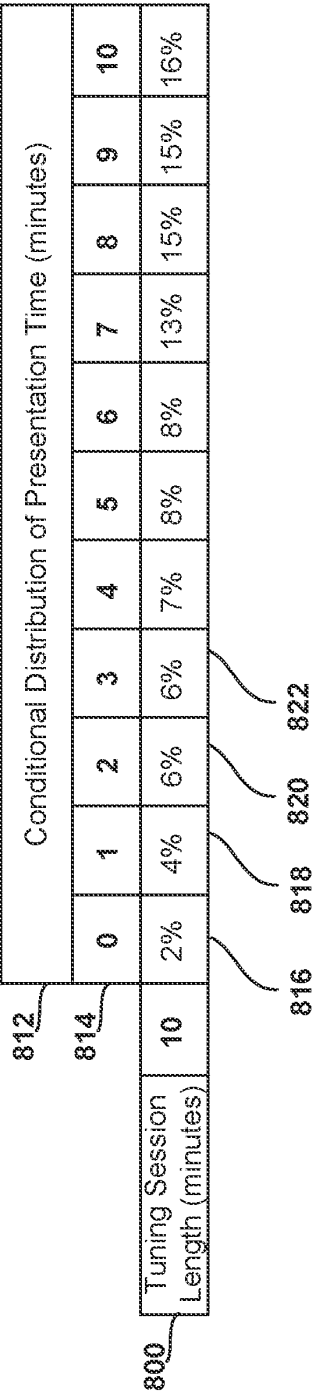
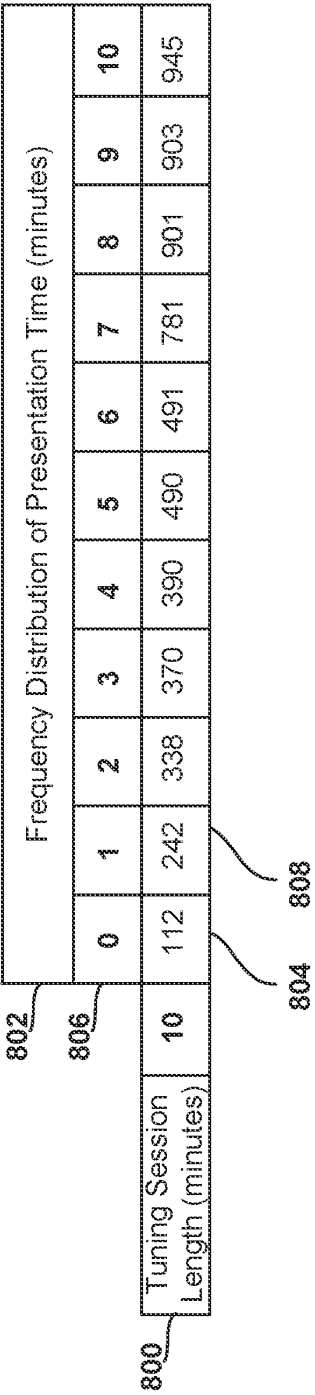
FIG. 7A

00:25:00	Turned the TV off after watching previous station
00:34:00	Turned TV back on and within the same minute changed channel
02:56:00	Turned TV off
04:52:00	Turned TV on (same channel)
05:46:00	Turned TV off
20:50:00	Turned TV on (same channel)
21:35:00	Turned TV off
22:41:00	Turned TV on and changed channel

FIG. 7B

Tuning Session:	00:34:00 to 22:41:00 (1,327 minutes)
Presentation Sessions:	00:34:00 - 2:56:00 (142 minutes)
	04:52:00 - 5:46:00 (54 minutes)
	20:50:00 - 21:35:00 (45 minutes)

FIG. 7C



9/11

Frequency Distribution of Media Presented at Set Times (minutes)													
	at 0	at 1	at 2	at 3	at 4	at 5	at 6	at 7	at 8	at 9	at 10		
800	10	5851	5852	5619	5290	4500	4411	4521	4530	3749	2848	2945	

830

832

834

FIG. 8D

Conditional Distribution of Media Presented at Set Times (minutes)													
	at 0	at 1	at 2	at 3	at 4	at 5	at 6	at 7	at 8	at 9	at 10		
10	100%	98%	94%	88%	75%	74%	76%	76%	63%	48%	49%		
Tuning Session Length (minutes)													

836

838

800

840

FIG. 8E

Title: "Methods and apparatus to determine a duration of media presentation based on tuning session duration"

Inventor(s): Michael Sheppard, Jonathan Sullivan, Peter Lipa, Alex Terrazas
Attorney Docket No.: 20004/125399US07

10/11

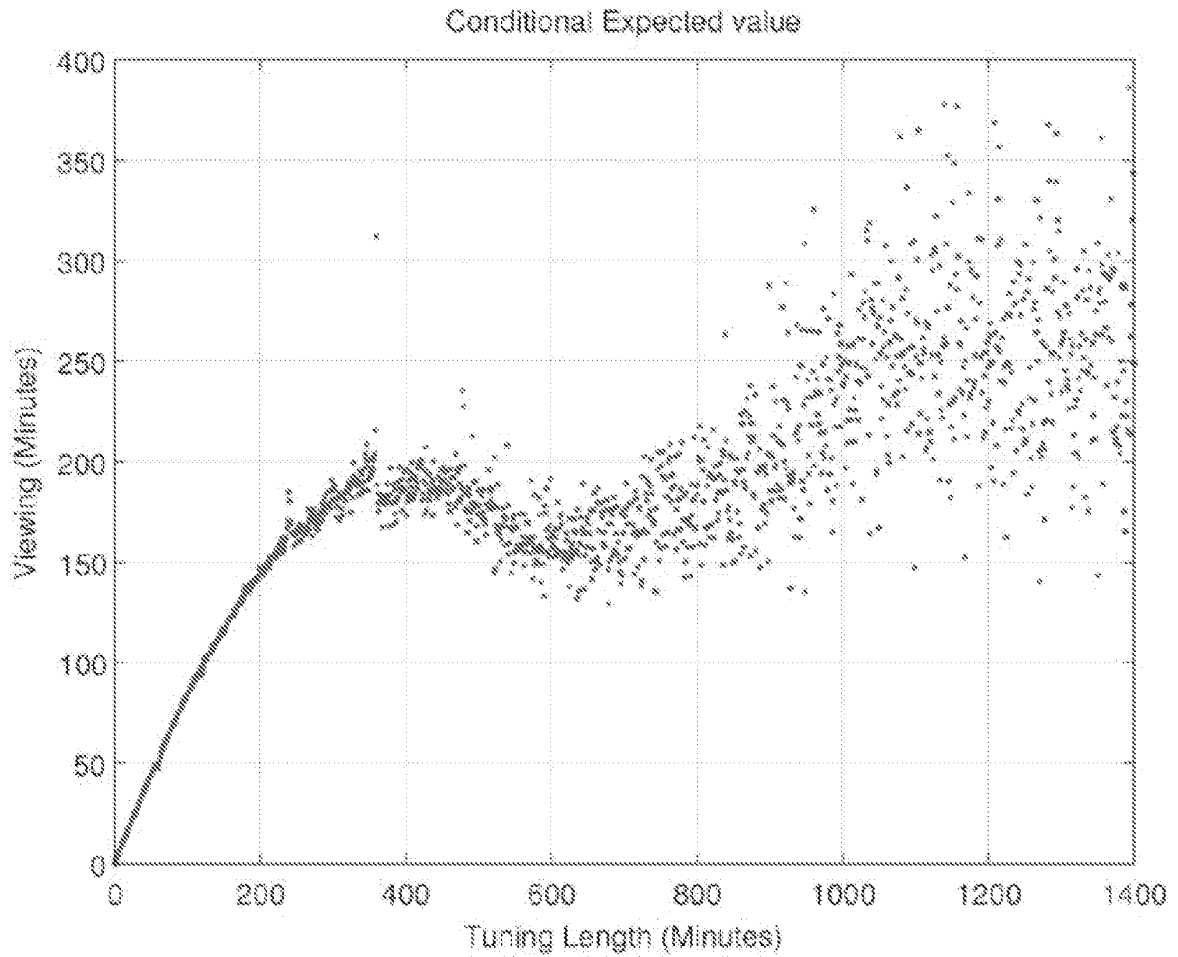


FIG. 9

11/11

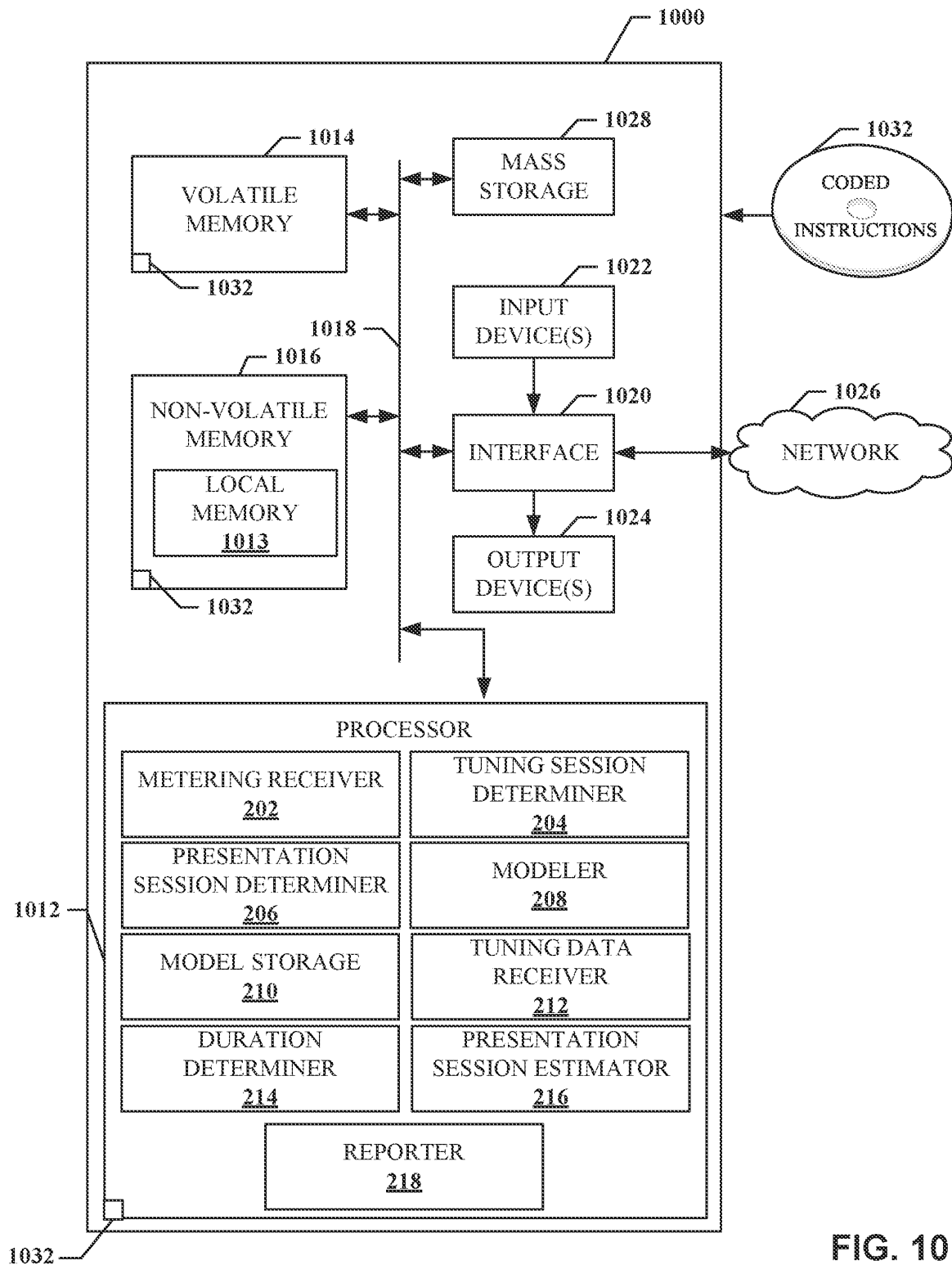


FIG. 10



UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC PAYMENT RECEIPT

APPLICATION #
17/967,832

RECEIPT DATE / TIME
09/27/2023 10:38:00 AM ET

ATTORNEY DOCKET #
81125399US07

Title of Invention

METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION

Application Information

APPLICATION TYPE Utility - Nonprovisional Application
under 35 USC 111(a)

PATENT # -

CONFIRMATION # 8517

FILED BY J ames Korenchan

PATENT CENTER # 62877506

AUTHORIZED BY -

CUSTOMER # 191621

FILING DATE 10/17/2022

CORRESPONDENCE
ADDRESS -

FIRST NAMED
INVENTOR Michael Sheppard

Payment Information

PAYMENT METHOD
DA / 604967

PAYMENT TRANSACTION ID
E20239QA38177623

PAYMENT AUTHORIZED BY
J ames Korenchan

FEE CODE	DESCRIPTION	ITEM PRICE(\$)	QUANTITY	ITEM TOTAL(\$)
1803	REQUEST FOR VOLUNTARY PUBLICATION OR REPUBLICATION	140.00	1	140.00
1808	OTHER PUBLICATION PROCESSING FEE	140.00	1	140.00
TOTAL AMOUNT:				\$280.00

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 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 & TRADEMARK OFFICE

First Inventor: SHEPPARD, Michael et al.
US App. No.: 17/967,832
Confirmation No.: 8517
Filed: October 17, 2022
For: METHODS AND APPARATUS TO DETERMINE A DURATION
OF MEDIA PRESENTATION BASED ON TUNING SESSION
DURATION
Docket No.: 81125399US07
Art Unit: 2421
Examiner: KURIEN, CHRISTEN A

Commissioner for Patents
Office of Petitions
P.O. Box 1450
Alexandria, Virginia 22313-1450

REQUEST FOR REPUBLICATION UNDER 37 CFR 1.221(a)

Dear Commissioner:

Upon reviewing the publication of application identified above, the applicant noted a material mistake by the Office that should be corrected. Particularly, the applicant notes that the Office published the application (2023/0042182A1) with the incorrect drawings. As such, pursuant to 37 CFR 1.221(a), the applicant respectfully requests for Republication for the above-identified U.S. Application with correct drawings.

Applicant hereby also submits a copy of the application that was filed on October 17, 2022. Since the above petition does not constitute new matter or require reexamination, a Republication of application under 37 CFR 1.221(a) is requested.

The Commissioner is hereby authorized to charge any deficiency in the amount or any additional fees which may be required under 37 CFR 1.16 or 1.17 to Deposit Account No. 60-4967. Please refund any overpayment to Deposit Account No. 60-4967.

Respectfully Submitted,

The Nielsen Company (US), LLC

/James L. Korenchan/

Date: September 27, 2023

James L. Korenchan

Attorney of Record

Registration No.: 70,760

Customer No. 191621

The Nielsen Company (US), LLC

675 Avenue of the Americas

New York, US



UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #
17/967,832

RECEIPT DATE / TIME
09/27/2023 10:38:00 AM ET

ATTORNEY DOCKET #
81125399US07

Title of Invention

METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION

Application Information

APPLICATION TYPE Utility - Nonprovisional Application
under 35 USC 111(a)

PATENT # -

CONFIRMATION # 8517

FILED BY James Korenchan

PATENT CENTER # 62877506

FILING DATE 10/17/2022

CUSTOMER # 191621

FIRST NAMED INVENTOR Michael Sheppard

CORRESPONDENCE ADDRESS -

AUTHORIZED BY -

Documents

TOTAL DOCUMENTS: 5

DOCUMENT		PAGES	DESCRIPTION	SIZE (KB)
2023-09-27_Request for Republication_81125399US0 7.pdf		2	Request/Corrected Patent Application Publications	84 KB
2023-09-27_App for Republication_81125399US0 7.pdf		75	-	2900 KB
2023-09-27_App for Republication_81125399US 07-SPEC.pdf	(1-51)	51	Specification	1949 KB
2023-09-27_App for Republication_81125399US	(52-63)	12	Claims	349 KB

07-CLM.pdf

2023-09-27_App for Republication_81125399US 07-ABST.pdf	(64-64)	1	Abstract	22 KB
2023-09-27_App for Republication_81125399US 07-DRW.pdf	(65-75)	11	Drawings-only black and white line drawings	576 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
2023-09-27_Request for Republication_81125399US07. pdf	FE74BC47FB3BC29D83037BD588CAFC9FB2FFB54153DD6BF2 51A2689859E5D249B3F1C429E111E9C377857088A6EC21F683 EAAB0433BA451A3840E5707EBB9CCA
2023-09-27_App for Republication_81125399US07. pdf	B037F52BBED3FB8D489EA848FC4B6A3DCCA81A9A524962A3 F372AA0450FC347EBC89A660964E13D8FF32D9561D88A62A1 101313A60FA4D4EDB35E56407687050
2023-09-27_App for Republication_81125399US07- SPEC.pdf	DB9F6295DBB0B959B457260E56EDE99A78D0706A804AF72AB 2A723BB8AB73C3BA2FE95D7303BF8DA0AC0A1122A4BEC3DB DD465A66A717F33C3AF424FB498217D
2023-09-27_App for Republication_81125399US07- CLM.pdf	351AC61E10E74B04145D47F28B3DFF1EA354E95E1F12B64A7 2D7E35D2AE29CE257E38ED2B8F6820D23B15337213DDDA314 0DEE79C5749FB6F350E153D0C5BB2B
2023-09-27_App for Republication_81125399US07- ABST.pdf	583DFC52090C4B1BB4C66B529F45F12BA0905156103D69337F 76EEB39DECBCBC52F49578464BE8FB3541E6A34DED924E36 ADC35E38E77E3EF88DF5AE7CA3D868
2023-09-27_App for Republication_81125399US07- DRW.pdf	F7BBA2434A55474A6EED4621EA9498C3BAEA8A75BA993D785 D08726E3C0FD13717437C1C79290DD3895112A172947B36CF0 A0BA318C5BE8A3F8F830F5B9868E9

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 filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

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

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

New International Application Filed with the USPTO as a Receiving Office

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



UNITED STATES PATENT AND TRADEMARK OFFICE

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

NOTICE OF ALLOWANCE AND FEE(S) DUE

191621 7590 09/19/2023
The Nielsen Company (US), LLC
Intellectual Property Docketing
675 Avenue of the Americas
New York, NY 10010

EXAMINER

KURIEN, CHRISTEN A

ART UNIT

PAPER NUMBER

2426

DATE MAILED: 09/19/2023

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/967,832	10/17/2022	Michael Sheppard	81125399US07	8517

TITLE OF INVENTION: METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1200	\$0.00	\$0.00	\$1200	12/19/2023

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 40% the amount of undiscounted fees, and micro entity fees are 20% the amount of undiscounted 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. 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.

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 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. **Because electronic patent issuance may occur shortly after issue fee payment, any desired continuing application should preferably be filed prior to payment of this issue fee in order not to jeopardize copendency.**

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

191621 7590 09/19/2023
The Nielsen Company (US), LLC
Intellectual Property Docketing
675 Avenue of the Americas
New York, NY 10010

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.
17/967,832	10/17/2022	Michael Sheppard	81125399US07	8517

TITLE OF INVENTION: METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1200	\$0.00	\$0.00	\$1200	12/19/2023

EXAMINER	ART UNIT	CLASS-SUBCLASS
KURIEN, CHRISTEN A	2426	725-014000

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/AIA/122 or PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or 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 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)

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

☐ Electronic Payment via Patent Center or 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. _____



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/967,832	10/17/2022	Michael Sheppard	81125399US07	8517
191621	7590	09/19/2023	EXAMINER	
The Nielsen Company (US), LLC Intellectual Property Docketing 675 Avenue of the Americas New York, NY 10010			KURIEN, CHRISTEN A	
			ART UNIT	PAPER NUMBER
			2426	

DATE MAILED: 09/19/2023

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. 17/967,832	Applicant(s) Sheppard et al.	
	Examiner CHRISTINE A KURIEN	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 10/17/2022.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

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

3. ☒ The allowed claim(s) is/are 1-23. 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)	5. ☐ Examiner's Amendment/Comment
2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.	6. ☒ Examiner's Statement of Reasons for Allowance
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.	7. ☐ Other _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.	

/NATHAN J FLYNN/ Supervisory Patent Examiner, Art Unit 2421	
--	--

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Allowable Subject Matter

1. Claims 1-23 are allowed.
2. The following is an examiner's statement of reasons for allowance: The prior art fails to either disclose or suggest the combination of features as arranged and claimed by applicant.
3. The closest prior art US 8904419 B2 to System And Method For Measuring Television Audience Engagement, US 8701134 B2 to User Presence Confidence And Media Content Viewing Estimation.

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

1. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTINE A KURIEN whose telephone number is (571)270-5694. The examiner can normally be reached on M-F; 7:30-4:30.

2. 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>.
3. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.
4. 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 <https://ppair-my.uspto.gov/pair/PrivatePair>. 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.

/CHRISTINE A KURIEN/
Examiner, Art Unit 2421

/NATHAN J FLYNN/
Supervisory Patent Examiner, Art Unit 2421

<i>Notice of References Cited</i>	Application/Control No. 17/967,832		Applicant(s)/Patent Under Reexamination Sheppard et al.	
	Examiner CHRISTINE A KURIEN		Art Unit 2421	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-8904419-B2	12-2014	Vinson; Michael	H04N21/6582	725/14
*	B	US-8863166-B2	10-2014	Harsh; Aaron	H04N21/44224	725/9
*	C	US-8839278-B2	09-2014	Wang; Jia	H04N21/44224	725/16
*	D	US-8701134-B2	04-2014	Whinmill; Trevor	H04N21/44204	725/9
*	E	US-7954120-B2	05-2011	Roberts; Andrew Clive	H04H60/33	725/12
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

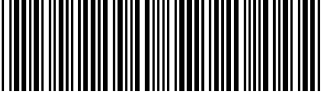
FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC 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	

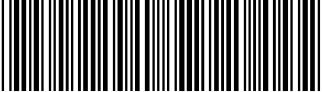
*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Issue Classification 	Application/Control No. 17/967,832	Applicant(s)/Patent Under Reexamination Sheppard et al.
	Examiner CHRISTINE A KURIEN	Art Unit 2421

CPC						
Symbol					Type	Version
H04N	/	21	/	252	F	2013-01-01
H04N	/	21	/	4667	I	2013-01-01
H04N	/	21	/	44222	I	2013-01-01

CPC Combination Sets					
Symbol				Type	Version
/		/			

/CHRISTINE A KURIEN/ Examiner, Art Unit 2421 (Assistant Examiner)	07 September 2023 (Date)	Total Claims Allowed: 23	
/NATHAN J FLYNN/ Supervisory Patent Examiner, Art Unit 2421 (Primary Examiner)	11 September 2023 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure Fig. 1

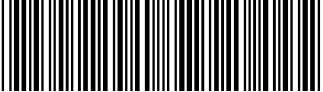
Issue Classification 	Application/Control No. 17/967,832	Applicant(s)/Patent Under Reexamination Sheppard et al.
	Examiner CHRISTINE A KURIEN	Art Unit 2421

INTERNATIONAL CLASSIFICATION			
CLAIMED			
H04N21/25	/	21	/ 25
H04N21/466	/	21	/ 466
H04N21/442	/	21	/ 442
NON-CLAIMED			
	/		/

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS

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

/CHRISTINE A KURIEN/ Examiner, Art Unit 2421 (Assistant Examiner)	07 September 2023 (Date)	Total Claims Allowed: 23	
/NATHAN J FLYNN/ Supervisory Patent Examiner, Art Unit 2421 (Primary Examiner)	11 September 2023 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure Fig. 1

Issue Classification 	Application/Control No. 17/967,832	Applicant(s)/Patent Under Reexamination Sheppard et al.
	Examiner CHRISTINE A KURIEN	Art Unit 2421

☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47															
CLAIMS															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1		10		19										
	2		11		20										
	3		12		21										
	4		13		22										
	5		14		23										
	6		15												
	7		16												
	8		17												
	9		18												

/CHRISTINE A KURIEN/ Examiner, Art Unit 2421 (Assistant Examiner)	07 September 2023 (Date)	Total Claims Allowed: 23	
/NATHAN J FLYNN/ Supervisory Patent Examiner, Art Unit 2421 (Primary Examiner)	11 September 2023 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure Fig. 1

<i>Index of Claims</i> 	Application/Control No. 17/967,832	Applicant(s)/Patent Under Reexamination Sheppard et al.
	Examiner CHRISTINE A KURIEN	Art Unit 2421

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS									
☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47									
CLAIM		DATE							
Final	Original	09/07/2023							
	1	=							
	2	=							
	3	=							
	4	=							
	5	=							
	6	=							
	7	=							
	8	=							
	9	=							
	10	=							
	11	=							
	12	=							
	13	=							
	14	=							
	15	=							
	16	=							
	17	=							
	18	=							
	19	=							
	20	=							
	21	=							
	22	=							
	23	=							

<i>Search Notes</i> 	Application/Control No. 17/967,832	Applicant(s)/Patent Under Reexamination Sheppard et al.
	Examiner CHRISTINE A KURIEN	Art Unit 2421

CPC - Searched*		
Symbol	Date	Examiner
H04N21/252 or H04N21/44222 or H04N21/4667	09/07/2023	ck

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Inventor Name search (double patenting)	09/07/2023	ck
Search	09/07/2023	ck

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
	H04N21/252 or H04N21/44222 or H04N21/4667	09/07/2023	ck

--	--

Bibliographic Data

Application No: 17/967,832

Foreign Priority claimed: ☐ Yes ☒ No

35 USC 119 (a-d) conditions met: ☐ Yes ☒ No ☐ Met After Allowance

Verified and Acknowledged: /CHRISTINE A KURIEN/

Examiner's Signature

Initials

Title:

METHODS AND APPARATUS TO DETERMINE A DURATION
OF MEDIA PRESENTATION BASED ON TUNING SESSION
DURATION

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
10/17/2022	725	2421	81125399US07
RULE			

APPLICANTS

The Nielsen Company (US), LLC,

INVENTORS

Michael Sheppard, Brooklyn, NY, UNITED STATES

Jonathan Sullivan, Hurricane, UT, UNITED STATES

Peter Lipa, Tucson, AZ, UNITED STATES

Alejandro Terrazas, Santa Cruz, CA, UNITED STATES

CONTINUING DATA

This application is a CON of 16860026 04/27/2020 PAT 11432026

16860026 is a CON of 15990729 05/28/2018 PAT 10638177

15990729 is a CON of 15011455 01/29/2016 PAT 9986272

15011455 has PRO of 62239126 10/08/2015

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

10/28/2022

STATE OR COUNTRY

UNITED STATES

ADDRESS

The Nielsen Company (US), LLC

Intellectual Property Docketing

675 Avenue of the Americas

New York, NY 10010

UNITED STATES

FILING FEE RECEIVED

\$6,460

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	17967832
	Filing Date	2022-10-17
	First Named Inventor	Michael Sheppard
	Art Unit	2426
	Examiner Name	
	Attorney Docket Number	125399US07

U.S. PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
/C.A.K/	1	6286140		2001-09-04	Ivanyi	
/C.A.K/	2	6363380		2002-03-26	Dimitrova	
/C.A.K/	3	7954120		2011-05-31	Roberts et al.	
/C.A.K/	4	8701134		2014-04-15	Whinmill et al.	
/C.A.K/	5	8839278		2014-09-16	Wang et al.	
/C.A.K/	6	8863166		2014-10-14	Harsh et al.	
/C.A.K/	7	8904419		2014-12-02	Vinson et al.	
/C.A.K/	8	9986272		2018-05-09	Sheppard et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		17967832
	Filing Date		2022-10-17
	First Named Inventor	Michael Sheppard	
	Art Unit	2426	
	Examiner Name		
	Attorney Docket Number	125399US07	

/C.A.K/	9	11432026		2022-08-30	Sheppard et al.	
---------	---	----------	--	------------	-----------------	--

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

Add

U.S.PATENT APPLICATION PUBLICATIONS

Remove

Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
/C.A.K/	1	20020129368		2002-09-12	Schlack et al.	
/C.A.K/	2	20030101449		2003-05-29	Bentolila et al.	
/C.A.K/	3	20070061831		2007-03-15	Savoor et al.	
/C.A.K/	4	20080300965		2008-12-04	Doe	
/C.A.K/	5	20120254911		2012-10-04	Doe	
/C.A.K/	6	20140037942		2014-02-06	Park et al.	
/C.A.K/	7	20140380350		2014-12-25	Shankar et al.	
/C.A.K/	8	20200260133		2020-08-13	Sheppard et al.	

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

Add

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		17967832
	Filing Date		2022-10-17
	First Named Inventor	Michael Sheppard	
	Art Unit	2426	
	Examiner Name		
	Attorney Docket Number	125399US07	

FOREIGN PATENT DOCUMENTS								Remove
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1							

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

Add

NON-PATENT LITERATURE DOCUMENTS				Remove
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T5	
C.A.K/	1	THE NIELSEN COMPANY, "Average Minutes Viewed, NPOWER," [http://en-us-nielsen.com/sitelets/cls/], 2012, 2 pages.		
/C.A.K/	2	TUCHMAN, "An Empirical Analysis of Complementarities Between the Consumption of Goods and Advertisements," November 20, 2014, 50 pages.		
/C.A.K/	3	ECONOMETRIC ANALYSIS, "Appendix B," Probability and Distribution Theory," 2002, 52 pages.		
/C.A.K/	4	UNITED STATES PATENT AND TRADEMARK OFFICE, "Final Office Action," issued in connection with U.S. Patent Application No. 15/011,455, dated July 18, 2017, 12 pages.		
/C.A.K/	5	UNITED STATES PATENT AND TRADEMARK OFFICE, "Non-Final Office Action," issued in connection with U.S. Patent Application No. 15/011,455, dated February 15, 2017, 15 pages.		
/C.A.K/	6	UNITED STATES PATENT AND TRADEMARK OFFICE, "Notice of Allowance," issued in connection with U.S. Patent Application No. 15/011,455, dated 8 pages.		
/C.A.K/	7	UNITED STATES PATENT AND TRADEMARK OFFICE, "Non-Final Office Action," issued in connection with U.S. Patent Application No. 15/990,729, dated February 01, 2019, 11 pages.		

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		17967832
	Filing Date		2022-10-17
	First Named Inventor	Michael Sheppard	
	Art Unit	2426	
	Examiner Name		
	Attorney Docket Number	125399US07	

/C.A.K/	8	UNITED STATES PATENT AND TRADEMARK OFFICE, "Notice of Allowance," issued in connection with U.S. Patent Application No. 15/990,729, dated June 17, 2019, 8 pages.
/C.A.K/	9	UNITED STATES PATENT AND TRADEMARK OFFICE, "Notice of Allowance," issued in connection with U.S. Patent Application No. 15/990,729, dated January 02, 2020, 8 pages.
/C.A.K/	10	UNITED STATES PATENT AND TRADEMARK OFFICE, "Non-Final Office Action," issued in connection with U.S. Patent Application No. 16/860,026, dated January 19, 2021, 18 pages.
/C.A.K/	11	UNITED STATES PATENT AND TRADEMARK OFFICE, "Final Office Action," issued in connection with U.S. Patent Application No. 16/860,026, dated July 12, 2021, 18 pages.
/C.A.K/	12	UNITED STATES PATENT AND TRADEMARK OFFICE, "Notice of Allowance and Fee(s) Due," issued in connection with U.S. Patent Application No. 16/860,026, dated April 20, 2022, 8 pages.

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

EXAMINER SIGNATURE

Examiner Signature	/CHRISTINE A KURIEN/	Date Considered	09/05/2023
--------------------	----------------------	-----------------	------------

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

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

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	17967832
	Filing Date	2022-10-17
	First Named Inventor	Michael Sheppard
	Art Unit	2426
	Examiner Name	
	Attorney Docket Number	125399US07

CERTIFICATION STATEMENT

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

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

OR

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

See attached certification statement.

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

☒ A certification statement is not submitted herewith.

SIGNATURE

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

Signature	/ Michael W. Zimmerman/	Date (YYYY-MM-DD)	2022-12-12
Name/Print	Michael W. Zimmerman	Registration Number	57993

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

Privacy Act Statement

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

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

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L1	17	("11432026" "20020129 368" "20030101449" "2 0070061831" "2008030 0965" "20120254911" " 20140037942" "201403 80350" "20200260133" " "6286140" "6363380" "7 954120" "8701134" "88 39278" "8863166" "890 4419" "9986272").PN.	(US-PGPUB; USPAT)	OR	ON	ON	2023/09/05 12:35 PM
L2	717	((("SHEPPARD") near3 ("Michael")) OR (("SULLIVAN") near3 ("Jonathan")) OR (("LIPA") near3 ("Peter")) OR (("TERRAZAS") near3 ("Alejandro"))).INV.	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2023/09/07 10:40 PM
L3	43810	(H04N21/252 or H04N21/44222 or H04N21/4667).cpc.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/09/07 10:43 PM
L4	0	L2 AND enviroment SAME tun\$3 SAME session	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/09/07 10:48 PM
L5	3	"20230042182"	(US-PGPUB; USPAT; USOCR; FIT (AP, AT,	OR	ON	ON	2023/09/07 10:48 PM

			AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L6	1	"20230042182"	(US-PGPUB; USPAT)	OR	ON	ON	2023/09/07 10:49 PM
L7	6	(tuning ADJ session AND duration AND estimat\$3 near5 duration).clm.	(US-PGPUB; USPAT)	OR	ON	ON	2023/09/07 11:01 PM
L8	1	L2 AND kurien.xa.	(US-PGPUB; USPAT)	OR	ON	ON	2023/09/07 11:02 PM
L9	14	("20020129368" "20030101449" "20070061831" "20080300965" "20120254911" "20140037942" "6286140" "6363380" "7954120" "8701134" "8839278" "20140380350" "8863166" "8904419").PN.	(US-PGPUB; USPAT)	OR	ON	ON	2023/09/07 11:12 PM
L10	145	(tuning ADJ session AND duration AND estimat\$3 near5 session SAME media enviroment).clm.	(US-PGPUB; USPAT)	OR	ON	ON	2023/09/07 11:32 PM
L11	145	(tuning ADJ session SAME duration SAME estimat\$3 near5 session SAME media enviroment).clm.	(US-PGPUB; USPAT)	OR	ON	ON	2023/09/07 11:33 PM
L12	145	(tuning ADJ session SAME duration SAME estimat\$3 near5 media enviroment).clm.	(US-PGPUB; USPAT)	OR	ON	ON	2023/09/07 11:33 PM
L13	0	(tuning ADJ session SAME duration SAME estimat\$3 near5 media SAME enviroment).clm.	(US-PGPUB; USPAT)	OR	ON	ON	2023/09/07 11:34 PM

PE2E SEARCH - Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
N1	0	access SAME tuning	(US-PGPUB; USPAT)	OR	ON	ON	2023/09/07

		SAME session SAME data SAME media SAME presentation SAME devices SAME environments SAME output SAME device SAME tuning SAME session SAME data SAME presentation SAME devices SAME indicative SAME duration SAME indicative SAME amount SAME time SAME between SAME interactions SAME presentation SAME session SAME data SAME subset SAME "not" SAME available SAME second SAME subset SAME indicative SAME generate SAME model SAME relating SAME durations SAME first SAME subset SAME media SAME second SAME subset SAME expected SAME presentation SAME session SAME duration SAME tuning SAME session SAME expected SAME presentation					11:26 PM
N2	0	access SAME tuning SAME session SAME data SAME media SAME presentation SAME devices SAME environments SAME output SAME device SAME tuning SAME session SAME data SAME presentation SAME devices SAME indicative SAME duration SAME indicative SAME amount SAME time SAME between SAME interactions SAME presentation SAME session SAME data SAME subset SAME "not" SAME available SAME second SAME subset SAME indicative	(US-PGPUB; USPAT)	OR	ON	ON	2023/09/07 11:26 PM

		SAME generate SAME model SAME relating SAME durations SAME first SAME subset SAME media SAME second SAME subset SAME expected SAME presentation SAME session SAME duration SAME tuning SAME session SAME expected SAME presentation.clm. AND L3 AND L2					
N3	6	L7 AND I2	(US-PGPUB; USPAT)	OR	ON	ON	2023/09/07 11:29 PM
N4	0	(tuning ADJ session SAME duration SAME estimat\$3 near5 media SAME enviroment).clm.	(US-PGPUB; USPAT)	OR	ON	ON	2023/09/07 11:34 PM
N5	0	N4 AND L2 AND I3	(US-PGPUB; USPAT)	OR	ON	ON	2023/09/07 11:34 PM



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
17/967,832	10/17/2022	Michael Sheppard	81125399US07

CONFIRMATION NO. 8517

191621
The Nielsen Company (US), LLC
Intellectual Property Docketing
675 Avenue of the Americas
New York, NY 10010

POA ACCEPTANCE LETTER



OC000000058410204

Date Mailed: 06/20/2023

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 06/09/2023.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/sleutchit/



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
17/967,832	10/17/2022	Michael Sheppard	125399US07

CONFIRMATION NO. 8517

81905

Hanley, Flight & Zimmerman, LLC (Nielsen)
150 S. Wacker Dr. Suite 2200
Chicago, IL 60606

POWER OF ATTORNEY NOTICE



OC000000058410139

Date Mailed: 06/20/2023

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 06/09/2023.

- The Power of Attorney to you in this application has been revoked by the applicant. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/sleutchit/

TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA/82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	17/967,832
Filing Date	10/17/2022
First Named Inventor	Michael Sheppard
Title	METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION
Art Unit	2426
Examiner Name	TBD
Attorney Docket Number	81125399US07

SIGNATURE of Applicant or Patent Practitioner

Signature	/Justin M. Cook/	Date (Optional)	June 9, 2023
Name	Justin M. Cook	Registration Number	66,635
Title (if Applicant is a juristic entity)	Associate General Counsel		
Applicant Name (if Applicant is a juristic entity)	The Nielsen Company (US), LLC		

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.



*Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

☒ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above:

OR

191621

☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:

☒ The address associated with the above-mentioned Customer Number

OR

☐ The address associated with Customer Number:

OR

☐ Firm or
Individual Name

Address

City

State

Zip

Country

Telephone

Email

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

The Nielsen Company (US), LLC

- ☐ Inventor or Joint Inventor (title not required below)
- ☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)
- ☒ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)
- ☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature

Thomas J. Strouse

Date (Optional)

17 Feb 2023

Name

Thomas J. Strouse

Title

Vice President of Intellectual Property

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ Total of forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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



UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #
17/967,832

RECEIPT DATE / TIME
06/09/2023 07:00:44 AM ET

ATTORNEY DOCKET #
125399US07

Title of Invention

METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	8517	FILED BY	Justin Cook
PATENT CENTER #	62236829	FILING DATE	10/17/2022
CUSTOMER #	81905	FIRST NAMED INVENTOR	Michael Sheppard
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	-

Documents

TOTAL DOCUMENTS: 1

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
81125399US07_aia0082ab.pdf	2	Power of Attorney	308 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
81125399US07_aia0082ab.pdf	C4E1DBD957793B28F7C61DF6AA1BF417320EA98DCD336B69 6AA94A3CFF9572B483451882587E13EC1936C471E363E413A6 03FC33CBBC3666E1AA02D54AE48DDB

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 filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

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

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

New International Application Filed with the USPTO as a Receiving Office

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



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
17/967,832	10/17/2022	Michael Sheppard	125399US07

CONFIRMATION NO. 8517

81905

Hanley, Flight & Zimmerman, LLC (Nielsen)
150 S. Wacker Dr. Suite 2200
Chicago, IL 60606

PUBLICATION NOTICE



OC000000137371845

Title:METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION

Publication No.US-2023-0042182-A1

Publication Date:02/09/2023

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.

The publication may be accessed through the USPTO's publicly available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Public Records Division. The Public Records Division can be reached by telephone at (571) 272-3150 or (800) 972-6382, by facsimile at (571) 273-3250, by mail addressed to the United States Patent and Trademark Office, Public Records Division, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently <https://portal.uspto.gov/pair/PublicPair>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)

Approved for use through 11/30/2020. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	17967832
	Filing Date	2022-10-17
	First Named Inventor	Michael Sheppard
	Art Unit	2426
	Examiner Name	
	Attorney Docket Number	125399US07

U.S. PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	6286140		2001-09-04	Ivanyi	
	2	6363380		2002-03-26	Dimitrova	
	3	7954120		2011-05-31	Roberts et al.	
	4	8701134		2014-04-15	Whinmill et al.	
	5	8839278		2014-09-16	Wang et al.	
	6	8863166		2014-10-14	Harsh et al.	
	7	8904419		2014-12-02	Vinson et al.	
	8	9986272		2018-05-09	Sheppard et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		17967832
	Filing Date		2022-10-17
	First Named Inventor	Michael Sheppard	
	Art Unit	2426	
	Examiner Name		
	Attorney Docket Number	125399US07	

	9	11432026		2022-08-30	Sheppard et al.	
--	---	----------	--	------------	-----------------	--

If you wish to add additional U.S. Patent citation information please click the Add button. [Add](#)

U.S.PATENT APPLICATION PUBLICATIONS

[Remove](#)

Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	20020129368		2002-09-12	Schlack et al.	
	2	20030101449		2003-05-29	Bentolila et al.	
	3	20070061831		2007-03-15	Savoor et al.	
	4	20080300965		2008-12-04	Doe	
	5	20120254911		2012-10-04	Doe	
	6	20140037942		2014-02-06	Park et al.	
	7	20140380350		2014-12-25	Shankar et al.	
	8	20200260133		2020-08-13	Sheppard et al.	

If you wish to add additional U.S. Published Application citation information please click the Add button. [Add](#)

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		17967832
	Filing Date		2022-10-17
	First Named Inventor	Michael Sheppard	
	Art Unit	2426	
	Examiner Name		
	Attorney Docket Number	125399US07	

FOREIGN PATENT DOCUMENTS								Remove
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ² i	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1							

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

Add

NON-PATENT LITERATURE DOCUMENTS				Remove
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T5	
	1	THE NIELSEN COMPANY, "Average Minutes Viewed, NPOWER," [http://en-us-nielsen.com/sitelets/cls/], 2012, 2 pages.		
	2	TUCHMAN, "An Empirical Analysis of Complementarities Between the Consumption of Goods and Advertisements," November 20, 2014, 50 pages.		
	3	ECONOMETRIC ANALYSIS, "Appendix B," Probability and Distribution Theory," 2002, 52 pages.		
	4	UNITED STATES PATENT AND TRADEMARK OFFICE, "Final Office Action," issued in connection with U.S. Patent Application No. 15/011,455, dated July 18, 2017, 12 pages.		
	5	UNITED STATES PATENT AND TRADEMARK OFFICE, "Non-Final Office Action," issued in connection with U.S. Patent Application No. 15/011,455, dated February 15, 2017, 15 pages.		
	6	UNITED STATES PATENT AND TRADEMARK OFFICE, "Notice of Allowance," issued in connection with U.S. Patent Application No. 15/011,455, dated 8 pages.		
	7	UNITED STATES PATENT AND TRADEMARK OFFICE, "Non-Final Office Action," issued in connection with U.S. Patent Application No. 15/990,729, dated February 01, 2019, 11 pages.		

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	17967832
	Filing Date	2022-10-17
	First Named Inventor	Michael Sheppard
	Art Unit	2426
	Examiner Name	
	Attorney Docket Number	125399US07

8	UNITED STATES PATENT AND TRADEMARK OFFICE, "Notice of Allowance," issued in connection with U.S. Patent Application No. 15/990,729, dated June 17, 2019, 8 pages.
9	UNITED STATES PATENT AND TRADEMARK OFFICE, "Notice of Allowance," issued in connection with U.S. Patent Application No. 15/990,729, dated January 02, 2020, 8 pages.
10	UNITED STATES PATENT AND TRADEMARK OFFICE, "Non-Final Office Action," issued in connection with U.S. Patent Application No. 16/860,026, dated January 19, 2021, 18 pages.
11	UNITED STATES PATENT AND TRADEMARK OFFICE, "Final Office Action," issued in connection with U.S. Patent Application No. 16/860,026, dated July 12, 2021, 18 pages.
12	UNITED STATES PATENT AND TRADEMARK OFFICE, "Notice of Allowance and Fee(s) Due," issued in connection with U.S. Patent Application No. 16/860,026, dated April 20, 2022, 8 pages.

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

EXAMINER SIGNATURE

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

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

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

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	17967832
	Filing Date	2022-10-17
	First Named Inventor	Michael Sheppard
	Art Unit	2426
	Examiner Name	
	Attorney Docket Number	125399US07

CERTIFICATION STATEMENT

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

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

OR

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

See attached certification statement.

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

☒ A certification statement is not submitted herewith.

SIGNATURE

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

Signature	/ Michael W. Zimmerman/	Date (YYYY-MM-DD)	2022-12-12
Name/Print	Michael W. Zimmerman	Registration Number	57993

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

Privacy Act Statement

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

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

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor: Michael Sheppard	)	I hereby certify that this paper
	)	and/or fee is being electronically
Serial No.: 17/967,832	)	deposited with the United States
	)	Patent and Trademark Office on this
For: METHODS AND APPARATUS TO	)	date:
DETERMINE A DURATION OF MEDIA	)	
PRESENTATION BASED ON TUNING	)	
SESSION DURATION	)	December 12, 2022
	)	
Filed: October 17, 2022	)	
	)	/ Kaoru Julian /
Group Art Unit: 2426	)	
	)	Kaoru Julian

Examiner: Not yet assigned

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

TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT

Dear Commissioner:

The documents listed on the attached Form PTO/SB/08a Information Disclosure Statement (IDS) form are submitted pursuant to 37 C.F.R. §§ 1.56, 1.97, and 1.98.

In accordance with 37 C.F.R. § 1.98(d), copies of the Non-Patent Literature and Foreign Reference documents listed on the attached IDS form, with the exception of Non-Patent Literature document numbers 10 through 12, are not submitted herewith as they are part of USPTO records in the file wrappers of U.S. Patent Application No. 16/860,026, U.S. Patent Application No. 15/990,729, and/or U.S. Patent Application No. 15/011,455, to which priority is claimed under 35 U.S.C. § 120.

HANLEY, FLIGHT & ZIMMERMAN, LLC
(customer number 81905)
Attorneys for Applicant
150 South Wacker Drive, Suite 2200
Chicago, Illinois 60606
(312) 580-1020

Respectfully Submitted,

By: **/Michael W. Zimmerman/**
Michael W. Zimmerman
Registration No. 57,993

December 12, 2022

Electronic Acknowledgement Receipt	
EFS ID:	47189409
Application Number:	17967832
International Application Number:	
Confirmation Number:	8517
Title of Invention:	METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION
First Named Inventor/Applicant Name:	Michael Sheppard
Customer Number:	81905
Filer:	Michael William Zimmerman./Kaoru Julian
Filer Authorized By:	Michael William Zimmerman.
Attorney Docket Number:	125399US07
Receipt Date:	12-DEC-2022
Filing Date:	17-OCT-2022
Time Stamp:	15:58:37
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	Information Disclosure Statement (IDS) Form (SB08)	125399US07_IDS_signed.pdf	1035540	no	6
			be332a638b5382b9c8b34ca3a49f29161ef6eed5		

Warnings:

Information:					
2	Transmittal Letter	125399US07_IDS- Transmittal_signed.pdf	144974	no	1
			46c7e448f434306866820a111dcecf5e7e984444		
Warnings:					
Information:					
3	Non Patent Literature	NPL10_US04-16860026_NFOA_2021-01-19_.pdf	625356	no	18
			aaa4a815ea8931572160efdd3f89a13ecaa656bd		
Warnings:					
Information:					
4	Non Patent Literature	NPL11_US04-16860026_FOA_2021-07-12_.pdf	628992	no	18
			ba93560fb0f2a2c3c096eac5b01caa087f133c3b		
Warnings:					
Information:					
5	Non Patent Literature	NPL12_US04-16860026_NOA_2022-04-20_.pdf	447583	no	8
			40e3466407974a2fcb8b654df6227228ac6a21593		
Warnings:					
Information:					
Total Files Size (in bytes):			2882445		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/967,832	10/17/2022	Michael Sheppard	125399US07	8517

81905	7590	12/09/2022
Hanley, Flight & Zimmerman, LLC (Nielsen)		
150 S. Wacker Dr. Suite 2200		
Chicago, IL 60606		

EXAMINER	
----------	--

ART UNIT	PAPER NUMBER
2426	

NOTIFICATION DATE	DELIVERY MODE
12/09/2022	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):

docketing@hfzlaw.com
jflight@hfzlaw.com
mhanley@hfzlaw.com

<i>Decision Granting Request for Prioritized Examination (Track I)</i>	Application No. 17/967,832	Applicant(s) Sheppard et al.	
	Examiner CHERYL P GIBSON BAYLOR	Art Unit OPET	AIA (FITF) Status Yes
1. THE REQUEST FILED <u>17 October 2022</u> IS GRANTED . The above-identified application has met the requirements for prioritized examination A. ☒ for an original nonprovisional application (Track I). B. ☐ for an application undergoing continued examination (RCE). 2. The above-identified application will undergo prioritized examination. The application will be accorded special status throughout its entire course of prosecution until one of the following occurs: A. filing a <u>petition for extension of time</u> to extend the time period for filing a reply; B. filing an <u>amendment to amend the application to contain more than four independent claims, more than thirty total claims</u>, or a multiple dependent claim; C. filing a <u>request for continued examination</u> ; D. filing a notice of appeal; E. filing a request for suspension of action; F. mailing of a notice of allowance; G. mailing of a final Office action; H. completion of examination as defined in 37 CFR 41.102; or I. abandonment of the application. Telephone inquiries with regard to this decision should be directed to CHERYL GIBSON BAYLOR at (571)272-3213. In his/her absence, calls may be directed to Petition Help Desk at (571) 272-3282.			
/CHERYL GIBSON BAYLOR/ Paralegal Specialist, OPET			



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
17/967,832	10/17/2022	Michael Sheppard	125399US07

CONFIRMATION NO. 8517

NEW OR REVISED PPD NOTICE

81905

Hanley, Flight & Zimmerman, LLC (Nielsen)
150 S. Wacker Dr. Suite 2200
Chicago, IL 60606



NOTICE OF NEW OR REVISED PROJECTED PUBLICATION DATE

The above-identified application has a new or revised projected publication date. The current projected publication date for this application is 02/09/2023. If this is a new projected publication date (there was no previous projected publication date), the application has been cleared by Licensing & Review or a secrecy order has been rescinded and the application is now in the publication queue.

If this is a revised projected publication date (one that is different from a previously communicated projected publication date), the publication date has been revised due to processing delays in the USPTO or the abandonment and subsequent revival of an application. The application is anticipated to be published on a date that is more than six weeks different from the originally-projected publication date.

More detailed publication information is available through the private side of Patent Application Information Retrieval (PAIR) System. The direct link to access PAIR is currently <http://pair.uspto.gov>. Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Questions relating to this Notice should be directed to the Office of Data Management, Application Assistance Unit at (571) 272-4000, or (571) 272-4200, or 1-888-786-0101.



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
17/967,832	10/17/2022		2120	125399US07	23	3

CONFIRMATION NO. 8517

81905

Hanley, Flight & Zimmerman, LLC (Nielsen)
150 S. Wacker Dr. Suite 2200
Chicago, IL 60606

FILING RECEIPT



0000000050235752

Date Mailed: 10/31/2022

Receipt is acknowledged of this non-provisional utility 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 FIRST INVENTOR, 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 corrected Filing Receipt, including a properly marked-up ADS showing the changes with strike-through for deletions and underlining for additions. If you received a "Notice to File Missing Parts" or other Notice requiring a response for this application, please submit any request for correction 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 provided that the request is grantable.

Inventor(s)

Michael Sheppard, Brooklyn, NY;
Jonathan Sullivan, Hurricane, UT;
Peter Lipa, Tucson, AZ;
Alejandro Terrazas, Santa Cruz, CA;

Applicant(s)

The Nielsen Company (US), LLC, New York, NY;

Power of Attorney: The patent practitioners associated with Customer Number 81905

Domestic Priority data as claimed by applicant

This application is a CON of 16/860,026 04/27/2020 PAT 11,432,026
which is a CON of 15/990,729 05/28/2018 PAT 10,638,177
which is a CON of 15/011,455 01/29/2016 PAT 9,986,272
which claims benefit of 62/239,126 10/08/2015

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 10/28/2022

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 17/967,832**

Projected Publication Date: 02/09/2023

Non-Publication Request: No

Early Publication Request: No

Title

METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION
BASED ON TUNING SESSION DURATION

Preliminary Class

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

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.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific

page 2 of 4

countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

SelectUSA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop

technology, manufacture products, deliver services, and grow your business, visit <http://www.SelectUSA.gov> or call +1-202-482-6800.

PATENT APPLICATION FEE DETERMINATION RECORD						Application or Docket Number 17/967,832			
Substitute for Form PTO-875									
APPLICATION AS FILED - PART I									
(Column 1)		(Column 2)		SMALL ENTITY		OTHER THAN SMALL ENTITY			
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)		
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	320		
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A	700		
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	800		
TOTAL CLAIMS (37 CFR 1.16(i))	23 minus 20 =	*				x 100 =	300		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3 minus 3 =	*				x =	0		
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		
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0		
			TOTAL			TOTAL	1820		
* If the difference in column 1 is less than zero, enter "0" in column 2.									
APPLICATION AS AMENDED - PART II									
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OTHER THAN SMALL ENTITY	
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)	
	Total (37 CFR 1.16(i))	* Minus **	=	x =			x =		
	Independent (37 CFR 1.16(h))	* Minus ***	=	x =			x =		
	Application Size Fee (37 CFR 1.16(s))								
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								
				TOTAL ADD'L FEE			TOTAL ADD'L FEE		
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)	
	Total (37 CFR 1.16(i))	* Minus **	=	x =			x =		
	Independent (37 CFR 1.16(h))	* Minus ***	=	x =			x =		
	Application Size Fee (37 CFR 1.16(s))								
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								
				TOTAL ADD'L FEE			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.									

TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA/82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	Not yet assigned
Filing Date	October 17, 2022
First Named Inventor	Michael Sheppard
Title	METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION
Art Unit	Not yet assigned
Examiner Name	Not yet assigned
Attorney Docket Number	125399US07

SIGNATURE of Applicant or Patent Practitioner

Signature	/ Michael W. Zimmerman/	Date (Optional)	October 17, 2022
Name	Michael W. Zimmerman	Registration Number	57993
Title (if Applicant is a juristic entity)	Attorney for Applicant		
Applicant Name (if Applicant is a juristic entity)	The Nielsen Company (US), LLC		

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.



*Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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

POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

- ☒ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above:

OR

- ☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

81905

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:

- ☒ The address associated with the above-mentioned Customer Number

OR

- ☐ The address associated with Customer Number:

OR

Firm or Individual Name			
Address			
City	State	Zip	
Country			
Telephone	Email		

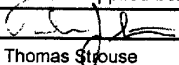
I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

The Nielsen Company (US), LLC

- ☐ Inventor or Joint Inventor (title not required below)
- ☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)
- ☒ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)
- ☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature		Date (Optional)	April 22 2014
Name	Thomas Stouse		
Title	Vice President of Intellectual Property, The Nielsen Company (US), LLC		

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

Privacy Act Statement

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

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

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

**CERTIFICATION AND REQUEST FOR PRIORITIZED EXAMINATION
UNDER 37 CFR 1.102(e)** (Page 1 of 1)

First Named Inventor:	Michael Sheppard	Nonprovisional Application Number (if known):	
Title of Invention:	METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION		

APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS PRIORITIZED EXAMINATION FOR THE ABOVE-IDENTIFIED APPLICATION.

1. The processing fee set forth in 37 CFR 1.17(i)(1) and the prioritized examination fee set forth in 37 CFR 1.17(c) have been filed with the request. The publication fee requirement is met because that fee, set forth in 37 CFR 1.18(d), is currently \$0. The basic filing fee, search fee, and examination fee are filed with the request or have been already been paid. I understand that any required excess claims fees or application size fee must be paid for the application.
2. I understand that the application may not contain, or be amended to contain, more than four independent claims, more than thirty total claims, or any multiple dependent claims, and that any request for an extension of time will cause an outstanding Track I request to be dismissed.
3. The applicable box is checked below:
 - I. ☒ **Original Application (Track One) - Prioritized Examination under § 1.102(e)(1)**
 - i. (a) The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a). This certification and request is being filed with the utility application via EFS-Web.
---OR---
 - (b) The application is an original nonprovisional plant application filed under 35 U.S.C. 111(a). This certification and request is being filed with the plant application in paper.
 - ii. An executed inventor's oath or declaration under 37 CFR 1.63 or 37 CFR 1.64 for each inventor, or the application data sheet meeting the conditions specified in 37 CFR 1.53(f)(3)(i) is filed with the application.
 - II. ☐ **Request for Continued Examination - Prioritized Examination under § 1.102(e)(2)**
 - i. A request for continued examination has been filed with, or prior to, this form.
 - ii. If the application is a utility application, this certification and request is being filed via EFS-Web.
 - iii. The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a), or is a national stage entry under 35 U.S.C. 371.
 - iv. This certification and request is being filed prior to the mailing of a first Office action responsive to the request for continued examination.
 - v. No prior request for continued examination has been granted prioritized examination status under 37 CFR 1.102(e)(2).

Signature / Michael W. Zimmerman/	Date October 17, 2022
Name (Print/Typed) Michael W. Zimmerman	Practitioner Registration Number 57993
Note: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. Submit multiple forms if more than one signature is required.*	
☒ *Total of <u>1</u> forms are submitted.	

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.

METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION

RELATED APPLICATIONS

[0001] This patent arises from a continuation of U.S. Patent Application Serial No. 16/860,026, filed April 27, 2020, which is a continuation of U.S. Patent Application Serial No. 15/990,729, filed May 28, 2018, now U.S. Patent No. 10,638,177, which is a continuation of U.S. Patent Application Serial No. 15/011,455, filed January 29, 2016, now U.S. Patent No. 9,986,272, which claims the benefit of U.S. Provisional Patent Application No. 62/239,126, entitled “METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION” filed October 8, 2015. U.S. Patent Application Serial No. 16/860,026, U.S. Patent Application Serial No. 15/990,729, U.S. Patent Application Serial No. 15/011,455, and U.S. Provisional Patent Application No. 62/239,126 are hereby incorporated herein by reference in their entirety.

FIELD OF THE DISCLOSURE

[0001] This disclosure relates generally to media audience measurement, and, more particularly, to methods and apparatus to determine a duration of media presentation based on tuning session duration.

BACKGROUND

[0002] Determining a size and demographics of an audience of a media presentation helps media providers and distributors schedule programming and determine a price for advertising presented during the programming. In addition, accurate estimates of audience demographics enable advertisers to target advertisements to certain types and sizes of audiences. To collect these demographics, an audience measurement entity enlists a plurality of media consumers (often called panelists) to cooperate in an audience measurement study (often called a panel) for a predefined length of time. The media consumption habits and demographic data associated with these enlisted media consumers are collected and used to statistically determine the size and demographics of the entire audience of the media presentation. In some examples, this collected data (e.g., data collected via measurement devices) may be supplemented with survey information, for example, recorded manually by the presentation audience members.

[0003] The process of enlisting and retaining participants for purposes of audience measurement is often a difficult and costly aspect of the audience measurement process. For example, participants are typically carefully selected and screened for particular characteristics so that the population of participants is representative of the overall presentation population. Additionally, the participants are required to perform specific tasks that enable the collection of the data, such as, for example, periodically self-identifying while consuming media programming.

BRIEF DESCRIPTION OF THE DRAWINGS

[0004] FIG. 1 is a block diagram of an example environment in which media presentation information is collected from media presentation locations and is analyzed by an example collection facility to determine durations of media presentation in accordance with the teachings of this disclosure.

[0005] FIG. 2 is a block diagram of an example implementation of the data adjuster of FIG. 1.

[0006] FIGS. 3-5 are flowcharts illustrating example machine readable instructions that may be executed to implement the example data adjuster of FIGS. 1 and/or 2.

[0007] FIG. 6 is an example table of measurement data collected by the example local people meter of FIG. 1.

[0008] FIGS. 7A-7C are tables of example tuning session data and presentation session data collected by the example local people meter of FIG. 1 in accordance with the teachings of this disclosure.

[0009] FIGS. 8A-8E are tables of statistical models generated by the data adjuster of FIGS. 1 and/or 2 based on data from the local people meters of FIG. 1 in accordance with the teachings of this disclosure.

[0010] FIG. 9 is an example graph illustrating expected total presentation session durations generated by the generated by the data adjuster of FIGS. 1 and/or 2 based on received tuning session durations in accordance with the teachings of this disclosure.

[0011] FIG. 10 is a block diagram of an example processing system capable of executing the example machine readable instructions of FIGS. 3-5 to implement the example data adjuster of FIGS. 1 and/or 2.

DETAILED DESCRIPTION

[0012] Audience measurement entities seek to understand the composition and size of audiences of media, such as television programming. Such information allows audience measurement entity researchers to, for example, report advertising delivery and/or targeting statistics to advertisers that target their media (e.g., advertisements) to audiences. Additionally, such information helps to establish advertising prices commensurate with audience exposure and demographic makeup (referred to herein collectively as “audience configuration”). One way to gather media presentation information is to gather media presentation information from media output devices (e.g., gathering television presentation data from a set-top box (STB) connected to a television). As used herein media presentation includes media output regardless of whether or not an audience member is present (e.g., media output by a media output device at which no audience is present, media exposure to an audience member(s), etc.).

[0013] A media presentation device (e.g., STB) provided by a service provider (e.g., a cable television service provider, a satellite television service provider, an over the top service provider, a music service provider, a movie service provider, a streaming media provider, etc.) or purchased by a consumer may contain processing capabilities to monitor, store, and transmit tuning data (e.g., which television channels are tuned on the

media presentation device at a particular time) to an audience measurement entity (e.g., The Nielsen Company (US), LLC.) to analyze media presentation activity. The tuning data is based on data received from the media presentation device while the media presentation device is on (e.g., powered on, switched on, and/or tuned to a media channel, streaming, etc.). However, tuning data may include extraneous data that may not accurately reflect media presentation when, for example, the media presentation device is configured to output media via a media output device (e.g., a television), but the media output device is turned off, not receiving the media from the media presentation device, etc. For example, tuning data may include data related to a STB that outputs television media via a television while the television is off, disconnected, turned to input other than the STB, etc. In another example, the tuning data collected by the media presentation device may not accurately reflect media actually exposed to an audience when the media presentation device is attempting to present the media but no audience members are present (e.g., a STB and/or a television is on and/or presenting media while no person is present to consume the media). To develop a more accurate estimation of the actual media presentation by the media presentation device, methods and apparatus disclosed herein analyze measurement data (e.g., tuning data) collected from media presentation devices (that may inaccurately reflect the media actually presented to an audience).

[0014] To determine aspects of media presentation data (e.g., which household member is currently consuming a particular media and the demographics of that household member), market researchers may perform audience measurement by

enlisting a subset media consumers as panelists. Panelists are audience members (e.g., household members, users, panelists, etc.) enlisted to be monitored, who divulge and/or otherwise share their media activity and/or demographic data to facilitate a market research study. An audience measurement entity typically monitors media presentation activity (e.g., viewing, listening, etc.) of the panelist members via audience measurement system(s), such as a metering device(s) and/or a local people meter (LPM). Audience measurement typically include determining the identity of the media being presented on a media output device (e.g., a television, a radio, a computer, etc.), determining data related to the media (e.g., presentation duration data, timestamps, channel data, etc.), determining demographic information of an audience, and/or determining which members of a household are associated with (e.g., have been exposed to) a media presentation. For example, an LPM in communication with an audience measurement entity communicates audience measurement (e.g., metering) data to the audience measurement entity. As used herein, the phrase “in communication,” including variances thereof, encompasses direct communication and/or indirect communication through one or more intermediary components and does not require direct physical (e.g., wired) communication and/or constant communication, but rather additionally includes selective communication at periodic or aperiodic intervals, as well as one-time events.

[0015] In some examples, metering data (e.g., including media presentation data) collected by an LPM or other meter is stored in a memory and transmitted via network, such as the Internet, to a datastore managed by the audience measurement entity. Typically, such metering data is combined with additional metering data collected from

a plurality of LPMs monitoring a plurality of panelist households. Example disclosed herein process the collected and/or aggregated metering data to determine model(s) based on a period of time between channel changes (referred to herein as tuning sessions). The metering data and/or the model(s) may include, but are not limited to, a number of minutes a household media presentation device was tuned to a particular channel, a number of minutes a household media presentation device was used (e.g., consumed) by a household panelist member and/or a visitor (e.g., a presentation session), demographics of the audience (which may be statistically projected based on the panelist data), information indicative of when the media presentation device is on or off, and/or information indicative of interactions with the media presentation device (e.g., channel changes, station changes, volume changes, etc.). As used herein a channel may be a tuned frequency, selected stream, an address for media (e.g., a network address), and/or any other identifier for a source and/or carrier of media.

[0016] In an effort to transform collected tuning data from media presentation devices (e.g., STBs) into media presentation data (e.g., to account for data including when the media output device is off or not used and/or when an audience member is not present), examples disclosed herein estimate presentation data from collected tuning data based on models determined from the metering data received from LPMs. Examples disclosed herein include determining a first tuning session based on a period of time between channel changes of a first media presentation device. Such examples further include determining first presentation session data within the determined first tuning session. Such examples further include determining a model relating the first

tuning session with the first presentation session data. Such examples further include determining a second tuning session for tuning data from a second media presentation device. Such examples further include selecting the model for the second tuning session, based on a match of a first duration of the second tuning session and a second duration associated with the model. Such examples further include estimating second presentation session data for the second tuning session based on the model.

[0017] FIG. 1 is a block diagram of an example environment 100 in which tuning data is collected from an example media presentation location 110 and is analyzed by an example collection facility 114 to estimate presentation session for tuning sessions within the tuning data. The example environment 100 includes a first example media presentation location 102, example media output devices 104, an example LPM 106, example media presentation devices 108, the second media presentation location 110, an example network 112, the example collection facility 114, an example data adjuster 120, an example tuning storage 116, and an example metering storage 118. According to the illustrated example, the collection facility 114 collects audience measurement (e.g., metering) data from the example LPM 106. The example data adjuster 120 creates model(s) based on the collected metering data. The example data adjuster 120 uses the models to estimate presentation sessions based on tuning data from the example media presentation device 108. For example, the data adjuster 120 of the illustrated example estimates media presentation session(s) for tuning sessions received from the example media presentation device 108 of the example media presentation location 110 that does not include a device to collect and/or send media

presentation data (e.g., media presentation locations that do not include the example LPM 106 to the collection facility 104).

[0018] The example first media presentation location 102 is a location that has been statistically selected to develop media ratings data for a population/demographic of interest. According to the example of FIG. 1, person(s) of the household have registered with a metering device (e.g., the example local people meter 106) and provided the demographic information. Alternatively, the first example media presentation location 102 may be additional and/or alternative types of environments such as, for example, a room in a non-statistically selected household, a theater, a restaurant, a tavern, a retail location, an arena, etc. In some examples, the environment 100 may include a plurality of first media presentation locations 102 for which metering data is collected.

[0019] In the illustrated example of FIG. 1, the first media presentation location 102 includes the example media output device 104. The example media output device 104 of FIG. 1 is a television. Alternatively, the media output device 104 may be any other type of device for outputting media such as, for example, a radio, a computer monitor, a video game console, and/or any other device capable of presenting media to a user.

[0020] The example LPM 106 is in communication with the example media output device 104 to collect and/or capture signals emitted externally by the media output device 104. The LPM 106 may be coupled with the media output device 104 via wired and/or wireless connection. The example LPM 106 may be implemented in connection with additional and/or alternative types of media presentation devices such

as, for example, a radio, a computer monitor, a video game console, and/or any other device capable to present media to a user. The LPM 106 may be a portable people meter, a cell phone, a computing device, a sensor, and/or any other device capable of metering user exposure to media. The media presentation location 102 may include a plurality of LPMs 106. In such examples, the plurality of the LPMs 106 may be used to monitor media exposure for multiple users and/or media output devices 104.

[0021] In some examples, the example LPM 106 includes a set of buttons assigned to audience members to determine which of the audience members is watching the example media output device 104. The LPM 106 may periodically prompt the audience members via a set of LEDs, a display screen, and/or an audible tone, to indicate that the audience member is present at the example first media presentation location 102 by pressing an assigned button. To decrease the number of prompts and, thus, the number of intrusions imposed upon the media consumption experience of the audience members, the LPM 106 prompts only when unidentified audience members are located in the first media presentation location 102 and/or only after the LPM 106 detects a channel change and/or a change in state of the media output device 104. In other examples, the LPM 106 may include at least one sensor (e.g., a camera, 3-dimensional sensor, etc.) and/or be communicatively coupled to at least one sensor that detects a presence of the user in the first example media presentation location 102. The example LPM 106 transmits metering data to a media researcher and/or a marketing entity. The example metering data includes the media presentation data (e.g., data related to media presented while the media output device 104 is on and a user is

present). The metering data may further include a household identification, a tuner key, a presentation start time, a presentation end time, a channel key, etc., as further described in FIG. 6.

[0022] The media presentation device 108 of the illustrated example of FIG. 1 is installed by a service provider (e.g., cable media service provider, a radio frequency (RF) media provider, a satellite media service provider, etc.) to present media to an audience member through the example media output device 104. In the illustrated example of FIG. 1, the example media presentation device 108 is a STB. Alternatively, the example media presentation device 108 may be an over the top device, a video game console, a digital video recorder (DVR), a digital versatile disc (DVD) player, a receiver, a router, a server, and/or any device that receives media from a service provider. In some examples, the media presentation device 108 may implement a DVR and/or DVD player. The example media presentation device 108 includes a unique serial number that, when associated with subscriber information, allows an audience measurement entity, a marketing entity, and/or any other entity to ascertain specific subscriber behavior information. Additionally, the example media presentation device 108 transmits tuning data (e.g., data related to tuned channels while the media presentation device 108 is on) to the example collection facility 114. Although the example media output device 104, the example LPM 106, and the example media presentation device 108 in the first example media presentation location 102 are separate devices, one or more of the media output device 104, the LPM 106, and/or the media presentation device 108 may be combined.

[0023] The example second media presentation location 110 includes the example media output device 104 and the example media presentation device 108, but does not include the example LPM 106. Accordingly, media presentation data is not collected at the example second media presentation location 110. However, tuning data is collected by the example media presentation device 108. Such tuning data includes data collected by the media presentation device 108 (e.g., which channel the media presentation device 108 was tuned to) but may not include presentation session information from the example media presentation device 108 (e.g., information related to when the media output device 104 is powered on and/or an audience member is present). Therefore tuning data from the example LPM 106 may be misleading. In some examples, the second media presentation location 110 may include a second plurality of media presentation locations 110.

[0024] Metering data from the example LPM 106 and/or tuning data from the example media presentation device 108 is transmitted to the example collection facility 114 via the example network 112. The example network 112 may be implemented using any type of public or private network such as, but not limited to, the Internet, a telephone network, a local area network (LAN), a cable network, and/or a wireless network. To enable communication via the network 112, the example media presentation device 108 includes a communication interface that enables a connection to an Ethernet, a digital subscriber line (DSL), a telephone line, a coaxial cable, or any wireless connection, etc.

[0025] The example collection facility 114 receives, processes, stores, and/or reports presentation data related to metering data received from the LPM 106 and/or tuning data from the media presentation device 108 periodically and/or upon a request by the collection facility 114. In some examples, the collection facility 114 receives the tuning data from a service provider associated with the media presentation device 108 instead of and/or in addition to obtaining the example tuning data from the example media presentation device 108.

[0026] According to the illustrated example, the collection facility 114 is hosted by an audience measurement entity. Alternatively the collector facility may be hosted by any other entity or may be co-hosted by an audience measurement entity and another entity(ies). For example, tuning data may be collected from the example media presentation devices 108 by a media provider (e.g., a cable television provider, a satellite television provider, etc.) and metering data may be collected from the example LPM(s) 106 by an audience measurement entity cooperating with the media provider to gain access to the tuning data. The example collection facility 114 includes the example tuning storage 116 and the example metering storage 118.

[0027] The example tuning storage 116 is a database that stores tuning data received from the example media presentation device 108 and the example metering storage 118 is a database that stores metering data from the example LPM(s) 106. The example tuning storage 116 and metering storage 118 may be implemented by any one of more of a database, a server, and/or any other data structure to store data. According to the illustrated example, the example tuning storage 116 and the example metering

storage 118 are communicatively coupled with the first example media presentation location(s) 102 and the second example media presentation location(s) 110 via the example network 112. Alternatively, the example tuning storage 116 and/or the example metering storage 118 may receive data in any other manner (e.g., tuning data and/or media presentation data may be collected by a third-party and transferred to the collection facility 114 via the network 112 or any other path).

[0028] The example data adjuster 120 processes metering data (e.g., metering data received from the metering storage 118) to create a tuning session(s) (e.g., based on a period of time between channel changes) and a presentation session(s) (e.g., based on when the media was presented by the media presentation device 108 on the media output device 104). The example data adjuster 120 integrates demographic data with the compiled presentation data to generate demographic statistical information. The data adjuster 120 of the illustrated example generates models to estimate presentation session data for a received tuning session received from the example media presentation devices 108. When the example collection facility 114 receives tuning data from the example media presentation devices 108 and/or from a service provider associated with the media presentation devices 108, the example data adjuster 120 estimates and reports presentation session data based on a comparison of the tuning data and the generated models, as further described in FIG. 2.

[0029] In operation, there are two steps to estimating presentation session(s) for tuning data received from the example media presentation device 108. The first step is a model generation step that includes generating models based on determined tuning

session(s) and presentation session(s) from metering data. The second step is a media presentation estimation step that includes estimating presentation sessions for received tuning data.

[0030] During the model generation step, the example LPM 106 collects metering data at the media presentation location 102. As previously described, the metering data includes data related to media presented to and/or exposed to audience members of the media presentation device 108. In some examples, the metering data includes demographics for the users of the media output device 104, data related to the media presented by the media presentation device 108, timestamps for the media exposure, data related to channel changes, data related to media output device 104 on/off status, etc. The example LPM 106 transmits the metering data to the example collection facility 114 via the example network 112 to be stored in the example metering storage 118. As previously described, the metering data is received (e.g., from the LPM 106) periodically and/or upon a request by the collection facility 114. Typically, multiple of the LPMs 106 associated with respective ones of the media presentation locations 102 will send the metering data to the example metering storage 118.

[0031] The example data adjuster 120 analyzes the metering data from the example metering storage 118 to create tuning sessions and presentation sessions based on the metering data. The data adjuster 120 determines tuning session(s) based on a period of time between channel changes indicated in the metering data. The example data adjuster 120 also determines presentation session(s) for the determined tuning session(s) based on a time and/or date of when the media was actually viewed by a user

(e.g., the media output device 104 was detected as being on and a user was determined to be present to view the media output device 104). After the tuning session(s) and the presentation session(s) are determined, the data adjuster 120 of the illustrated example creates and/or updates a model based on a duration(s) of the tuning session(s), as further described in conjunction with FIG. 2.

[0032] During the media presentation estimation step, the media presentation device 108 collects tuning data related to which channel a media presentation device 108 is tuned to while the media presentation device 108 is on. As previously described, the tuning data does not include presentation session data (e.g., data related to media presented while the media output device 104 is on and a user is present). The example media presentation device 108 transmits the tuning data to the example tuning storage 116 of the example collection facility 114 via the example network 112. As previously described, the tuning data is received (e.g., from the media presentation device 108) periodically and/or upon a request by the collection facility 114. In some examples, the tuning data may be collected by the service provider associated with the media presentation device 108. In such examples, the service provider may transmit the tuning data directly to the example collection facility 114 to be stored in the tuning storage 116.

[0033] The example data adjuster 120 determines a duration of a tuning session from the received tuning data. The example data adjuster 120 estimates presentation session data for the tuning session based on the created models. For example, the data adjuster 120 may estimate a 120-minute presentation session based on receiving a 180-minute tuning session. The example data adjuster 120 generates reports based on the

estimated presentation session data. The reports may be generated at preset times (e.g., hourly, daily, monthly, etc.) and/or may be initiated by user request. Additionally, the reports may include data from one or more media presentation locations (e.g., such as the first and second media presentation locations 102, 110). In some examples, the reports may include demographic and/or other statistical information, as further described in FIGS. 8A-9.

[0034] FIG. 2 is block diagram of an example implementation of the example data adjuster 120 of FIG. 1 to estimate presentation sessions for tuning data based on models generated from metering data. The example data adjuster 120 includes an example metering receiver 202, and example tuning session determiner 204, an example presentation session determiner 206, an example modeler 208, an example model storage 210, an example tuning data receiver 212, an example duration determiner 214, an example presentation session estimator 216, and an example reporter 218.

[0035] The example metering receiver 202 of FIG. 2 receives metering data from the example LPM 106 and sends the received metering data to the example tuning session determiner 204 for further processing. In some examples, the metering receiver 202 receives metering data from the example metering storage 118. In some examples, the metering receiver 202 receives metering data from the example LPM(s) 106. In some examples, the metering receiver 202 receives metering data from both the example metering storage 118 and the example LPM(s) 106. The metering receiver 202 may include a network adapter and/or server for receiving metering data from the example

metering storage 118 and/or the example LPM(s) 106 (e.g., via the example network 112) through a wired and/or wireless connection.

[0036] The example tuning session determiner 204 analyzes metering data received via the example metering receiver 202 to create a tuning session(s) based on a period of time between channel changes. Alternatively, the tuning session determiner 204 may generate the created tuning session(s) based on a period of time between any interaction with the media output device 104, the LPM 106, and/or the media presentation device 108. According to the illustrated example, the example tuning session determiner 204 determines a new tuning session for each channel change identified in the metering creates a new tuning session. In this manner, a tuning session is representative of the period of time between each channel change. For example, if the metering data includes a first channel change at 4:00 PM and a second subsequent channel change at 5:30 PM on the same day, the example tuning session determiner 204 creates a 90-minute tuning session representative of the period from 4:00PM to 5:30 PM. Once a tuning session(s) has been determined from the metering data, the example tuning session determiner 204 sends data for the determined tuning session(s) to the example presentation session determiner 206.

[0037] The example presentation session determiner 206 receives data for a tuning session(s) received from the example tuning session determiner 204 and further analyzes created tuning session(s) to determine a presentation session(s) within the tuning session(s). The presentation sessions are determined based on when the media presentation device 108 is actually presenting media to an audience member (e.g., the

example media output device 104 is on and/or an audience member is present). In some examples, the metering data may include user identifiers identifying which user is located in the example media presentation location 102 while the example media output device 104 is on. In such examples, the presentation session determiner 206 may not credit a duration as a presentation session if an audience member is not present while the media output device 104 is on. Once the presentation session(s) is determined, the example presentation session determiner 206 transmits the created tuning session data and the determined presentation session data to the example modeler 208.

[0038] The example modeler 208 creates and/or updates models based on tuning session data and presentation session data received from the example. The example modeler 208 integrates the presentation session data in a model with a corresponding tuning session length. For example, if the example tuning session determiner 204 determines presentation session data from a 500-minute tuning session, the example modeler 208 will store the corresponding presentation session data in a 500-minute tuning session model. In some examples, the example modeler 208 updates the model based on the total presentation session for the tuning session. For example, if the 500-minute tuning session includes a total presentation session of 320 minutes, the example modeler 208 will update the 500-minute tuning session model to include the 320 minute presentation session, as further described in FIG. 8A. In some examples, the example modeler 208 updates the model based on durations associated with the presentation session for the tuning session. For example, if during the 500 minute tuning session, there were two presentation sessions (e.g., from the 0 minute mark to the 200 minute

mark and from the 380 minute mark to the 500 minute mark), the example modeler 208 will update the 500-minute tuning session model to include data from the periods of time (e.g., 0-200 minutes and 380-500 minutes) associated with the presentation sessions, as further described in FIG. 8D. Additionally, the example modeler 208 may update the model based on various conditional probabilities associated with the presentation session(s), as further described in FIG. 8B, 8C, 8E, and 9. Once the example modeler 208 has created and/or updated a model, the example modeler 208 stores the model in the example modal storage 210.

[0039] The example model storage 210 of FIG. 2 stores models created and/or updated by the example modeler 208. In some examples, the model storage 210 includes hardware, software, or firmware to store data locally in the example data adjuster 120. Alternatively, the model storage 210 is located outside the example data adjuster 120 (e.g., in a database and/or a cloud). The models stored in the example model storage 210 may be updated (e.g., based on additional metering data) and/or used to estimate presentation sessions (e.g., based on the tuning data).

[0040] The example tuning data receiver 212 of FIG. 2 receives tuning data from the example media presentation device 108 and/or a service provider and sends the received tuning data to the example duration determiner 214 for further processing. In some examples, the tuning data receiver 212 receives metering data from the example tuning storage 116. Alternatively, the tuning data receiver 212 may receive metering data from the example media presentation device(s) 108. In some examples, the tuning data receiver 212 receives metering data from both the example tuning storage 116 and

the example media presentation device(s) 108. The tuning data receiver 212 may include a network adapter and/or server for receiving metering data from the example tuning storage 116 and/or the example media presentation device(s) 108 (e.g., via the example network 112) via a wired and/or wireless connection.

[0041] The example duration determiner 214 analyzes tuning data to determine a duration of a tuning session from the media presentation device 108. As previously described, a tuning session is based on a period time between channel changes of the media presentation device 108. The tuning data does not include presentation session data. To estimate accurate presentation session for the tuning data, the example duration determiner 214 determines the duration of the tuning session so that an appropriate model may be retrieved to determine the estimate. The example duration determiner 214 transmits tuning data including the tuning session duration to the example presentation session estimator 216 for further processing.

[0042] The example presentation session estimator 216 estimates presentation session for tuning data received from the example tuning data receiver 212 via the example duration determiner 214 based on presentation session data from a model stored in the example model storage 210. The presentation session estimator 216 retrieves, from the example model storage 210, a model with a tuning session length that matches determined tuning session duration determined by the example duration determiner 214. For example, if the tuning data received from the example model storage 210 a 500 minute tuning session, the presentation session estimator 216 retrieves the 500-minute tuning session model from the example memory 210. Since the tuning data does not

differentiate between time when the media output device 104 is on and the media output device 104 is off and/or when an audience member is present, the example presentation session estimator 216 estimates presentation sessions to account for periods of time when the media presentation device is on but the media output device 104 is off and/or an audience member is not present. The example presentation session estimator 216 may estimate additional presentation session data based on, for example, an initial presentation session (e.g., the first presentation session in the tuning session), a final presentation session (e.g., the last presentation session in the tuning session, and/or a total presentation session (e.g., the total presentation minutes in the tuning session) based on the data stored in the corresponding model. For example, the presentation session estimator 216 may receive a 200-minute model(s) while estimating a presentation session for a 200-minute tuning session. The presentation session estimator 216 may estimate, based on the 200-minute model, an initial tuning session of 60 minutes, an final presentation session of 30 minutes, and an total presentation session estimate of 90 minutes based on user and/or administrator settings. In some examples, the settings may be based on statistical analysis (e.g., expected value, weighted average, standard deviation, minimum and/or maximum percentages of presentation sessions from the model(s) etc.).

[0043] In some examples, the example presentation session estimator 216 bins (e.g., groups) data from multiple models within a threshold range when the number of entries in a particular model does not satisfy a minimum threshold number of entries. For example, if a 65-minute tuning duration is determined from tuning data and the 65-

minute tuning session model does not meet a threshold number (e.g., minimum) of entries, the example presentation session estimator 216 may group data from models of similar tuning session length within a threshold range. For example, if the threshold range is 4 minutes, the data from the 63-minute tuning session model, the 64-minute tuning session model, the 66-minute tuning session model, and the 67-minute tuning session model may be combined with the data from the 65-minute tuning session model. In this manner, the number of entries may be increased until the threshold number of entries is satisfied. In some examples, the threshold number of entries for a model and the minimum threshold range may be set and/or adjusted by a user and/or an administrator.

[0044] The example reporter 218 of FIG. 2 generates reports of data received, determined, and/or generated by the example data adjuster 120. The example reporter 218 generates reports including media presentation session data, the metering data from the example LPM 106, tuning data from the media presentation device 108, data relating models generated by the example modeler 208, presentation session estimator 216 settings, and/or any other data relating to the LPM 106 and/or the media presentation device 108. The reports may include statistical analysis including conditional distributions, cumulative distributions, expected values, etc. For example, the reports may illustrate that 15% of 200-minute tuning sessions from media presentation devices 108 include only 120 minutes of presentation time, that 35% of the 200-minute tuning session was being presented at the 158th minute, that the expected total presentation minutes for the 200-minute tuning session is 150 minutes, etc. The reports may be

preset and/or customized by a user and/or administrator to include information relevant to the user and/or administrator.

[0045] While an example manner of implementing the example data adjuster 120 of FIG. 1 is illustrated in FIG. 2, one or more elements, processes and/or devices illustrated in FIG. 2 may be combined, divided, re-arranged, omitted, eliminated and/or implemented in any other way. Further, the example metering receiver 202, the example tuning session determiner 204, the example presentation session determiner 206, the example modeler 208, the example model storage 210, the example tuning data receiver 212, the example duration determiner 214, the example presentation session estimator 216, the example reporter 218, and/or, more generally, the example the example data adjuster 120, of FIG. 2 may be implemented by hardware, machine readable instructions, software, firmware and/or any combination of hardware, machine readable instructions, software and/or firmware. Thus, for example, any of the example metering receiver 202, the example tuning session determiner 204, the example presentation session determiner 206, the example modeler 208, the example model storage 210, the example tuning data receiver 212, the example duration determiner 214, the example presentation session estimator 216, the example reporter 218, and/or, more generally, the example the example data adjuster 120, of FIG. 2 could be implemented by one or more analog or digital circuit(s), logic circuit(s), programmable processor(s), application specific integrated circuit(s) (ASIC(s)), programmable logic device(s) (PLD(s)) and/or field programmable logic device(s) (FPLD(s)). When reading any of the apparatus or system claims of this patent to cover a purely software and/or firmware implementation,

at least one the example metering receiver 202, the example tuning session determiner 204, the example presentation session determiner 206, the example modeler 208, the example model storage 210, the example tuning data receiver 212, the example duration determiner 214, the example presentation session estimator 216, the example reporter 218, and/or, more generally, the example the example data adjuster 120, of FIG. 2 is/are hereby expressly defined to include a tangible computer readable storage device or storage disk such as a memory, a digital versatile disk (DVD), a compact disk (CD), a Blu-ray disk, etc. storing the software and/or firmware. Further still, the example data adjuster 120 of FIG. 2 may include one or more elements, processes and/or devices in addition to, or instead of, those illustrated in FIG. 2, and/or may include more than one of any or all of the illustrated elements, processes and devices.

[0046] Flowcharts representative of example machine readable instructions for implementing the example data adjuster 120 of FIG. 2 are shown in FIG. 3-5. In the examples, the machine readable instructions comprise a program for execution by a processor such as the processor 1012 shown in the example processor platform 1000 discussed below in connection with FIG. 10. The program may be embodied in software stored on a tangible computer readable storage medium such as a CD-ROM, a floppy disk, a hard drive, a digital versatile disk (DVD), a Blu-ray disk, or a memory associated with the processor 1012, but the entire program and/or parts thereof could alternatively be executed by a device other than the processor 1012 and/or embodied in firmware or dedicated hardware. Further, although the example program is described with reference to the flowcharts illustrated in FIGS. 3-5, many other methods of implementing the

example data adjuster 120 of FIG. 2 may alternatively be used. For example, the order of execution of the blocks may be changed, and/or some of the blocks described may be changed, eliminated, or combined.

[0047] As mentioned above, the example processes of FIGS. 3-5 may be implemented using coded instructions (e.g., computer and/or machine readable instructions) stored on a tangible computer readable storage medium such as a hard disk drive, a flash memory, a read-only memory (ROM), a compact disk (CD), a digital versatile disk (DVD), a cache, a random-access memory (RAM) and/or any other storage device or storage disk in which information is stored for any period (e.g., for extended time periods, permanently, for brief instances, for temporarily buffering, and/or for caching of the information). As used herein, the term tangible computer readable storage medium is expressly defined to include any type of computer readable storage device and/or storage disk and to exclude propagating signals and to exclude transmission media. As used herein, "tangible computer readable storage medium" and "tangible machine readable storage medium" are used interchangeably. Additionally or alternatively, the example processes of FIGS. 3-5 may be implemented using coded instructions (e.g., computer and/or machine readable instructions) stored on a non-transitory computer and/or machine readable medium such as a hard disk drive, a flash memory, a read-only memory, a compact disk, a digital versatile disk, a cache, a random-access memory and/or any other storage device or storage disk in which information is stored for any period (e.g., for extended time periods, permanently, for brief instances, for temporarily buffering, and/or for caching of the information). As

used herein, the term non-transitory computer readable medium is expressly defined to include any type of computer readable storage device and/or storage disk and to exclude propagating signals and to exclude transmission media. As used herein, when the phrase "at least" is used as the transition term in a preamble of a claim, it is open-ended in the same manner as the term "comprising" is open ended.

[0048] The example machine readable instructions illustrated in FIG. 3 may be executed to cause the example data adjuster 120 of FIG. 2 to create a model based on metering data and determine presentation session data from tuning data of the example media presentation device(s) 108 (e.g., the model generation step) in conjunction with FIGS. 7-9.

[0049] At block 300, the metering receiver 202 receives metering data from the example LPM 106. As previously described, the metering data contains detailed media exposure data for the example media presentation location 102 (e.g., for media from the example media presentation device 108 output by the example media output device 104. Example metering data is illustrated and further described in FIG. 6. At block 302, the tuning session determiner 204 creates a tuning session based on a period of time between channel changes. Alternatively, the example tuning session determiner 204 may create a tuning session based on any other events at the example media presentation location (e.g., a volume change, a detected user presence, etc.). Once the tuning session has been created, the example presentation session determiner 206 determines presentation sessions within the tuning session (block 304). Alternatively, presentation sessions may be determined prior to or in parallel with the creation of the tuning session.

An example of presentation sessions within a tuning session is illustrated and further described in FIGS. 7A-7C.

[0050] At block 306, the example modeler 208 adds the presentation session data to a first set of models based on the tuning session length. For example, based on the determined tuning sessions, the example modeler 208 updates the example models by adding the presentation data to the first set of models (e.g., such as frequency distribution of total presentation time and frequency distribution of media presented at set times, as further described in FIGS. 8A and 8D). For example, if there are 50 minutes of total presentation session time for a 75-minute tuning session, the example modeler 208 adds a count for the total 50 minutes presentation session to a frequency distribution model for a 75-minute tuning session, as further described in FIG. 8A. Additionally, if the example modeler 208 determines that the 75-minute tuning session contains two presentation sessions (e.g., from 0-30 minutes and from 55-75 minutes), the example modeler 208 may update a 75-minute frequency distribution model based on every minute of the two presentation sessions (e.g., adds a count at 0 minute bucket, at a 1 minute bucket, at a 2 minute bucket, ..., at a 30 minute bucket, at a 55 minute bucket, ..., at a 75 minute bucket), as further described in FIG. 8D. Once the example modeler 208 updates the first set of models, the example modeler 208 updates a second set of models associated with the first set of models (block 308). For example, there may be various models (e.g., such as models of conditional distribution of total presentation time, models of cumulative distribution of total presentation time, models of conditional distribution of media presented at set times, models of conditional

expected value, etc., as further described in FIGS. 8B, 8C, 8E, and 9) that are calculated based on the first set of models. For example, a 75-minute conditional distribution model is based on a number of counts in one bucket divided by the total number of counts. In such examples, the conditional probability for a 20-minute tuning session may include 100 counts for a presentation session totaling 15 minutes and the 20-minute tuning session may have a total of 500 counts, therefore the conditional probability for a 15 minute total presentation session based on a 20-minute tuning session is 20% (e.g., $100/500$). However if additional metering data is received, the conditional data is calculated based on updates to the first set of models. For example, if 500 more 20-minute tuning sessions are added to the first set of models and none of the 500 20-minute tuning sessions include 15-minute total presentation sessions, the conditional probability for a 15-minute total presentation session would lower to 10% (e.g., $100/1000$). In such examples, the presentation session data is first added to the first set of models and then the second set of models may be updated (e.g., re-calculated) based on the updated first set. At block 310, once the models have been updated, the models are stored in the example model storage 210 to be used by the presentation session estimator 216, as further described in FIG. 4.

[0051] The example machine readable instructions illustrated in FIG. 4 may be executed to cause the example data adjuster 120 of FIG. 2 to estimate presentation sessions from tuning data from the example media presentation device 108 (e.g., the media presentation estimation step).

[0052] At block 400, the example tuning data receiver 212 receives tuning data from the example media presentation device 108. As previously described, the tuning data includes data relating to which channel the media presentation device 108 was tuned to while the media presentation device 108 is on. Tuning data may be inaccurate because tuning data assumes that the media output device 104 is on and a viewer is present whenever the media presentation device is on. Therefore, tuning data does not provide presentation session data (e.g., data related to when the media output device 104 is on and a user is present) within a tuning session.

[0053] At block 402, the example duration determiner 214 determines a duration of a tuning session based on the tuning data. Once the duration the tuning session has been determined, the example presentation session estimator 216 retrieves a corresponding model from the example model storage 210 (block 404). Since the example models are divided by tuning session durations, the presentation session estimator 216 retrieves a model that corresponds to (e.g., matches with) the duration the received tuning session. At block 406, the example presentation session estimator 216 estimates presentation session data (e.g., a total estimated presentation session, a period for a presentation session at the beginning and/or end of the tuning session, and/or any other data based on the stored models as further described in FIGS. 8A-E) based on user settings. For example, a user may create setting for an initial presentation session based a when the total percentage of users in a model drops below 80%. In such examples, if a 10 minute tuning session is received from the example tuning data receiver 212, the presentation session estimator 216 receives a 10-minute model (e.g., such as the

conditional distribution of media presented at set times model of FIG. 8E). Since the 4th minute of the model of FIG. 8E is the first time that the conditional percentage drops below 80% (e.g., at the 4th minute it is 75%), the presentation session estimator 216 estimates an initial presentation session from the 0th minute to the 3rd minute. As previously described, the user settings may be preset or configured based on user and/or administrator preferences. At block 408, the example reporter 218 generates a report including the estimated presentation session data. Additionally, the report may include the tuning data, the metering data, demographic data, any and/or all of the stored models, and/or any other data related to the LPM 106 and/or the media presentation device 108. As previously described, the data reported on the reporter may be preset or customized.

[0054] The example machine readable instructions illustrated in FIG. 5 include alternative instructions to cause the example data adjuster 120 of FIG. 2 to estimate presentation sessions from tuning data from the example media presentation device 108. The example machine readable instructions cause the example data adjuster 120 of FIG. 2 to bin (e.g., group) models based on tuning session durations.

[0055] At block 500, the example tuning data receiver 212 receives tuning data from the example media presentation device 108. As previously described, the tuning data includes data relating to which channel the media presentation device 108 was tuned to while the media presentation device 108 is powered on. Tuning data may be inaccurate because tuning data assumes that the media output device 104 is on and a viewer is present whenever the media presentation device is on. Therefore, tuning data

does not provide presentation session data (e.g., data related to when the media output device 104 is on and a user is present) within a tuning session.

[0056] At block 502, the example duration determiner 214 determines a duration of a tuning session based on the tuning data. Once the duration the tuning session has been determined, the example presentation session estimator 216 retrieves a corresponding model from the example model storage 210 (block 504). Since example the models are divided by tuning session durations, the presentation session estimator 216 retrieves a model that corresponds to (e.g., matches with) the duration the received tuning session.

[0057] At block 506, the presentation session estimator 216 determines if the obtained model exceeds a minimum number of entries. The minimum number of entries may be predetermined and/or based on user and/or administrator preferences. If a model has a limited number of entries (e.g., small sample size), the presentation session estimator 216 may inaccurately estimate presentation session data. As previously described, the example presentation session estimator 216 may bin (e.g., group) similar models together to increase the number of entries above the minimum number of entries. If the model does exceed the minimum number of entries, the example presentation session estimator 216 estimates presentation session data (e.g., a total estimated presentation session, a period for a presentation session at the beginning and/or end of the tuning session, and/or any other data based on the stored models as further described in FIGS. 8A-E) (block 508) based on user settings. For example, a user may create setting for an initial presentation session based a when the total percentage of users in a

model drops below 80%. In such examples, if a 10 minute tuning session is received from the example tuning data receiver 212, the presentation session estimator 216 receives a 10-minute model (e.g., such as the conditional distribution of media presented at set times model of FIG. 8E). Since the 4th minute of the model of FIG. 8E is the first time that the conditional percentage drops below 80% (e.g., at the 4th minute it is 75%), the presentation session estimator 216 estimates an initial presentation session from the 0th minute to the 3rd minute. As previously described, the user settings may be preset or configured based on user and/or administrator preferences.

[0058] If the model does not exceed the minimum number of entries, the example presentation session estimator 216 estimates presentation session data based on the model and data from other models within a threshold duration range (block 510). In this manner, the example presentation session estimator 216 can increase the number of entries by gathering data from models with similar tuning session durations. For example, if a threshold range is 5 minutes and a 30-minute tuning session model does not meet the minimum number of entries, the presentation session estimator 216 may combine entries from the 28-minute tuning session model, the 29-minute tuning session model, the 30-minute tuning session model, the 32-minute tuning session model, and the 33-minute tuning session model. In some examples, the presentation session estimator 216 may add entries from one model at a time until the minimum threshold is met. The threshold range and/or the minimum number of entries may be preset and/or based on user and/or administrator preferences. Once, the minimum threshold is met, the example presentation session estimator 216 estimates presentation session data based on

the binned (e.g., grouped) models (e.g., a total estimated presentation session, an duration for a presentation session at the beginning and/or end of the tuning session, and/or any other data based on the stored models as further described in FIGS. 8A-E). At block 512, the example reporter 218 generates a report including the estimated presentation session data. Additionally, the report may include the tuning data, the metering data, demographic data, any and/or all of the stored models, presentation session data prior to binning, and/or any other data related to the LPM 106 and/or the media presentation device 108.

[0059] FIG. 6 is an illustration of example metering data 600 from the example LPM 106. The example metering data 600 includes a household identification (ID) 602, a tuner key 604, a start presentation time 606, an end presentation time 608, a channel key 610, a genre 612, a presentation weight date key 614, a valid data flag 616, and a source 618.

[0060] The example household ID 602 of FIG. 6 identifies which example media presentation location 102 transmitted the metering data 600. In this example, there is one household ID 602, namely '30006.' However, there may be many household IDs from various media presentation locations 102 within the metering data 600. The example tuner key 604 is an identification number for the media output device 104. Since there may be the media presentation location 102 with multiple media presentation devices 102, the tuner key 604 identifies which media output device 104 was being used. The example start time 606 is a timestamp based on a start of a presentation session (e.g., when the media presentation device 108 was actually presenting media on the

media output device 104). The example end time 608 is a timestamp based an end of a presentation session. The example channel key 610 identifies a channel tuned by the media presentation device 108. The example genre 612 identifies the genre of the media tuned to on the media presentation device 108 during the presentation session. The example presentation weight date key 614 is a code representative of a date of the end time 608. The example valid data flag 616 is a Boolean value that identifies whether the metering data is valid. The metering data may not be valid if there is an error in the metering data (e.g., the metering data is corrupted, the metering data is missing information, etc.). The example source 618 identifies a source (e.g., a videocassette recorder (VCR), DVD, cable, antenna, video game counsel, etc.) of the media presentation device 618. The source 618 may change if, for example, the user is watching a DVD. Additionally, the metering data 600 may contain additional columns for data related to other aspects of audience member data. For example, the metering data may contain data identifying whether or not a user(s) is present, demographics relating to the user(s), and/or an identifier for the user(s) present during a presentation session. Alternatively, the metering data may only display data while a user is present and omit any data while the user is not present. For example, the example LPM 106 may adjust the example metering data 600 so that the metering data 600 does not include data from time durations when a user is not present.

[0061] When the example metering data 600 of FIG. 6 is received by the example collection facility 114 from the example LPM 106, the example tuning session determiner 204 tuning sessions based on a period time between channel changes by

analyzing the metering data 600. The example columns 620 represent data from a period time between channel changes. In this example, the tuning session determiner 204 identifies the example columns 620 as an example tuning session as further described in in FIGS 7A-C.

[0062] FIGS. 7A-C illustrate an example of determining a tuning session and presentation sessions within the tuning session based on the example metering data 600 of FIG. 6. In the illustrated example, the tuning session determiner 204 determines tuning session based on a period of time between channel changes. FIG. 7A displays the columns 620 from the example metering data 600 of FIG. 6. FIG. 7B displays information that may be extracted from the example columns 620 to determine the tuning session and the presentation sessions. For example, based on the information from the example columns 620, the presentation session determiner 206 determines that at time 00:25:00 media output device '186242092' from household '50006' was turned off after watching a channel associated with '294984.' At time 00:34:00, the media output device '186242092' was turned on and the channel was changed to a channel associated with a channel key '2875552.' At time 02:26:00, the media output device '186242092' was turned off. At time 04:52:00, the media output device '186242092' was turned back on while remaining on the channel associated with the channel key '2875552.' At time 05:46:00, the media output device '186242092' was turned off. At time 20:50:00, the media output device '186242092' was turned back on while remaining on the channel associated with the channel key '2875552.' At time 21:35:00, the media output device '186242092' was turned off. At time 22:41:00, the media

output device '186242092' was turned back on and the channel was changed to a channel associated with the channel key '294984.'

[0063] FIG. 7C illustrates an example tuning session and example presentation sessions determined for the metering data from columns 620 of FIG. 7A. Since the channel was changed at 00:34:00 and then again at 22:41:00, the example tuning session determiner 204 generates an example tuning session of 1,327 minutes (e.g., the period of time between channel changes). Once the tuning session is created, the presentation session determiner 206 determines presentation sessions based on the periods of time that media from the media output device '186242092' was actually presented within the tuning session (e.g., the media output device '186242092' was on and a user was viewing the media output device '186242092'). For example, the presentation session determiner 206 analysis the start and end times from the metering data from columns 620 to determine when the media output device 104 was on and when the media output device 104 was off. The presentation sessions only include periods of time while the media output device 104 is on. In some examples, the metering data in columns 620 may only include data when a user is present. In such examples, the presentation sessions are based on when the media output device 104 is on. In some examples, the metering data in columns 620 may include additional data such as data related to the presence of audience members. In such examples, the presentation session determiner 206 may need to determine if, and/or which, audience members are present while the media output device 104 is on. Based on the example columns 620, the presentation session determiner 206 determines that the presentation session periods are 00:34:00-

02:56:00 (e.g., 142 minutes), 04:52:00-0:5:46:00 (e.g., 54 minutes), and 20:50:00-21:35:00 (e.g., 45 minutes). The total presentation time for the 1,327 minute tuning session is 238 minutes (e.g., $142+54+42=238$). In this example, once the example presentation session determiner 206 determines presentation session data based on the created tuning session, the example modeler 208 adds the presentation session data to a model corresponding to a tuning session duration 1,327 minutes, as further described in FIGS. 8A-8E.

[0064] FIGS. 8A-E display example models displaying various distributions based on presentation session data for an example 10-minute tuning session. The example models of 8A-E are based on a total of 5963 10-minute tuning sessions collected from metering data of the example LPM 106 in FIG. 2, as previously described in FIGS. 7A-C.

[0065] FIG. 8A displays an example model of an example frequency distribution of total presentation time based on the gathered 10-minute tuning session. Additionally, other models may be created for tuning sessions of varying lengths (e.g., 1-minute tuning session, 5-minute tuning session, 60-minute tuning session, 720-minute tuning session, etc.). Alternatively, one model may be generated with multiple rows representing multiple tuning session lengths.

[0066] The example model of FIG. 8A includes an example frequency distribution of presentation times 802 broken into one minute intervals for the example 10-minute tuning session 800. In some examples, the presentation times 802 represent a range of times. For example, the example presentation time '0' labeled 806 may include

all time from 00:00:00 to 00:00:59, 00:00:00 to 00:00:29, or any other range. The ranges may be predetermined and/or may be customized by a user and/or an administrator. Alternatively, the frequency distribution presentation times 802 may be broken into any duration of intervals (e.g., thirty second intervals, 2 minute intervals, 5 minute intervals, etc.).

[0067] To generate and/or update the example model of FIG. 8A, the example collection facility 114 of FIG. 1 collects metering data from the example LPM 106. Once the example data adjuster 120 breaks the metering data into tuning sessions and presentation sessions, the example data adjuster 120 populates the model(s) based on the tuning session data and presentation session data. The example frequency distribution of FIG. 8A is populated based on presentation session data from tuning sessions of 10 minute length. Each of the 5,963 collected 10-minute tuning sessions are represented in a presentation duration bucket based on the total presentation time of the tuning session (e.g., the amount time within the 10-minute tuning session 800 that media was presented). The example of FIG. 8A includes 112 instances of a total presentation time of 0 minutes labeled 804 for a 10-minute tuning session 800, 242 instances of a total presentation time of 1 minute labeled 808 for a 10-minute tuning session 800, etc. As additional metering data is processed by the example data adjuster 120, the example model is updated to represent the additional monitored data.

[0068] Various statistical calculations (e.g., weighted average, standard deviation, etc.) can additionally be determined by the example modeler 208 based on the

data from the frequency distribution of FIG. 8A. For example, an expected value (e.g., weighted average) may be calculated using the following formula:

$$\text{[0069]} \quad \bar{x} = \frac{\sum_{i=1}^n w_i \cdot x_i}{\sum_{i=1}^n w_i}$$

[0070] Where $\bar{x}$ is the expected value, w_i is the number of instances in presentation bucket i , and x_i is the number of presentation minutes of presentation bucket i .

[0071] The example model of FIG. 8A has an expected value of 6.58, as shown below:

$$\text{[0072]} \quad \frac{0(112)+1(242)+2(338)+3(370)+4(390)+5(490)+6(491)+7(781)+8(901)+9(903)+10(945)}{5963} =$$

6.58

[0073] The example expected value is the number of expected total presentation minutes given a 10-minute tuning session. In other words, given a received 10-minute tuning session from a media presentation device, it is expected that a total of 6.58 minutes of the 10 minutes were actually presented to a user. The expected value for each tuning session length can be plotted on a graph, as further described in FIG. 9.

[0074] FIG. 8B displays an example model of an example conditional distribution of presentation time based on the example frequency distribution of FIG. 8A. Additionally other models may be created for conditional distribution of presentation time for tuning sessions of varying lengths (e.g., 1-minute session, 5-minute tuning session, 60-minute tuning session, 720-minute tuning session, etc.) Alternatively,

one model may be generated with multiple rows representing varying tuning session lengths.

[0075] The example model of FIG. 8B includes an example conditional distribution of presentation times 812 broken into one minute intervals for an example 10-minute tuning session 800. In some examples, the presentation times 812 represent a range of times. For example, the example presentation time '0' labeled 814 may include all time from 00:00:00 to 00:00:59, 00:00:00 to 00:00:29, or any other range. The ranges may be predetermined or may be customized by an administrator. Alternatively, the conditional distribution 812 may be broken into any duration of intervals (e.g., thirty second intervals, 2 minute intervals, 5 minute intervals, etc.).

[0076] Conditional distribution buckets contain conditional percentages based on the frequency distributions of FIG. 8A. The conditional percentages in the example conditional distribution buckets are calculated by dividing each frequency distribution bucket by a total number of tuning sessions modeled for a tuning session length. For example, the conditional distribution percentage for a 0-minute presentation session 814 within a 10-minute tuning session 800 is calculating by dividing the 112 instances of the 0-minute presentation session labeled 806 by the total number of 10-minute tuning sessions 800 (e.g., $112+242+338+370+390+490+491+781+901+903+945 = 5963$ total sessions) as shown below:

$$\text{[0077]} \quad \frac{112}{5963} = 2\%$$

[0078] 2% is placed in the conditional distribution bucket for the 0-minute presentation session 816 within a 10 minute tuning session 800. Other example conditional distribution buckets are calculated in a similar manner. For example, FIG. 8B illustrates that 4% of the 10-minute tuning sessions contain a total presentation time of 1 minute, 8% of the 10-minute tuning sessions contain a total presentation time of 5 minutes, 16% of the 10-minute tuning sessions contain a total presentation time of 10 minutes, etc.

[0079] FIG. 8C is an example model of an example cumulative distribution of presentation time based on the example conditional distribution of FIG. 8B. Additionally other models may be created for conditional distribution of presentation time for tuning sessions of varying lengths (e.g., 1-minute session, 5-minute tuning session, 60-minute tuning session, 720-minute tuning session, etc.) Alternatively, one model may be generated with multiple rows representing varying tuning session lengths.

[0080] The example model of FIG. 8C includes an example cumulative distribution of presentation times 824 broken into one minute intervals for an example 10-minute tuning session 800. In some examples, the presentation times 824 represent a range of times. For example, the example presentation time '0' labeled 826 may include all time from 00:00:00 to 00:00:59, 00:00:00 to 00:00:29, or any other range. The ranges may be predetermined or may be customized by an administrator. Alternatively, the example cumulative distribution 824 may be broken into any duration of intervals (e.g., thirty second intervals, 2 minute intervals, 5 minute intervals, etc.).

[0081] Cumulative distribution buckets contain cumulative percentages based on the conditional distribution of FIG. 8B. The cumulative percentages in the example cumulative distribution buckets are calculated by adding the percentage in a selected conditional distribution bucket with the percentages in all the conditional distribution buckets prior to the selected conditional distribution bucket. For example, the cumulative distribution bucket for a 3-minute presentation session within a 10-minute tuning session 800 is calculated by adding the percentage in the 3 minute conditional distribution bucket 822 for a 10-minute tuning session 800 (e.g., 6%) with the percentage in the 2-minute (e.g., 6%) conditional distribution bucket 720, 1-minute (e.g., 4%) conditional distribution bucket 818, and 0-minute (e.g., 2%) conditional distribution bucket 816 and for a 10-minute tuning session 800 as shown below:

[0082] $6\% + 6\% + 4\% + 2\% = 18\%$

[0083] 18% is placed in the 3-minute cumulative distribution bucket 828 and the other example cumulative distribution buckets are calculated in a similar manner. The percentages in each cumulative distribution buckets represent the total percentage of presentation times of up to a particular length of time. For example, 54% of the 10-minute tuning sessions contained a total presentation sessions of 8 minutes or less. Alternatively, a cumulative distribution may be calculated based on the frequency distribution of FIG. 8A. In this manner, the cumulative distribution calculated using the frequency distribution of FIG. 8A as appose to the conditional distribution percentages of FIG. 8B. The distributions models of FIGS. 8A, 8B, and 8C may be used to adjust

tuning data from a STB in order to determine a total presentation session for the tuning data from the STB, as further described in FIG. 9.

[0084] FIG. 8D displays an example model of an example frequency distribution of media output device presented at set times 830 during a 10-minute tuning session 800. Additionally, other models may be created for tuning sessions of varying lengths (e.g., 1-minute tuning session, 5-minute tuning session, 60-minute tuning session, 720-minute tuning session, etc.). Alternatively, one model may be generated with multiple rows representing the varying tuning session lengths.

[0085] The example model of FIG. 8D includes an example frequency distribution of media output devices presented at set times 830 broken into one minute intervals for an example 10-minute tuning session 800. Alternatively, the frequency distribution 830 may be broken into any duration of intervals (e.g., thirty second intervals, 2 minute intervals, 5 minute intervals, etc.). If a user of the media presentation device was presentation the media presentation device at the designated time, the instance is counted in a corresponding frequency distribution bucket. In some examples, the blocks can represent a range of times. For example, the blocks may be broken up so that if a user was exposed to media by the media presentation device 108 within the 00:00:00-00:00:29 window, the instance would be counted in the 'at 0' frequency distribution bucket 832.

[0086] To generate and/or update the example model of FIG. 8D, the example collection facility 114 of FIG. 1 collects metering data from the example LPM 106. Once the example data adjuster 120 breaks the metering data into tuning sessions and

presentation sessions, the example data adjuster 120 populates the model(s) based on tuning session data and presentation session data. The example model of the example frequency distribution of media output devices presenting at set times of FIG. 8D is populated based on presentation session data from tuning sessions of 10 minute length. Each of the 5963 gathered 10-minute tuning sessions are analyzed to determine how many media presentation device 108 were actually presenting media on media output device 104 at set times of the 10-minute tuning session. For example, a 10-minute tuning session containing presentation sessions from 00:00-05:30 and from 08:45-10:00 would be entered as being watched in the at 0, at 1, at 2, at 3, at 4, at 5, at 9, and at 10 minute frequency distribution blocks.

[0087] FIG. 8E displays an example model of an example conditional distribution of media output devices presenting media at set times 836 during a 10-minute tuning session 800. Additionally, other models may be created for tuning sessions of varying lengths (e.g., 1-minute tuning session, 5-minute tuning session, 60-minute tuning session, 720-minute tuning session, etc.). Alternatively, one model may be generated with multiple rows representing rows representing the varying tuning session lengths.

[0088] The example model of FIG. 8E includes an example conditional distribution of media output devices presenting media at set times 836 broken into one minute intervals for an example 10-minute tuning session 800. Alternatively, the conditional distribution at set times 836 may be broken into any duration of intervals (e.g., thirty second intervals, 2 minute intervals, 5 minute intervals, etc.). If a user of the

media presentation device was presentation the media presentation device at the designated time, the instance is counted in a corresponding conditional distribution bucket. In some examples, the blocks can represent a range of times. For example, the blocks may be broken up so that if a user was exposed to media by the media presentation device 108 within the 00:00:00-00:00:29 window, the instance would be counted in the 'at 0' conditional distribution bucket labeled 838.

[0089] Conditional distribution buckets contain conditional percentages based on the frequency distributions 830 of FIG. 8D. The conditional percentages in the example conditional distribution buckets are calculated based on dividing each frequency distribution bucket by a total number of tuning sessions modeled for a tuning session length. For example, the conditional distribution percentage at the fifth minute for the example 10 minute-tuning session 800 is calculating by dividing the 4411 presentation instances at the fifth minute 834 by the total number of 10-minute tuning sessions (e.g., 5963 total sessions) as shown below:

$$\text{[0090]} \quad \frac{4411}{5963} = 74\%$$

[0091] 74% is placed in the at 5 minute conditional bucket 840 for a 10 minute tuning session. Other example conditional distribution buckets 820 are calculated in a similar manner. The conditional distribution of FIG. 8B illustrates that 100% of the total 10-minute tuning sessions were presenting media at the zeroth minute, 88% of the total 10-minute tuning sessions were presenting media at the third minute, 49% of the total 10-minute tuning sessions were presenting media at the tenth minute, etc. Additionally,

a report may be generated including any of the example models or combination of the example models. The distributions models of FIGS. 8D and 8E may be used to adjust tuning data from a STB based on an initial presentation session, an ending presentation session, and/or any other presentation session information for the tuning data of the STB, as previously described in FIG. 4.

[0092] FIG. 9 is an example graph of expected total presentation session values based on various tuning sessions generated from metering data of the LPM 106 of FIG. 1. The example data adjuster 120 determines an expected total presentation session by calculating a weighted average of the total presentation sessions of a selected tuning session length. For example, as previously described in FIG. 5A, the example expected value for the 10-minute tuning session of FIG. 5A was 6.58. Therefore, the example graph of FIG. 9 will have a coordinate (e.g., (10, 6.58)) to represent the expected value for the 10-minute tuning session. The example graph contains a point for every tracked tuning session (e.g., a 1 minute tuning session, 10 minute tuning session, 200 minute tuning session, etc.). A report may be generated including the example graph.

[0093] FIG. 10 is a block diagram of an example processor platform 1000 capable of executing the instructions of FIGS. 3-5 to implement the example data adjuster 120 of FIG. 1. The processor platform 1000 can be, for example, a server, a personal computer, a mobile device (e.g., a cell phone, a smart phone, a tablet such as an iPadTM), a personal digital assistant (PDA), an Internet appliance, or any other type of computing device.

[0094] The processor platform 1000 of the illustrated example includes a processor 1012. The processor 1012 of the illustrated example is hardware. For example, the processor 1012 can be implemented by integrated circuits, logic circuits, microprocessors or controllers from any desired family or manufacturer.

[0095] The processor 1012 of the illustrated example includes a local memory 1013 (e.g., a cache). The example processor 1012 of FIG. 10 executes the instructions of FIGS. 3-5 to the example metering receiver 202, the example tuning session determiner 204, the example presentation session determiner 206, the example modeler 208, the example model storage 210, the example tuning data receiver 212, the example duration determiner 214, the example presentation session estimator 216, the example reporter 218 of FIG. 2 to implement the example data adjuster 120. The processor 1012 of the illustrated example is in communication with a main memory including a volatile memory 1014 and a non-volatile memory 1016 via a bus 1018. The volatile memory 1014 may be implemented by Synchronous Dynamic Random Access Memory (SDRAM), Dynamic Random Access Memory (DRAM), RAMBUS Dynamic Random Access Memory (RDRAM) and/or any other type of random access memory device. The non-volatile memory 1016 may be implemented by flash memory and/or any other desired type of memory device. Access to the main memory 1014, 1016 is controlled by a memory controller.

[0096] The processor platform 1000 of the illustrated example also includes an interface circuit 1012. The interface circuit 1012 may be implemented by any type of

interface standard, such as an Ethernet interface, a universal serial bus (USB), and/or a PCI express interface.

[0097] In the illustrated example, one or more input devices 1022 are connected to the interface circuit 1012. The input device(s) 1022 permit(s) a user to enter data and commands into the processor 1012. The input device(s) can be implemented by, for example, a sensor, a microphone, a camera (still or video), a keyboard, a button, a mouse, a touchscreen, a track-pad, a trackball, isopoint and/or a voice recognition system.

[0098] One or more output devices 1024 are also connected to the interface circuit 1012 of the illustrated example. The output devices 1024 can be implemented, for example, by display devices (e.g., a light emitting diode (LED), an organic light emitting diode (OLED), a liquid crystal display, a cathode ray tube display (CRT), a touchscreen, a tactile output device, and/or speakers). The interface circuit 1012 of the illustrated example, thus, typically includes a graphics driver card, a graphics driver circuit or a graphics driver processor.

[0099] The interface circuit 1012 of the illustrated example also includes a communication device such as a transmitter, a receiver, a transceiver, a modem and/or network interface card to facilitate exchange of data with external machines (e.g., computing devices of any kind) via a network 1026 (e.g., an Ethernet connection, a digital subscriber line (DSL), a telephone line, coaxial cable, a cellular telephone system, etc.).

[00100] The processor platform 1000 of the illustrated example also includes one or more mass storage devices 1028 for storing software and/or data. Examples of such mass storage devices 1028 include floppy disk drives, hard drive disks, compact disk drives, Blu-ray disk drives, RAID systems, and digital versatile disk (DVD) drives.

[00101] The coded instructions 1032 of FIGS. 3-5 may be stored in the mass storage device 1028, in the volatile memory 1014, in the non-volatile memory 1016, and/or on a removable tangible computer readable storage medium such as a CD or DVD.

[00102] From the foregoing, it should be appreciated that the above disclosed methods, apparatus, and articles of manufacture estimate presentation session from tuning data based on metering data. Media presentation device data may have extraneous information leading to inaccurate audience measurement data. For example, STB data does not account for when a television is off and the television is on, or when the television is on, but no one is watching the media presentation device. Methods and apparatus described herein estimate presentation sessions for tuning data to account for the extraneous information. Since LPMs can determine more accurate information including when a media presentation device is on and when a user is actually watching the media presentation device, metering data from the LPM are analyzed to create models used to accurately adjust media presentation device data.

[00103] Using the examples disclosed herein, media presentation device data may be more accurately analyzed based on data from a plurality of LPMs. In some

examples, models are created from metering data of LPMs initial presentation session, a final presentation session, and a total presentation session within a tuning session. In such examples, presentation sessions for tuning data from media monitoring devices may be estimated based on data in corresponding models. In this manner, reports may be generated to include the estimated presentation session for a tuning session of a media presentation device.

[00104] From the foregoing, persons of ordinary skill in the art will appreciate that the above disclosed methods and apparatus may be realized within a single device or across two cooperating devices, and could be implemented by software, hardware, and/or firmware to implement the data adjuster disclosed herein.

[00105] Although certain example methods, apparatus and articles of manufacture have been described herein, the scope of coverage of this patent is not limited thereto. On the contrary, this patent covers all methods, apparatus and articles of manufacture fairly falling within the scope of the appended claims either literally or under the doctrine of equivalents.

What is claimed is:

1. A computing system comprising:
machine readable instructions; and
processor circuitry to execute the machine readable instructions to at least:
access respective tuning session data from a plurality of media
presentation devices, corresponding ones of the plurality of media presentation
devices in respective ones of media presentation environments, the respective
ones of the media presentation environments including at least one media output
device to present media from a corresponding one of the media presentation
devices, the respective tuning session data from respective ones of the media
presentation devices indicative of a tuning session having a tuning session
duration, the tuning session duration is indicative of an amount of time between
interactions with a corresponding one of the plurality of media presentation
devices, presentation session data is available for a first subset of the media
presentation environments, presentation session data is not available for a second
subset of the media presentation environments;
access, for ones of the first subset of the media presentation
environments, respective presentation session data indicative of a presentation
session duration during which media corresponding to a respective tuning
session was presented on the respective at least one media output device by the
media presentation device within a respective tuning session duration;

generate a model relating the respective tuning session durations to corresponding presentation session durations from ones of the first subset of the media presentation environments;

based on the model, determine, for a given one of the media presentation environments in the second subset of the media presentation environments, an expected presentation session duration for a given tuning session having a given tuning session duration; and

output the expected presentation session duration for the given tuning session from the given one of the media presentation environments.

2. The computing system of claim 1, wherein the processor circuitry is to: access, from the first subset of the media presentation environments, additional tuning session data and additional media presentation data indicative of additional tuning session durations and additional media presentation session durations, respectively; and

update the model with the additional tuning session durations and additional media presentation data.

3. The computing system of claim 2, wherein the processor circuitry is to: subsequent to determining the expected the presentation session duration, based on the model, for the given tuning session having the given tuning session duration, determine, for another given one of the media presentation environments in the second

subset of the media presentation environments, another expected presentation session duration for another given tuning session having another given tuning session duration based on the updated model; and

output the other expected presentation session duration for the other given tuning session from the other given one of the media presentation environments.

4. The computing system of claim 1, wherein the processor circuitry is to determine the expected presentation session duration for the given tuning session based on the model by determining the expected presentation session duration based on multiple ones of the tuning session durations and corresponding ones of the presentation session durations of the ones of the first subset of the media presentation environments, the multiple ones of the tuning session durations being within a threshold extent of similarity of the given tuning session duration.

5. The computing system of claim 4, wherein the threshold extent of similarity is a threshold of time similarity in which each of the tuning session durations of the multiple ones of the tuning session durations of the ones of the first subset of the media presentation environments are within a time threshold of the given tuning session duration.

6. The computing system of claim 5, wherein the expected presentation session duration for the given presentation session is a weighted average of the

presentation session durations of the multiple ones of the tuning session durations of the ones of the first subset of the media presentation environments.

7. The computing system of claim 5, wherein the time threshold is four minutes.

8. The computing system of claim 4, wherein the expected presentation session duration for the given presentation session is a conditional probability of the presentation session durations of the multiple ones of the tuning session durations of the ones of the first subset of the media presentation environments, indicated by the model.

9. The computing system of claim 1, wherein the processor circuitry is to:
determine that a number of tuning session durations related by the model to corresponding presentation session durations from the first subset of the media presentation environments is at least a threshold number of tuning session durations, and
determine the expected presentation session duration for the given tuning session having the given tuning session duration based on the model in response to the determination that the number of tuning session durations related by the model to corresponding presentation session durations from the first subset of the media presentation environments is at least the threshold number of tuning session durations.

10. The computing system of claim 9, wherein the threshold number is five hundred tuning session durations.

11. A non-transitory computer-readable medium comprising instructions to cause processor circuitry to at least:

access respective tuning session data from each of a plurality of media presentation devices, corresponding ones of the media presentation devices in respective ones of media presentation environments, the respective media presentation environments including at least one media output device to present media from a corresponding one of the media presentation devices, the respective tuning session data from respective ones of the media presentation devices indicative of a tuning session having a tuning session duration, the tuning session duration is indicative of an amount of time between interactions with a corresponding one of the media presentation devices, presentation session data is available for a first subset of the media presentation environments, and presentation session data is not available for a second subset of the media presentation environments;

access, for ones of the first subset of the media presentation environments, respective presentation session data indicative of a presentation session duration during which media corresponding to a respective tuning session was presented by the respective at least one media output device by the media presentation device within a respective tuning session duration;

generate a model relating the respective tuning session durations to corresponding presentation session durations from the ones of the first subset of the media presentation environments;

based on the model, determine, for a given one of the media presentation environments in the second subset of the media presentation environments, an expected presentation session duration for a given tuning session having a given tuning session duration; and

output the expected presentation session duration for the given tuning session from the given one of the media presentation environments.

12. The non-transitory computer-readable medium of claim 11, wherein the instructions cause the processor circuitry to determine the expected presentation session duration, based on the model, for the given tuning session by determining the expected presentation session duration based on multiple ones of the tuning session durations and corresponding ones of the presentation session durations of the ones of the first subset of the media presentation environments, the multiple ones of the tuning session durations being within a threshold extent of similarity of the given tuning session duration,

wherein the threshold extent of similarity is a threshold of time similarity in which each of the tuning session durations of the multiple ones of the tuning session durations of the ones of the first subset of the media presentation environments are within a time threshold of the given tuning session duration, and

wherein the expected presentation session duration for the given presentation session is a weighted average of the presentation session durations of the multiple ones of the tuning session durations of the ones of the first subset of the media presentation environments.

13. The non-transitory computer-readable medium of claim 11, wherein the instructions cause the processor circuitry to determine the expected presentation session duration for the given tuning session based on the model by determining the expected presentation session duration based on multiple ones of the tuning session durations and corresponding ones of the presentation session durations of the ones of the first subset of the media presentation environments, the multiple ones of the tuning session durations being within a threshold extent of similarity of the given tuning session duration, and

wherein the expected presentation session duration for the given presentation session is a conditional probability of the presentation session durations of the multiple ones of the tuning session durations of the ones of the first subset of the media presentation environments.

14. The non-transitory computer-readable medium of claim 11, the instructions cause the processor circuitry to:

determine that a number of tuning session durations related by the model to corresponding presentation session durations from the first subset of the media presentation environments is at least a threshold number of tuning session durations, and

determine the expected presentation session duration for the given tuning session having the given tuning session duration based on the model in response to the determination that the number of tuning session durations related by the model to corresponding presentation session durations from the first subset of the media presentation environments is at least the threshold number of tuning session durations.

15. A system comprising:
 - processor circuitry; and
 - a computer-readable medium including instructions to cause the processor circuitry to at least:
 - access respective tuning session data from a plurality of set-top boxes, corresponding ones of the set-top boxes in respective ones of media presentation environments, the respective media presentation environments including at least one television to present media from a corresponding one of the set-top boxes, the respective tuning session data from respective ones of the set-top boxes indicative of a tuning session having a tuning session duration, the tuning session duration indicative of an amount of time between interactions with a corresponding one of the set-top boxes, on/off durations are available for a first subset of the media presentation environments, on/off durations are not available for a second subset of the media presentation environments;
 - access, for ones of the first subset of the media presentation environments, respective on/off durations corresponding to respective tuning

sessions, the on/off duration indicative of an amount of time that the respective television was turned on during the respective tuning session;

generate a model relating the respective tuning session durations to corresponding on/off durations from the ones of the first subset of the media presentation environments;

based on the model, determine, for a given one of the media presentation environments in the second subset of the media presentation environments, an expected on/off duration for a given tuning session having a given tuning session duration; and

cause presentation of the expected on/off duration for the given tuning session from the given one of the media presentation environments.

16. The system of claim 15, wherein the processor circuitry is to:
- access, from additional ones of the first subset of the media presentation environments, additional tuning session data indicative of additional tuning session durations and additional on/off durations indicative of an amount of time that the respective television was turned on during the additional tuning session; and
- update the model with the additional tuning session durations and additional on/off durations.

17. The system of claim 16, wherein the processor circuitry is to:

subsequent to determining the expected on/off duration, based on the model, for the given tuning session having the given tuning session duration, determine, for another given one of the media presentation environments in the second subset of the media presentation environments, another expected on/off duration for another given tuning session having another given tuning session duration based on the updated model; and output the other expected on/off duration for the other given tuning session from the other given one of the media presentation environments.

18. The system of claim 15, wherein the processor circuitry is to determine the expected on/off duration for the given tuning session based on the model by determining the expected on/off duration based on multiple ones of the tuning session durations and corresponding ones of the on/off durations of the ones of the first subset of the media presentation environments, the multiple ones of the tuning session durations being within a threshold extent of similarity of the given tuning session duration.

19. The system of claim 18, wherein the threshold extent of similarity is a threshold of time similarity in which each of the tuning session durations of the multiple ones of the tuning session durations of the ones of the first subset of the media presentation environments are within a time threshold of the given tuning session duration.

20. The system of claim 19, wherein the expected on/off duration for the given tuning session is a weighted average of the on/off durations of the multiple ones of the tuning session durations of the ones of the first subset of the media presentation environments.

21. The system of claim 18, wherein the expected on/off duration for the given tuning session is a conditional probability of the on/off durations of the multiple ones of the tuning session durations of the ones of the first subset of the media presentation environments, indicated by the model.

22. The system of claim 15, wherein the processor circuitry is to:
determine that a number of tuning session durations related by the model to corresponding on/off durations from the first subset of the media presentation environments is at least a threshold number of tuning session durations, and
determine the expected on/off duration for the given tuning session having the given tuning session duration based on the model in response to the determination that the number of tuning session durations related by the model to corresponding on/off durations from the first subset of the media presentation environments is at least the threshold number of tuning session durations.

23. The system of claim 22, wherein the threshold number is five hundred tuning session durations.

ABSTRACT

Methods, apparatus, systems, and articles of manufacture are disclosed to determine a duration of media presentation based on tuning session duration. Example apparatus a receiver to obtain a first tuning session duration indicative of an amount of time between channel changes of a first media presentation device at a first media presentation location, a presentation session estimator to select a model from storage, the model selected based on a match of the first tuning session duration and a second tuning session duration, the model including a relation between the second tuning session duration and a first presentation session duration of media presented on a second media presentation device at a second media presentation location, and estimate a second presentation session duration of media presented within the first tuning session duration based on the model.

Electronic Patent Application Fee Transmittal				
Application Number:				
Filing Date:				
Title of Invention:		METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION		
First Named Inventor/Applicant Name:		Michael Sheppard		
Filer:		Michael William Zimmerman./Natalie Arroyo		
Attorney Docket Number:		125399US07		
Filed as Large Entity				
Filing Fees for Track I Prioritized Examination - Nonprovisional Application under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
UTILITY APPLICATION FILING	1011	1	320	320
UTILITY SEARCH FEE	1111	1	700	700
UTILITY EXAMINATION FEE	1311	1	800	800
REQUEST FOR PRIORITIZED EXAMINATION	1817	1	4200	4200
Pages:				
Claims:				
CLAIMS IN EXCESS OF 20	1202	3	100	300
Miscellaneous-Filing:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
PROCESSING FEE, EXCEPT PROV. APPLS.	1830	1	140	140
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				6460

Electronic Acknowledgement Receipt	
EFS ID:	46834811
Application Number:	17967832
International Application Number:	
Confirmation Number:	8517
Title of Invention:	METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION
First Named Inventor/Applicant Name:	Michael Sheppard
Customer Number:	81905
Filer:	Michael William Zimmerman.
Filer Authorized By:	
Attorney Docket Number:	125399US07
Receipt Date:	17-OCT-2022
Filing Date:	
Time Stamp:	21:01:04
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$ 6460
RAM confirmation Number	E20220GL01254009
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	125399US07_ADS.pdf	2226649	no	9
			3a6d7dcd311cc04c6330b6b7b8c9f740f20e194c		
Warnings:					
Information:					
2	Transmittal of New Application	125399US07_App-Transmittal.pdf	366836	no	2
			fd6b26b2c16c4c10c0f6ac2181ec576affac15a		
Warnings:					
Information:					
3	Oath or Declaration filed	125399US07_Declaration_all.pdf	900085	no	4
			b416df4247a6d31863e850979a8fc7cd1006b057		
Warnings:					
Information:					
4	Transmittal of New Application	125399US07_Fee-Transmittal.pdf	371398	no	2
			16aaca2164e7227c5b13383cce0099150468785b		
Warnings:					
Information:					
5	Drawings-only black and white line drawings	125399US07_Figures.pdf	263737	no	11
			ab9912600ecd6f8c8d3e59529bf0ae1a4a59422		
Warnings:					
Information:					
6	Power of Attorney	125399US07_POA.pdf	351799	no	3
			586ed8b74e339673f68e29120ccb3a4927ab1f8b		
Warnings:					
Information:					

7	Track One Request	125399US07_TRACK_ONE.pdf	126251	no	2						
			fb7259bb98b8e5a9d2337d8ff2bd426dca0bd0c								
Warnings:											
Information:											
8		125399US07_Specification.pdf	250317	yes	64						
			6fb81c9affa0ea346a0702207c847e481ee20029								
	Multipart Description/PDF files in .zip description										
	Document Description		Start	End							
	Specification		1	51							
	Claims		52	63							
	Abstract		64	64							
Warnings:											
Information:											
9	Fee Worksheet (SB06)	fee-info.pdf	51116	no	2						
			367df2917c64dc8135d98d7f3d8091b280fe7828								
Warnings:											
Information:											
Total Files Size (in bytes):			4908188								
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.											

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	125399US07
		Application Number	
Title of Invention	METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2:

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

Inventor Information:

Inventor	1				Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Michael		Sheppard		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Brooklyn	State/Province	NY	Country of Residence	US
Mailing Address of Inventor:					
Address 1	515 Argyle Rd.				
Address 2					
City	Brooklyn	State/Province	NY		
Postal Code	11218	Country	US		
Inventor	2				Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Jonathan		Sullivan		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Hurricane	State/Province	UT	Country of Residence	US
Mailing Address of Inventor:					
Address 1	4347 W. Bowler St.				
Address 2					
City	Hurricane	State/Province	UT		
Postal Code	84737	Country	US		
Inventor	3				Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Peter		Lipa		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	125399US07
		Application Number	
Title of Invention	METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION		

City	Tucson	State/Province	AZ	Country of Residence	US
------	--------	----------------	----	----------------------	----

Mailing Address of Inventor:

Address 1	1303 E. University Boulevard				
Address 2	#20922				
City	Tucson	State/Province	AZ		
Postal Code	85719	Country i	US		
Inventor	4				Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Alejandro		Terrazas	

Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service

City	Santa Cruz	State/Province	CA	Country of Residence	US
------	------------	----------------	----	----------------------	----

Mailing Address of Inventor:

Address 1	96 Frederick Street				
Address 2	Unit C				
City	SANTA CRUZ	State/Province	CA		
Postal Code	95062	Country i	US		

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button.**Correspondence Information:**Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).☐ An Address is being provided for the correspondence Information of this application.

Customer Number	81905		
Email Address	mailroom@hfzlaw.com	Add Email	Remove Email

Application Information:

Title of the Invention	METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION		
Attorney Docket Number	125399US07	Small Entity Status Claimed	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	11	Suggested Figure for Publication (if any)	

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	125399US07
		Application Number	
Title of Invention	METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION		

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

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

Representative Information:

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

Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)
Customer Number	81905		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation of	16860026	2020-04-27

Application Data Sheet 37 CFR 1.76		Attorney Docket Number		125399US07	
		Application Number			
Title of Invention	METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION				

Prior Application Status		Patented		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
16860026	Continuation of	15990729	2018-05-28	10638177	2020-04-28
Prior Application Status		Patented		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15990729	Continuation of	15011455	2016-01-29	9986272	2018-05-29
Prior Application Status		Expired		Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)		
15011455	Claims benefit of provisional	62239126	2015-10-08		
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.					Add

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)ⁱ the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

			Remove
Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ⁱ (if applicable)
Additional Foreign Priority Data may be generated within this form by selecting the Add button.			Add

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.

☐ NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	125399US07
		Application Number	
Title of Invention	METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION		

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	125399US07
		Application Number	
Title of Invention	METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION		

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.			
Applicant	1	Remove	
If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.			
		Clear	
☐ Assignee	Legal Representative under 35 U.S.C. 117		Joint Inventor
Person to whom the inventor is obligated to assign.		Person who shows sufficient proprietary interest	
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:			
Name of the Deceased or Legally Incapacitated Inventor:			
If the Applicant is an Organization check here. ☒			
Organization Name	The Nielsen Company (US), LLC		
Mailing Address Information For Applicant:			
Address 1	85 Broad Street		
Address 2			
City	New York	State/Province	NY
Country	US	Postal Code	10004
Phone Number		Fax Number	
Email Address			
Additional Applicant Data may be generated within this form by selecting the Add button. Add			

Assignee Information including Non-Applicant Assignee Information:

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

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	125399US07
		Application Number	
Title of Invention	METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION		

Assignee 1				
Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.				
Remove				
If the Assignee or Non-Applicant Assignee is an Organization check here. ☐				
Prefix	Given Name	Middle Name	Family Name	Suffix
Mailing Address Information For Assignee including Non-Applicant Assignee:				
Address 1				
Address 2				
City		State/Province		
Country i		Postal Code		
Phone Number		Fax Number		
Email Address				
Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button. Add				

Signature:[Remove](#)

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). **However, if this Application Data Sheet is submitted with the INITIAL filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).**

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/ Michael W. Zimmerman/		Date (YYYY-MM-DD)	2022-10-17	
First Name	Michael W.	Last Name	Zimmerman	Registration Number	57993
Additional Signature may be generated within this form by selecting the Add button. Add					

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	125399US07
		Application Number	
Title of Invention	METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION		

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

Privacy Act Statement

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

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

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

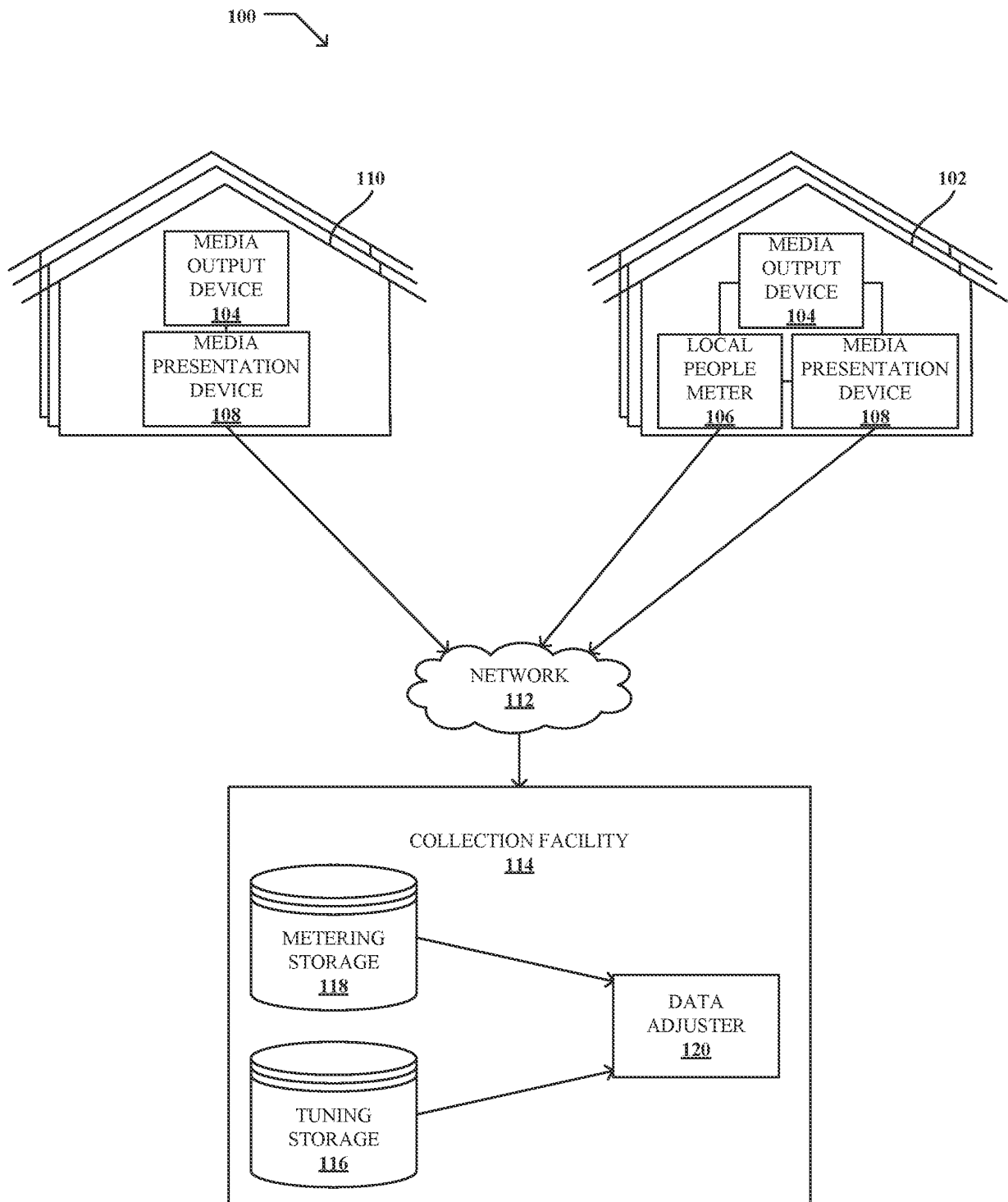


FIG. 1

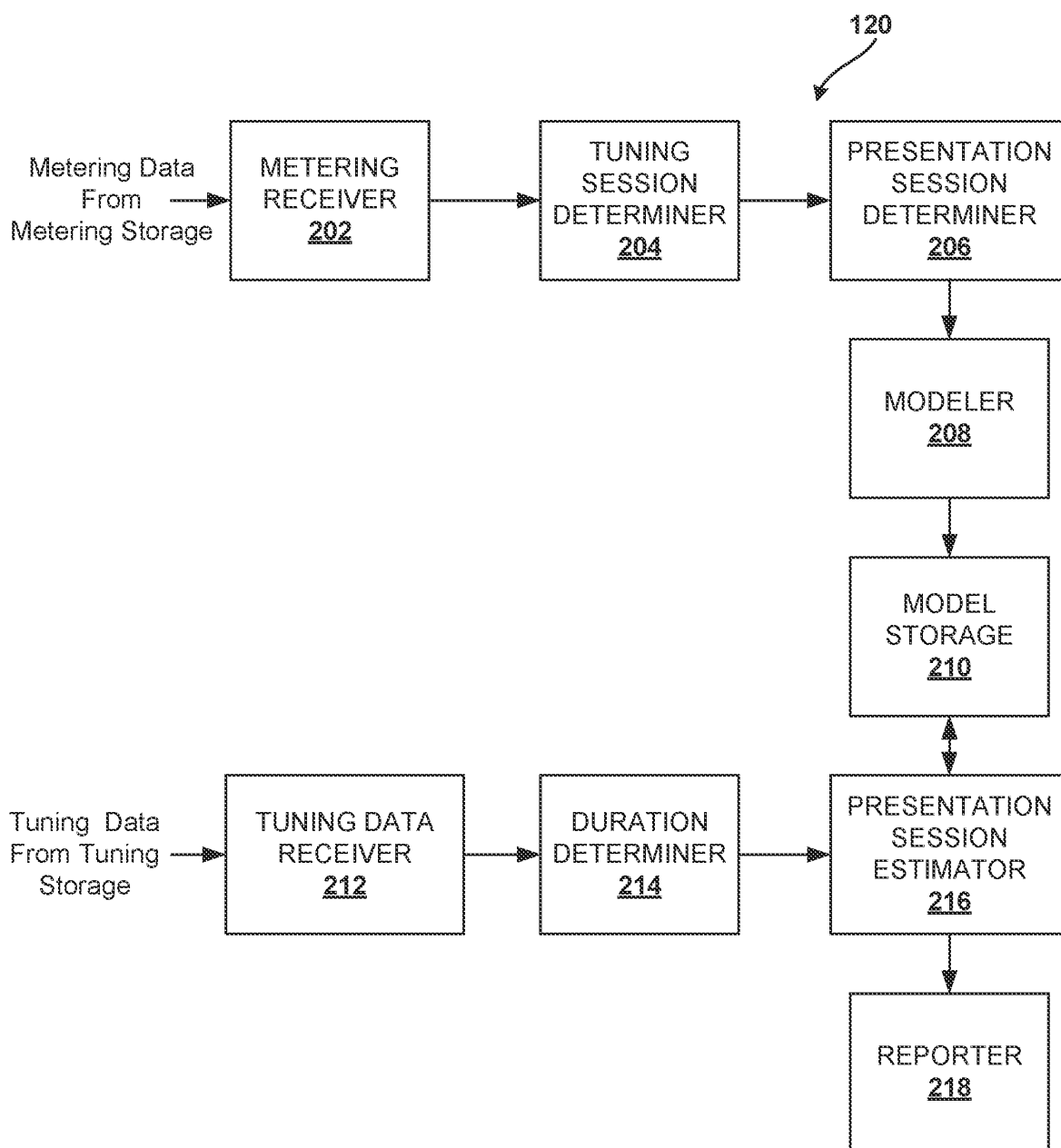


FIG. 2

3/11

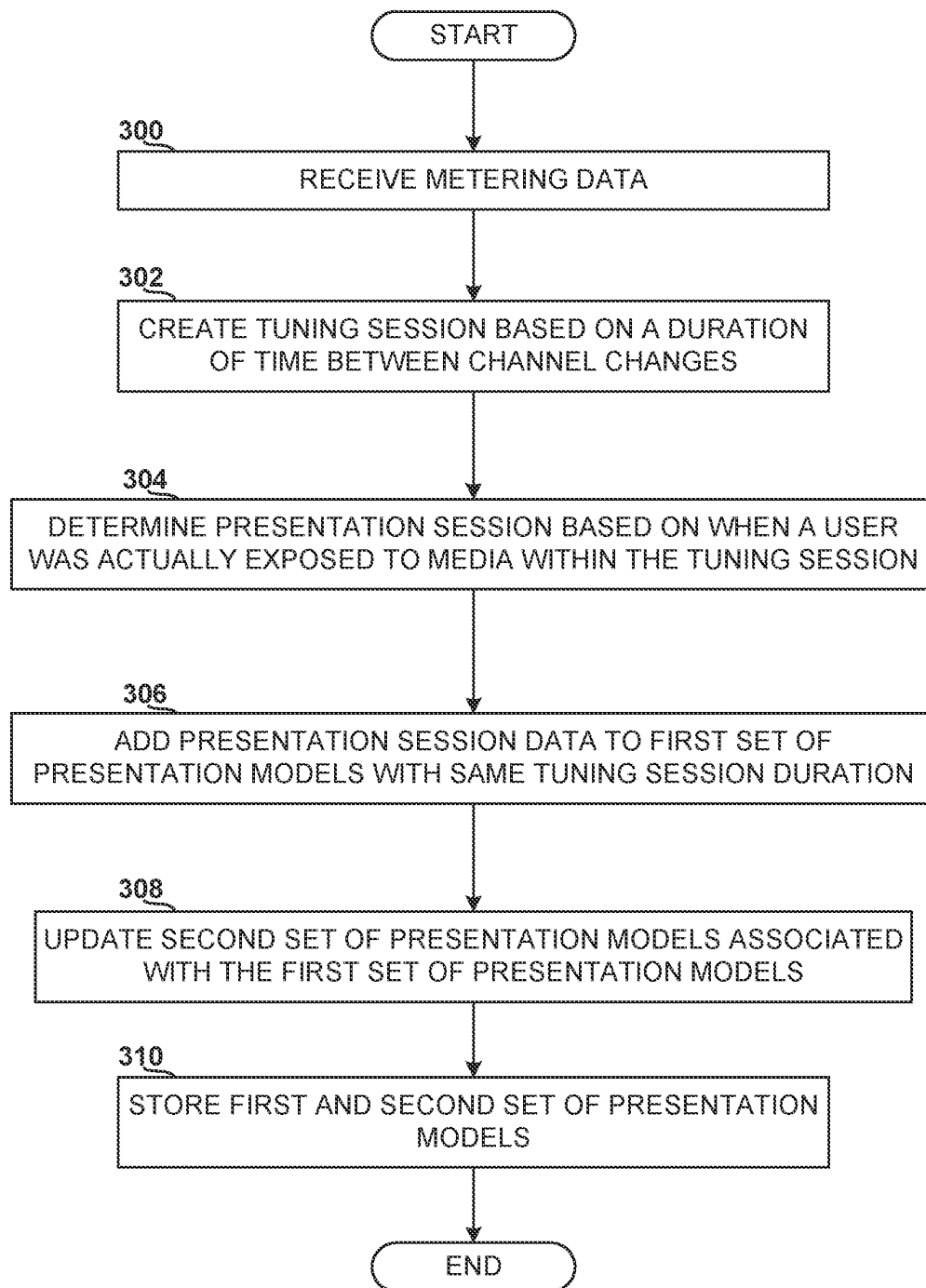


FIG. 3

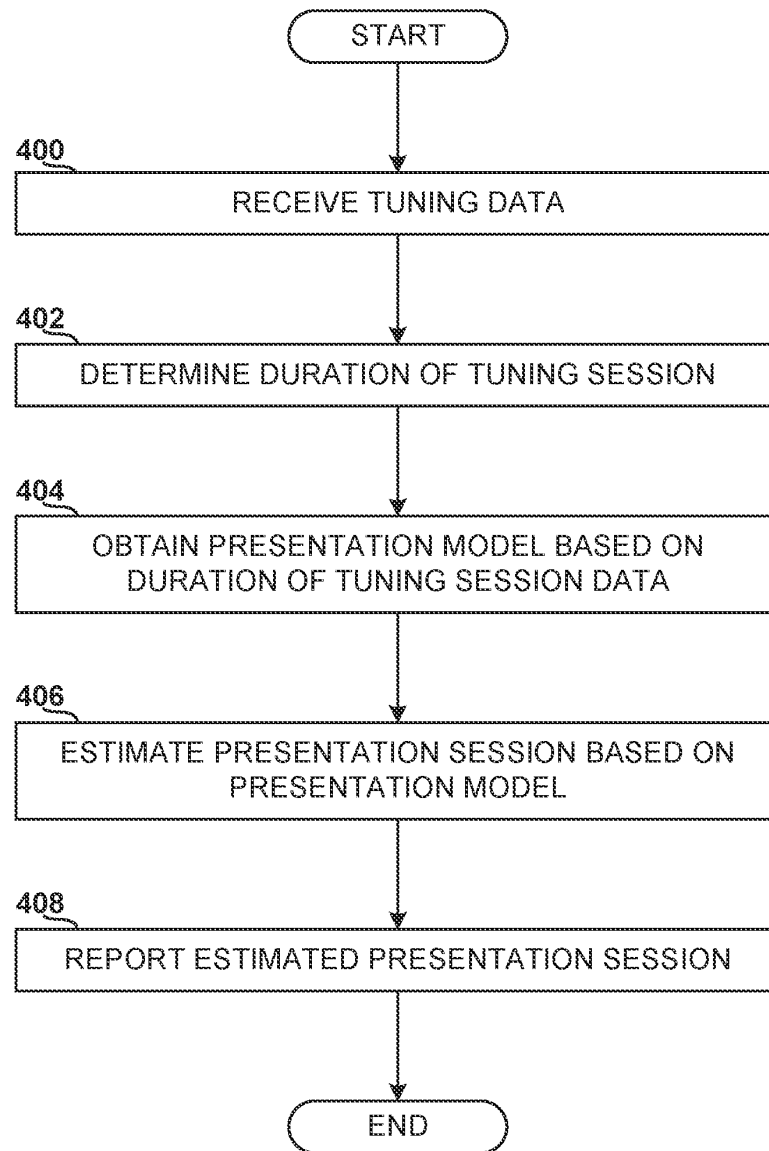


FIG. 4

5/11

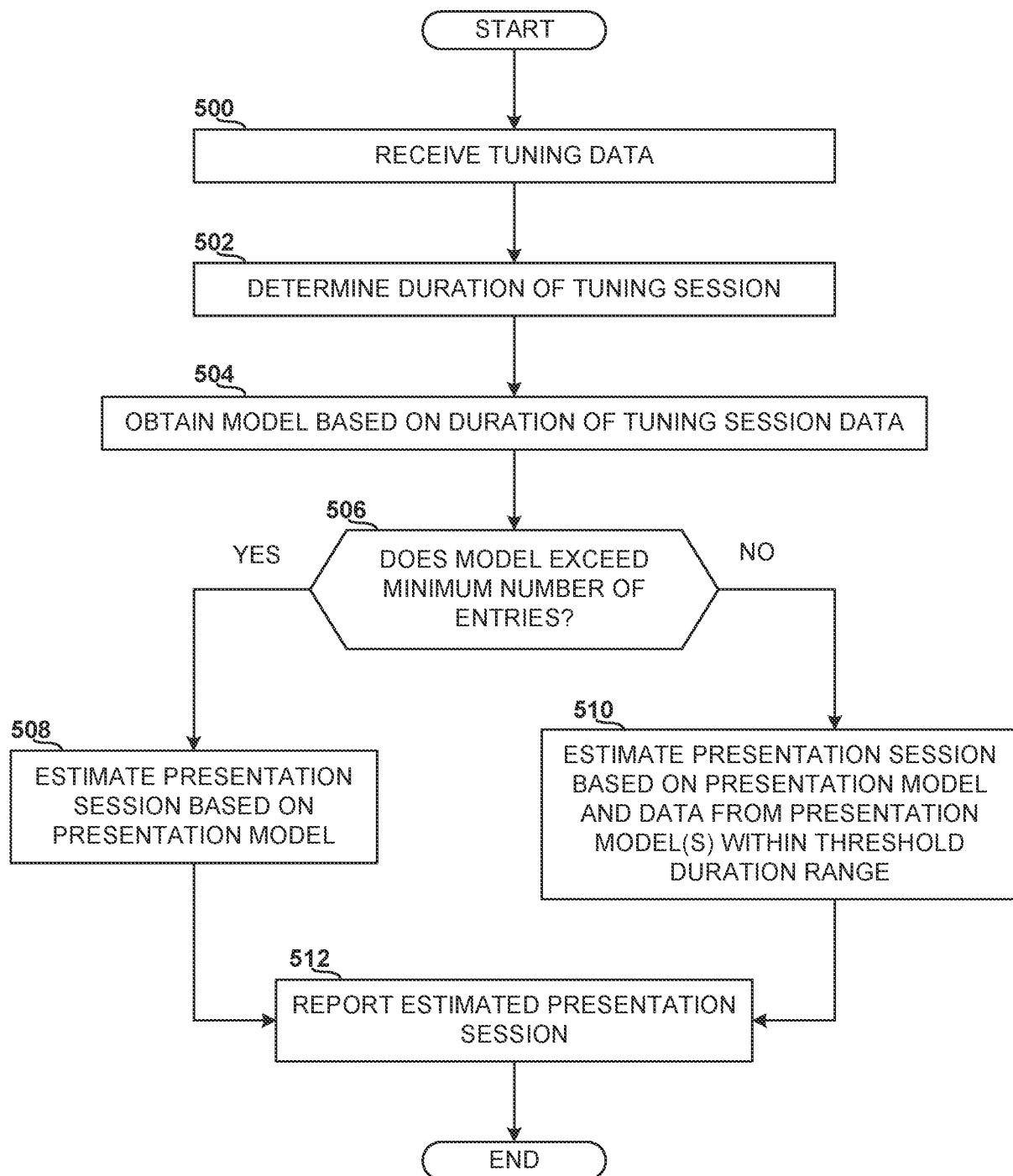


FIG. 5

600

Household ID	Tuner Key	Start Time	End Time	Station Key	Genre	Presentation Weight		Valid Data Flag	Source
						Date	Key		
50006	186242092	2014-12-01 00:00:00	2014-12-01 00:25:00	294984	N/A	17427	1	1	0
50006	186242092	2014-12-01 00:34:00	2014-12-01 02:56:00	287552	Non-Media	17427	1	1	0
50006	186242092	2014-12-01 04:52:00	2014-12-01 05:46:00	287552	Non-Media	17427	1	1	0
50006	186242092	2014-12-01 20:50:00	2014-12-01 21:35:00	287552	Non-Media	17427	1	1	0
50006	186242092	2014-12-01 22:41:00	2014-12-01 23:24:00	294984	N/A	17427	1	1	0
50006	186242092	2014-12-01 23:29:00	2014-12-01 23:59:00	294984	N/A	17427	1	1	0
50006	186242092	2014-12-02 15:20:00	2014-12-02 15:33:00	349855	Gen. Ent.	17428	1	1	0
50006	186242092	2014-12-03 14:49:00	2014-12-03 14:53:00	348488	Gen. Ent.	17429	1	1	0
50006	186242092	2014-12-03 22:21:00	2014-12-03 22:21:00	287552	Non-Media	17429	1	1	0
50006	186242092	2014-12-03 22:27:00	2014-12-03 22:30:00	288298	N/A	17429	1	1	0
50006	186242092	2014-12-03 23:37:00	2014-12-03 23:48:00	287552	Non-Media	17429	1	1	0
50006	186242092	2014-12-04 00:00:00	2014-12-04 00:23:00	287552	Non-Media	17430	1	1	0
50006	186242092	2014-12-04 23:00:00	2014-12-04 23:47:00	287552	Non-Media	17430	1	1	0
50006	186242092	2014-12-04 23:55:00	2014-12-05 01:40:00	287552	Non-Media	17431	1	1	0

602 Household ID

604 Tuner Key

606 Start Time

608 End Time

610 Station Key

612 Genre

614 Date

616 Key

618 Valid Data Flag

620 Source

FIG. 6

7/11

620 {

Household			Station			Presentation Valid		
ID	Tuner Key	Start Time	End Time	Key	Genre	Date Key	Weight Flag	Source
50006	186242092	2014-12-01 00:00:00	2014-12-01 00:25:00	294984	N/A	17427	1	0
50006	186242092	2014-12-01 00:34:00	2014-12-01 02:56:00	287552	Non-Media	17427	1	0
50006	186242092	2014-12-01 04:52:00	2014-12-01 05:46:00	287552	Non-Media	17427	1	0
50006	186242092	2014-12-01 20:50:00	2014-12-01 21:35:00	287552	Non-Media	17427	1	0
50006	186242092	2014-12-01 22:41:00	2014-12-01 23:24:00	294984	N/A	17427	1	0

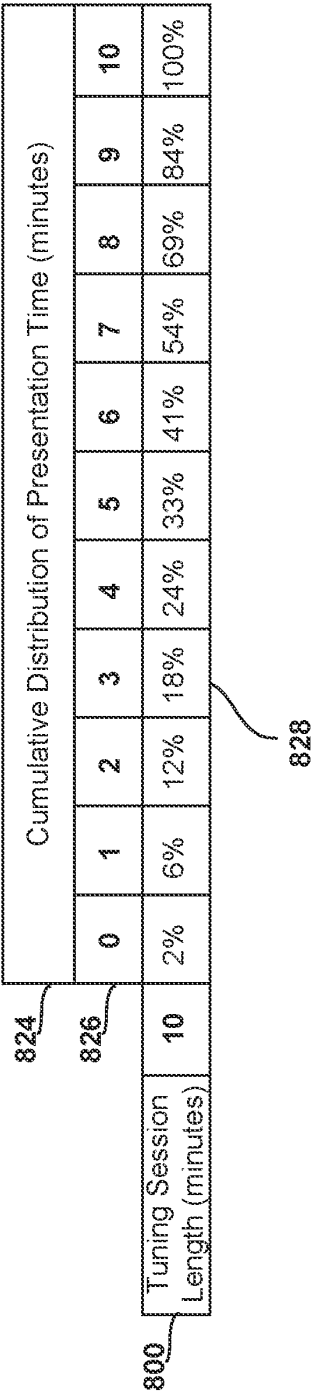
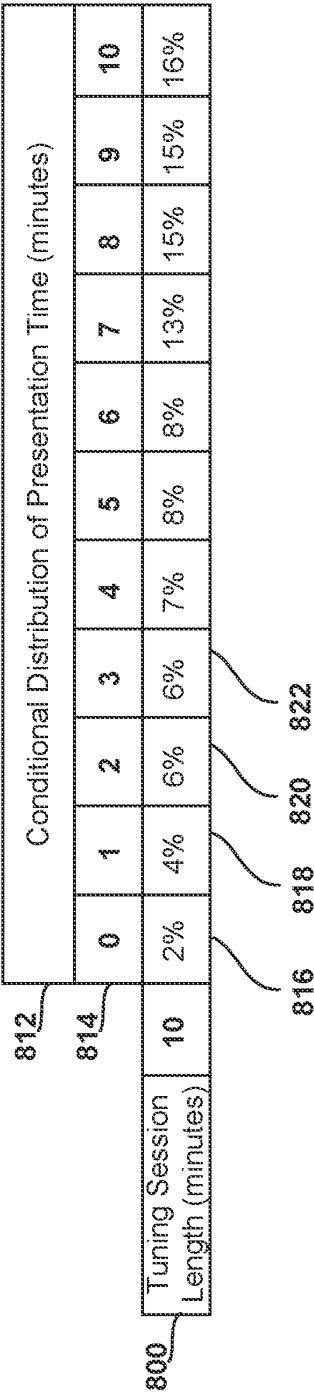
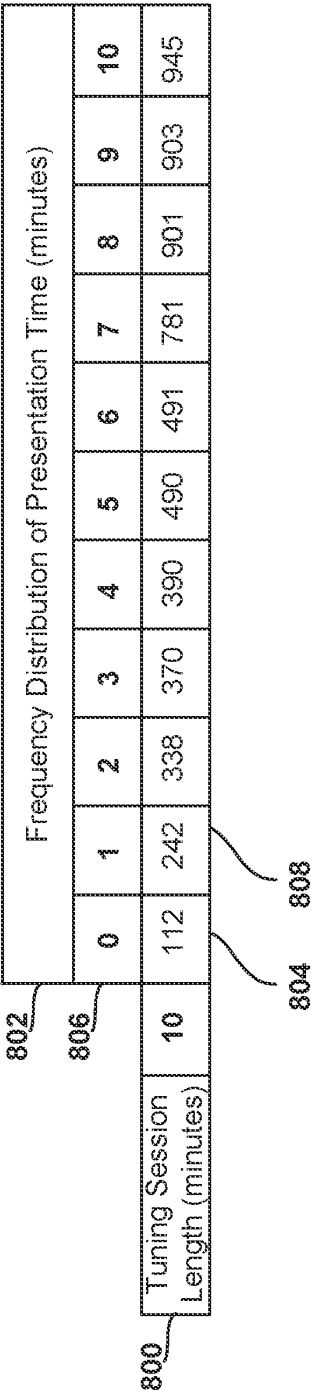
FIG. 7A

00:25:00	Turned the TV off after watching previous station
00:34:00	Turned TV back on and within the same minute changed channel
02:56:00	Turned TV off
04:52:00	Turned TV on (same channel)
05:46:00	Turned TV off
20:50:00	Turned TV on (same channel)
21:35:00	Turned TV off
22:41:00	Turned TV on and changed channel

FIG. 7B

Tuning Session:	00:34:00 to 22:41:00 (1,327 minutes)
Presentation Sessions:	00:34:00 - 2:56:00 (142 minutes)
	04:52:00 - 5:46:00 (54 minutes)
	20:50:00 - 21:35:00 (45 minutes)

FIG. 7C



9/11

Frequency Distribution of Media Presented at Set Times (minutes)													
	at 0	at 1	at 2	at 3	at 4	at 5	at 6	at 7	at 8	at 9	at 10		
800	10	Tuning Session Length (minutes)	5851	5852	5619	5290	4500	4411	4521	4530	3749	2848	2945

830

832

834

FIG. 8D

Conditional Distribution of Media Presented at Set Times (minutes)													
	at 0	at 1	at 2	at 3	at 4	at 5	at 6	at 7	at 8	at 9	at 10		
100%	98%	94%	88%	75%	74%	76%	76%	63%	48%	49%			

800

836

838

840

FIG. 8E

Title: "Methods and apparatus to determine a duration of media presentation based on tuning session duration"

Inventor(s): Michael Sheppard, Jonathan Sullivan, Peter Lipa, Alex Terrazas
Attorney Docket No.: 20004/125399US07

10/11

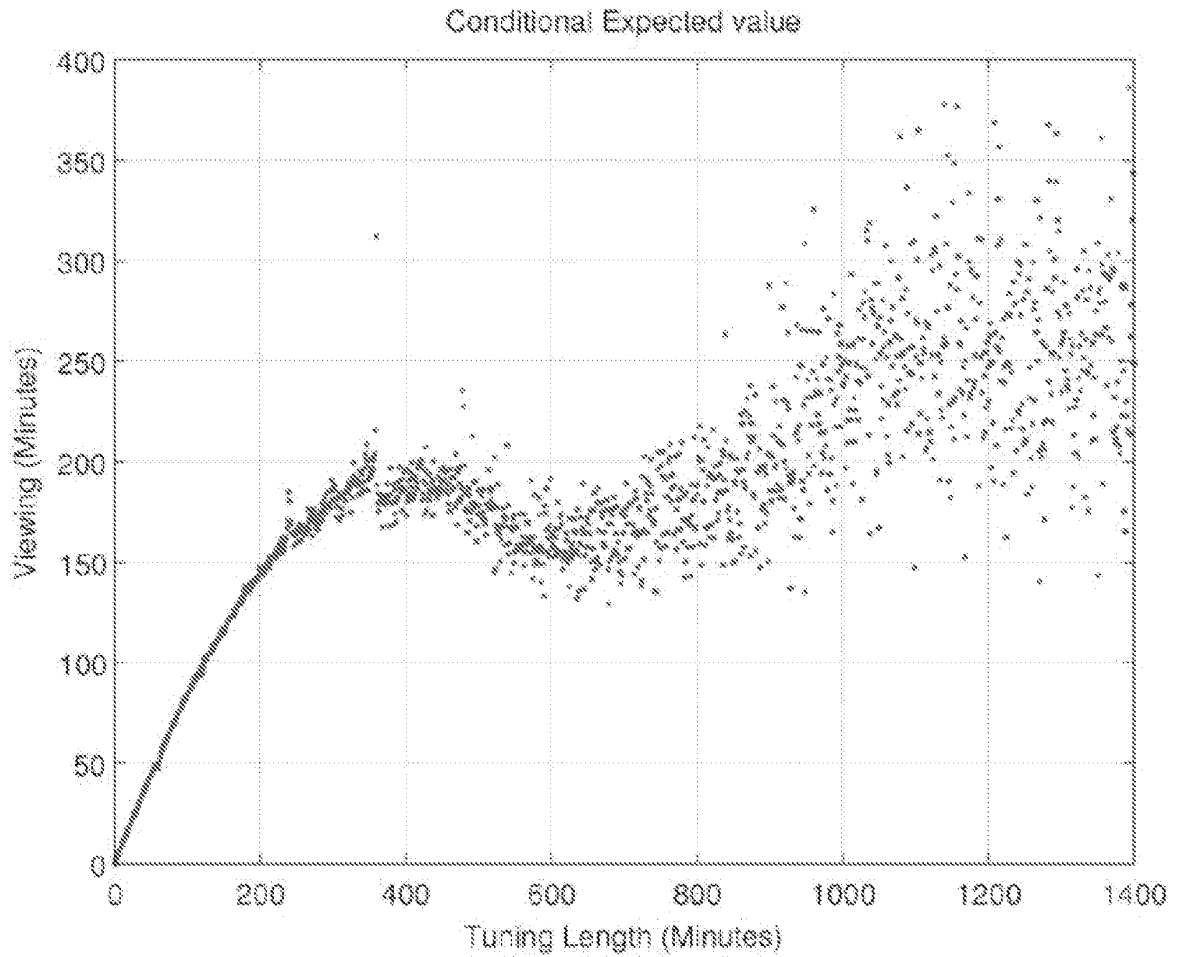


FIG. 9

11/11

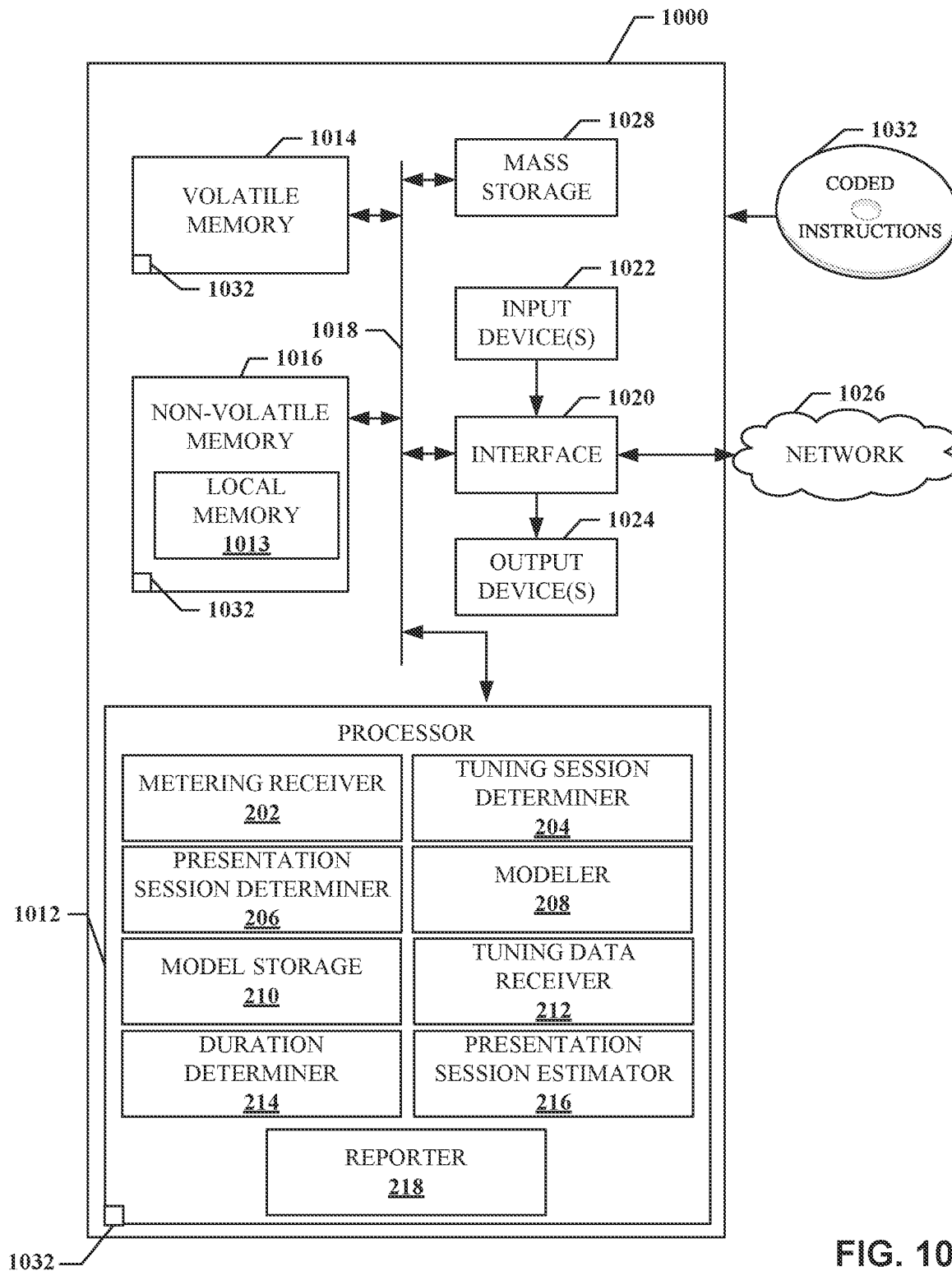
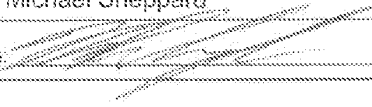


FIG. 10

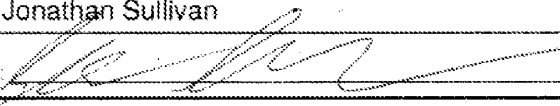
DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION
As the below named inventor, I hereby declare that: This declaration is directed to: ☒ The attached application, or ☐ United States application or PCT international application number _____ filed on _____ The above-identified application was made or authorized to be made by me. I believe that I am the original inventor or an original joint inventor of a claimed invention in the application. I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.	
WARNING: Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.	
LEGAL NAME OF INVENTOR	
Inventor:	Michael Sheppard
Date (Optional):	10/2/2015
Signature:	
Note: An application data sheet (PTO/GB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.	

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.83. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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

**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN
APPLICATION DATA SHEET (37 CFR 1.76)**

Title of Invention	METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION
As the below named inventor, I hereby declare that: This declaration is directed to: ☒ The attached application, or ☐ United States application or PCT international application number _____ filed on: _____ The above-identified application was made or authorized to be made by me. I believe that I am the original inventor or an original joint inventor of a claimed invention in the application. I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both. WARNING: Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available. LEGAL NAME OF INVENTOR Inventor: <u>Jonathan Sullivan</u> Date (Optional): <u>8 October 2015</u> Signature:  Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.	

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

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.

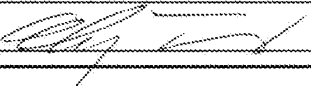
**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN
APPLICATION DATA SHEET (37 CFR 1.76)**

Title of Invention	METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION
As the below named inventor, I hereby declare that: This declaration is directed to: ☒ The attached application, or ☐ United States application or PCT international application number _____ filed on _____. The above-identified application was made or authorized to be made by me. I believe that I am the original inventor or an original joint inventor of a claimed invention in the application. I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both. WARNING: Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.	
LEGAL NAME OF INVENTOR Inventor: <u>Peter Lipa</u> Date (Optional) : <u>10/1/2015</u> Signature: <u><i>Peter Lipa</i></u>	
Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.	

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN
APPLICATION DATA SHEET (37 CFR 1.76)**

Title of Invention	METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION
As the below named inventor, I hereby declare that: This declaration is directed to: ☒ The attached application, or ☐ United States application or PCT international application number _____ filed on _____ The above-identified application was made or authorized to be made by me. I believe that I am the original inventor or an original joint inventor of a claimed invention in the application. I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both. WARNING: Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available. LEGAL NAME OF INVENTOR Inventor: <u>Alejandro Terrazas</u> Date (Optional): <u>10/07/2015</u> Signature: <u></u> Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.	

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

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.

UTILITY PATENT APPLICATION TRANSMITTAL (Only for new nonprovisional applications under 37 CFR 1.53(b))	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"><i>Attorney Docket No.</i></td> <td>125399US07</td> </tr> <tr> <td><i>First Named Inventor</i></td> <td>Michael Sheppard</td> </tr> <tr> <td><i>Title</i></td> <td>METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION</td> </tr> <tr> <td><i>Priority Mail Express® Label No.</i></td> <td></td> </tr> </table>	<i>Attorney Docket No.</i>	125399US07	<i>First Named Inventor</i>	Michael Sheppard	<i>Title</i>	METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION	<i>Priority Mail Express® Label No.</i>	
<i>Attorney Docket No.</i>	125399US07								
<i>First Named Inventor</i>	Michael Sheppard								
<i>Title</i>	METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION								
<i>Priority Mail Express® Label No.</i>									

APPLICATION ELEMENTS See MPEP chapter 600 concerning utility patent application contents. 1. ☒ Fee Transmittal Form (PTO/SB/17 or equivalent) 2. ☐ Applicant asserts small entity status. See 37 CFR 1.27 3. ☐ Applicant certifies micro entity status. See 37 CFR 1.29. Applicant must attach form PTO/SB/15A or B or equivalent. 4. ☒ Specification [Total Pages <u>64</u>] Both the claims and abstract must start on a new page. (See MPEP § 608.01(a) for information on the preferred arrangement) 5. ☒ Drawing(s) (35 U.S.C. 113) [Total Sheets <u>11</u>] 6. ☐ Inventor's Oath or Declaration [Total Pages <u>4</u>] (including substitute statements under 37 CFR 1.64 and assignments serving as an oath or declaration under 37 CFR 1.63(e)) a. ☐ Newly executed (original or copy) b. ☒ A copy from a prior application (37 CFR 1.63(d)) 7. ☒ Application Data Sheet * See note below. See 37 CFR 1.76 (PTO/AIA/14 or equivalent) 8. ☐ CD-ROM or CD-R in duplicate, large table, or Computer Program (Appendix) ☐ Landscape Table on CD 9. Nucleotide and/or Amino Acid Sequence Submission (if applicable, items a. – c. are required) a. ☐ Computer Readable Form (CRF) b. ☐ Specification Sequence Listing on: i. ☐ CD-ROM or CD-R (2 copies); or ii. ☐ Paper c. ☐ Statements verifying identity of above copies	ADDRESS TO: Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450
--	--

ACCOMPANYING APPLICATION PAPERS 10. ☐ Assignment Papers (cover sheet & document(s)) Name of Assignee _____ 11. ☐ 37 CFR 3.73(c) Statement (when there is an assignee) ☒ Power of Attorney 12. ☐ English Translation Document (if applicable) 13. ☐ Information Disclosure Statement (PTO/SB/08 or PTO-1449) ☐ Copies of citations attached 14. ☐ Preliminary Amendment 15. ☐ Return Receipt Postcard (MPEP § 503) (Should be specifically itemized) 16. ☐ Certified Copy of Priority Document(s) (if foreign priority is claimed) 17. ☐ Nonpublication Request Under 35 U.S.C. 122(b)(2)(B)(i). Applicant must attach form PTO/SB/35 or equivalent. 18. ☒ Other: Request for prioritized examination _____ _____ _____ _____	
--	--

***Note:** (1) Benefit claims under 37 CFR 1.78 and foreign priority claims under 1.55 **must** be included in an Application Data Sheet (ADS).
 (2) For applications filed under 35 U.S.C. 111, the application must contain an ADS specifying the applicant if the applicant is an assignee, person to whom the inventor is under an obligation to assign, or person who otherwise shows sufficient proprietary interest in the matter. See 37 CFR 1.46(b).

19. CORRESPONDENCE ADDRESS					
☒ The address associated with Customer Number: <u>81905</u> OR ☐ Correspondence address below					
Name					
Address					
City	State		Zip Code		
Country	Telephone		Email		
Signature	/ Michael W. Zimmerman/		Date	October 17, 2022	
Name (Print/Type)	Michael W. Zimmerman		Registration No. (Attorney/Agent)	57993	

This collection of information is required by 37 CFR 1.53(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

Privacy Act Statement

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

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

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

FEE TRANSMITTAL		Complete if known	
		Application Number	
		Filing Date	October 17, 2022
☐ Applicant asserts small entity status. See 37 CFR 1.27.		First Named Inventor	Michael Sheppard
☐ Applicant certifies micro entity status. See 37 CFR 1.29. Form PTO/SB/15A or B or equivalent must either be enclosed or have been submitted previously.		Examiner Name	
		Art Unit	
TOTAL AMOUNT OF PAYMENT	(\$)	Practitioner Docket No.	125399US06

METHOD OF PAYMENT (check all that apply)
☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____

☒ Deposit Account Deposit Account Number: 50-2455 Deposit Account Name: Hanley, Flight & Zimmerman, LLC

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

☒ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, **except for the filing fee**
☒ Charge any additional fee(s) or underpayment of fee(s) ☒ Credit any overpayment of fee(s) under 37 CFR 1.16 and 1.17

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

FEE CALCULATION**1. BASIC FILING, SEARCH, AND EXAMINATION FEES** (U = undiscounted fee; S = small entity fee; M = micro entity fee)

Application Type	FILING FEES			SEARCH FEES			EXAMINATION FEES			Fees Paid (\$)
	U (\$)	S (\$)	M (\$)	U (\$)	S (\$)	M (\$)	U (\$)	S (\$)	M (\$)	
Utility	320	160*	80	700	350	175	800	400	200	1820
Design	220	110	55	160	80	40	640	320	160	
Plant	220	110	55	440	220	110	660	330	165	
Reissue	320	160	80	700	350	175	2,320	1,160	580	
Provisional	300	150	75	0	0	0	0	0	0	

* The \$150 small entity status filing fee for a utility application is further reduced to \$75 for a small entity status applicant who files the application via EFS-Web.

2. EXCESS CLAIM FEES

Fee Description	Undiscounted Fee (\$)	Small Entity Fee (\$)	Micro Entity Fee (\$)
Each claim over 20 (including Reissues)	100	50	25
Each independent claim over 3 (including Reissues)	480	240	120
Multiple dependent claims	860	430	215

Total Claims	Extra Claims	Fee (\$)	Fee Paid (\$)
23	-20 or HP = 3	100	300

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

Indep. Claims	Extra Claims	Fee (\$)	Fee Paid (\$)
3	-3 or HP = 0	480	0

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

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$420 (\$210 for small entity) (\$105 for micro entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

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

4. OTHER FEE(S)

Non-English specification, \$140 fee (\$70 for small entity) (\$35 for micro entity)

Non-electronic filing fee under 37 CFR 1.16(t) for a utility application, \$400 fee (\$200 small or micro entity)

Other (e.g., late filing surcharge): Request for prioritized examination and processing fee 4340

SUBMITTED BY

Signature	/ Michael W. Zimmerman/	Registration No. (Attorney/Agent) 57993	Telephone 312-580-1020
Name (Print/Type)	Michael W. Zimmerman		Date October 17, 2022

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

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

Privacy Act Statement

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

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

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

SCORE Placeholder Sheet for IFW Content

Application Number: 17967832

Document Date: 10/17/2022

The presence of this form in the IFW record indicates that the following document type was received in electronic format on the date identified above. This content is stored in the SCORE database.

Since this was an electronic submission, there is no physical artifact folder, no artifact folder is recorded in PALM, and no paper documents or physical media exist. The TIFF images in the IFW record were created from the original documents that are stored in SCORE.

- Drawing

At the time of document entry (noted above):

- USPTO employees may access SCORE content via DAV or via the SCORE web page.
- External customers may access SCORE content via PAIR using the Supplemental Content tab.