

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of: Michael Sheppard et al.
U.S. Patent No.: 11,856,250 Attorney Docket No.: 57824-0001IP1
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Title: METHODS AND APPARATUS TO DETERMINE A DURATION OF MEDIA PRESENTATION BASED ON TUNING SESSION DURATION

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**PETITION FOR *INTER PARTES* REVIEW OF UNITED STATES PATENT
NO. 11,856,250 PURSUANT TO 35 U.S.C. §§ 311–319, 37 C.F.R. § 42**

TABLE OF CONTENTS

I.	REQUIREMENTS FOR IPR	2
A.	Grounds for Standing.....	2
B.	Challenge and Relief Requested.....	2
C.	Claim Construction	3
D.	Level of Ordinary Skill in the Art.....	4
II.	THE '250 PATENT	4
A.	Brief Description.....	4
III.	THE CHALLENGED CLAIMS ARE UNPATENTABLE.....	5
A.	[GROUND 1A] – Claims 1-8, 11-13, and 15-21 are rendered obvious by Pecjak and Mirisola	5
1.	Pecjak	5
2.	Mirisola.....	9
3.	The combination of Pecjak and Mirisola	10
4.	Analysis	14
B.	[GROUND 1B] – Claims 9-10, 14, and 22-23 are rendered obvious by Pecjak and Mirisola (with or without Shankar).....	82
1.	Shankar	82
2.	The combination of Pecjak-Mirisola and Shankar.....	83
3.	Analysis	86
IV.	DISCRETIONARY DENIAL UNDER §314(a) IS NOT MERITED	91
V.	CONCLUSION AND FEES	92
VI.	MANDATORY NOTICES	93
A.	Real Party-In-Interest Under 37 C.F.R. § 42.8(b)(1).....	93
B.	Related Matters Under 37 C.F.R. § 42.8(b)(2).....	93
C.	Lead And Back-Up Counsel Under 37 C.F.R. § 42.8(b)(3).....	93
D.	Service Information	93

EXHIBITS

VA-1001	U.S. Patent No. 11,856,250 to Sheppard (“the ’250 patent”)
VA-1002	Excerpts from the Prosecution History of the ’250 Patent (“the Prosecution History”)
VA-1003	Declaration and Curriculum Vitae of Dr. Tim Williams
VA-1004	Complaint, <i>The Nielsen Company (US), LLC v. VideoAmp, Inc.</i> , Case No. 1-24-cv-00123-1, D. Del., January 31, 2024
VA-1005	U.S. Patent Pub. No. 2016/0249098 A1 to Pecjak et al. (Pecjak)
VA-1006	U.S. Patent No. 9,204,188 B1 to Mirisola et al. (“Mirisola”)
VA-1007	U.S. Patent Pub. No. 2011/0289524 A1 to Toner et al. (Toner)
VA-1008	U.S. Patent Pub. No. 2010/0218206A1 to Biemans (“Biemans”)
VA-1009	High-Definition Multimedia Interface, Specification Version 1.4 (“HDMI 1.4”).
VA-1010	Modeling User Activities in a Large IPTV System (Qiu)
VA-1011	U.S. Patent Pub. No. 2016/0165277 A1 to Kirillov et al. (“Kirillov”)
VA-1012	<i>Pocket Guide to TV Terms</i> , The Nielsen Company, Published 2008 (“Nielsen-2008”)
VA-1013	U.S. Patent No. 9,185,435 B2 to Shankar et al. (“Shankar”)
VA-1014	<i>Understanding Power and Rules of Thumb for Determining Sample Sizes</i> , Tutorials in Quantitative Methods for Psychology, published 2007 (“Wilson”)

- VA-1015 *Using Multivariate Statistics*, Sixth Edition, published 2013
 (“Tabachnick”)
- VA-1016 U.S. Patent Pub. No. 2003/0055759 A1 to Conkwright et al.
 (“Conkwright”)
- VA-1017 U.S. Patent Pub. No. 2007/0074258 A1 to Wood et al.
 (“Wood”)
- VA-1018 Multi-Channel Digital Video Data Capture, Accumulation and
 Processing Guidelines, published June, 2012
- VA-1019 District Court of Delaware and Judge Richard Andrews Trial
 Statistics

LISTING OF CLAIMS

Claim 1	
[1.pre]	A computing system comprising:
[1.1]	machine readable instructions; and
[1.2]	processor circuitry to execute the machine readable instructions to at least:
[1.3]	access respective tuning session data from a plurality of media presentation devices,
[1.4]	corresponding ones of the plurality of media presentation devices in respective ones of media presentation environments,
[1.5]	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,
[1.6]	the respective tuning session data from respective ones of the media presentation devices indicative of a tuning session having a tuning session duration,
[1.7]	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,

[1.8]	wherein presentation session data is available for a first subset of the media presentation environments,
[1.9]	and wherein presentation session data is not available for a second subset of the media presentation environments;
[1.10]	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;
[1.11]	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;
[1.12]	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
[1.13]	output the expected presentation session duration for the given tuning session from the given one of the media presentation environments.

Claim 2	
[2.1]	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
[2.2]	update the model with the additional tuning session durations and additional media presentation data.
Claim 3	
[3.1]	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
[3.2]	output the other expected presentation session duration for the other given tuning session from the other given one of the media presentation environments.

Claim 4

[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.

Claim 5

[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.

Claim 6

[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.
Claim 7	
[7]	The computing system of claim 5, wherein the time threshold is four minutes.
Claim 8	
[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.
Claim 9	
[9.1]	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
[9.2]	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.
Claim 10	
[10]	The computing system of claim 9, wherein the threshold number is five hundred tuning session durations.
Claim 11	
[11.pre]	A non-transitory computer-readable medium comprising instructions to cause processor circuitry to at least:
[11.1]	access respective tuning session data from each of a plurality of media presentation devices,
[11.2]	corresponding ones of the media presentation devices in respective ones of media presentation environments,
[11.3]	the respective media presentation environments including at least one media output device to present media from a corresponding one of the media presentation devices,

[11.4]	the respective tuning session data from respective ones of the media presentation devices indicative of a tuning session having a tuning session duration,
[11.5]	wherein the tuning session duration is indicative of an amount of time between interactions with a corresponding one of the media presentation devices,
[11.6]	wherein presentation session data is available for a first subset of the media presentation environments,
[11.7]	and wherein presentation session data is not available for a second subset of the media presentation environments;
[11.8]	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;
[11.9]	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;

[11.10]	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
[11.11]	output the expected presentation session duration for the given tuning session from the given one of the media presentation environments.
Claim 12	
[12.1]	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,
[12.2]	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
[12.3]	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.
Claim 13	
[13.1]	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
[13.2]	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.

Claim 14	
[14.1]	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
[14.2]	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.
Claim 15	
[15.pre]	A system comprising:
[15.1]	processor circuitry; and
[15.2]	a computer-readable medium including instructions to cause the processor circuitry to at least:

[15.3]	access respective tuning session data from a plurality of set-top boxes,
[15.4]	corresponding ones of the set-top boxes in respective ones of media presentation environments,
[15.5]	the respective media presentation environments including at least one television to present media from a corresponding one of the set-top boxes,
[15.6]	the respective tuning session data from respective ones of the set-top boxes indicative of a tuning session having a tuning session duration,
[15.7]	the tuning session duration indicative of an amount of time between interactions with a corresponding one of the set-top boxes,
[15.8]	wherein on/off durations are available for a first subset of the media presentation environments,
[15.9]	and wherein on/off durations are not available for a second subset of the media presentation environments;
[15.10]	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;
[15.11]	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;
[15.12]	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
[15.13]	cause presentation of the expected on/off duration for the given tuning session from the given one of the media presentation environments.
Claim 16	
[16.1]	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

[16.2]	update the model with the additional tuning session durations and additional on/off durations.
Claim 17	
[17.1]	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
[17.2]	output the other expected on/off duration for the other given tuning session from the other given one of the media presentation environments.
Claim 18	
[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.
Claim 19	
[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.
Claim 20	
[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.
Claim 21	
[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.

Claim 22	
[22.1]	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
[22.2]	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.
Claim 23	
[23]	The system of claim 22, wherein the threshold number is five hundred tuning session durations.

VideoAmp Inc. (“**Petitioner**” or “**VideoAmp**”) petitions for *Inter Partes* Review (“**IPR**”) of claims 1-23 (“**the Challenged Claims**”) of U.S. Patent No. 11,856,250 (“**the ’250 patent**”) because there exists a reasonable likelihood Petitioner will prevail with respect to at least one of the Challenged Claims.

I. REQUIREMENTS FOR IPR

A. Grounds for Standing

Petitioner certifies the ’250 patent is available for IPR. This petition is being filed within one year of service of a complaint against VideoAmp. VA-1004. VideoAmp is not barred or estopped from requesting review of the Challenged Claims on the below-identified grounds.

B. Challenge and Relief Requested

Petitioner requests an IPR of the Challenged Claims on the grounds noted below. Dr. Williams provides supporting testimony in his Declaration. VA-1003, ¶¶1-151.

Ground	’250 Patent Claims	Basis for Rejection (§103)
1A	1-8, 11-13, 15-21	Obvious over Pecjak in view of Mirisola
1B	9-10, 14, 22-23	Obvious over Pecjak in view of Mirisola with or without Shankar

The ’250 patent claims priority to a number of continuation applications and provisional application, the earliest of which was filed on October 8, 2015. VA-1001, 2. Petitioner does not concede October 8, 2015 is the priority date that

should be afforded to the '250 Patent, but for the purposes of this proceeding, the references asserted in this Petition qualify as prior art under 35 USC §102(a)(1) or (a)(2) (as shown in the table below) even if the October 8, 2015 date of the provisional application is used as the priority date (“**the Benefit Date**”)¹:

Reference	Filing Date	Publication Date
Pecjak	Feb. 20, 2015	Aug. 25, 2016
Mirisola	Jun. 30, 2011	Dec. 1, 2015
Shankar	Jun. 24, 2014	Nov. 10, 2015

C. Claim Construction

All claim terms should be construed according to the *Phillips* standard. *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005); 37 C.F.R. §42.100; VA-1003, ¶13. Petitioner submits no claim terms need be construed to resolve issues of controversy in the present Petition. *Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011). Petitioner reserves the right to respond to any constructions offered by Patent Owner or adopted by the Board. Petitioner is not conceding that each challenged claim satisfies all statutory requirements (e.g.,

¹ Patent Owner advanced a priority date of January 29, 2016 in the co-pending litigation. VA-1004, 14.

§112 requirements), nor is Petitioner waiving any arguments concerning claim scope or grounds that can only be raised in district court.

D. Level of Ordinary Skill in the Art

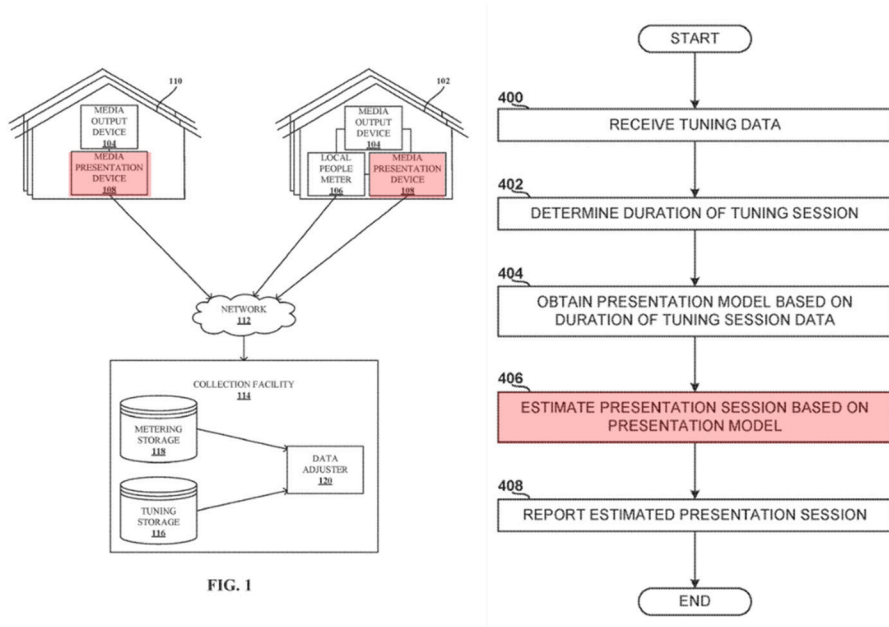
A person of ordinary skill in the art (“POSITA”) relating to the subject matter of the ’250 patent would have had (1) a bachelor’s degree in computer engineering, electrical engineering, or a related field, and (2) two years of industry experience in distributed computer network systems or cable broadcasting systems. VA-1003, ¶¶19-21. Additional graduate education could substitute for professional experience, and *vice versa*. *Id.*

II. THE ’250 PATENT

A. Brief Description

The ’250 patent relates “to methods and apparatus to determine a duration of media presentation based on tuning session duration.” VA-1001, 1:27-30. The ’250 patent describes obtaining tuning data directly from a “media presentation device” (e.g., a set-top box (STB)). VA-1001, 2:30-3:14. Media presentation activity is monitored for audience members (panelists) using an audience measurement system, for example, a metering device(s) and/or a local people meter (LPM). VA-1001, 3:15-45. The metering data is collected to create a model that describes a number of minutes a household media presentation device was tuned to a channel and 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). VA-1001, 3:46-67; VA-1003, ¶¶25-26.



The '250 patent estimates a presentation session based on a model created from tuning data obtained from media presentation devices

VA-1001, FIGS. 1, 4².

III. THE CHALLENGED CLAIMS ARE UNPATENTABLE

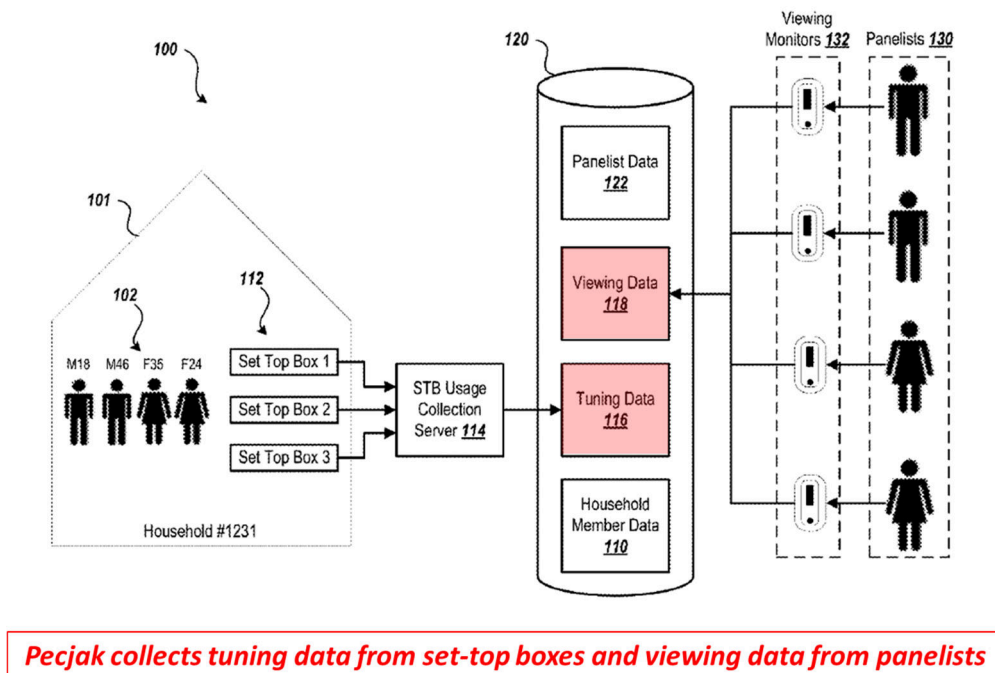
A. [GROUND 1A] – Claims 1-8, 11-13, and 15-21 are rendered obvious by Pecjak and Mirisola

1. Pecjak

Pecjak discloses techniques for “projecting person-level viewership from household-level data” to include “a projected number of viewing minutes that the particular program was viewed by individual members of [a] household.” VA-

² Annotations to figures are shown in color.

1005, ¶¶[0015]-[0019]. Like the '250 patent, Pecjak discloses obtaining tuning data from set top boxes that provide television programs to a household that can include one or more panelists. VA-1005, ¶¶[0002, [0013], [0020]-[0028], FIGS. 1, 5; VA-1001, 2:30-47, 1:40-51, 3:15-45. Additionally, Pecjak obtains viewing level data (“viewing data”) that includes “an identification of a particular television program associated with [a] viewing event and a panelist minutes value representing a number of minutes a panelist was exposed to the particular television program during the viewing event.” VA-1005, ¶¶[0002], [0024]-[0027], [0038], FIGS. 1, 5; VA-1003, ¶28.



VA-1005, FIG. 1.

Pecjak’s reporting server 202 uses person-level viewing data “to generate projected person-level viewing data from household-level tuning data.” VA-1005,

¶¶[0029]-[0040]. As shown in Pecjak's FIG. 2 below, the reporting server 202 includes a "measurement data processor 204, a data aggregation processor 206, and a report generation module 208," that "generate viewership data based on the household member data 110, tuning data, 116, viewing data 118, and panelist data 122 and use that data to generate one or more reports 210." VA-1005, ¶¶[0030]-[0040], [0083]-[0093], FIG. 2; VA-1003, ¶¶29-30.

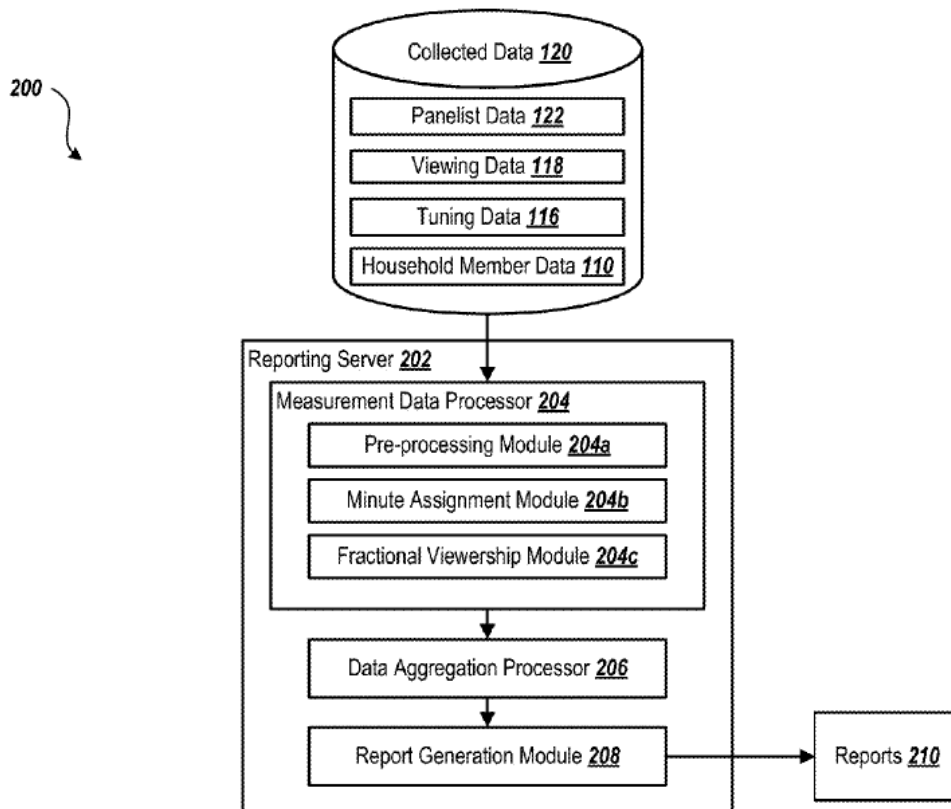
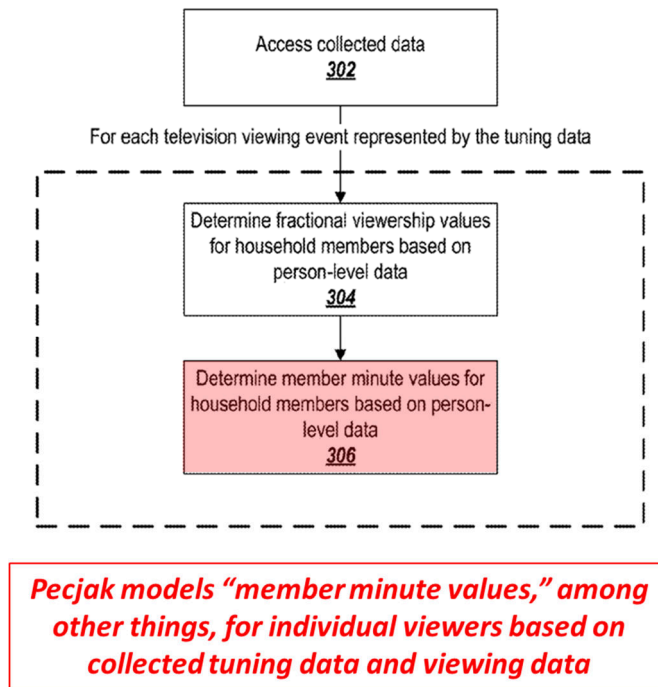


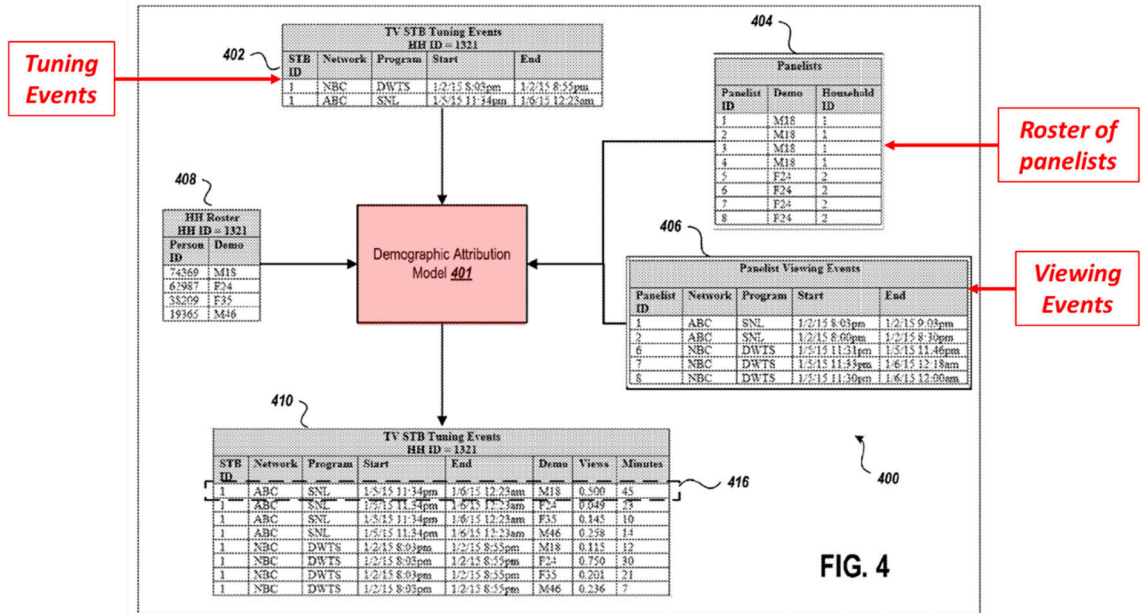
FIG. 2

VA-1005, FIG. 2.



VA-1005, FIG. 3.

Pecjak models the relationship between tuning data and viewing data with a “demographic attribution model” that uses “person-level viewing data and household-level tuning data to project person-level viewership for the household.” VA-1005, ¶¶[0076]-[0080]. As shown in Pecjak’s FIG. 4 below, the demographic attribution model includes “a tuning events table 402,” “a roster of panelists” 404, and “a household roster [408] for the household associated with the tuning events in table 402.” *Id.*; VA-1003, ¶31.



Pecjak's "model" relates "tuning events" to panelist "viewing events"

VA-1005, FIG. 4.

2. Mirisola

Mirisola discloses determining viewership metrics from set-top boxes using "channel tuning information from the set-top boxes." VA-1006, 5:14-6:51, FIG. 1 (reproduced below). Mirisola explains that "[m]ore precise metrics may be determined by accounting for the power status of the display devices that are coupled to the set-top boxes and are responsible for displaying the content output from the set-top boxes" and that this information can be obtained from High-Definition Multimedia Interface (HDMI) "interfaces and protocols associated with the HDMI interface." VA-1006, 5:19-23, 6:52-7:22, FIG. 1, FIG. 2A. This power status information is used to determine "time intervals during which the respective display de-

vice 104 is powered on and time intervals during which the respective display device is powered off.” VA-1006, 7:8-22, 9:47-61, FIG. 2A; VA-1003, ¶32.

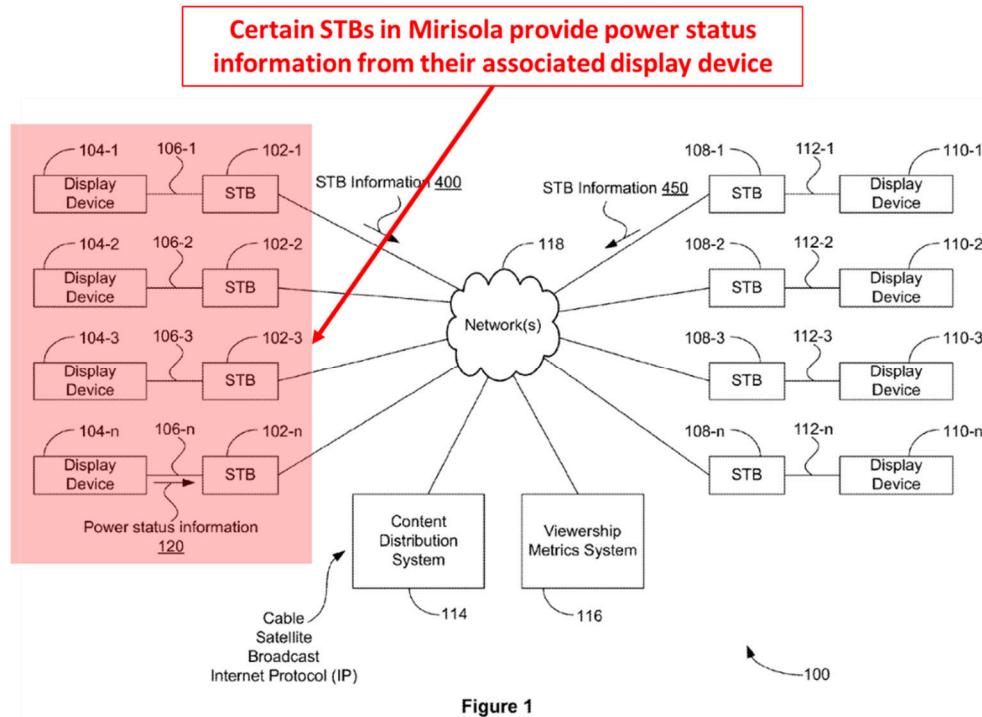


Figure 1

VA-1006, FIG. 1.

3. The combination of Pecjak and Mirisola

It would have been obvious for a POSITA to combine the teachings of Pecjak and Mirisola to (1) retrieve HDMI power status information, as taught by Mirisola, from STBs, as disclosed in Pecjak, to determine periods of time a television corresponding to a set-top box was turned on, and (2) provide implementation details for Pecjak’s techniques, e.g., implementing Pecjak’s display devices in the form of Mirisola’s televisions. VA-1005, ¶¶[0020]-[0028], FIGS. 1, 5; VA-1006,

5:19-23, 6:52-7:22, FIG. 1, FIG. 2A; VA-1003, ¶34. A POSITA would have combined Pecjak and Mirisola for multiple reasons. VA-1003, ¶34.

First, logging television power status with tuning data gathered from a set-top box would provide increased visibility into user engagement with programs, directly related to the user's interest in those programs, leading to more effective advertising. VA-1005, ¶¶[0020]-[0028], FIGS. 1, 5; VA-1006, 5:19-23, 6:52-7:22, FIG. 1, FIG. 2A; VA-1003, ¶35. For example, a POSITA would have known that user interaction (e.g., turning on a television) is one of the best indicators that a user is engaged with a television program. VA-1003, ¶35. This is corroborated by Biemans, which explains that media systems often determined user interest in a television program by detecting a user input, such as turning a client device off, from a remote control. VA-1008, ¶¶[0038]-[0040], [0045]-[0048], FIGS. 4A-4B; VA-1003, ¶35.

Second, Mirisola provides implementation details for Pecjak's user interactions of interest with a set-top box. VA-1005, ¶[0020]. For example, Mirisola discloses that a user's channel selections included in tuning information can include a time interval during which a user is tuned to a channel. VA-1006, 6:29-33 ("the raw tuning information may include a first time interval during which the STB is tuned to channel A, a second time interval during which the STB is tuned to channel B, and a third time interval during which the STB is tuned to

channel A”). As Dr. Williams explains, a POSITA would have found obvious that channel selections would have been indicative of a tuning session duration (e.g., a user changing to a channel at the beginning of a program, and changing the channel again at the end), as this was well recognized in the art before the Benefit Date. VA-1007, ¶¶[0016]-[0023], [0029]; VA-1010, 4-8; VA-1003, ¶36.

Third, as noted by Mirisola, collecting television power status information with tuning data collected from a set-top box verifies the accuracy of the tuning data and would have allowed the ratings provider to adjust tuning session data where it was determined that the television corresponding to the set-top box was turned off for a portion of the tuning session. VA-1005, ¶¶[0020]-[0021], FIGS. 1, 5; VA-1006, 5:14-23, 6:52-7:22, FIG. 1, FIG. 2A; VA-1003, ¶37.

A POSITA would also have found the combination of Pecjak and Mirisola obvious and predictable because incorporating Mirisola’s techniques into Pecjak would have been nothing more than (1) the application of known techniques (e.g., collecting power status from an HDMI connection, capturing indications of user interactions, such as channel selections, in tuning information) to a known structure (e.g., a STB with an HDMI connection to a television) to yield predictable results (e.g., a STB that collects power status information in tuning data), (2) the use of known techniques to improve similar devices (methods, or products) in the same way (applying Mirisola’s techniques to a similar Pecjak system and method), and

(3) applying a known technique (collecting commands in tuning data) to a known device (Pecjak's set-top boxes that collect tuning data) ready for improvement to yield predictable results. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007); *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966); VA-1003, ¶38.

For instance, one predictable result of incorporating Mirisola's teachings into Pecjak's system would have been the improvement in the accuracy of the tuning data, as explained above.

A POSITA would have had a reasonable expectation of success in implementing this combination because both Pecjak and Mirisola are analogous art (to each other and the '250 patent) that disclose almost identical techniques used for the same purpose – collecting tuning data from a set-top box playing television programs and using this data to model viewership. VA-1005, ¶¶[0020]-[0028], FIGS. 1, 5; VA-1006, 5:19-23, 6:52-7:22, FIG. 1, FIG. 2A. Both Pecjak and Mirisola collect tuning data from a set-top box, and both references indicate that user interactions with the set-top box can be included in this tuning data. *Id.* The inclusion of a television, as explicitly disclosed by Mirisola, provides implementation details for Pecjak's system, as Pecjak describes "television programs"—programs that were specifically intended to be displayed on a television. *See generally*, VA-1005. Moreover, the modification to collect power status information leverages an

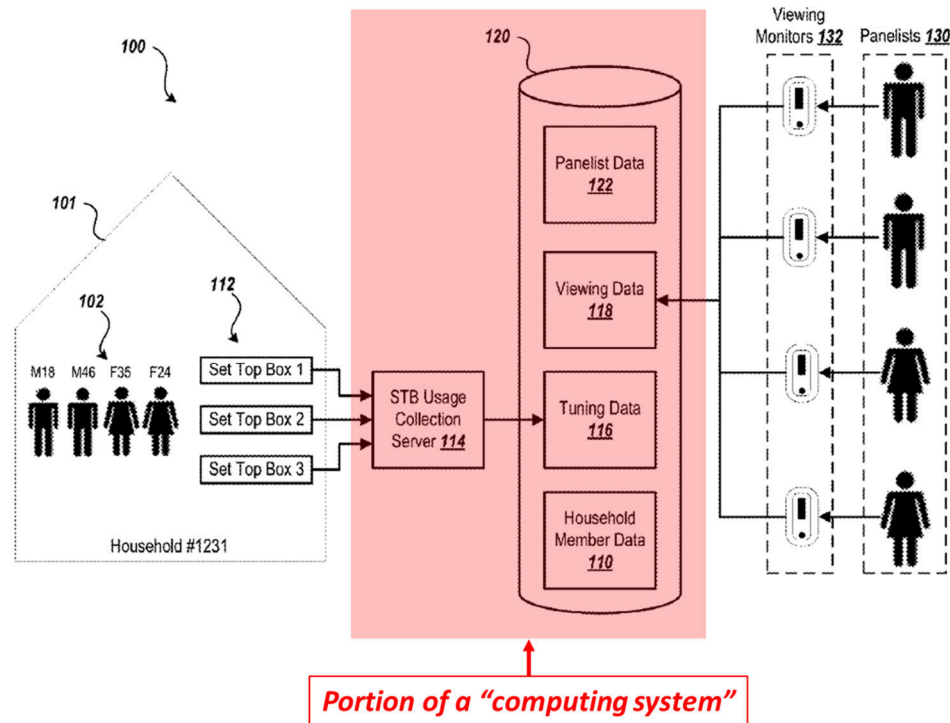
existing, well-known interface of the set-top box—the HDMI interface, and further, Mirisola explains that the collection of power status information is explained within the HDMI specification—a well-established standard document that would have been part of a POSITA’s general knowledge. VA-1006, 6:52-7:7; VA-1009, 226, 273-274. Finally, this modification would have involved only routine programming skill well within the capability of a POSITA (e.g., coding machine readable instructions executed by Pecjak’s reporting server to retrieve power status information). VA-1005, ¶¶[0029]-[0030]; *see infra*, [1.1]; VA-1003, ¶39.

4. Analysis

[1.pre]

To the extent the preamble is limiting, Pecjak discloses a [1.pre]. VA-1005, ¶¶[0005], [0029], [0100], FIGS. 1-2; VA-1003, ¶40.

For example, Pecjak’s FIG. 1 (reproduced below) “illustrates an example of a system 100 in which television viewership information may be collected and processed to determine audience measurement data. The system 100 includes a number of households, such as household 101, that include one or more set-top boxes 112.” VA-1005, ¶[0020]. “The set top boxes 112 may report ... tuning events to a set top box usage collection server 114.” VA-1005, ¶[0020]. Storage 120 stores panelist data 122, viewing data 118, tuning data 116, and household member data 110. VA-1005, ¶¶[0020]-[0028]; VA-1003, ¶41.



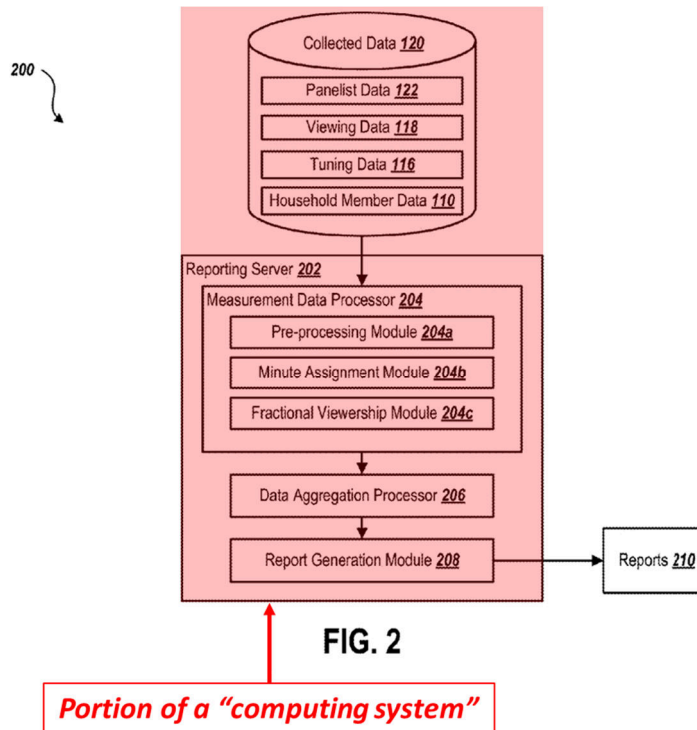
VA-1005, FIG. 1.

The collected data in storage 120 is provided to a reporting server 202 (highlighted in red in Pecjak's FIG. 2 below) that receives collected data 120 and generates reports 210. VA-1005, ¶¶[0029]-[0030], [0100]. Pecjak describes the reporting server 202 as follows:

The reporting server 202 may be implemented using, for example, a general-purpose computer capable of responding to and executing instructions in a defined manner, a personal computer, a special-purpose computer, a workstation, a server, or a mobile device. The reporting server 202 may receive instructions from, for example, a

software application, a program, a piece of code, a device, a computer, a computer system, or a combination thereof, which independently or collectively direct operations. The instructions may be embodied permanently or temporarily in any type of machine, component, equipment, or other physical storage medium that is capable of being used by the reporting server 202.

VA-1005, ¶¶[0029]-[0030], [0100]; VA-1003, ¶42. A POSITA would have understood that the server 114, storage 120, and the reporting server 202 are part of a “computing system” at least because servers and storage devices are well-known components of a computer system. VA-1003, ¶42. Indeed, devices, such as the reporting server 202, must perform various computing operations by executing the machine-readable instructions, as described below in [1.1]-[1.13]. VA-1005, ¶¶[0029]-[0030], [0100]. Thus, it would have been obvious to a POSITA that Pecjak discloses a “*computing system*.” VA-1003, ¶42.



VA-1005, FIG. 2.

[1.1]

As noted above in [1.pre], Pecjak's reporting server 202 "receive[s] instructions from, for example, a software application, a program, a piece of code, a device, a computer, a computer system, or a combination thereof, which independently or collectively direct operations. ... The *instructions*³ may be embodied permanently or temporarily *in any type of machine*, component, equipment, *or other physical storage medium* that is capable of being used by the reporting server 202." VA-1005, ¶[0029]. Moreover, "[t]he reporting server 202 *executes instructions* that implement a measurement data processor 204, a data aggregation

³ All emphasis is added unless otherwise noted.

processor 206, and a report generation module 208.” VA-1005, ¶[0030]. Pecjak also discloses that its techniques are implemented by “*instructions stored on a computer readable storage device*” or “a computer program product, i.e., a computer program tangibly embodied in an information carrier, e.g., *in a machine-readable storage device, in machine-readable storage medium, in a computer-readable storage device or, in computer-readable storage medium* for execution by, or to control the operation of data processing apparatus.” VA-1005, ¶¶[0005], [0100], FIG. 2. Accordingly, Pecjak teaches that its computer system includes “*machine readable instructions*.” VA-1003, ¶43.

[1.2]

Pecjak discloses [1.2] at least because Pecjak’s processors 204, 206, and 208 (“*processor circuitry*”) in the reporting server 202 execute machine readable instructions. VA-1003, ¶44. Specifically, Pecjak’s “reporting server 202 executes instructions that implement a measurement data processor 204, a data aggregation processor 206, and a report generation module 208.” VA-1005, ¶[0030]. These processors are further configured to also execute instructions. *Id.* For example, Pecjak’s *machine readable instructions* are executed by a “data processing apparatus” or “one or more processors” as part of “digital electronic circuitry” (“*processor circuitry*”) to perform at least the operations described below in [1.3]-[1.13]. VA-1005, ¶¶[0005], [0029]-[0030], [0067], [0096], [0097], [0098],

[0100], FIG. 2; VA-1003, ¶44.

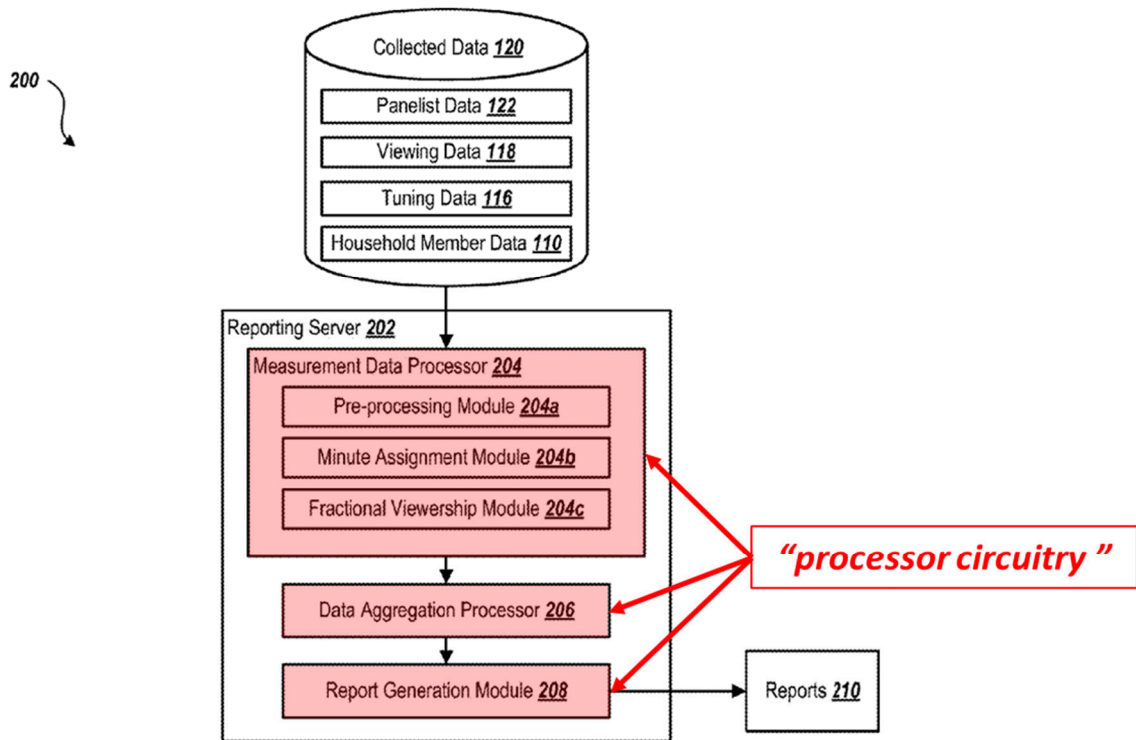


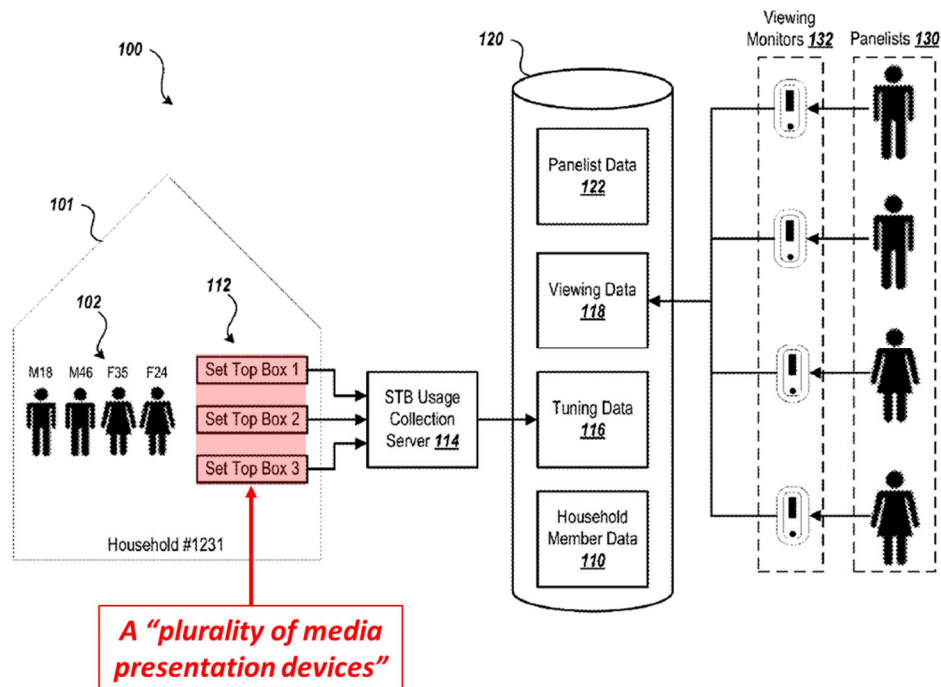
FIG. 2

VA-1005, FIG. 2.

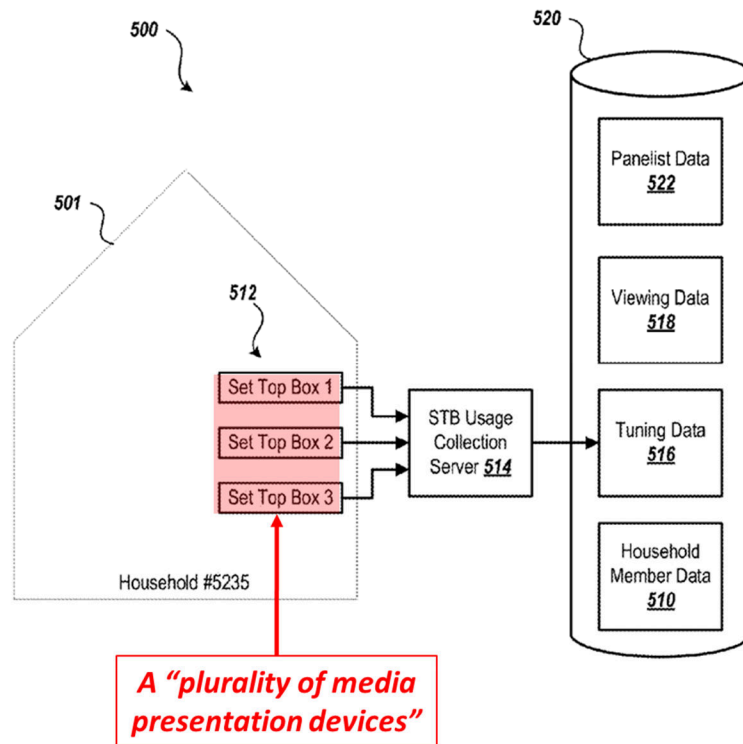
[1.3]

The '250 patent describes that a “set-top box” (“STB”) is an example *“media presentation device.”* VA-1001, 2:39-57; VA-1003, ¶45. Consistent with the '250 patent, Pecjak discloses set top boxes (*“a plurality of media presentation devices”*) that are used for “viewing television programs.” VA-1005, ¶[0020]. As shown below in Pecjak’s FIGS. 1 and 5, these set top boxes can be located in a household. VA-1005, ¶¶[0021]-[0023], [0039]-[0040], [0076]-

[0077], FIG. 1. One common and obvious scenario would have been when different members of a single household are watching television content through set-top boxes located in different rooms, respectively, of the household. VA-1003, ¶45. In some cases, these set top boxes can be located in different respective households, each with different “demographics.” VA-1005, ¶¶[0020]-[0023] (“The system 100 includes **a number of households**, such as household 101, that include one or more set-top boxes 112 for viewing television programs.”), [0037], [0081], FIGS. 1, 5; VA-1003, ¶45.



VA-1005, FIG. 1.



VA-1005, FIG. 5.

Pecjak also discloses accessing “*tuning session data from a plurality of media presentation devices.*” In particular, Pecjak teaches that “[t]he set top boxes 112 record data for tuning events (e.g., viewing events), which may represent a particular television network or *program being watched at a particular time.*” VA-1005, ¶[0020]. “The set top boxes 112 ... may store tuning data 116 representing these tuning events in a database or other storage 120.” VA-1005, ¶[0020]. “[T]he tuning data may include data to identify the household 101 and set top box 112, stream control data, data representing content recorded by the set top box 112, programs ordered on the set top box 112, and data about when the set top

box 112 was on or off.” VA-1005, ¶¶[0020]-[0021], FIGS. 1, 5. The tuning data may also include “a particular television program watched during each viewing event, and a household minutes value representing a number of minutes the particular household watched the particular television program during each viewing event.” VA-1005, ¶[0084]. Because the tuning data includes data for particular programs being watched at a particular time, data representing content recorded by the set top box 112, programs ordered on the set top box 112, and data about when the set top box 112 was on or off, a POSITA would have understood that the tuning data stored and used by the set top boxes is “*tuning session data*.” VA-1005, ¶¶[0013], [0020], [0026], [0056], [0063]; VA-1001, 3:54-56. And because this “tuning session data” is received from the set top boxes 112, it would have been obvious to a POSITA that Pecjak also discloses “*access respective tuning session data from a plurality of media presentation devices*.” *Id.*; VA-1003, ¶46.

As discussed above in [1.2], the pre-processing module 204a and measurement data processor 204 are part of the reporting server 202 processing circuitry, thus it is Pecjak’s “*computing system*” that is performing these operations. VA-1005, ¶[0030], FIG. 2; *see* [1.2]; VA-1003, ¶47.

[1.4]

The ’250 patent describes an “environment” as an area in which “tuning data

is collected” or as a “media presentation location.” VA-1001, 4:26-37 (“FIG. 1 is a block diagram of an example environment 100 in which tuning data is collected from an example media presentation location 110 ...”), 4:51-64; VA-1003, ¶48.

The ’250 patent also describes a media presentation location as “a location that has been statistically selected to develop media ratings data” such as a household. VA-1001, 4:51-64, FIG. 1 (illustrating a media presentation location as a house). Other example environments described by the ’250 patent include “a theater, a restaurant, a tavern, a retail location, an arena, etc.” VA-1001, 4:51-64. Accordingly, a POSITA would have understood that a “*media presentation environment*” also encompasses an area within which a media presentation can be presented, such as a household or a room in a household. VA-1001, 4:51-64, FIG. 1; VA-1003, ¶48.

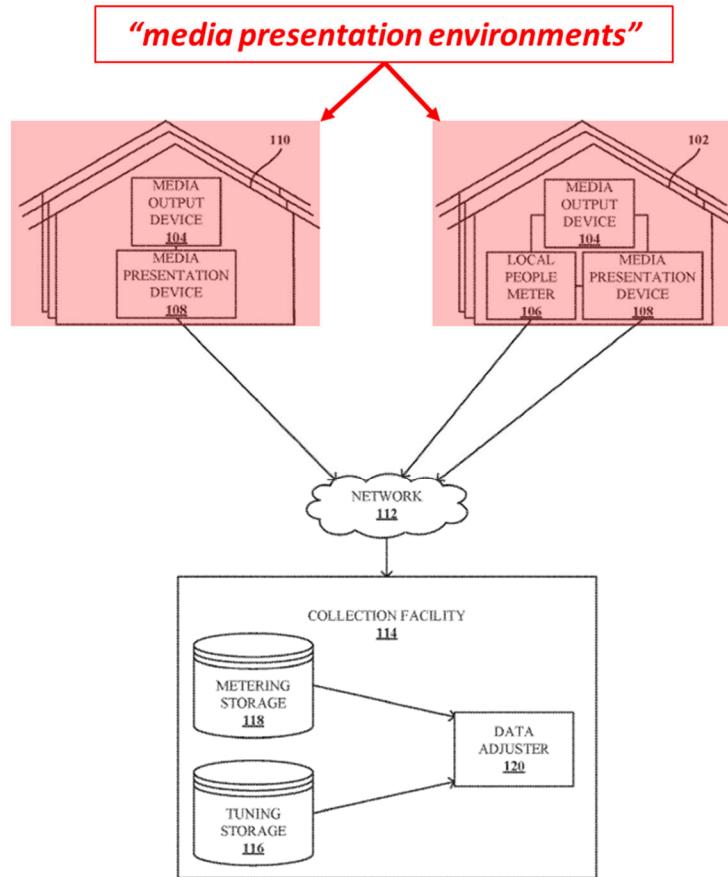


FIG. 1

VA-1001, FIG. 1.

Pecjak discloses “*media presentation environments*” similar to the ones described in the ’250 patent in multiple ways. VA-1003, ¶49. First, recall that Pecjak teaches that there are “one or more set-top boxes 112 for viewing television programs” in each household. In an example in which each household has only one set-top box, the two set-top boxes would have been located respectively in two households (“*corresponding ones of the plurality of media presentation devices in respective ones of media presentation environment*”). VA-1005,

¶¶[0020]-[0021], [0057], [0084], [0089], [0095], FIGS. 1, 5; VA-1003, ¶49.

Pecjak also discloses two types of households—both of which are “*media presentation environments*”—“rostered” households where viewer demographics are known (e.g., household #1231 in FIG. 1⁴), and “non-rostered” households where viewer demographics are unknown (e.g., household #5235 in FIG. 5). VA-1005, ¶¶[0020]-[0022], [0081], FIG. 1, 5. Pecjak’s set-top boxes generate tuning data from tuning events such that the tuning data is associated with each household. VA-1005, ¶[0020]; *see* [1.3]. Again, because there are at least two types of households disclosed by Pecjak and each household may have its own media presentation environment with a set-top box, Pecjak discloses [1.4]; VA-1003, ¶50.

⁴ Pecjak illustrates household #1231 in FIG. 4, but inadvertently labels the household “1321.” VA-1005, FIG. 4.

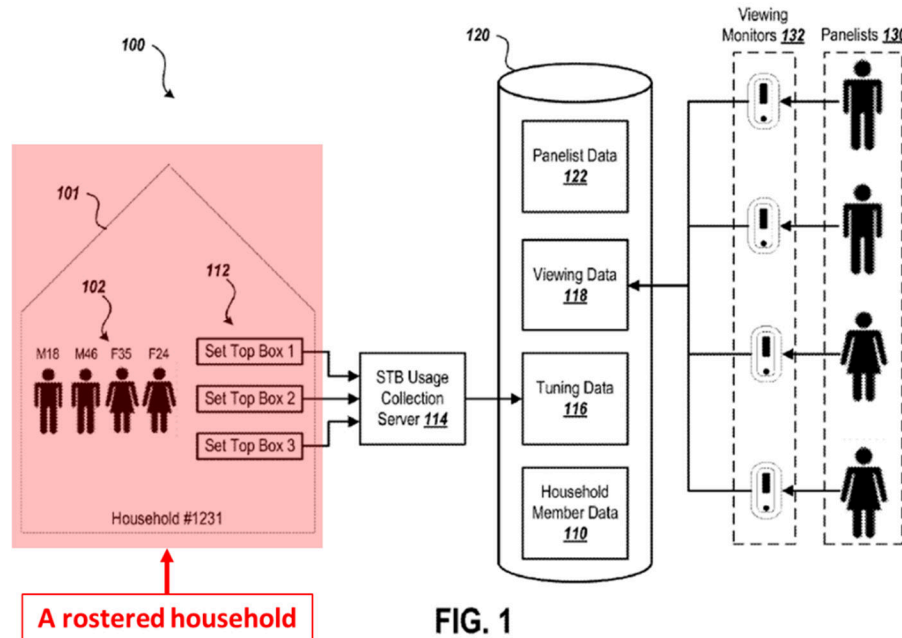


FIG. 1

VA-1005, FIG. 1.

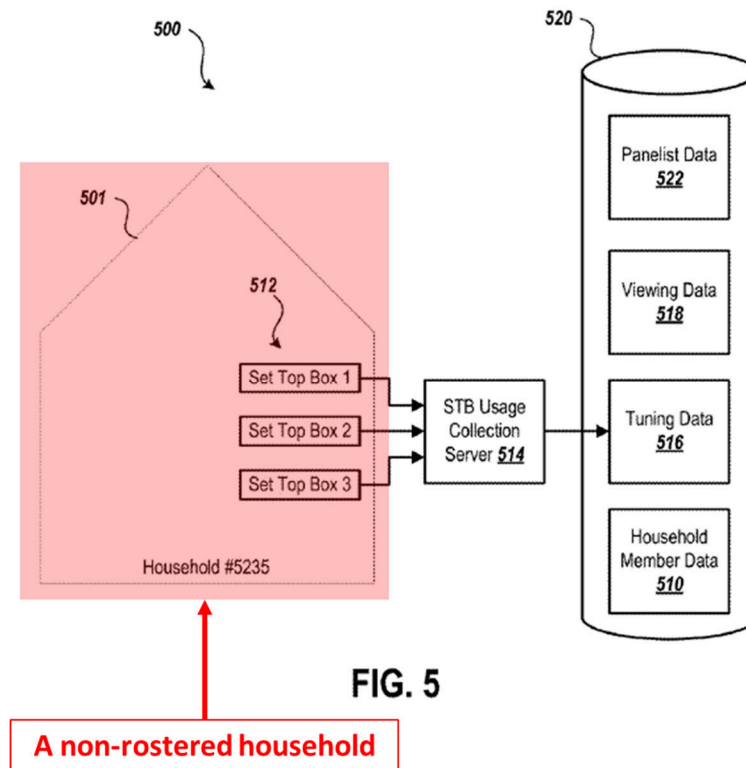


FIG. 5

VA-1005, FIG. 5.

Second, as explained above in [1.3], in the scenario in which each set-top box is located in a different room of the same household, the set-top boxes are ***“corresponding ones of the plurality of media presentation devices in respective ones of media presentation environment.”*** VA-1003, ¶51.

As one example, Pecjak teaches that viewing monitors carried by panelists are portable computing devices. VA-1005, ¶[0026]. A POSITA would have found obvious that individuals carrying portable devices—in both panelist and non-panelist households—would, when located in different rooms, have consumed Pecjak’s television programs in a different respective ***“media presentation environments.”*** VA-1005, ¶[0026]; VA-1003, ¶52.

Mirisola corroborates this understanding by disclosing that information retrieved from a set top box can include “a location of the sending STB within a household (e.g., living room, family room, bedroom, etc.).” VA-1006, 12:66-13:20; VA-1003, ¶53.

[1.5]

The ’250 patent’s ***“media output device”*** includes a “television.” VA-1001, 2:61-67. Consistent with the ’250 patent, Pecjak discloses television programs provided by set-top boxes (***“at least one media output device to present media from a corresponding one of the media presentation devices”***). VA-

1005, ¶¶[0013] (describing “one or more set-top boxes for viewing television programs), [0020]-[0021] (describing that members use the set-top boxes “to watch television”), [0096] (describing a “television playing the program). A POSITA would have found obvious that each of Pecjak’s households (“*the respective ones of the media presentation environments*”) would have included at least one television (“*at least one media output device*”) as it would have been obvious that a household would have included a television to view television programs provided through a set top box in the household. VA-1005, ¶¶[0013], [0020]-[0021], [0096]; VA-1003, ¶54.

Mirisola corroborates Dr. William’s testimony and discloses example scenarios in which set-top boxes provided media content to a corresponding display device, such as a television. VA-1006, 3:56-67, FIG. 1 (reproduced below, illustrating set top boxes coupled to a display device). To the extent there may be any questions regarding the type of display device is used with set top boxes in Pecjak, Mirisola provides explicit disclosure of televisions being connected to set top boxes for displaying media content. *Id.*, VA-1003, ¶55. Moreover, to the extent Patent Owner contends that a disclosure of televisions presenting media from set top boxes is not obvious in Pecjak, a POSITA would have combined Pecjak and Mirisola for the reasons explained above in Section §III.A.3. *Id.* Thus, the Pecjak-Mirisola combination would have rendered obvious a computer system including

“the respective ones of the media presentation environments [Pecjak’s rooms or households] including at least one media output device [Mirisola’s television] to present media from a corresponding one of the media presentation devices [Pecjak and Mirisola’s set top boxes].” VA-1003, ¶¶55-56.

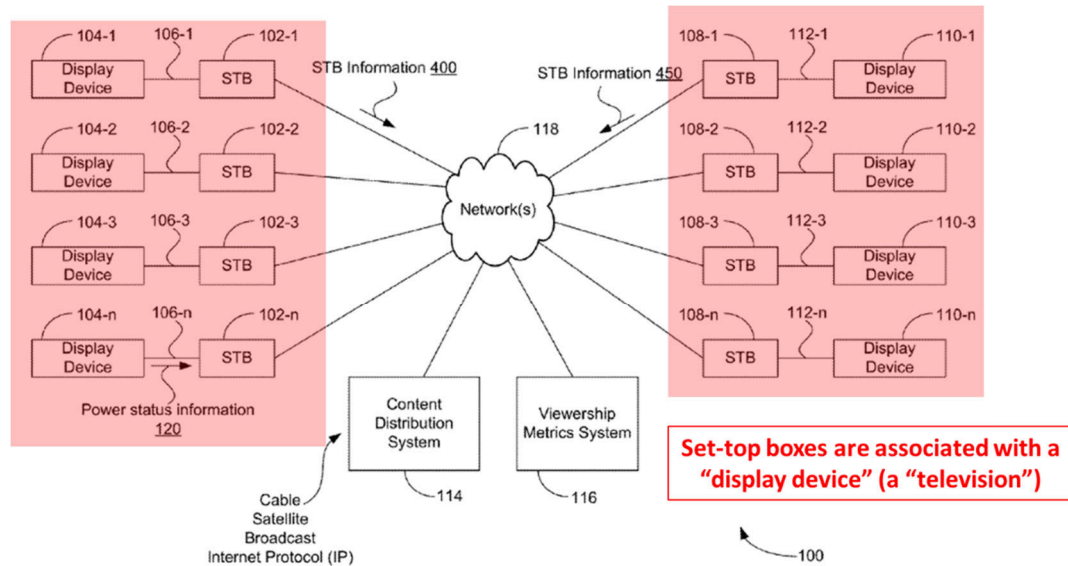


Figure 1

VA-1006, FIG. 1.

As another corroborating example, Biemans similarly discloses that a client device, such as a set-top box, is connected to a television. VA-1008, ¶¶[0038]-[0040], FIG. 2; VA-1003, ¶56. FIG. 2 below illustrates client devices with corresponding televisions. VA-1008, FIG. 2.

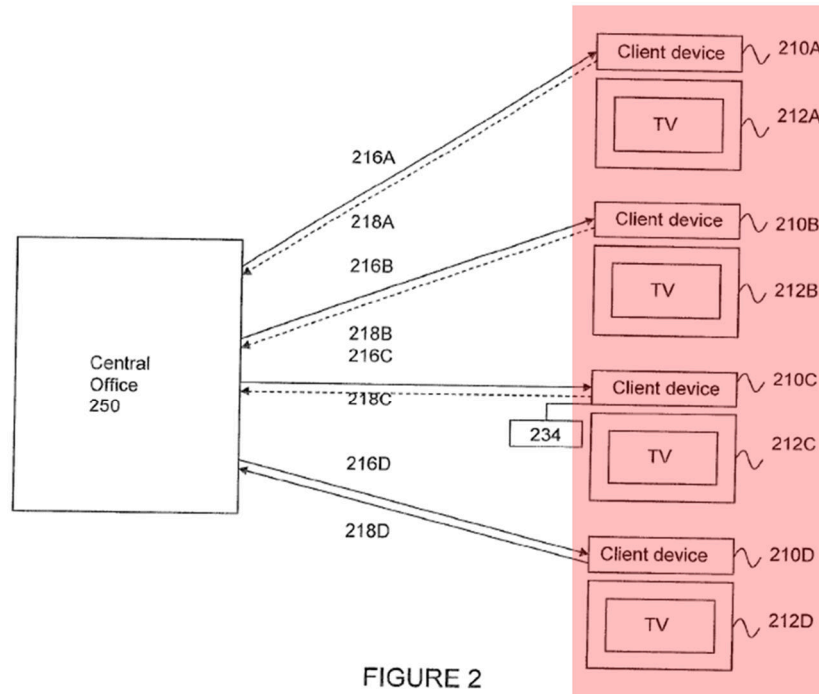


FIGURE 2

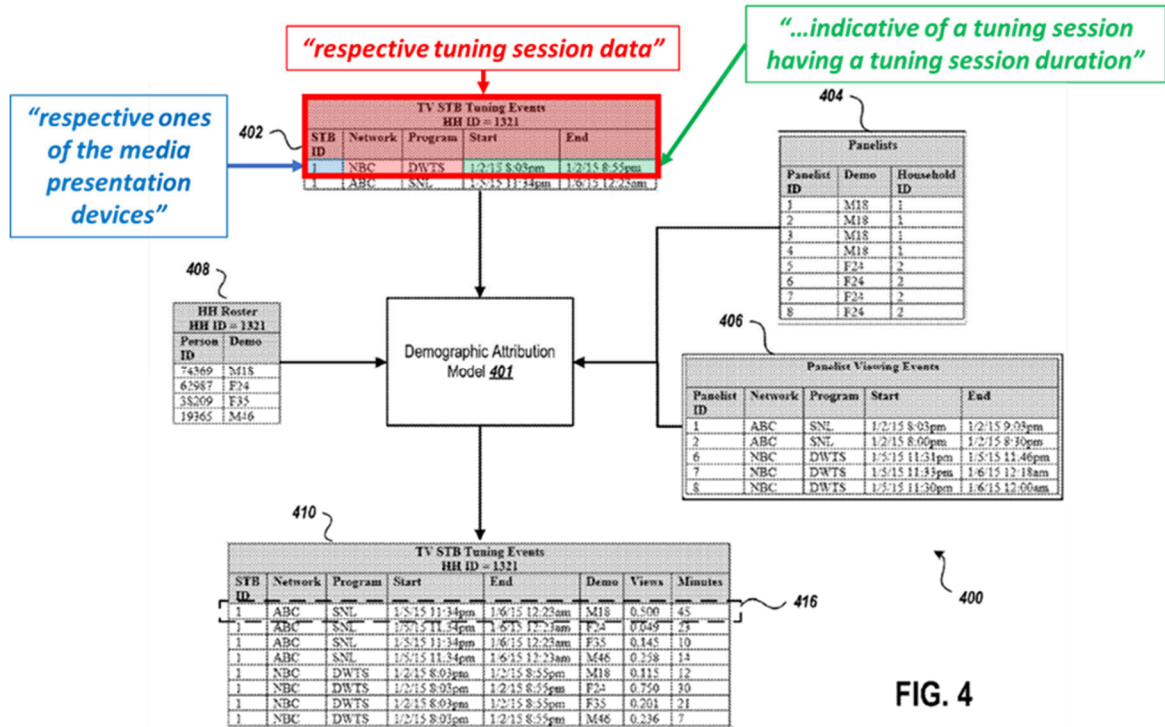
**"client devices" (set-top boxes) are
associated with televisions**

VA-1008, FIG. 2.

[1.6]

Pecjak's tuning data includes a "minutes value" ("*a tuning session duration*") representing "a number of minutes the ... television program was played" ("*indicative of a tuning session having a tuning session duration*") "at a particular household in association with the tuning event." VA-1005, ¶¶[0002]-[0004], [0025], [0036], [0080], [0084], [0095]. As discussed above in [1.3], each media presentation environment is associated with a respective set top box that collects and provides the tuning session data ("*the respective tuning session data from respective ones of the media presentation devices*"). VA-1005, ¶¶[0002]-

[0004], [0025], [0036], [0080], [0084], [0095]; *see* [1.3]. For instance, as shown in Pecjak's FIG. 4 below, a tuning events table 402 includes "*household-level* tuning data" including: 1) Set Top Box 1 ("STB ID 1") (a "*respective ... media presentation device*") with a starting time of 5:03 pm on 1/2/15 and ending time of 8:55 pm on 1/2/15 ("*respective tuning session data*") for one program "DWTS" ("*a tuning session*"), and 2) STB ID 1 with a starting time of 11:34 pm on 1/5/15 and ending time of 12:23 am on 1/6/15 ("*respective tuning session data*") for another program "SNL" ("*a tuning session*"). VA-1005, ¶¶[0076]-[0080], FIG. 4. Thus, this data indicates that the first tuning session for STB ID 1 had a tuning session duration of 3 hours and 52 minutes and that the second tuning session for STB ID 1 had a tuning session duration of 49 minutes ("*the respective tuning session data ... indicative of a tuning session having a tuning session duration*"). *Id.*; VA-1003, ¶57. Because Pecjak's system collects data from all the set-top boxes in a household, a POSITA would have understood that turning session data from other set-top boxes in the household (ID #1321) would similarly be collected and provided in the tuning events table 402. VA-1005, ¶¶[0020], [0081], FIGS. 1, 5; VA-1003, ¶57.



VA-1005, FIG. 4.

[1.7]

In particular, Pecjak teaches that tuning data 116 includes “data about ... user interaction with the set top box 112” (“*interactions with a corresponding one of the plurality of media presentation devices*”). VA-1005, ¶[0020]. A POSITA would have found obvious that the interactions described by Pecjak would have included user commands to the set top box, for example, a command to change to a particular channel or to power off a STB or television, and further, that these commands would have been indicative of the tuning session duration (e.g., a user changing to a channel at the beginning of a program, and

changing the channel again at the end – “*the tuning session duration is indicative of an amount of time between interactions with a corresponding one of the plurality of media presentation devices*”). VA-1003, ¶58.

Dr. William’s testimony is corroborated by other references in the art, for example, Toner, Qiu, and Biemans. VA-1007, ¶¶[0016]-[0023], [0029]; VA-1008, ¶¶[0038]-[0040], [0045]-[0048], FIGS. 4A-4B; VA-1010, 4-8; VA-1003, ¶¶59-61. Like Pecjak and the ’250 patent, and reflecting the knowledge that would have been known to a POSITA as of the Benefit Date, Toner discloses the collecting and analyzing of viewing data from a set top box. VA-1007, ¶¶[0016]-[0030], FIG. 1. Toner’s system includes a set top box, a headend 101, and a usage collection configuration information (UC Config 104) that “instruct[s] the STB 102 to selectively collect, store, and send viewing data 106.” VA-1007, ¶¶[0020]-[0023], FIG. 1. The viewing data collected by Toner includes “operational commands from the viewer” and “the duration in seconds of the viewing of that channel before the channel was changed or the STB 102 was powered off.” VA-1007, ¶¶[0023], [0029]; VA-1003, ¶59. Qiu and Biemans disclose similar techniques. VA-1010, 4-8; VA-1008, ¶¶[0038]-[0040], [0045]-[0049], FIGS. 4A-4B; VA-1003, ¶¶59-61.

Additionally, Pecjak in view of Mirisola also renders [1.5] obvious. VA-1003, ¶62. For example, Mirisola discloses that a user’s channel selections can

be included in tuning information, to include a “time interval” that a user is tuned to a specific channel (“*an amount of time between interactions with a corresponding one of the plurality of media presentation devices*”). VA-1006, 6:1-10 (“The STB 102 may tune to any particular channel in the signals in accordance with end user inputs (e.g., an end user changes channels using a remote control)”), 6:29-33 (“the raw tuning information may include a first time interval during which the STB is tuned to channel A, a second time interval during which the STB is tuned to channel B, and a third time interval during which the STB is tuned to channel A”). This is consistent with the ’250 patent, which describes that tuning sessions are “a period of time between channel changes.” VA-1001, 3:54-56; VA-1003, ¶62.

[1.8]

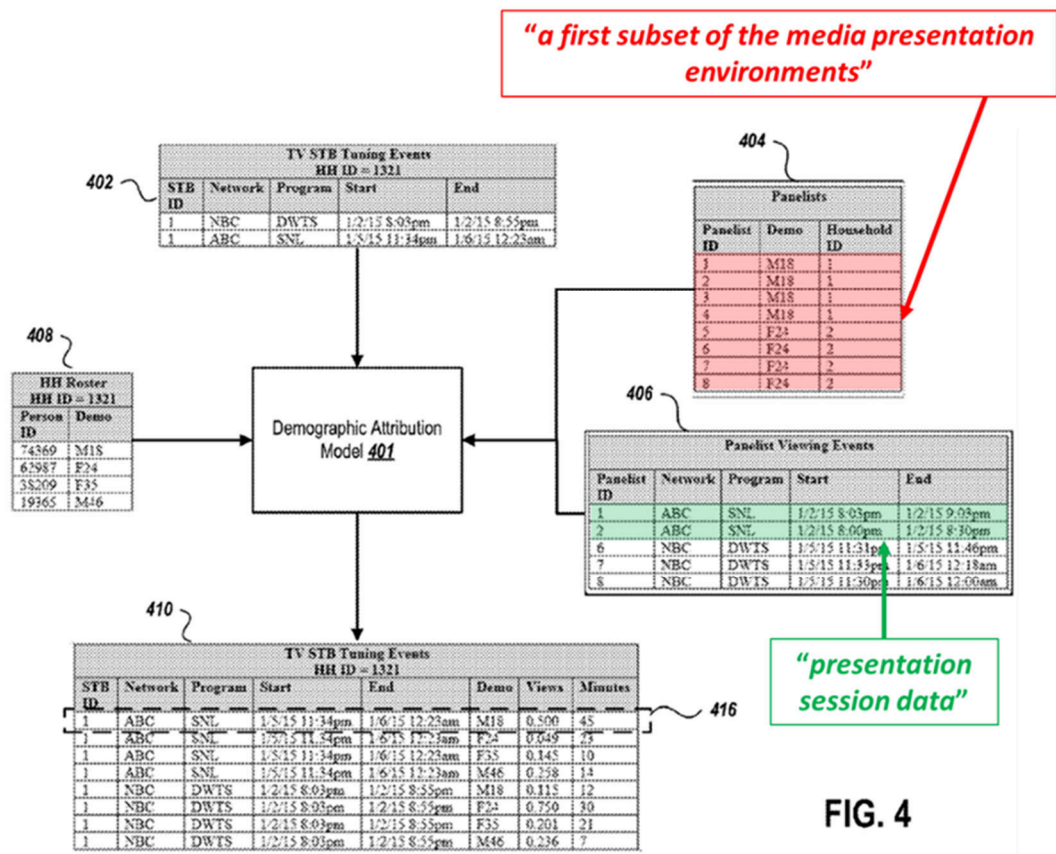
The ’250 patent describes that a “presentation session” can be “a number of minutes a household media presentation device was used (e.g., consumed) by a household panelist member and/or a visitor,” and that “*presentation session data*” can be “data related to media presented while the media output device 104 is on and a user is present.” VA-1001, 3:59-61, 8:11-12. Accordingly, “*presentation session data*” includes, at least, a duration a television program was consumed by a panelist. *Id.* 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.” VA-1001, 3:19-23; VA-1003, ¶63.

Consistent with the ’250 patent, Pecjak’s panelists can be recruited to obtain panelist viewing data (“***presentation session data***”) obtained from a monitoring device that is indicative of person-level viewing activity for the individual panelists. VA-1005, ¶¶[0002], [0013], [0025]-[0027], [0076], [0078]-[0082], FIGS. 1, 4-5; *see* [1.4]. Additionally, like the ’250 patent, Pecjak describes that demographic information is acquired from panelists. VA-1005, ¶¶[0022], [0024], [0079], FIG. 4. Thus, in some cases, ***presentation session data*** may include information regarding the viewers or panelists (e.g., a demographic or identifier). *Id.* A household that includes a set-top box and has one or more panelists corresponds to “***a first subset of the media presentation environments***”. VA-1005, ¶¶[0022], [0024]; *see* [1.4]. As discussed below, Pecjak uses panelist viewing data to project person-level minutes values for television programs in households with panelists (“***presentation session data is available for a first subset of the media presentation environments***”). VA-1005, ¶¶[0076]-[0092], FIGS. 3-4, 6-7; *see infra* [1.11]; VA-1003, ¶64.

For example, Pecjak’s FIG. 4 depicts a table 404 that is a “roster of panelists” including a number of different households (“Household ID 1” and “2”) (“***a first subset of the media presentation environments***”). VA-1005, ¶[0076],

FIG. 4. Additionally, FIG. 4 depicts a table 406 of “panelist viewing events” that summarize the person-level viewing data associated with each of the panelists (e.g., panelist 1 watched “SNL” on “ABC” from 8:03 PM to 9:03 PM – a total of 60 minutes) (“*presentation session data*”). VA-1005, ¶[0078], FIG. 4; VA-1003, ¶65. As discussed below, this panelist viewing data is used to project viewing data for the tuning events listed in table 402.



VA-1005, FIG. 4.

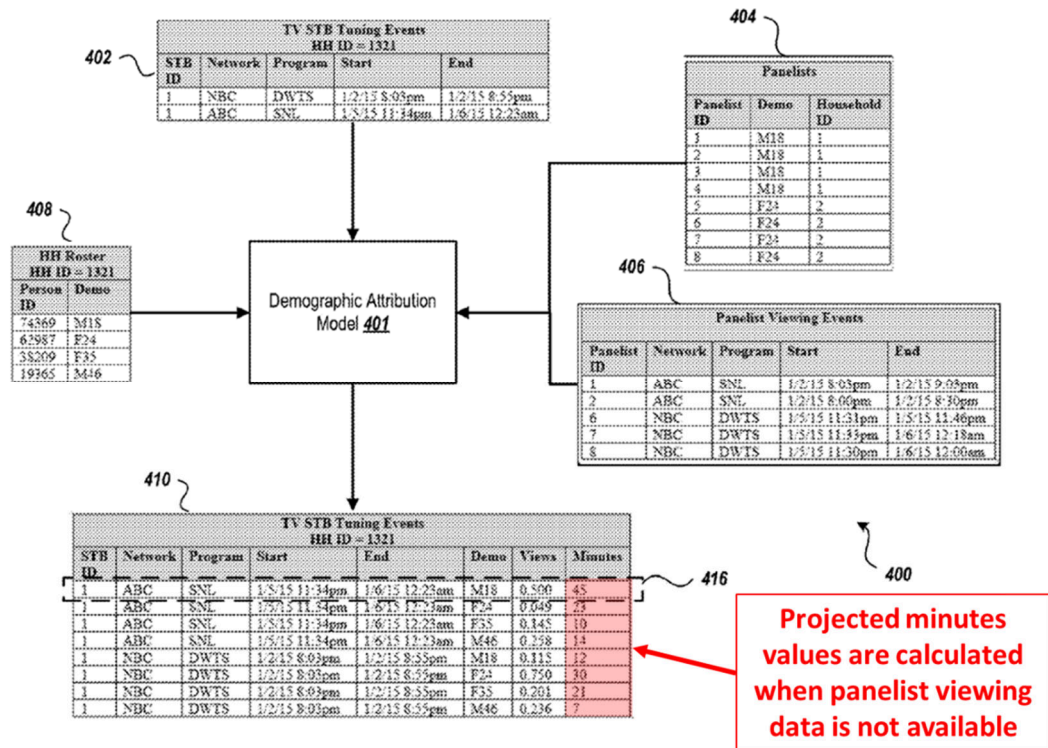
[1.9]

Pecjak teaches that “[v]iewing within particular demographic groups may

also be projected for households where individual member information is not known based on the observed and projected person-level data.” VA-1005, ¶[0019]. Thus, Pecjak discloses households in which individual member information is available, such as panelists in the “*first subset of the media presentation environments*” as explained above in [1.8], and households for which individual member information is not available, e.g., non-panelist households, and projection is performed (“*a second subset of the media presentation environments*”). VA-1003, ¶66; VA-1005, ¶¶[0019], [0025], [0028]. Because panelist viewing data (“*presentation session data*”) is not available for non-panelist households, it would have been obvious to a POSITA that Pecjak teaches or suggests “*presentation session data is not available for a second subset of the media presentation environments*”). *Id.*; VA-1003, ¶66.

For example, table 402 in Pecjak’s FIG. 4 (reproduced below) includes tuning events for a household (described in table 408) that does not have a panelist (“*a second subset of the media presentation environments*”). VA-1004, ¶¶[0076]-[0080], FIG. 4. Per-person “minute values” are projected for each tuning event and for each of the viewers in this household, described in more detail below. *Id.*; *see infra*, [1.12]. These projected minutes values are calculated, at least in part, because panelist viewing data is not available for the household (“*presentation session data is not available for a second subset of*

the media presentation environments”). *Id.*; VA-1003, ¶67.



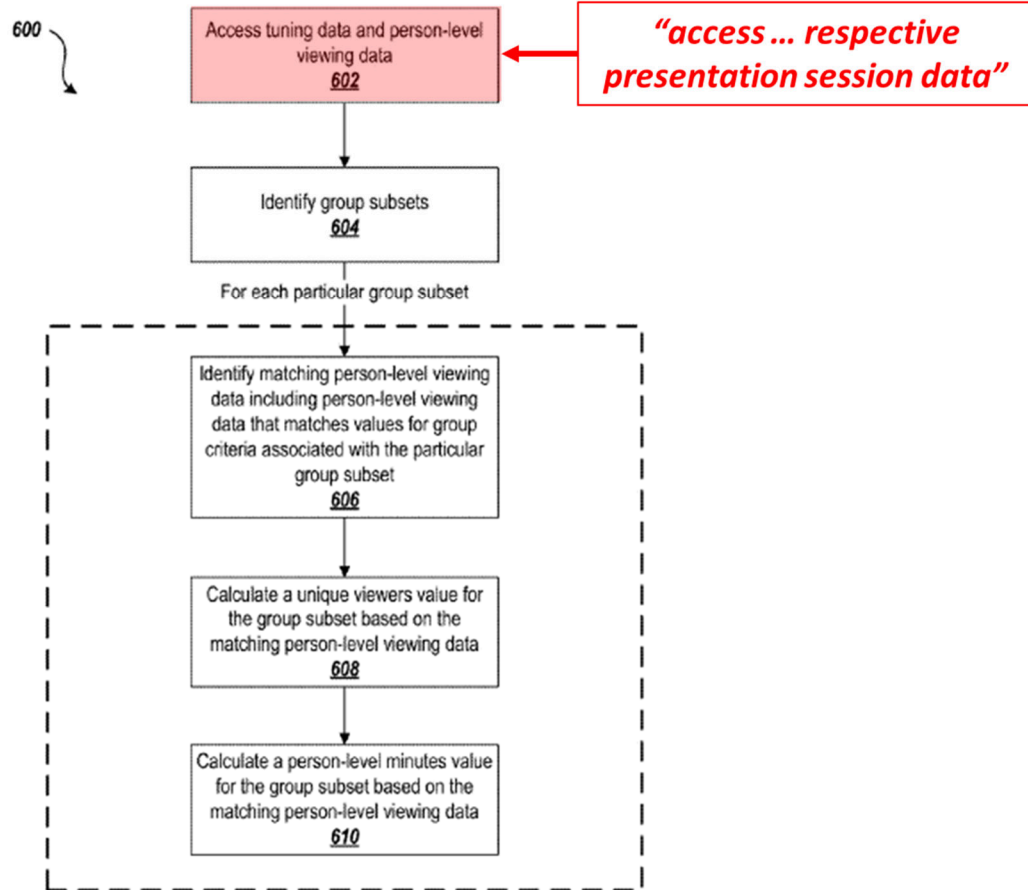
VA-1005, FIG. 4.

[1.10]

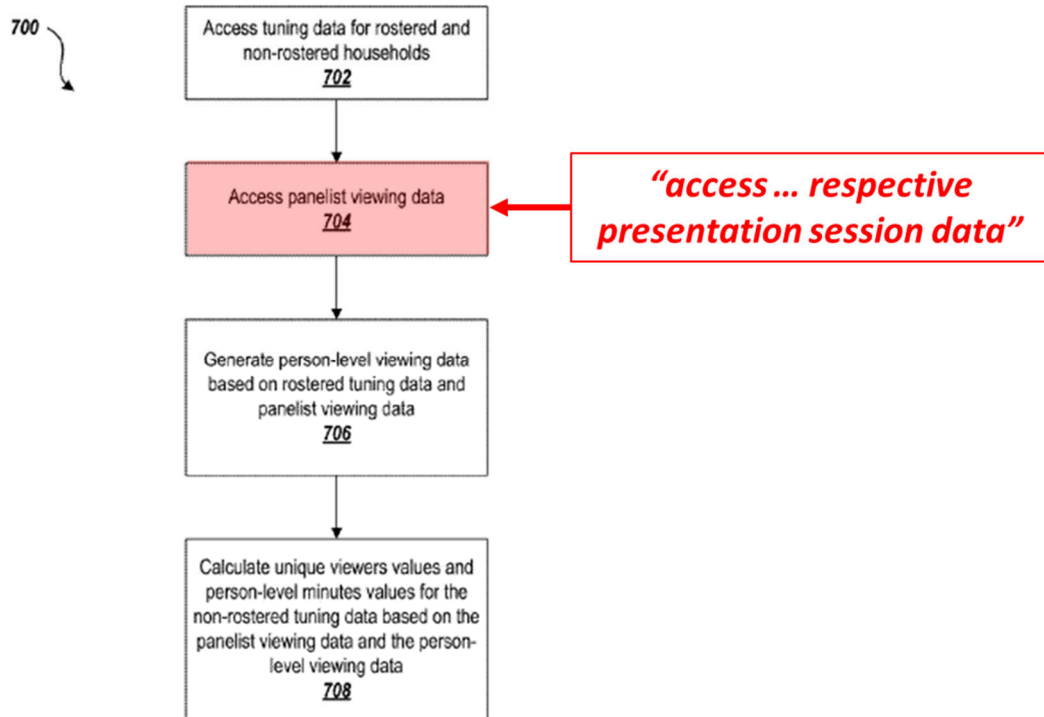
Pecjak teaches that “panelist viewing data” from a panelist household (“*presentation session data*” from “*the first subset of the media presentation environments*”) includes a panelist minutes value that represents “a number of minutes the particular panelist member was exposed to the particular television program” (“*data indicative of a presentation session duration*”), and is “access[ed]” by the measurement data processor (“*access, for ones of the first subset of the media presentation environments, respective presentation session data indicative of a presentation session duration*”). VA-1005, ¶¶[0002],

[0013], [0084], [0096], FIGS. 6-7 (reproduced below). FIG. 6 and 7 below illustrate that Pecjak's techniques include the measurement data processor accessing viewing data from panelists. VA-1005, FIGS. 6-7; VA-1003, ¶68.

As discussed above in [1.8] and [1.9], panelist viewing data includes "person-level viewing activity for the individual panelists," for example, "a television viewing event" that played for a period of time ("***media corresponding to a respective tuning session***" and "***a respective tuning session duration***") where "a particular panelist 130 [watched the] television program for a period of time" ("***a presentation session duration during which media corresponding to a respective tuning session was presented***"). VA-1005, ¶¶[0025]-[0027]; *see* [1.8]-[1.9]; VA-1003, ¶¶69-70. Additionally, as discussed above in [1.3] and [1.5], television programs are presented using a set top box and corresponding television ("***media corresponding to a respective tuning session was presented on the respective at least one media output device by the media presentation device***"). VA-1005, ¶¶[0020]-[0023], [0039]-[0040], [0076]-[0077], FIG. 1; *see* [1.3], [1.5]; VA-1003, ¶¶69-70.



VA-1005, FIG. 6.



VA-1005, FIG. 7.

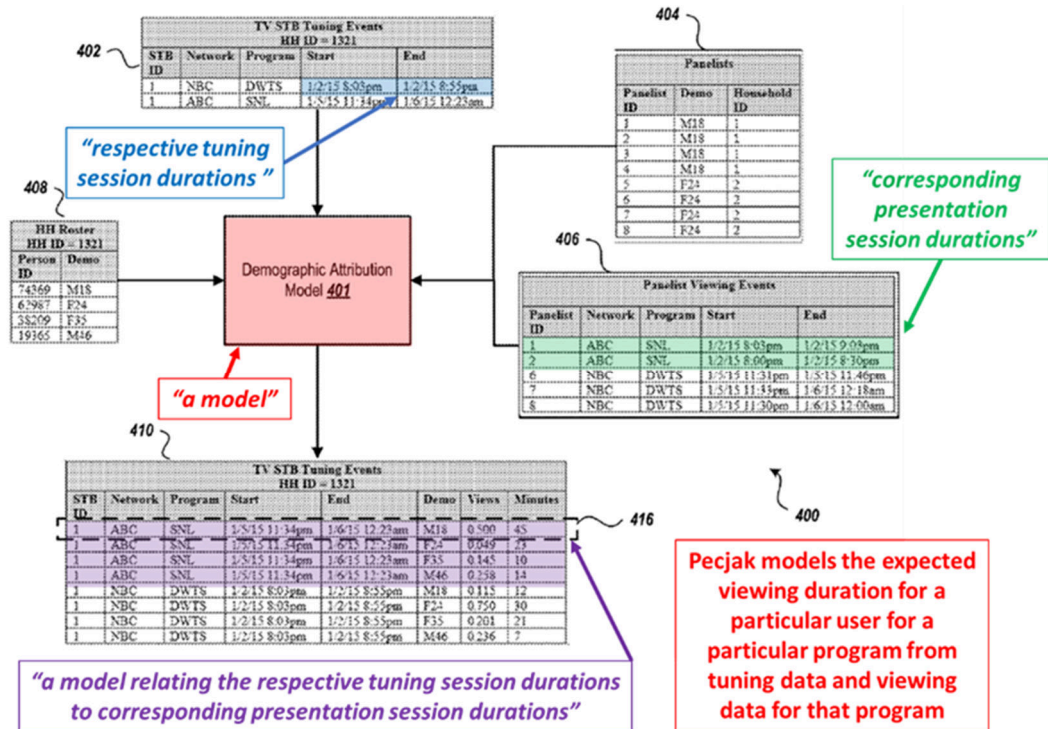
[1.11]

Pecjak teaches that a “demographic attribution model” (“*a model*”) is generated using tuning data and durations (e.g., “a television viewing event occurred on January 2 associated with the show ‘DWTS’” that ran from 8:03 PM to 8:55 PM) (“*respective tuning session durations*”) and viewing data and durations from panelist households (e.g., “Panelist ID 1 watched ‘SNL’ from 8:03 PM until 9:03 PM (60 minutes)”) (“*corresponding presentation session durations from ones of the first subset of the media presentation environments*”) to project “person-level viewership” for the household, including “person-level minutes values” (an expected per-person viewing duration for a non-rostered household) and “member

minutes values” (an expected per-person viewing duration for a rostered household). VA-1005, ¶¶[0076]-[0078], [0097]-[0098], FIG. 4 (reproduced below); VA-1003, ¶71. This operation is performed by the measurement data processor 204, which generates person-level viewing data for tuning events based on “first person level viewing data” (e.g., “Panelist ID 1 watched ‘SNL’ from 8:03 PM until 9:03 PM (60 minutes)”) (“*corresponding presentation session durations from ones of the first subset of the media presentation environments*”) and “rostered tuning data” (e.g., “a television viewing event occurred on January 2 associated with the show ‘DWTS’” that ran from 8:03 PM to 8:55 PM) (“*respective tuning session durations*”). VA-1005, ¶¶[0076]-[0078], [0097]-[0098], FIGS. 4, 7; VA-1003, ¶71.

A POSITA would have found obvious that the demographic attribution model would have “*relat[ed]*” the tuning data and durations (“*respective tuning session durations*”) to viewing data and durations (“*corresponding presentation session durations from ones of the first subset of the media presentation environments*”) as the projected viewing data is generated for a particular tuning event among a plurality of such events. VA-1005, ¶¶[0076]-[0080], FIG. 4; VA-1003, ¶72. For example, in FIG. 4 (reproduced below), Pecjak illustrates two separate programs (“SNL” and “DWTS”) in table 402. *Id.* To determine a projected

value for the SNL program, the demographic attribution model distinguishes viewing data that corresponds to the SNL tuning event (e.g., “panelist IDs 1 and 2 only,” thus, “*relating*” the viewing data from these panelists to the corresponding tuning event, and vice versa). *Id.*; VA-1003, ¶72.



VA-1005, FIG. 4⁵.

[1.12]

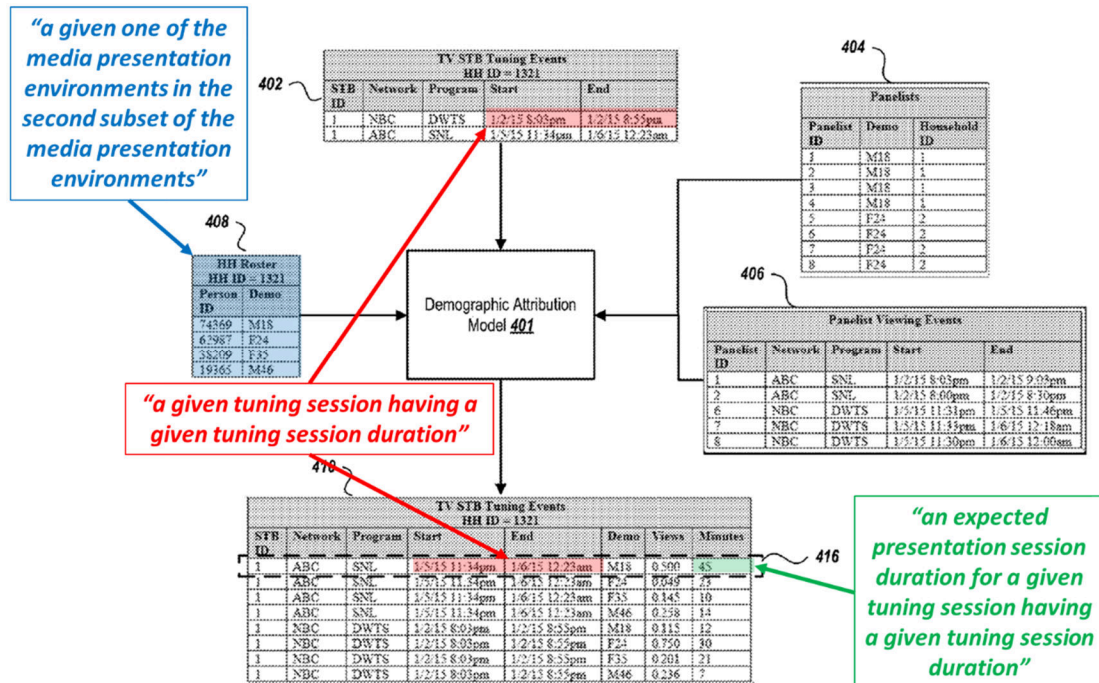
Pecjak teaches that the demographic attribution model and measurement

⁵ Pecjak inadvertently swaps the listed program data in table 406 from what is listed in tables 402 and 410. VA-1005, FIG. 4. The program dates and times from tables 402 and 410 should be referenced with respect to FIG. 4. *Id.*

data processor are used to project person-level viewership (“***based on the model, determine ... an expected presentation session duration***”) for households that do not have panelists (“... ***for a given one of the media presentation environments in the second subset of the media presentation environments***”). VA-1005, ¶¶[0076]-[0080], [0097]-[0098], FIGS. 4, 6-7. The projected person-level viewership for a household that does not have a panelist includes person-level minutes values (an expected per-person viewing duration for a non-rostered household) and member minutes values (an expected per-person viewing duration for a rostered household). Thus, Pecjak teaches “***determining ... an expected presentation session duration for a given tuning session having a given tuning session duration.***” VA-1005, ¶¶[0076]-[0078], [0097]-[0098], FIG. 4; VA-1003, ¶73.

For example, Pecjak discloses an example where a minutes value is projected for an “SNL” program, which ran from 11:34 PM to 12:23 AM for a duration of 49 minutes (“***a given tuning session having a given tuning session duration***”), and an 18-year old male in a household that is not a panelist (“***a given one of the media presentation environments in the second subset of the media presentation environments***”). VA-1005, ¶[0080], FIG. 4. Using the panelist viewing data that corresponds to the 18-year-old male demographic, it is determined that panelist viewing events for “panelist IDs 1 and 2” correspond to that

specific episode of SNL, where panelist ID 1 watched the program for “60 minutes” and panelist ID 2 watched for “30 minutes.” *Id.* Averaging these values yields “an average of 45 minutes,” which is the projected number of minutes the non-panelist 18-year-old male would have been expected to view the program (“determine, for a given one of the media presentation environments in the second subset of the media presentation environments, an expected presentation session duration”). *Id.*; VA-1003, ¶74.



VA-1005, FIG. 4.

[1.13]

Pecjak teaches that the results of its model are provided in “reports” (an “*output*”), and that the results of its techniques can be provided as an “output” generated by “one or more programmable processors executing a computer program”

(e.g., the operations of the “measurement data processor”). VA-1005, ¶¶[0013], [0028]-[0030], [0097]-[0098], FIG. 2. As discussed above, the measurement data processor “generates person-level viewing data for tuning events represented by the rostered tuning data” and “calculates unique viewers values and person-level minutes values for the non-rostered tuning data” (“*the expected presentation session duration for the given tuning session from the given one of the media presentation environments*”). VA-1005, ¶¶[0097]-[0098]; FIG. 7; see [1.12]; VA-1003, ¶75.

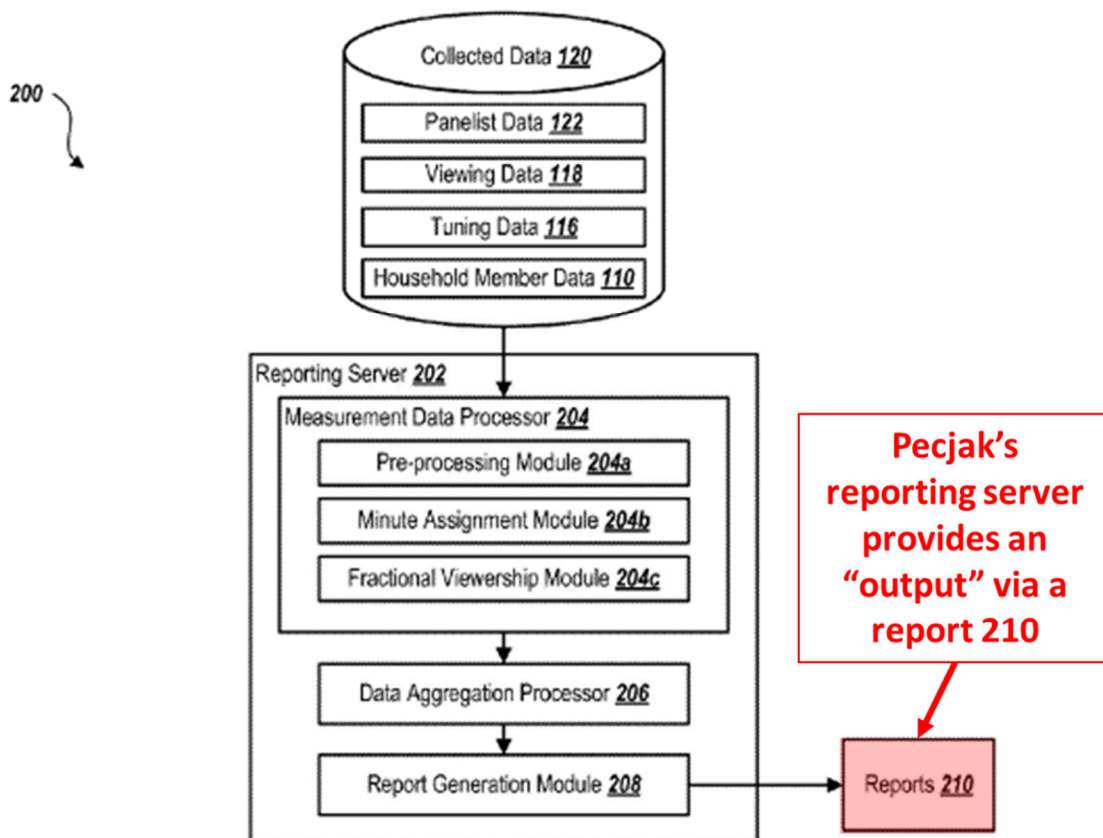


FIG. 2

VA-1005, FIG. 2.

A POSITA also would have found obvious that the projections of Pecjak’s demographic attribution model (“*the expected presentation session duration*”) would have been presented as an “*output*” as this information is reviewed by advertisers and content providers to make advertising and programming decisions. VA-1005, ¶¶[0001], [0013], [0019], [0055]; VA-1006, 1:16-40; VA-1003, ¶76. For example, Pecjak discloses that “[e]stimates of television (TV) viewership may be used by content providers, advertisers, and others to estimate the number of people that viewed a particular television program, advertisement, sporting event, or other content item,” and these estimations would have been based on the projections performed by Pecjak’s techniques. VA-1005, ¶[0013]; VA-1003, ¶76.

[2.1]

To the extent the term “*additional media presentation data*” is accorded any patentable weight⁶, Pecjak and Mirisola render [2.1] obvious. VA-1003, ¶77.

As a preliminary matter and as explained above in [1.3], Pecjak discloses accessing “*tuning session data*” such as “a particular television program

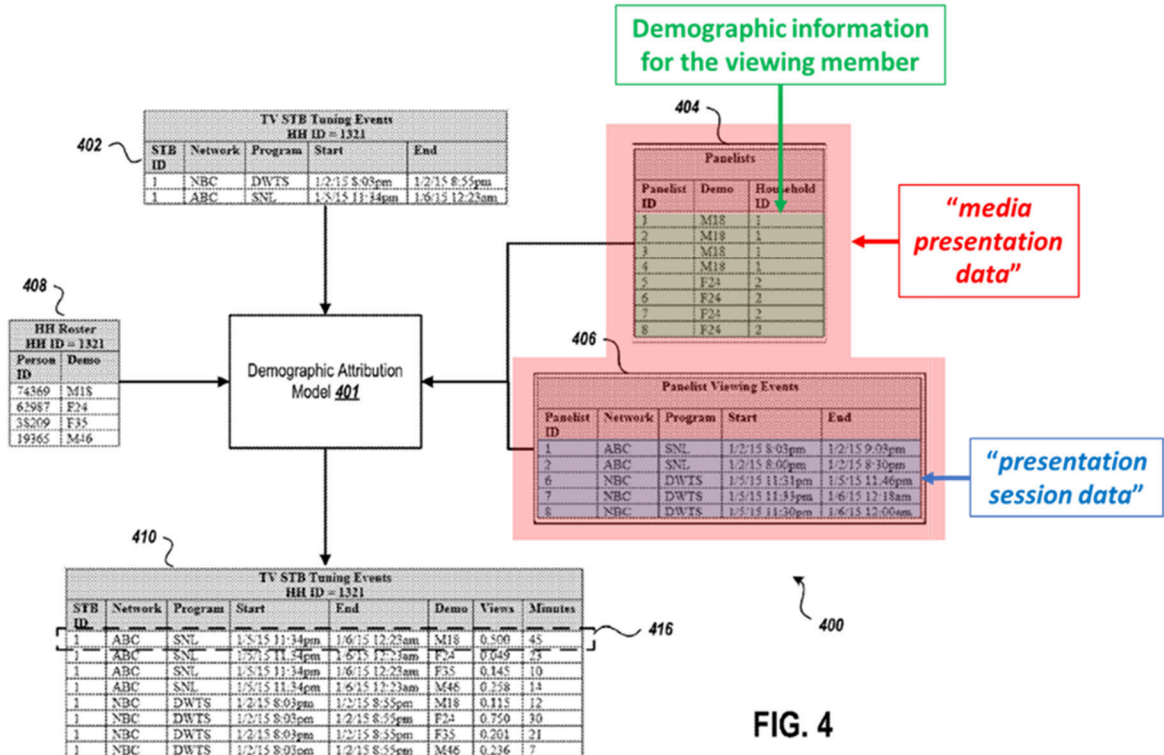
⁶ “Media presentation data” is not recited in claim 1 but claim 2 recites “*additional media presentation data*.”

watched during each viewing event, and a household minutes value representing a number of minutes the particular household watched the particular television program during each viewing event.” VA-1005, ¶[0084]. This data, which includes “*tuning session duration*” data (e.g., household minutes value), is obtained from “*the first subset of the media presentation environments*,” as explained in [1.8] and [1.10]. When such data is collected for multiple programs or additional households, it would have been obvious that Pecjak also teaches accessing “*additional tuning session data ... indicative of additional tuning session durations*.” VA-1003, ¶78.

Moreover, Pecjak discloses that panelist viewing data (“presentation session data” discussed above in [1.8]) and demographic information are associated with panelists (together, “*media presentation data*”) ⁷. VA-1005, ¶¶[0022], [0024], [0037], [0040], [0079], FIG. 4. For example, Pecjak’s FIG. 4 depicts a panelist roster (*see* table 408). VA-1005, ¶[0077]. Each of the panelists is attributed to a demographic (e.g., “M18” for a 18-year-old male). VA-1005, ¶¶[0078]-[0080], FIG. 4. These panelists are also given an “ID” which

⁷ The ’250 patent explains that “media presentation data” can include data indicating, e.g., “which household member is currently consuming a particular media and the demographics of that household member.” VA-1001, 3:15-18, 5:43-45.

corresponds to particular viewing data (e.g., panelist ID 1, an 18-year-old male, watched SNL on ABC from 8:03 PM to 9:03 PM). *Id.* Accordingly, both viewing data and demographic information is available for panelists (“*media presentation data*”). *Id.* Additionally, because the panelist viewing data includes a duration (e.g., SNL on ABC from 8:03 PM to 9:03 PM, 60 minutes), this “*media presentation data*” is “*indicative of ... media presentation session durations.*” *Id.*; VA-1003, ¶79.



VA-1005, FIG. 4.

Pecjak also discloses that multiple instances of “*media presentation data*” are accessed when projecting minutes values (e.g., “Panelist ID 1 watched ‘SNL’ from 8:03 PM until 9:03 PM (60 minutes). Panelist ID 2

watched ‘SNL’ from 8:00 PM until 8:30 PM (30 minutes)”—“**media presentation data**”). VA-1005, ¶¶[0078]-[0080], FIG. 4. VA-1003, ¶80.

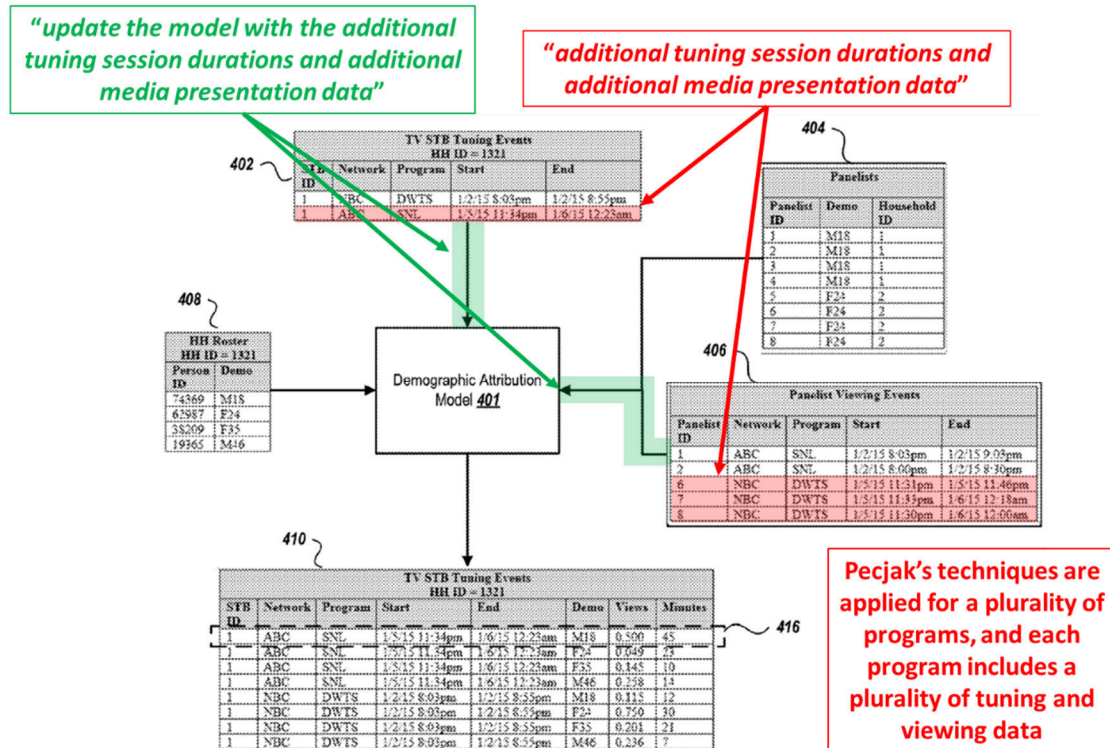
Additionally, as discussed above in [1.10], Pecjak’s measurement data processor (“**the processor circuitry**”) accesses tuning session data and panelist viewing data, and thus would have “**access[ed] ... additional tuning session data and additional media presentation data**” in the same way. VA-1005, ¶¶[0002], [0013], [0084], [0096], FIGS. 6-7; *see* [1.10]; VA-1003, ¶81.

Finally, *In re Harza* held that the mere duplication of parts (e.g., a “**access[ing] ... additional tuning session data and additional media presentation data**”) carries no patentable significance absent some unexpected result. *In re Harza*, 274 F.2d 669, 671 (CCPA 1960). Here, simply accessing “additional” data of any previously recited type, such previous data obtained in the same way, does not produce an unexpected result, and is thus unpatentable on its face. *Id.*

[2.2]

As explained above in [1.11], Pecjak teaches generating a model 401 that relates “**the respective tuning session durations to corresponding presentation session durations.**” *See* [1.11]. To ensure that the model has the latest data to project person-level viewing events, it would have been obvious to a POSITA that as additional tuning session data is collected, such data would have been stored at additional tuning events data, e.g., in table 402. VA-1005, ¶[0078],

FIG. 4; VA-1003, ¶82. It would also have been obvious that the reporting server 202 (“*processing circuitry*”) in the Pecjak-Mirisola system would have *updated* the model with “*additional tuning session data*” for additional programs or additional households with panelists (“*the first subset of the media presentation environments*”). VA-1003, ¶82. For example, as shown in Pecjak’s FIG. 4 below, additional tuning session data from table 402 would have continued to be provided to the model 401. VA-1003, ¶82.



VA-1005, FIG. 4.

FIG. 4 also illustrates that model 401 is *updated* with “*additional media presentation data.*” For instance, as explained above, panelist viewing event and panelist roster information including demographic information (“*additional*

media presentation data”) stored in tables 406 and 408 is provided to model 401. VA-1005, ¶¶[0077]-[0079], FIG. 4. It would have been obvious to a POSITA that as additional program and household information is collected, the model would have been updated with the “*additional media presentation data*” so that the latest data to project person-level viewing events is used. VA-1003, ¶83.

Finally, a POSITA would have found obvious from Pecjak and Mirisola’s general disclosure that the generated model would have been updated continuously with subsequently generated data (“*update the model with the additional tuning session durations and additional media presentation data*”), at least because these systems make their predictions across a wide range of consumers and are continuously accessing tuning and panelist data for a plurality of programs to keep the model and projected results up-to-date. VA-1003, ¶84. For example, Pecjak (1) assigns a four-digit identifier for each of its households, (2) assigns an identifier to each of the STBs within each household, and (3) assigns identifiers to each of its panelists, thus indicating that its techniques are to be used on a large scale. VA-1005, FIGS. 1, 4-5. Further, Pecjak’s discussion of group subsets indicate that its techniques are applied over large geographic areas, for example, “Texas.” VA-1005, ¶¶[0085]-[0092]. With access to such

a large swath of data, a POSITA would have been motivated to continually update the demographic attribution model as new data became available. VA-1005, ¶¶[0085]-[0092], FIGS. 1, 4-5; VA-1006, 1:16-40, 5:33-67 (describing a “content distribution environment” including “108-n” STBs); VA-1003, ¶84.

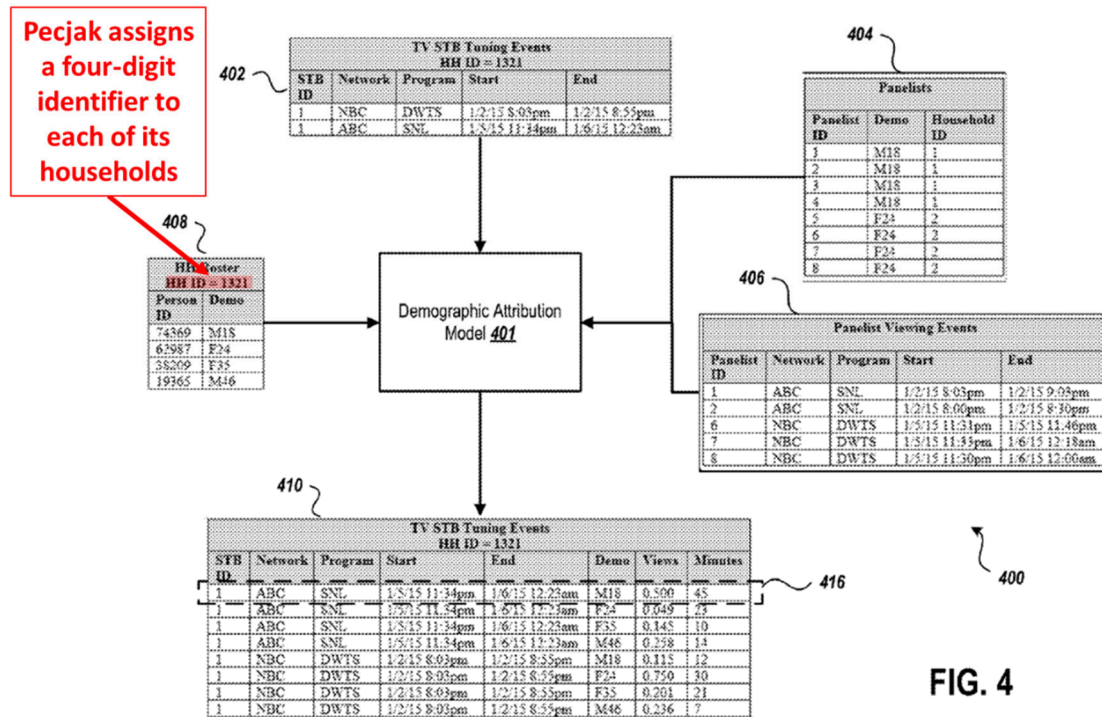


FIG. 4

VA-1005, FIG. 4.

Additionally, *In re Harza* held that the mere duplication of parts (e.g., a “updat[ing] ... the model with the additional tuning session durations”) carries no patentable significance absent some unexpected result. *In re Harza*, 274 F.2d 669, 671 (CCPA 1960). Here, simply updating a previously generated model with “additional” data of the same type previously obtained does not produce an unexpected result, and is thus unpatentable on its face. *Id.*

[3.1]

Claim 3 recites limitations similar to [1.12] and [1.13] and further specifies that the features of claim 3 are performed “*subsequent to determining the expected the presentation session duration ... for the given tuning session having the given tuning session duration.*” As explained below and for reasons similar to those noted above in [1.12], [1.13], and [2], Pecjak and Mirisola render claim 3 obvious. VA-1003, ¶85.

In particular, as noted in [1.9], Pecjak’s system includes households for which individual member information is not known, e.g., non-panelist households, and projection is performed. A household amongst this subset of households for which an earlier projection was not made in [1.12] and [1.13] corresponds to “*another given one of the media presentation environments in the second subset of the media presentation environments.*” VA-1003, ¶86.

It would have been obvious to a POSITA that after generating a model, outputting the expected presentation session duration, accessing additional tuning session data and additional media presentation data, the model in Pecjak-Mirisola system would have been updated with additional tuning session data and additional media presentation data (as explained above in [1.12], [1.13], [2.1], and [2.2]). VA-1003, ¶87.

A POSITA would have also found obvious that the updated model discussed above in [2.1]-[2.2] would have been used to determine “another expected presentation session duration for another given tuning session having another given tuning session duration” so that the latest information is used to provide projections for any household for which a projection was not previously made. VA-1005, ¶¶[0020], [0037], [0055]-[0056]; *see* [2.1]-[2.2]; VA-1003, ¶88. Indeed, as Dr. Williams explains, Pecjak’s techniques were designed to model person-level viewership (“***another expected presentation session duration for another given tuning session having another given tuning session duration***”) across many households, and in order to do so, Pecjak’s demographic attribution model would have been continually applied to various households for various programs (“***determine, for another given one of the media presentation environments in the second subset of the media presentation environments ... based on the updated model***”). VA-1003, ¶88 (citing VA-1016, ¶[0008], describing the benefits of larger sample sizes). For example, Pecjak in FIG. 4 depicts one example household with various members – only one of many possibly demographics across many households. VA-1004, ¶¶[0057], [0067], [0077]-[0080], FIG. 4. Indeed, Pecjak discloses that “viewership reports” are generated for “various demographic groups” and different “demo-

graphic categories” (“*another given one of the media presentation environments in the second subset of the media presentation environments*”). VA-1005, ¶¶[0057], [0067]; VA-1003, ¶88. Further, because Pecjak’s “unique viewers values” represent the “estimated number of individual members in the particular demographic group ... that watched the particular television program,” a POSITA would have found obvious that Pecjak’s techniques would have been applied across many households (including “*another given one of the media presentation environments in the second subset of the media presentation environments*”). VA-1005, ¶¶[0088], [0098]; VA-1016, ¶[0008]; VA-1003, ¶88.

Additionally, as discussed above, the measurement data processor “generates person-level viewing data for tuning events represented by the rostered tuning data” and “calculates unique viewers values and person-level minutes values for the non-rostered tuning data” (“*the processor circuitry is to ...*”). VA-1005, ¶¶[0097]-[0098]; FIG. 7; *see* [1.12], [3.1]; VA-1003, ¶89.

[3.2]

As discussed above in [1.13] and [3.1], Pecjak describes that the results of its model are provided in “reports” (an “*output*”), and that the results of the method steps of its techniques can be provided as an “output” generated by “one or more programmable processors executing a computer program” (e.g., the operations of

the “measurement data processor”). VA-1005, ¶¶[0013], [0030], [0057], [0067], [0097]-[0098], FIG. 2; *see* [1.13], [3.1]. Also, as discussed above, the measurement data processor “generates person-level viewing data for tuning events represented by the rostered tuning data” and “calculates unique viewers values and person-level minutes values for the non-rostered tuning data,” to include the “*other given*” households (“*the other expected presentation session duration for the other given tuning session from the other given one of the media presentation environments*”). VA-1005, ¶¶[0097]-[0098]; FIG. 7; *see* [1.12], [3.1]; VA-1003, ¶90.

Finally, a POSITA would have found obvious from Pecjak and Mirisola’s general disclosure that the generated model would have made subsequent predictions for other households (“*output the other expected presentation session duration for the other given tuning session from the other given one of the media presentation environments*”), at least because these systems make their predictions across a wide range of consumers and are continuously accessing tuning and panelist data for a plurality of programs. VA-1003, ¶91. For example, Pecjak (1) assigns a four-digit identifier for each of its households, (2) assigns an identifier to each of the STBs within each household, and (3) assigns identifiers to each of its panelists, thus indicating that its techniques are to be used for multiple households on a large scale. VA-1005, FIGS. 1, 4-5. Further,

Pecjak’s discussion of group subsets indicate that its techniques are applied over large geographic areas, for example, “Texas.” VA-1005, ¶¶[0085]-[0092]. With access to such a large swath of data, a POSITA would have been motivated to continually make viewership predictions across various households. VA-1005, ¶¶[0085]-[0092], FIGS. 1, 4-5; VA-1006, 1:16-40, 5:33-67 (describing a “content distribution environment” including “108-n” STBs); VA-1003, ¶91.

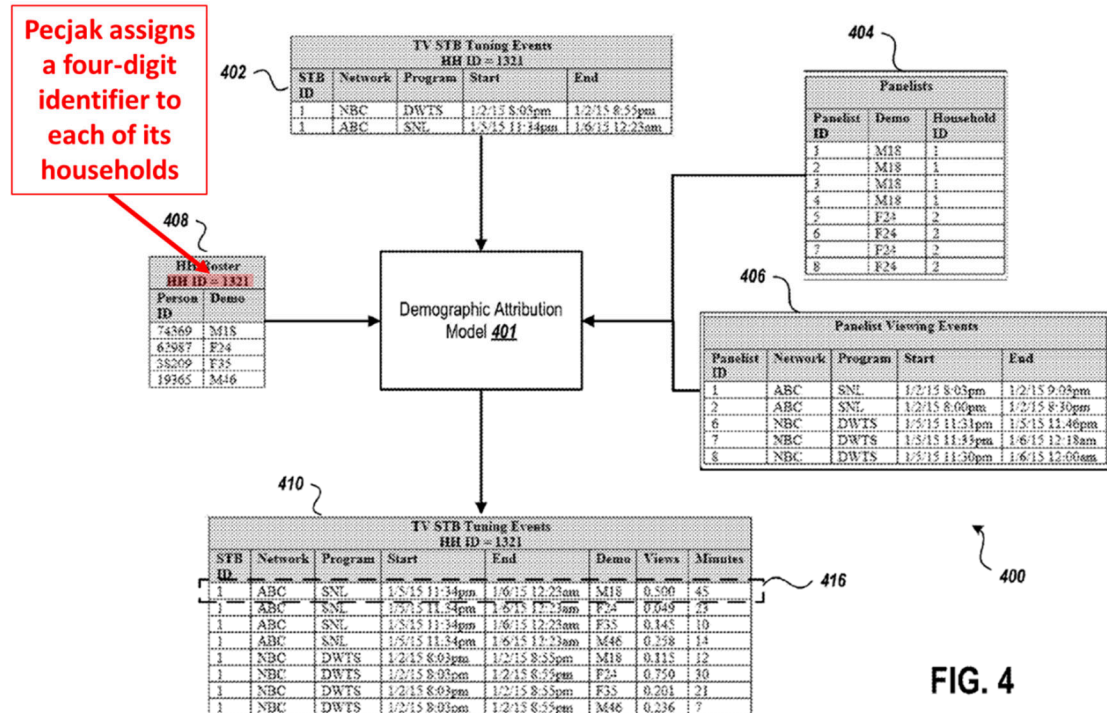


FIG. 4

VA-1005, FIG. 4.

As discussed above in [1.13], a POSITA also would have found obvious that the projections of Pecjak’s demographic attribution model (“*the expected presen-*

tation session duration”) would have been provided as an “*output*” as this information is reviewed by advertisers and content providers to make advertising and programming decisions. VA-1005, ¶¶[0001], [0013], [0019], [0055]; VA-1006, 1:16-40; *see* [1.13]; VA-1003, ¶92. For example, Pecjak discloses that “[e]stimates of television (TV) viewership may be used by content providers, advertisers, and others to estimate the number of people that viewed a particular television program, advertisement, sporting event, or other content item,” and these estimations would have been based on the projections performed by Pecjak’s techniques. VA-1005, ¶[0013]; VA-1003, ¶92.

[4]

Mirisola discloses that tuning data, in the form of power status information, can be filtered to remove noisy information in an effort to establish a “*threshold extent of similarity*,” as explained below. VA-1006, 18:32-51, 23:43-48, FIG. 6A. For example, Mirisola discloses that “intervals of less than 3 minutes in duration may be filtered out and disregarded as noisy” and that intervals can also be filtered out “if any of the intervals for the particular STB is longer than 16 hours.” VA-1006, 18:32-51. In the combination, Mirisola’s filters would have been applied to Pecjak’s “*tuning session durations*,” for example, to remove short tuning sessions indicative of noisy data, and unacceptably long tuning sessions indicative of a lack of interaction. VA-1006, 18:32-51,

23:43-48, FIG. 6A; VA-1005, ¶[0018]; VA-1003, ¶93. In so doing, the remaining tuning session durations that satisfy the filters have “*a threshold extent of similarity of the given tuning session duration*” as these durations have been confirmed to be neither too short, nor too long and within a particular duration, when compared to the “*given tuning session.*” VA-1006, 18:32-51, 23:43-48, FIG. 6A. As Dr. Williams explains, a POSITA would have been motivated to apply Mirisola’s filters to Pecjak’s tuning data because, as Mirisola explains, these filters remove “noisy” and “unreliable” information, thus increasing the accuracy of the model. VA-1006, 18:32-51; VA-1003, ¶93. This is consistent with Pecjak’s disclosure that “[a]dditional techniques to improve accuracy of the projections” can be performed. VA-1005, ¶[0018].

As discussed above in [1.4], panelist households (“*the first subset of the media presentation environments*”) include set top boxes, which report tuning session data and durations (“*tuning session durations*”). VA-1005, ¶¶[0020], [0022], FIG. 1; *see* [1.4]. Additionally, Pecjak discloses that multiple instances of panelist viewing data related to the tuning session (“*multiple ... corresponding ones of the presentation session durations*”) are used to project “*the expected presentation session duration*” (e.g., “panelist IDs 1 and 2” for an episode of “SNL”). VA-1005, ¶¶[0076]-[0080], FIG. 4. As Dr. Williams explains, a POSITA also would have found obvious that “*multiple ones of the*

tuning session durations” would have additionally been accessed from the panelist households, along with the panelist viewing data, as Pecjak discloses that panelist households include a set top box, which reports such tuning session data. VA-1005, ¶¶[0020], [0022], FIG. 1; *see* [1.4]; VA-1003, ¶94.

Additionally, as discussed above in [1.12], Pecjak’s demographic attribution model and measurement data processor (“*the processor circuitry*”) project tuning session durations based on panelist viewing data, and thus would have “*determined] the expected presentation session duration based on multiple ones of the tuning session durations and corresponding ones of the presentation session durations*” in the same way. VA-1005, ¶¶[0076]-[0080], [0097]-[0098], FIGS. 4, 6-7; *see* [1.12]; VA-1003, ¶95.

Finally, requiring gathered tuning session durations to satisfy “*a threshold extent of similarity*” to be used for viewership modeling was known in the art before the Benefit Date, and would have been part of a POSITA’s general knowledge. VA-1018, 24, VA-1003, ¶96. For example, the Media Rating Council (MRC) published guidelines before the Benefit Date for the collection and reporting of tuning data that included setting minimum and maximum values for acceptable instances of tuning session data (thus ensuring tuning session data has “*a threshold extent of similarity*” of falling within acceptable minimum and maximum duration values (both “*thresholds*”)). VA-1018, 24; VA-1003, ¶96.

[5]

As discussed above in [4], Mirisola's filters are based on time (e.g., intervals of less than 3 minutes in duration"), and thus the threshold used to filter tuning data 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.***" VA-1006, 18:32-19:10, 23:43-48, FIGS. 6A, 8; *see* [4]. Because each of the tuning sessions used to project the "***given tuning session duration***" passes through these filters, "***each of the tuning session durations***" used in the projection is "***within a time threshold of the given tuning session duration***" (e.g., a tuning session with a significantly different duration than the given tuning session (e.g., "3 minutes" or "16 hours") would have been filtered out). *Id.*; VA-1003, ¶97.

[6]

Pecjak discloses that, for non-rostered households where exact demographics are unknown, person-level minutes values ("***the expected presentation session duration for the given presentation session***") can be calculated for a particular group subset (e.g., a geographical area such as Texas or New York) and demographic (e.g., "age, gender, race, or income") by approximation using the panelist viewing data. VA-1005, ¶¶[0085]-[0093], FIG. 6. Given that the

composition of any given non-rostered household is unknown, Pecjak approximates a total “unique viewers value” for each demographic (e.g., the total number of unique viewers for the demographic in the total non-rostered households) by estimating “the average number of persons in households represented by the viewing data” for that demographic (e.g., the average number of persons per household from the panelist data). *Id.* For example, Pecjak explains that Texas may have an average number of persons per household of 2.5, indicating a total of 25 members for 10 households, of which 12 are male and 8 are female. VA-1005, ¶[0089]; VA-1003, ¶98.

Using the estimated unique viewers value for the group subset, Pecjak then calculates a person-level minutes value for demographics in the group subset (e.g., matching panelist viewing data for males with the estimated number of males across all non-rostered households). VA-1005, ¶¶[0090]-[0091]. This calculation can include a “co-viewing factor” (a “*weight*”) that factors the amount of co-viewing that occurs in the group subset (e.g., Texas has a co-viewing factor of 1.5, indicating that, on average, 1.5 people watched the program per-household). VA-1005, ¶¶[0018], [0090]-[0092]. Pecjak’s co-viewing factor is determined from viewing data from panelist households (“*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”). VA-1005, ¶[0092]; VA-1003, ¶99.

As an example, if tuning data from a non-rostered household indicates that “SNL” was watched for an average total time of 100 minutes for each household, the total number of minutes per-person accounting for co-viewing, or the *“weighted average of the presentation session durations,”* would be 150 minutes (100 minutes x 1.5 co-viewing = 150 minutes; indicating that multiple people in at least some households watched the program simultaneously—*“the expected presentation session duration for the given presentation session is a weighted average,”* where the average is weighted based on the amount of co-viewing). VA-1005, ¶¶[0090]-[0092]; VA-1003, ¶100.

Additionally, Pecjak determines person-level minutes value for each demographic in the group subset using the estimated unique viewers value for the demographic, an additional *“weight”* (e.g., for 80% male viewership, the total number of minutes watched by any given male would be 120 minutes (150 minutes x 0.8 = 120 minutes) (*“the expected presentation session duration for the given presentation session is a weighted average,”* where the average is weighted based on a demographic). *Id.*; VA-1003, ¶101.

Additionally, as Dr. Williams explains, a *“weighted average”* is a mathematical technique well within the general knowledge and skill of a POSITA and prevalent in the prior art. VA-1005, ¶[0018]; VA-1011, ¶¶[0063]-[0075]; VA-

1012, 6; VA-1017, ¶[0054]; VA-1003, ¶102. For example, Kirillov discloses using a weighted average to calculate “viewer-level reach,” where the weight adjusts the estimation for particular demographics. VA-1011, ¶¶[0063]-[0075]. Wood provides another example, where “viewer usage” (describing set top boxes tuned to a particular program) is modeled with a weighted average. VA-1017, ¶[0054]; VA-1003, ¶102.

[7]

A *prima facie* case of obviousness exists where the claimed ranges or amounts do not overlap with the prior art but are merely close. *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 783, 227 USPQ 773, 779 (Fed. Cir. 1985) (Court held as proper a rejection of a claim directed to an alloy of “having 0.8% nickel, 0.3% molybdenum, up to 0.1% iron, balance titanium” as obvious over a reference disclosing alloys of 0.75% nickel, 0.25% molybdenum, balance titanium and 0.94% nickel, 0.31% molybdenum, balance titanium. “The proportions are so close that *prima facie* one skilled in the art would have expected them to have the same properties.”). *See also Warner-Jenkinson Co., Inc. v. Hilton Davis Chemical Co.*, 520 U.S. 17, 41 USPQ2d 1865 (1997); VA-1003, ¶103.

Here, the claims are obvious because Mirisola discloses a time threshold of three minutes, as explained above in [4]-[6], which is close to 4 minutes. VA-1006, 18:32-51; VA-1014, 6-8; VA-1003, ¶103.

Moreover, the '250 patent assigns no criticality to a time threshold of four minutes. VA-1001, 11:23-33; *Ineos USA LLC v. Berry Plastics Corp.*, 783 F.3d 865, 869 (Fed. Cir. 2015); *Genentech, Inc. v. Hospira, Inc.*, 946 F.3d 1333, 1338 (Fed. Cir. 2020). Indeed, “where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). Here, Pecjak and Mirisola disclose the general conditions of the claimed features. *See, e.g.*, VA-1005, ¶¶[0076]-[0080]; FIG. 4; VA-1006, 5:19-23, 6:52-7:22, FIG. 1, FIG. 2A. For example, Pecjak and Mirisola are analogous art to the '250 patent, as explained above in Section III.A.3. Like the '250 patent claims, Pecjak and Mirisola describe a computer system with set top boxes, televisions, and recording of tuning data that models viewership for certain households with relevant viewership data obtained from other households). *Id.* Moreover, for the reasons described herein, Pecjak and Mirisola render the features of this claim and any claims depending therefrom obvious, which is further evidence that the general conditions of the claims are disclosed. VA-1003, ¶104.

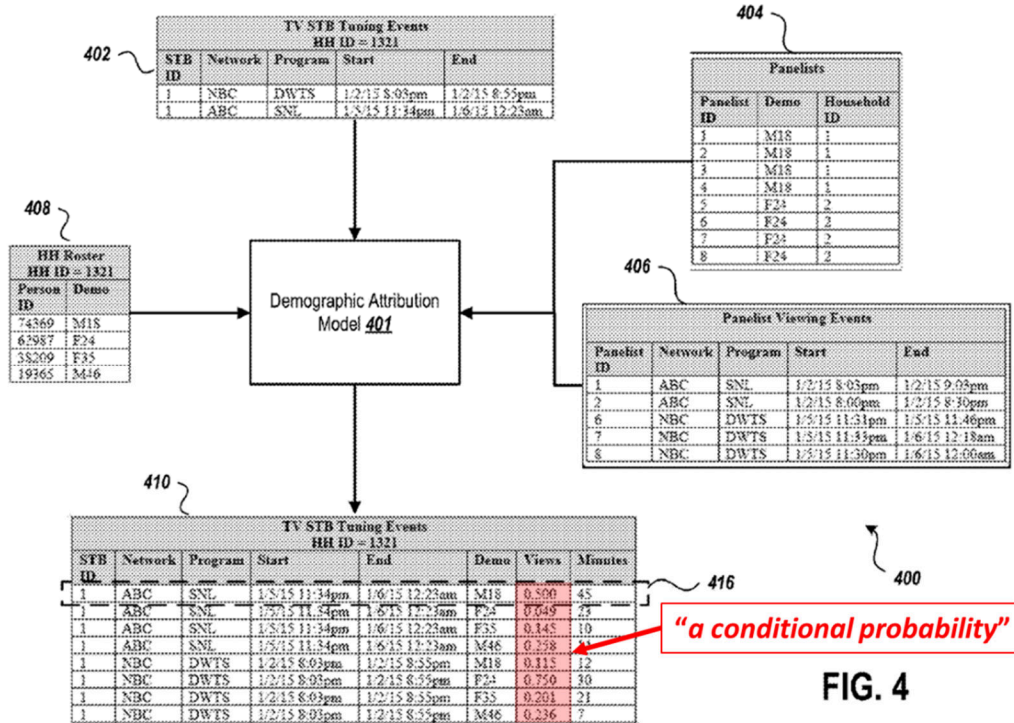
The '250 patent provides one example of a threshold range being 4 minutes, a second example of the threshold range being 5 minutes, and also explains that “the minimum threshold range *may be set and/or adjusted by a user*

and/or an administrator.” VA-1001, 11:23-33, 16:11-41. Thus, in contrast to describing the claimed range as being critical, the ’250 patent describes the claimed range as merely being a product of routine experimentation well within the capabilities of a POSITA. VA-1003, ¶105. For at least these reasons, [7] is obvious in view of Pecjak and Mirisola.

[8]

Pecjak discloses that each projected level viewing event (“*the expected presentation session duration for the given presentation session*”) can include a “fractional viewership value” (“*a conditional probability*”) that represents the probability for a condition that a particular viewer watched the program. VA-1005, ¶[0079], FIG. 4. For example, for 4 panelists of same demographic (e.g., “18-year old male”), if only 2 of those panelists watched the program, the fractional viewership value would be 50% (“*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*”). VA-1005, ¶[0079], FIG. 4; VA-1003, ¶106.

Pecjak’s FIG. 4 illustrates example fractional viewership values that have been calculated for an example rostered household. *Id.*



VA-1005, FIG. 4.

[11.pre]

Pecjak discloses that its techniques are embodied as a “computer program product” or “instructions” (“*instructions to cause processor circuitry to ...*”) stored in a “machine-readable storage medium” (“*non-transitory computer-readable medium*”). VA-1005, ¶¶[0005], [0029]-[0030], [0100], FIG. 2. As explained above in [1.pre]-[1.2], Pecjak further discloses that its instructions are executed by a “data processing apparatus” or “one or more processors” as part of “digital electronic circuitry” (“*processor circuitry*”) e.g., in the reporting server 202. VA-1005, ¶¶[0005], [0029]-[0030], [0100]-[0102], FIG. 2; *see supra* [1.pre]-[1.2]; VA-1003, ¶107.

[11.1]-[13.2]

These limitations are obvious as explained above for the corresponding limitations listed in the following table. VA-1003, ¶108.

Claim	Corresponding Claim
11.1	1.3
11.2	1.4
11.3	1.5
11.4	1.6
11.5	1.7
11.6	1.8
11.7	1.9
11.8	1.10
11.9	1.11
11.10	1.12
11.11	1.13
12.1	4
12.2	5
12.3	6
13.1	4
13.2	8

[15.pre]

Pecjak-Mirisola render [15.pre] obvious for at least the same reasons in [1.pre]. VA-1005, ¶¶[0005]-[0007], [0010], [0020], [0029]-[0030], [0081], FIGS. 1-2, 5; *see* [1.pre]; VA-1003, ¶109.

[15.1]

See [1.2]. VA-1003, ¶110.

[15.2]

See [1.pre]-[1.2], [11.pre]. VA-1003, ¶111.

[15.3]-[15.7]

Limitations [15.3]-[15.7] recite features similar to limitations [1.3]-[1.7] but replace the term “media presentation devices” with “set-top boxes.” In the mapping of features [1.3]-[1.7], Petitioner already mapped the “media presentation devices” to “set-top boxes.” Accordingly, for at last the reasons noted above in [1.3]-[1.7], Pecjak and Mirisola render obvious [15.3]-[15.7]. VA-1003, ¶112.

[15.8]

Pecjak teaches that “the tuning data may include ... data about when the set top box 112 was on or off.” VA-1005, ¶¶[0020]-[0021], FIGS. 1, 5. A POSITA would have understood that data that indicates *when* a particular set top box was on or off would also provide “*on/off durations [that] are available for a first subset of the media presentation environments*” at least because the on or off times provide an indication of the duration of when a set top box was on or off in a particular panelist household or room (“*a first subset of the media presentation environment*”). VA-1003, ¶113.

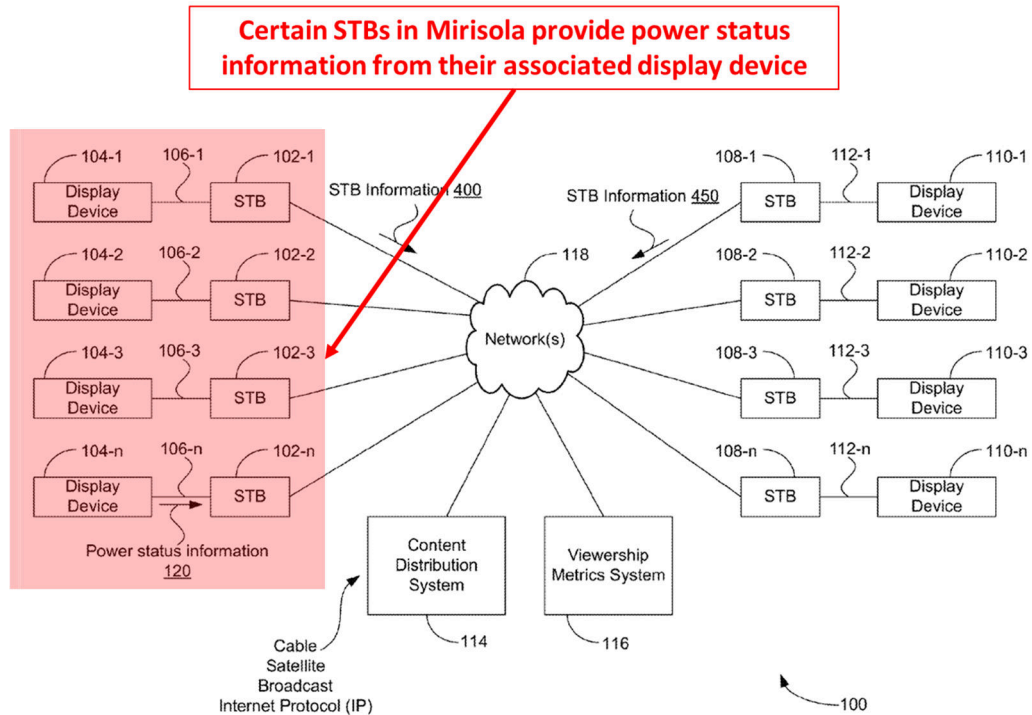
To the extent Patent Owner alleges that Pecjak does not render obvious [15.8], Pecjak and Mirisola also render [15.8] obvious. VA-1003, ¶114.

Mirisola discloses that a set-top box with an HDMI connection to a display device “collect[s] power status information 120 for the display device 104” (e.g., a television) along with “power status information for the STB 102.” VA-1006, 5:61-62; 6:52-7:22, 8:16-32, FIGS. 1, 2A. Mirisola explains that power status indicates time intervals during which the respective device is powered on and time intervals during which the respective device is powered off (“*on/off durations*”). VA-1006, 6:52-7:22, 13:1-14:62, 5:61-62, 8:16-32, FIGS. 1, 2A. Mirisola’s system “derive[s] the pertinent intervals from the chronological sequences of these events along respective timelines” (e.g., an interval representing when the STB was powered on and subsequently powered off). VA-1006, 12:40-61, FIG. 10; VA-1003, ¶115.

In the Pecjak-Mirisola combination, interactions with the set-top box (including turning the set-top box or television on and off) would have been captured by the set-top box and would have indicated “time intervals” that correspond to tuning sessions (“*on/off durations are available*”). VA-1005, ¶[0020]; VA-1006, 5:61-62; 6:52-7:22, FIGS. 1, 2A; *see* §III.A.3; VA-1003, ¶116.

Additionally, Mirisola explains that some set-top boxes “do not collect power status information for the display devices 110” (e.g., a set-top box with non-HDMI connection to a television). VA-1006, 8:33-54. Accordingly, a

POSITA would have understood that some of the STBs in the Pecjak-Mirisola system (a graphic illustrative example is shown below using Mirisola's FIG. 1) would have an HDMI connection and other set-top boxes would not. VA-1003, ¶117. Thus, on/off durations would have been available for households or rooms with a set-top box with an HDMI connection to a display device, which include the panelists' households or rooms (*"for a first subset of the media presentation environments"*). VA-1003, ¶117.



VA-1006, FIG. 1.

[15.9]

As discussed above in [15.8], Mirisola explains that some set-top boxes “do not collect power status information for the display devices 110” (e.g., a

set-top box with non-HDMI connection to a television) (“*on/off durations are not available*”). VA-1006, 8:33-54. Accordingly, on/off durations would not have been available for households with a set-top box with no HDMI connection to a display device, or a suitable alternative (“*for a second subset of the media presentation environments*”). VA-1003, ¶118.

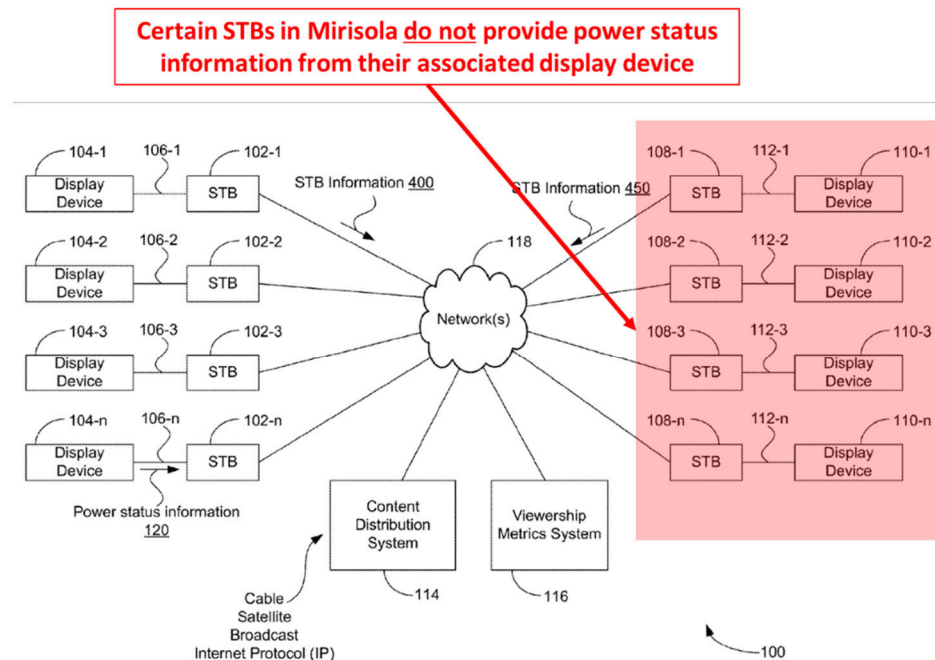


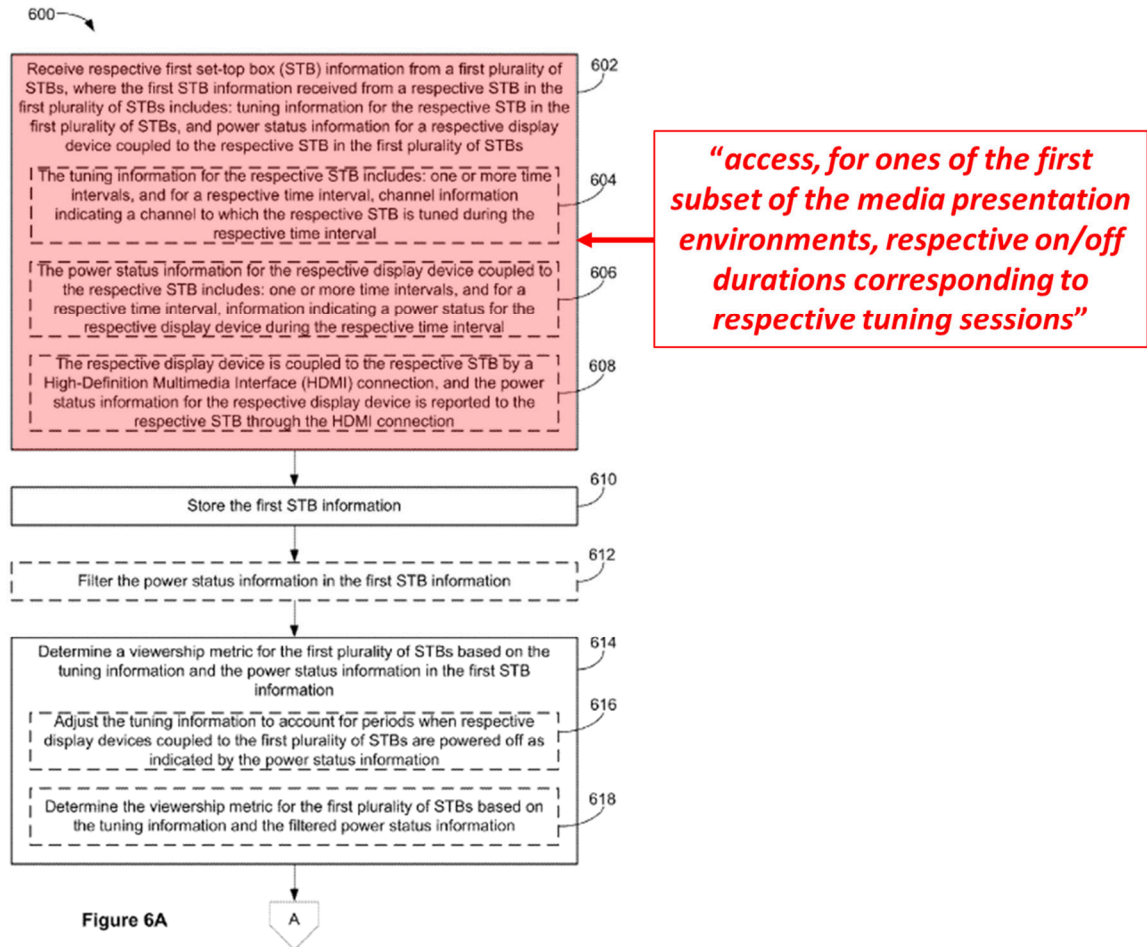
Figure 1

VA-1006, FIG. 1.

[15.10]

Like Pecjak, Mirisola discloses that, when estimating viewership for households without on/off data, the process begins with “receiv[ing] respective first set-top box (STB) information from a first plurality of STBs” (“*access, for ones of the first subset of the media presentation environments, respective on/off durations*”) including “tuning information for the respective STB in the

first plurality of STBs” (including a “time interval”) (“*corresponding to respective tuning sessions*”) and “power status information for a respective display device coupled to the respective STB” (also indicating a “time interval”). VA-1006, 19:60-20:11, 20:43-52, FIGS. 6A (reproduced below), 6B; VA-1005, ¶¶[0020]-[0021]. As discussed above in [15.8], power status information includes data indicative of time intervals during which the respective device is powered on and time intervals during which the respective device is powered off (“*the on/off duration indicative of an amount of time that the respective television was turned on during the respective tuning session*”). VA-1006, 5:61-62; 6:52-7:22, 8:16-32, FIGS. 1, 2A; VA-1003, ¶119.

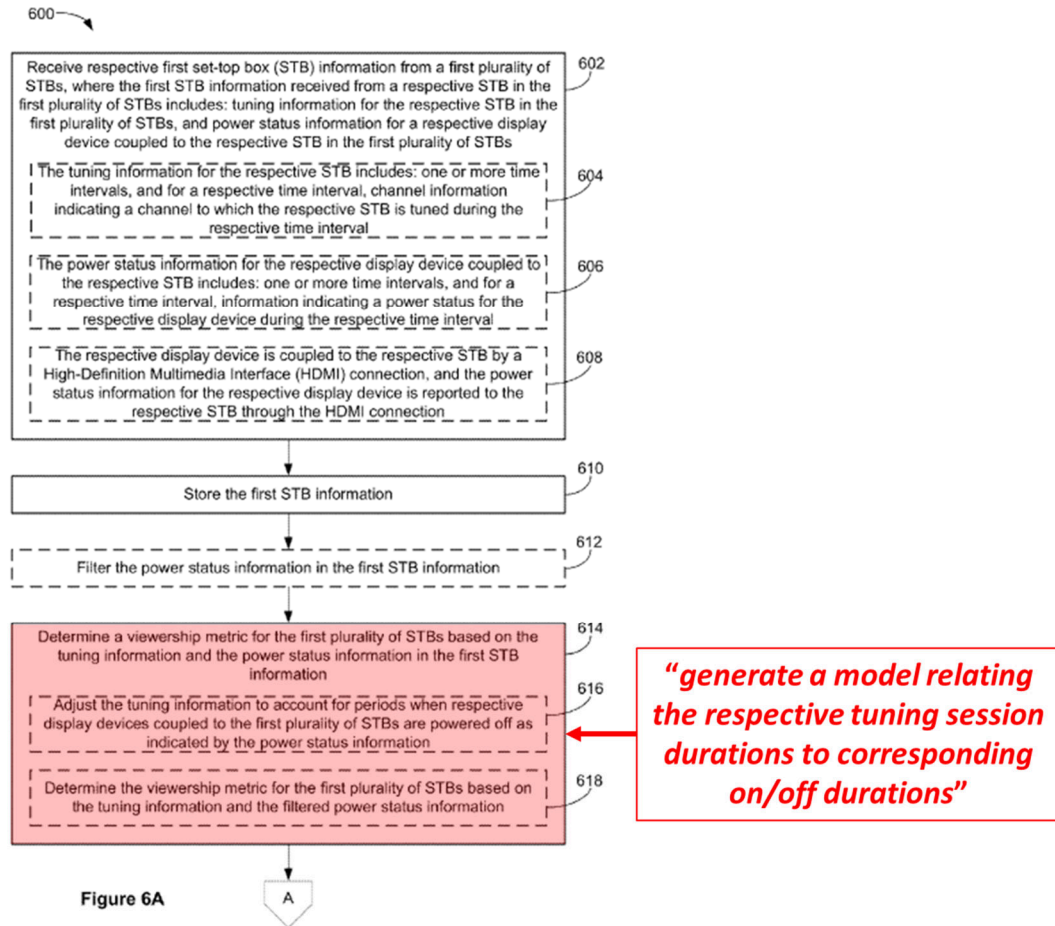


VA-1006, FIG. 6A.

[15.11]

As explained above in [1.11], Pecjak discloses “*generating ... a model.*” VA-1005, ¶¶[0076]-[0078], [0097]-[0098], FIG. 4; *see* [1.11]. The model uses tuning session duration information as taught by the Pecjak-Mirisola combination. *Id.* For example, Mirisola teaches “determin[ing] a viewership metric for the first plurality of STBs based on the tuning information and the power status information in the first STB information.” VA-1006, 20:15-26, FIGS. 6A-6B.

This includes “adjusting the tuning information to account for periods when respective display devices coupled to the first plurality of STBs are powered off as indicated by the power status information.” *Id.*; VA-1003, ¶120. Mirisola discloses a “tuning information adjusting module for adjusting raw tuning information using power status information of display devices” (“*relating the respective tuning session durations to corresponding on/off durations from the ones of the first subset of the media presentation environments*”), and as discussed above, in the combination the tuning information adjustment module would have been used to adjust Pecjak’s tuning data to account for display device power status information (thereby incorporating Mirisola’s techniques into Pecjak’s generated “*model*”). VA-1006, 11:45-52, 14:62-16:31, FIG. 5; *see* §III.A.3; VA-1003, ¶120.



VA-1006, FIG. 6A.

[15.12]

Mirisola's system also "receives respective second STB information from a second plurality of STBs distinct from the first plurality of STBs" which "does not include power status information for a respective display device coupled to the respective STB" (*"a given one of the media presentation environments in the second subset of the media presentation environments"*). VA-1006, 21:14-25; FIGS. 6A-6B; VA-1003, ¶121.

Using both the first and second STB information, Mirisola's system "determines a viewership metric for a second plurality of STBs based on the tuning information included in the second STB information (630)" (*"for a given tuning session having a given tuning session duration"*), and "determines an adjusted viewership metric for the second plurality of STBs based at least on the power status information received from the first plurality of STBs" (*"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"*). VA-1006, 21:26-40; VA-1003, ¶122.

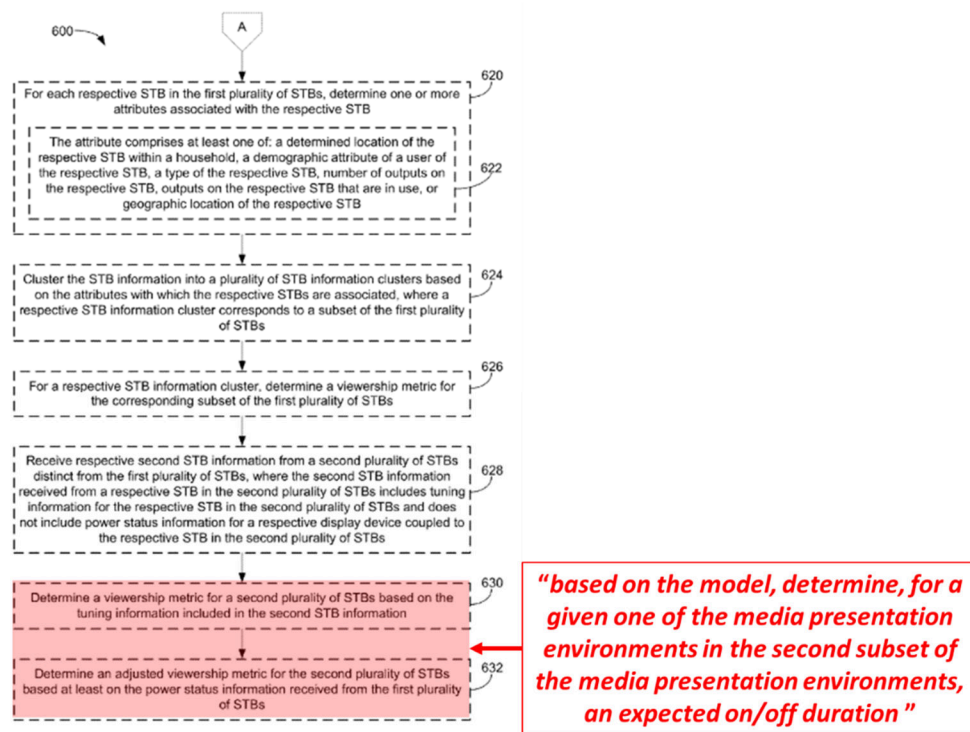


Figure 6B

VA-1006, FIG. 6B.

Additionally, as discussed above, these steps would have been “embodied as “instructions” stored in a “machine-readable storage medium” (*“computer-readable medium including instructions to cause the processor circuitry to at least ...”*). VA-1005, ¶¶[0005], [0029]-[0030], [0100], FIG. 2; VA-1006, 19:62-67; *see* [15.10]; VA-1003, ¶123.

[15.13]

Results from Pecjak’s model are output as “reports” that are generated by “one or more programmable processors executing a computer program” (e.g., the operations of the “measurement data processor”). VA-1005, ¶¶[0013], [0030], [0097]-[0098], FIG. 2; *see also* [1.13]. As discussed above, the above steps would have been “embodied as “instructions” stored in a “machine-readable storage medium” (*“computer-readable medium including instructions to cause the processor circuitry to at least ...”*), the results of which would have been presented for review in a “report” (*“cause presentation of the expected on/off duration for the given tuning session from the given one of the media presentation environments”*). VA-1005, ¶¶[0005], [0029]-[0030], [0100], FIG. 2; VA-1006, 19:62-67; *see* [15.10]; VA-1003, ¶124.

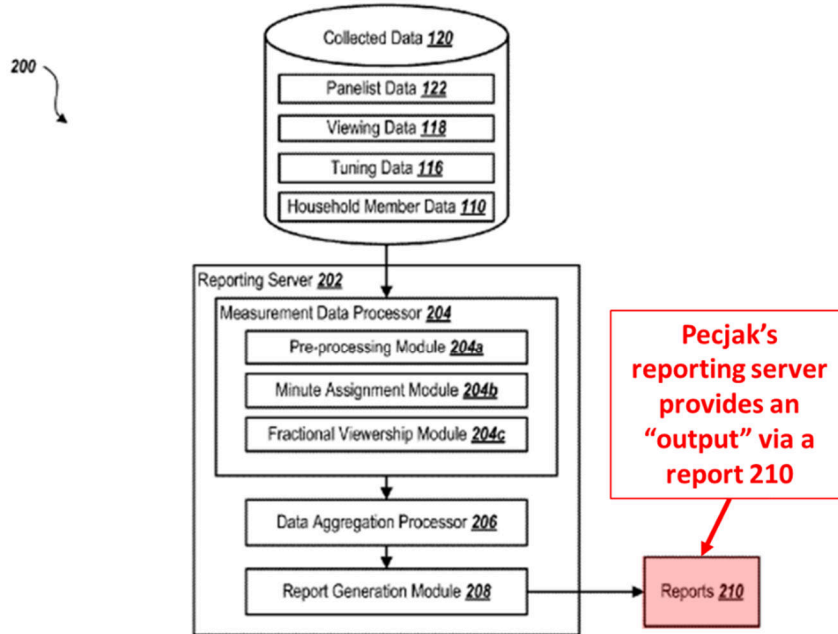


FIG. 2

VA-1005, FIG. 2.

[16.1]

The Pecjak-Mirisola combination would have accessed additional “*on/off durations*” similar to the additional “media presentation data” as discussed above in [2.1]. See [2.1]; VA-1003, ¶125.

[16.2]

The Pecjak-Mirisola combination would have updated its model with additional “*on/off durations*” similar to the additional “media presentation data” as discussed above in [2.2]. See [2.2]; VA-1003, ¶126.

[17.1]

The Pecjak-Mirisola combination would have determined another expected “*on/off duration*” for another household similar to the additional “expected

presentation session duration” as discussed above in [3.1]. *See* [3.1]. VA-1003, ¶127.

[17.2]

The Pecjak-Mirisola combination would have output the expected “*on/off duration*” for another household similar to the additional “expected presentation session duration” as discussed above in [3.2]. *See* [3.2]; VA-1003, ¶128.

[18]

Mirisola discloses that on/off predictions are made from “*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*” (e.g., a sample of “80 unique set top boxes”). VA-1006, 17:65-18:16, FIG. 1. Additionally, as discussed above in [4], Mirisola discloses that tuning data, in the form of power status information, can be “filtered” to remove “noisy information” (thus enforcing a “*threshold extent of similarity*”). VA-1006, 18:32-51, 23:43-48, FIG. 6A; *see* [4]; VA-1003, ¶129.

[19]

See [5]. VA-1003, ¶130.

[20]

As discussed above in [6], a “*weighted average*” is a mathematical technique well within the general knowledge and skill of a POSITA and prevalent in the prior art. VA-1005, ¶[0018]; VA-1011, ¶¶[0063]-[0075]; VA-1012, 6;

see [6]; VA-1003, ¶131. Accordingly, a POSITA would have found obvious that an “*expected on/off duration*” would have been calculated as 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.*” VA-1003, ¶131.

[21]

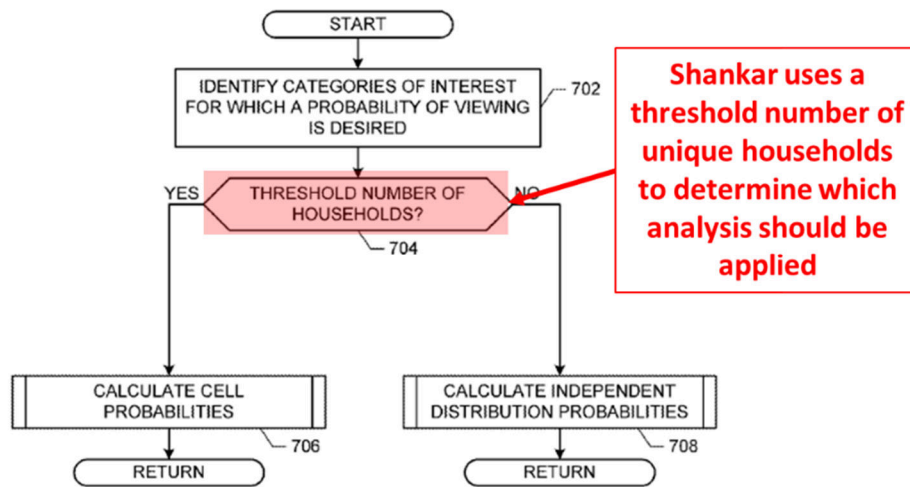
The Pecjak-Mirisola combination would have determined “*a conditional probability of the on/off durations*” similar to the conditional probability of the “expected presentation session duration” as discussed above in [8]. See [8]; VA-1003, ¶132.

B. [GROUND 1B] – Claims 9-10, 14, and 22-23 are rendered obvious by Pecjak and Mirisola (with or without Shankar)

1. Shankar

Shankar discloses methods for calculating television “exposure” probabilities where a “threshold value” is used to determine which type of analysis should be applied. VA-1013, 10:52-11:11, 20:17-28, 20:45-64, 27:34-44, FIGS. 7, 15. Shankar discloses that “probability value accuracy may be improved when different probability calculation techniques are applied in view of corresponding available sample sizes,” and that a cell probability technique is preferred when the number of households is above the threshold value, as it “yield[s] a probability value with acceptable accuracy” (which would otherwise be unacceptable below the

threshold value). VA-1013, 10:52-11:11; VA-1003, ¶33.



VA-1013, FIG. 7.

2. The combination of Pecjak-Mirisola and Shankar

It would have been obvious for a POSITA to combine the teachings of Pecjak-Mirisola and Shankar to use a threshold to qualify data sets of tuning session durations related to viewing data (e.g., setting a threshold sample size for a particular demographic or program). VA-1005, ¶¶[0076]-[0080], [0097]-[0098], FIGS. 4, 6-7; VA-1013, 10:52-11:11, 20:17-28, 20:45-64, 27:34-44, FIGS. 7, 15; VA-1003, ¶133. A POSITA would have been motivated to make this combination for multiple reasons. VA-1003, ¶133.

First, a POSITA would have found obvious that setting a threshold sample size would have improved the accuracy of projections, as corroborated by multiple prior art references. VA-1005, ¶[0018]; VA-1016, ¶[0008]; VA-1014, 6-8; VA-

1003, ¶134. For example, Shankar discloses that larger sample sizes above a threshold allow the use of more accurate probability techniques (e.g., cell probability) that would otherwise have unacceptable accuracy. VA-1013, 10:52-11:11. As another example, Wilson, a publication from *Tutorials in Quantitative Methods for Psychology*, describes different recommended sample sizes and how accuracy improves with sample size (“50 as very poor; 100 as poor, 200 as fair, 300 as good, 500 as very good and 1000 as excellent”). *Id.* Accordingly, a POSITA would have been motivated to take steps to ensure that an adequate amount of data had been collected before attempting to make projections using the collected data. VA-1003, ¶134.

Second, Shankar discloses additional probability techniques that would have enhanced the existing techniques of Pecjak and Mirisola (e.g., cell probability and independent distribution). VA-1013, 10:52-11:11, 12:8-42, 17:8-23, 20:17-28, 20:45-64, 27:34-44, FIGS. 7, 15. For example, Shankar discloses calculating an “average visitor parameter (AVP)” that quantifies the exposure of a television program to a particular demographic, another data point that would have been beneficial to the Pecjak-Mirisola system, which is interested in demographic-specific projections. VA-1013, 24:3-25:13, FIG. 10; VA-1003, ¶135.

A POSITA would also have found the combination of Pecjak-Mirisola and

Shankar obvious and predictable because Pecjak, Mirisola, and Shankar are analogous art, and because incorporating Shankar's techniques into Pecjak-Mirisola would have been nothing more than (1) the application of known techniques (e.g., using a threshold to qualify a sample size) to a known structure (e.g., the Pecjak-Mirisola demographic attribution model) to yield predictable results (e.g., using a threshold to qualify data sets used by the demographic attribution model), and (2) the use of known techniques to improve similar devices (methods, or products) in the same way (applying Shankar's techniques of estimating television viewership to a similar Pecjak-Mirisola system and method). *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007); *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966); VA-1003, ¶136. For instance, one predictable result of incorporating Shankar's teachings into Pecjak-Mirisola's system would have been the improvement in the accuracy of the tuning data, as explained above.

A POSITA would have had a reasonable expectation of success in implementing this combination because all of Pecjak, Mirisola, and Shankar disclose similar techniques used for the same purpose – collecting television viewing data and using this data to model viewership. VA-1005, ¶¶[0020]-[0028], FIGS. 1, 5; VA-1006, 5:19-23, 6:52-7:22, FIG. 1, FIG. 2A; VA-1013, 10:52-11:11, 20:17-28, 20:45-64, 27:34-44, FIGS. 7, 15; VA-1003, ¶137. Indeed, Pecjak invites a POSITA to use additional techniques to improve the accuracy of its techniques,

and as Dr. Williams explains, using thresholds to qualify a sample size for predictions would have been part of a POSITA's general knowledge. VA-1005, ¶[0018]; VA-1014, 6-8; VA-1015, 653, 754; VA-1003, ¶137. Finally, this modification would have involved only routine programming skill well within the capability of a POSITA (e.g., coding machine readable instructions to implement a threshold value of panelist data sets to be executed by Pecjak's reporting server, which is capable of executing such instructions). VA-1005, ¶¶[0029]-[0030]; VA-1003, ¶137.

3. Analysis

[9.1]

As discussed above in Ground 1A, each of Pecjak's households include a set top box that reports tuning data and tuning session durations for the household ("***a number of tuning session durations***"). *See, e.g.*, §III.A.4.[1.6]; VA-1003, ¶139.

Additionally, as discussed above, a POSITA would have found obvious that setting a threshold sample size would have improved the accuracy of projections made by Pecjak-Mirisola model. *See* §III.B.2. For example, Wilson describes different recommended sample sizes (each a "threshold number" of participants) and the associated level of confidence with each (e.g., "50 as very poor; 100 as poor, 200 as fair, 300 as good, 500 as very good and 1000 as excellent"). VA-1014, 6-8; *see also* VA-1015, 653, 754. As an additional example, the Media Rating Council

(MRC) published guidelines before the Benefit Date for the collection and reporting of tuning data that included a “[m]inimum reporting size.” VA-1018, 26; VA-1003, ¶140. Thus, it would have been obvious to a POSITA that the Pecjak-Mirisola system would have used a threshold number of tuning session durations to determine “*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*” to ensure that a reasonable sample size is used to provide accurate projections. VA-1003, ¶140.

A POSITA also would have found obvious that Shankar’s “threshold value” (“*a threshold number*”) would have been beneficial to qualify samples of tuning session durations for particular programs or demographics. VA-1013, 7:26-60, 10:52-11:11, 20:17-28, 20:45-64, 27:34-44, FIGS. 7, 15. For example, Shankar discloses that when “collected [Local People Meter (LPM)] data” (representing “exposure minutes to respective persons within the household” for a “tuning session” (“*corresponding presentation session durations*” each associated with a “*tuning session duration*”)) is above a threshold value, a “cell probability” technique is used, and alternatively, if the LPM data is below the threshold value, an “independent distribution” technique is used (thus ensuring that “*at least a thresh-*

old number of tuning session durations” are related to the collected “*corresponding presentation session durations*”). *Id.* This is because applying an insufficient sample size to the cell probability technique would “yield[] unacceptably low probability value accuracy.” VA-1013, 10:52-11:11; ¶138.

Accordingly, in the combination, the number of related tuning sessions and viewing data from the panelist households would have satisfied a threshold in Pecjak-Mirisola’s model for a projection (“*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*”). VA-1005, ¶¶[0076]-[0080], [0097]-[0098], FIGS. 4, 6-7; VA-1013, 10:52-11:11, 20:17-28, 20:45-64, 27:34-44, FIGS. 7, 15. Indeed, Pecjak invites a POSITA to use additional techniques to improve the accuracy of its techniques, and as Dr. Williams explains, using thresholds to qualify a sample size for predictions would have been part of a POSITA’s general knowledge. VA-1005, ¶[0018]; VA-1014, 6-8; VA-1015, 653, 754; VA-1003, ¶139.

[9.2]

As discussed above in [9.1], after determining the threshold number of related tuning sessions was met (“*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”), a projection of a viewing duration would have been made by the demographic attribution model to generate Pecjak’s table 410, as discussed above in [1.11]-[1.12] (“**determine the expected presentation session duration for the given tuning session having the given tuning session duration based on the model**”). VA-1005, ¶¶[0013], [0030], [0097]-[0098], FIG. 2; *see* [1.11]-[1.12], [9.1]; VA-1003, ¶141. Thus Pecjak and Mirisola, with or without Shankar, render [9.2] obvious. VA-1003, ¶141.

[10]

As discussed above in [9.1], the use of specific threshold values would have been part of a POSITA’s general knowledge, knowledge that included a specific threshold number of five hundred (“**the threshold number is five hundred tuning session durations**”). VA-1014, 6-8; VA-1015, 653, 754; *see* [9.1]-[9.2]; VA-1003, ¶142. Indeed, both *Understanding Power and Rules of Thumb for Determining Sample Sizes* and *Using Multivariate Statistics* disclose a recommended sample size of five hundred. VA-1014, 6-8; VA-1015, 653, 754. Setting a threshold at this value would have provided similar benefits as discussed above in [9.1]-[9.2]. *See* [9.1]-[9.2]; VA-1003, ¶142.

Additionally, there is a presumption of anticipation when the range or values

disclosed in the prior art overlap the claimed range or value. *UCB, Inc. v. Actavis Laboratories UT, Inc.*, 65 F.4th 679 (Fed. Cir. 2023); *Ineos USA LLC v. Berry Plastics Corp.*, 783 F.3d 865, 869 (Fed. Cir. 2015); *ClearValue, Inc. v. Pearl River Polymers, Inc.*, 668 F.3d 1340, 1345 (Fed. Cir. 2012). Here, at least one prior art reference (e.g., *Understanding Power and Rules of Thumb for Determining Sample Sizes*), discloses that sample sizes from 50-1000 are viable, encompassing the claimed value of five hundred. VA-1014, 6-8; VA-1003, ¶143.

Moreover, the '250 patent assigns no criticality to a threshold five hundred tuning session durations, and only describes that the “minimum number of entries may be preset and/or based on user and/or administrator preferences.” VA-1001, 16:11-29. VA-1001, 11:23-33; *Ineos USA LLC v. Berry Plastics Corp.*, 783 F.3d 865, 869 (Fed. Cir. 2015); *Genentech, Inc. v. Hospira, Inc.*, 946 F.3d 1333, 1338 (Fed. Cir. 2020). Indeed, “where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). The '250 patent provides one example of a threshold range being 4 minutes, a second example of the threshold range being 5 minutes, and also explains that “the minimum threshold range *may be set and/or adjusted by a user and/or an administrator.*” VA-1001, 11:23-33,

16:11-41. Thus, the claimed range is not a critical range and is merely a product of routine experimentation well within the capabilities of a POSITA. VA-1003, ¶144. Thus Pecjak and Mirisola, with or without Shankar, render [10] obvious. VA-1003, ¶142..

[14.1]

See [9.1]. VA-1003. ¶145.

[14.2]

See [9.2]. VA-1003. ¶146.

[22.1]

See [9.1]. VA-1003. ¶147.

[22.2]

See [9.2]. VA-1003. ¶148.

[23]

See [10]. VA-1003. ¶149.

IV. DISCRETIONARY DENIAL UNDER §314(a) IS NOT MERITED

As noted below in Section VI.B, the '058 patent is currently the subject of a parallel district court proceeding (hereinafter “the Litigation”). No schedule for the Litigation has been issued. Petitioner has filed a Motion to Dismiss in April 2024 but no decision has been issued for over eight months. Moreover, no actions

involving invalidity contentions, claim construction briefs, expert reports, or any other substantive action have occurred.

In view of the minimal activity and investment in the Litigation and the robust grounds backed up by expert evidence presented in this Petition, *Fintiv* factors 3 and 6 strongly favor institution. *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11, 6 (PTAB Mar. 20, 2020)(precedential)(“*Fintiv*”). Because no prior art invalidity contentions have currently been advanced in the Litigation, *Fintiv* factor 4 favors institution. Moreover, because no case schedule has been issued and the median time to trial is over 1,000 days for the District Court of Delaware and over 1,100 days for the presiding judge, J. Richard Andrews, *Fintiv* factor 2 also strongly favors institution. VA-1019, 2, 5. Lastly, while none of the parties have requested a stay, Petitioner reserves the right to file a stay pending IPR after this IPR is filed or instituted. Thus, *Fintiv* factor 1 also favors institution or is neutral at worst.

V. CONCLUSION AND FEES

The Challenged Claims are unpatentable. Petitioner authorizes charge of fees to Deposit Account No. 06-1050.

VI. MANDATORY NOTICES

A. Real Party-In-Interest Under 37 C.F.R. § 42.8(b)(1)

Petitioner, VideoAmp, Inc. is the real party-in-interest.

B. Related Matters Under 37 C.F.R. § 42.8(b)(2)

Petitioner is not aware of any disclaimers, reexamination certificates or petitions for inter partes review for the '250 Patent. The '250 patent is the subject of a civil action (*The Nielsen Company (US) LLC, v. VideoAmp, Inc.* (DDE-1-24-cv-00123-1).

C. Lead And Back-Up Counsel Under 37 C.F.R. § 42.8(b)(3)

Petitioner provides the following designation of counsel.

Lead Counsel	Backup Counsel
Usman A. Khan, Reg. No. 70,439 Fish & Richardson P.C. 60 South Sixth Street, Suite 3200 Minneapolis, MN 55402 Tel: 202-783-5070 Fax: 877-769-7945 Email: IPR57824-0001IP1@fr.com	Aamir Kazi, pro hac vice forthcoming W. Karl Renner, Reg. No. 41,265 Fish & Richardson P.C. 60 South Sixth Street, Suite 3200 Minneapolis, MN 55402 Tel: 202-783-5070 Fax: 877-769-7945 PTABInbound@fr.com

D. Service Information

Please address all correspondence and service to the address listed above.

Petitioner consents to electronic service by email at IPR57824-0001IP1@fr.com (referencing No. 57824-0001IP1).

Respectfully submitted,

Dated January 30, 2025

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CERTIFICATION UNDER 37 CFR § 42.24

Under the provisions of 37 CFR § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Petition for *Inter partes* Review totals 13,987 words, which is less than the 14,000 allowed under 37 CFR § 42.24.

Dated January 30, 2025

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CERTIFICATE OF SERVICE

Pursuant to 37 CFR §§ 42.6(e)(4)(i) *et seq.* and 42.105(b), the undersigned certifies that on December 30, 2025 , a complete and entire copy of this Petition for *Inter partes* Review, Power of Attorney, and all supporting exhibits were provided via Federal Express, to the Patent Owner by serving the correspondence address of record as follows:

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