IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

ANONYMOUS MEDIA RESEARCH HOLDINGS, LLC,	§	
Plaintiff,	§	Case No. 2:23-cv-00439
v.	§	
SAMSUNG ELECTRONICS CO, LTD. AND SAMSUNG ELECTRONICS AMERICA, INC.,	§	Jury Trial Demanded
Defendants.	§	

PLAINTIFF'S AMENDED COMPLAINT

Plaintiff Anonymous Media Research Holdings, LLC ("AMRH") files this suit against Defendants Samsung Electronics Co., Ltd. ("SEC") and Samsung Electronics America, Inc. ("SEA") for infringement of United States Patent Nos. 8,510,768, 8,677,389, 8,756,622, 8,296,791, 10,719,848, 10,719,849, 10,572,896, and 10,963,911 and alleges, with personal knowledge as to its own actions and on information and belief as to the actions of others, as follows:

THE PARTIES

1. Plaintiff Anonymous Media Research Holdings, LLC ("AMRH") is a Delaware limited liability company that holds all rights, title, and interests in United States Patent Nos. 8,510,768, 8,677,389, 10,719,848, 8,756,622, 10,719,849, 8,296,791, 10,572,896, and 10,963,911 (collectively, "Asserted Patents"). AMRH has a principal place of business at 72 E 3rd St Suite 2B, New York, NY 10003.

2. Defendant SEC is a Korea corporation with its principal place of business with at 129 Samsung-Ro Yeongtong-gu, Gyeonggi-do 16677 Suwon-Shi, Republic of Korea. SEC has filed an appearance in this case and may be served via ECF.

3. Defendant SEA is a New York corporation. SEA has been registered to do business in the state of Texas since June 10, 1996. SEA has filed an appearance in this case and may be served via ECF.

4. SEA is a wholly owned subsidiary of SEC (SEC and SEA collectively "Samsung" or "Defendants"). Samsung maintains a regular and established places of business in this District, including a "flagship campus" at 6625 Excellence Way, Plano, Texas.[1]

JURISDICTION & VENUE

5. This Court has subject matter jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a) because the action brought by AMRH against Samsung arises under the patent laws of the United States, 35 U.S.C. §1 *et seq*.

6. This Court has personal jurisdiction over Samsung at least because Samsung conducts business in this District and throughout the state of Texas.

7. This Court also has personal jurisdiction over Samsung because Samsung has committed acts of patent infringement in this District and throughout Texas, including selling, and offering for sale, products and services that infringe AMRH's Asserted Patents.

8. This Court also has personal jurisdiction over Samsung because Samsung has placed infringing products and services into the stream of commerce, with the expectation they will be purchased and used by customers in Texas and in this District, such that customers in Texas

[1] Samsung, *Samsung Electronics America to Open Flagship North Texas Campus*, available at https://news.samsung.com/us/samsung-electronics-america-open-flagship-north-texas-campus/ (last visited Sept. 21, 2023).

and in this District have purchased and used, and continue to purchase and use, Samsung's infringing products and services, which has allowed Samsung to derive substantial benefits from infringing acts in Texas and in this District.

9. Venue is proper in this District against Samsung pursuant to 28 U.S.C. §§ 1391 and 1400(b).

10. Venue is proper in this District against Defendant SEC under 28 U.S.C. § 1391(c)(3) because SEC is a foreign corporation who is not a resident of the United States. Venue is also proper in this District against SEC because SEC is subject to the personal jurisdiction of this Court as set forth above, has committed patent infringement in this District, and maintains a regular and established place of business in this District, through its subsidiary SEA.

11. Venue is proper in this District against Defendant SEA under 28 U.S.C. §§ 1391 and 1400(b) because SEA is subject to the personal jurisdiction of this Court as set forth above, has committed patent infringement in this District, and maintains a regular and established place of business in this District.

12. Samsung has previously been party to numerous patent cases in this District, and has repeatedly availed itself of the power and benefits of this Court and forum by raising counterclaims seeking a declaratory judgment of noninfringement and invalidity.[2]

13. Defendants SEC and SEA are properly joined under 35 U.S.C. § 299(a)(1) because Defendants have committed the accused acts of patent infringement jointly, severally, and in the

[2] *See, e.g.*, *Kim v. Samsung Elecs. Co.*, 2-23-cv-00155 (E.D. Tex. Apr. 5, 2023), *Kim v. Samsung Elecs. Co.*, 2-22-cv-00367 (E.D. Tex. Sept. 21, 2022), *Hardin v. Samsung Elecs. Co.*, 2-22-cv-00344 (E.D. Tex. Sept. 2, 2022), *Smith Interface Techs., LLC v. Samsung Elecs. Co.*, 2-22-cv-00290 (E.D. Tex. Jul. 29, 2022), *Emergent Mobile LLC v. Samsung Elecs. Co.*, 2-22-cv-00107 (E.D. Tex. Apr. 8, 2022), *Scramoge Tech. Ltd. v. Samsung Elecs. Co.*, 2-22-cv-00015 (E.D. Tex. Jan. 10, 2022), *Netlist, Inc. v. Samsung Elecs. Co.*, 2-21-cv-00463 (E.D. Tex. Dec. 20, 2021), *KT Imaging USA, LLC v. Samsung Elecs. Co.*, 4-20-cv-00339 (E.D. Tex. Apr. 20, 2020), *Acorn Semi, LLC v. Samsung Elecs. Co.*, 2-19-cv-00347 (E.D. Tex. Oct. 23, 2019), *Dareltech, LLC v. Samsung Elecs. Co.*, 4-18-cv-00702 (E.D. Tex. Oct. 4, 2018), and *MyMail, Ltd. v. Samsung Elecs. Co.*, 2-18-cv-00017 (E.D. Tex. Jan. 19, 2018).

alternative with respect to or arising out of the same transaction, occurrence, or series of transactions or occurrences relating to the making, using, importing, selling, and/or offering for sale the same accused Samsung products and services. In addition, joinder is proper under 35 U.S.C. § 299(a)(1) because questions of fact common to both Defendants will arise in this action.

FACTUAL BACKGROUND

ACR-Based Advertising

14. Commercial use of automatic content recognition (or "ACR") to enable targeted advertising has become an enormous business that continues to grow.

15. By harnessing ACR technology in consumer electronics, such as smart TVs, companies like Samsung can listen to what its users listen to, and watch what its users watch. The monitoring of a user's listening and viewing activity usually involves the use of "fingerprinting" algorithms, which capture representations (or "fingerprints") of the audio or video data based on the content consumed by a user.

16. As a result, ACR technology can obtain a comprehensive picture of a user's media consumption, including information such as what you watch, when you watch it, and how long you watch it. Advertisers can use this ACR data to better target or personalize the advertising delivered on a user-by-user or household-by-household basis.

17. Several providers of consumer electronics, such as Samsung, have leveraged ACR data to build a successful business in targeted advertising. However, implementing ACR technology to scale is not straightforward. Rather, technical solutions are critical to ensure that commercially viable media measurement results are obtained from millions of monitored consumer devices.

18. For example, as well-understood in the industry, ACR data is "dirty." The audio and visual data samples routinely lead to incorrect or missing recognitions. This would require further innovations to ensure that the ACR data accurately represent the activity on a user's device.

19. In another example, raw ACR "fingerprint" data may only identify a unique content sample, such as State Farm's "What Ifs" commercial. Additional analytical tools are required to efficiently and effectively determine additional consumer viewership behavior such as the broadcast channel (*e.g.*, ABC or TBS) or distribution channel (*e.g.*, Linear TV or Over-the-Top / Streaming) on which the viewer is watching the commercial, or any in-play action a user performed during his or her viewing of the commercial (*e.g.*, skipping, pausing, fast-forwarding, or rewinding).

20. Therefore, solutions are required to manage and process raw ACR data before a company like Samsung can use that data at scale to enable a successful targeted advertising campaign.

Anonymous Media and Its Patented Inventions

21. Even before the recent proliferation and fragmentation of media driven by the Internet and innovations in consumer electronics, Anonymous Media began developing potential solutions to run ACR monitoring, collect ACR data, and use that data to improve on old methods of media measurement and develop new means of media measurement that would fit the new, emerging digital media landscape.

22. Mr. Jonathan Steuer and Mr. Chris Otto, two founders of Anonymous Media, both have decades of experience in the media industry. Together, they developed a suite of innovative tools and techniques to process and manage raw ACR data which would generate commercially viable media measurement results based on that data.

23. In the early 2000s, Anonymous Media began applying for patents that embodied the innovations that resulted from Mr. Steuer and Mr. Otto's work. The United States Patent and Trademark Office ("PTO") has since issued numerous patents to Anonymous Media, including the Asserted Patents, which embody the innovative solution pioneered by Mr. Steuer and Mr. Otto to process, manage, and utilize raw ACR data.

24. Anonymous Media developed a solution by which raw ACR data samples, including audio or video fingerprints, are compared against a reference database of content samples to generate a time-ordered sequence of content identifications, which would then be analyzed against an expected pattern reference as part of a scrubbing process in order to address missing or incorrect results. This results in the generation of clean, time-ordered sequences of media measurements. Systems and methods that specifically reflect this innovation are reflected in Asserted Patent Nos. 8,510,768 ("'768 Patent") and 10,719,848 ("'848 Patent"). *See* Exhibits 1 and 2.

25. Anonymous Media also pioneered a technique that identifies the channel (including, for example, broadcast or distribution channel) by which a user consumed a particular item of media content using a sequential-ordered sequence of at least two content identifiers obtained from the underlying audio or video data samples collected at monitoring devices. Systems and methods that specifically reflect this invention are reflected in Asserted Patent Nos. 8,756,622 ("'622 Patent") and 10,719,849 ("'849 Patent"). *See* Exhibits 3 and 4.

26. Anonymous Media further devised a process to deduce actions performed by a user to alter the play of a particular item of identified media content by using offset time positions of the content identifications associated with the underlying ACR visual or audio data, and comparing such offset time positions of the content identification results against the time progression of the

underlying ACR data samples. Systems and methods that specifically reflect this invention are reflected in Asserted Patent Nos. 8,296,791 ("'791 Patent") and 10,572,896 ("'896 Patent"). *See* Exhibits 5 and 6.

27. Anonymous Media further developed a technique to adjust the sampling window of the audio or video data samples based on prior content identification attempts, allowing for better sampling and recognition of content. Systems and methods that specifically reflect this invention are reflected in Asserted Patent Nos. 8,677,389 ("'389 Patent") and 10,963,911 ("'911 Patent"). *See* Exhibits 7 and 8.

Samsung's Use of the Patented Technology

28. Samsung markets itself as a leading provider of Smart TVs and other Internet-connected smart devices in the United States. The ecosystem of Samsung products spans hundreds of millions of smart devices across TV, mobile, and desktop environments.[3]

29. In 2015, Samsung launched an advertising division, branded as "Samsung Ads," to monetize data from these millions of smart devices manufactured and sold by Samsung in this District and across the country. Samsung Ads provides third-party advertisers with "direct access to Samsung Ads proprietary data, audiences, and inventory across 45MM households," including by selling access to the Samsung DSP software platform.[4]

30. Marketing materials for Samsung Ads openly promote Samsung's use of ACR technology to track the behavior of consumers when they use Samsung smart devices:[5]

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[3] Samsung, *The Power of More*, available at https://www.samsung.com/us/business/samsungads/resources/power-of-more (last visited Sept. 22, 2023).

[4] Samsung DSP, *Samsung DSP Gives Hands-on Access to Manage Reach and Frequency in One Platform*, available at https://www.samsung.com/us/business/samsungads/events/samsung-dsp-access-to-advertisers (last visited Sept. 22, 2023).

[5] Samsung Ads, *Understanding Automatic Content Recognition (ACR): A Samsung Ads Guide for Advertisers* (hereinafter "Samsung ACR Guide") at 4, available at http://samsungads.events/acrguide-pr (last visited Sept. 8, 2023).

31. As Samsung has explained, "ACR, or automatic content recognition, is a type of data technology that identifies content played on a digital media device."[6] Samsung's ACR technology "**enables recognition of content** being played on devices, such as Smart TVs, by **matching either the video visuals or audio to a similar source**."[7]

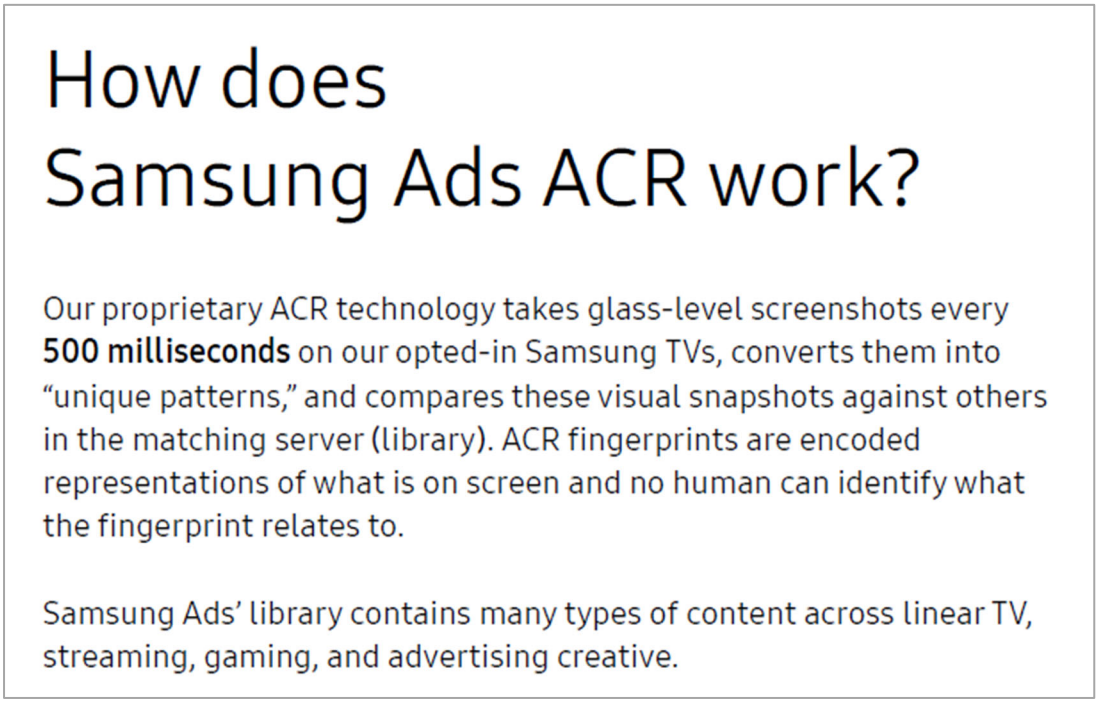
32. Since at least 2015, Samsung has developed and used software systems, hardware systems, and network architecture that implement ACR technology to collect and analyze data from Smart TVs and other smart devices. Samsung also sells, or offers for sale, products and services that use this implementation of ACR technology—including but not limited to products and services offered to third-party advertisers, such as the Samsung DSP platform, and content personalization features for improving the user experience on Samsung smart devices.[8]

33. These software systems, hardware systems, network architecture, products, and services that enable Samsung's ACR-based Samsung Ads offerings to advertisers are collectively referred to herein as "Accused ACR Instrumentalities." Samsung uses the Accused ACR Instrumentalities to carry out functions described in the Asserted Patents, including but not limited to receiving representations of audio or video data over a network, querying an electronic database of known content, and taking additional action depending on the content identification results

[6] Samsung ACR Guide at 4.
[7] Samsung ACR Guide at 4 (emphasis in original).
[8] *See* Samsung ACR Guide at 12–15, 18.

obtained. Additional actions are taken, for example, to enable more precise measurement of the content playing on smart devices.

34. For instance, the Accused ACR Instrumentalities include Smart TVs containing software that allows Samsung to monitor information about the media contents, such as movies, shows, or advertisements playing on the screen. Samsung discloses that its software captures real-time ACR fingerprints, defined by Samsung as "encoded representations of what is on screen."[9] These ACR fingerprints are compared against data located on a "matching server," allowing Samsung to identify content from a reference library that it maintains for Samsung Ads:[10]

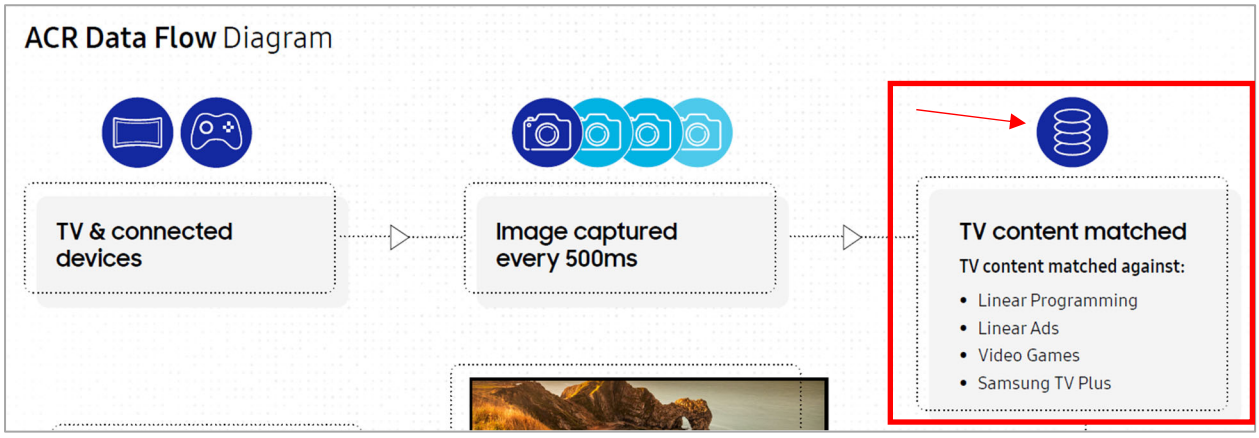


35. The ACR fingerprints used in the Accused ACR Instrumentalities are representations corresponding to samples of audio data, video data, or a combination of both.[11]

[9] Samsung ACR Guide at 6.
[10] Samsung ACR Guide at 6.
[11] *See* Samsung ACR Guide at 4.

36. The Accused ACR Instrumentalities also include computing systems that receive ACR fingerprints over a network from Smart TVs and other smart devices.

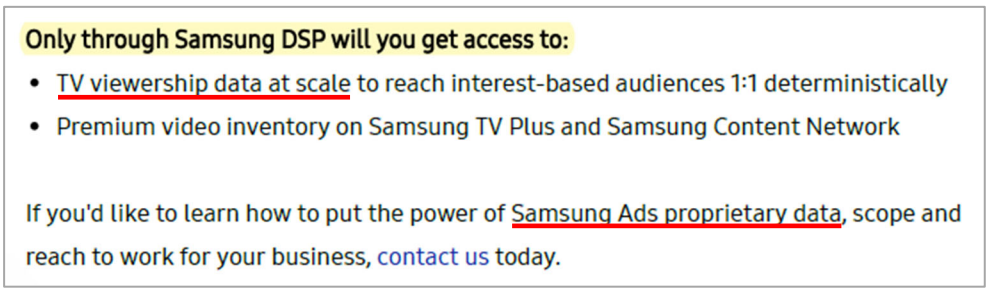
37. Samsung compares this ACR fingerprint data against a library of content by querying a database to determine if matching content exists. For example, a data flow diagram from Samsung's marketing materials depicts the use of an electronic database to match ACR fingerprint data against a wide range of content, including linear programming, linear ads, video games, and Samsung TV Plus:[12]



38. The Accused ACR Instrumentalities aggregate results from this matching and subsequently perform additional steps in accordance with the inventions of the Asserted Patents, ultimately resulting in ACR data that offers granular insight into exactly what is playing on its consumers' Smart TVs at any given moment of the day. For example, according to Samsung, its ACR data offers "real-time insight into what the viewer was exposed to – including channels, shows, linear ads, streaming apps, game consoles and titles, and metrics including total time spent, household reach, and frequency."[13]

[12] Samsung ACR Guide at 7.
[13] Samsung Ads CA, *Understanding Automatic Content Recognition (ACR): A Samsung Ads Guide for Advertisers* at 5, available at https://assets.mediafly.com/shares/9f64474af5054ab6a91e2eeae6e638f3product6857361/a1f4d (last visited Sept. 8, 2023).

39. According to Samsung, this ACR data is proprietary and available only to its third-party advertising partners,[14] including through its Samsung DSP platform that provides advertising insights and interactive reports using ACR data:[15]



40. The Accused ACR Instrumentalities practice the inventions of the Asserted Patents to process and analyze ACR data collected from Smart TVs and other consumer electronics devices that users purchase from Samsung.

41. By making, using, offering to sell, and/or selling the Accused ACR Instrumentalities, Samsung has infringed and is infringing the asserted patents as described in further detail below.

42. Anonymous Media has attempted to engage in discussions with Samsung regarding Samsung's unauthorized use of the patented technology at issue via at least Samsung's Accused ACR Instrumentalities.

43. In connection with those efforts, representatives of Anonymous Media prepared claim charts reflecting publicly available evidence of Samsung's use of the patented inventions.

[14] TVREV, *How ACR Data Helps Samsung Clients Get a Better Grasp of Their Target Audience*, available at https://www.tvrev.com/news/how-samsung-helps-clients-get-a-better-grasp-of-their-target-audience (last visited Sept. 22, 2023).
[15] Samsung DSP, *Samsung DSP Gives Hands-on Access to Manage Reach and Frequency in One Platform*, available at https://www.samsung.com/us/business/samsungads/events/samsung-dsp-access-to-advertisers (last visited Sept. 22, 2023).

44. Anonymous Media's representatives made those claim charts available in an electronic data room, and provided Samsung representatives access to that data room, so that Samsung was able to view those claim charts.

45. Samsung, however, rebuffed Anonymous Media's attempts to engage in good-faith discussions.

46. Left with no recourse, AMRH files this suit to enforce its intellectual property rights and collect just compensation for Samsung's unauthorized use of its patented inventions.

CAUSES OF ACTION

Count I: Infringement of U.S. Patent No. 8,510,768 ("'768 Patent")

47. All preceding factual allegations above are incorporated as if fully set forth herein.

48. The USPTO duly and legally issued U.S. Patent No. 8,510,768 ("'768 Patent") to Anonymous Media Research, LLC with Mr. Jonathan Steuer and Mr. Chris Otto as named inventors. Anonymous Media Research, LLC subsequently assigned all rights, titles, and interests in the '768 Patent to AMRH.

49. The '768 Patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code.

50. Samsung has directly infringed and continues to directly infringe the '768 Patent. The infringing acts include, but are not limited to, the manufacture, use, sale, importation, and/or offer for sale of the Accused ACR Instrumentalities to practice the claimed invention in the '768 Patent. For example, Claim 9 of the '768 Patent[16] recites:

> A computer program product in a non-transitory computer readable medium comprising instructions executable by one or more processors of one or more computers, the one or more computers being coupled to a network to receive, over the network, data for a

[16] Claim 9 is referenced herein for representative purposes. Plaintiff intends to identify additional asserted claims and reserves its right to provide greater detail and scope via its Infringement Contentions at the time required under this Court's scheduling order.

sequence of audio data samples, the audio data samples comprising representations of audio data captured at a media monitoring device, the plurality of audio data samples being submitted over the network, the instructions comprising instructions for:

(a) using the one or more computers to query an electronic database of a plurality of audio data representations and corresponding content identifiers;

(b) generating a raw play stream, the raw play stream comprising a sequence of content identification results corresponding to the sequence of audio data samples; wherein:

the sequence of content identification results is obtained by querying the electronic database to attempt to determine respective likely matches between respective audio data samples in the sequence of audio data samples and respective audio data representations in the electronic database;

a content identification result of the sequence of content identification results comprises either: (i) a content identifier associated in the electronic database with a respective audio data representation that is determined to be a respective likely match with a respective one of the audio data samples; or (ii) an indication of the absence of a respective likely match between a respective audio data sample and an audio data representation in the electronic database; and

the raw play stream includes either: at least two different content identifiers obtained from the electronic database; or at least one content identifier obtained from the electronic database and at least one indication of the absence of a respective likely match between a respective audio data sample and an audio data representation in the electronic database;

(c) scrubbing the raw play stream by analyzing sample sequence data of the raw play stream to determine whether to change a result of the sequence of content of identification results in view of a pattern of the sample sequence data of the raw play stream compared to an expected pattern of sample sequence data; and

(d) generating a clean play stream from the raw play stream by making any changes to the raw play stream that are determined to be made by the scrubbing.

The Accused ACR Instrumentalities meet the recited elements of the media measurement system in Claim 9.

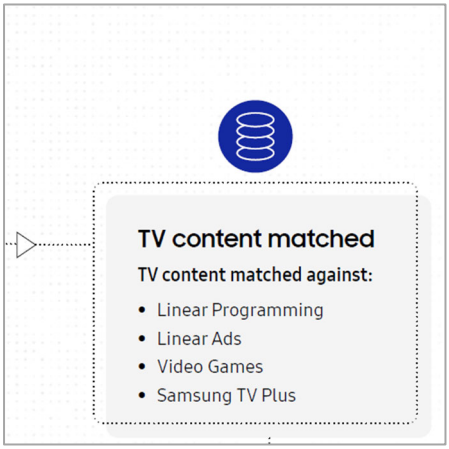
51. For instance, Samsung uses the Accused ACR Instrumentalities to measure viewership on Smart TVs:[17]

[17] Samsung ACR Guide at 4.

> Samsung Ads has developed its proprietary ACR technology which **powers our insights, targeting and measurement** across millions of Samsung Smart TVs around the world.

52. The Accused ACR Instrumentalities receive over a network, at one or more computers, data for a sequence of audio data samples. For example, the Accused ACR Instrumentalities use computer servers, including a "matching server," to receive real-time ACR fingerprint data submitted by a Smart TV over an Internet network:[18]

> What is **Samsung ACR**?
>
> ACR, or automatic content recognition, is a **type of data technology** that **identifies content played on a digital media device**.
>
> The technology **enables recognition of content** being played on devices, such as Smart TVs, by **matching either the video visuals or audio to a similar source**. This all happens automatically on the device at the **"screen"** or **"glass level"**.



53. The Accused ACR Instrumentalities collect and use audio data samples comprising representations of audio data captured at a media monitoring device, the plurality of audio data samples being submitted over the network. For example, Samsung has disclosed that it monitors audio data from smart devices, such as Smart TVs:[19]

> To make these kinds of enhancements available, we provide video or audio snippets of the program you're watching to third-party providers that use this information in order to return content or advertising "synched" to what you're watching. These providers may receive information about your device (e.g., its IP address and device identifiers) and your interactions with the content and advertising they provide. You may disable these interactive marketing features at any time by visiting the "settings" menu. The choices you make with respect to interactive marketing features will not affect whether you receive other types of ads and marketing on your SmartTV.

[18] Samsung ACR Guide at 4, 6, 7.
[19] Samsung, *Samsung Privacy Policy – SmartTV Supplement*, available at https://www.samsung.com/us/info/privacy/smarttv/ (last visited Sept. 22, 2023).

54. One or more computers in the Accused ACR Instrumentalities query an electronic database of a plurality of audio data representations and corresponding content identifiers. For example, Samsung Ads documentation states that Samsung compares fingerprint data against a reference library of content sourced from third-party vendors such as "*Numerator*, *Nielsen* (Linear Ads), *Gracenote* (Linear TV, Video on Demand), and *Gameopedia* (Video Games)."[20]

55. Samsung documentation further discloses that it stores content identifiers corresponding to content metadata from these vendors. As one example, for linear TV programs, Samsung stores a "Program ID" associated with a given series, season, episode, or movie:[21]

TITLE	PROGRAM ID	CONTENT TYPE	ORIGINAL AIR DATE
The Walking Dead	237394	Series	2022-02-27
The Walking Dead	1081952	Series	2010-10-31

56. The Accused ACR Instrumentalities generate a raw play stream comprising a sequence of content identification results corresponding to the sequence of audio data samples. For example, Samsung's ACR data flow is configured to capture and transmit a real-time sequence of ACR fingerprint data.[22] Samsung uses this ACR fingerprint data to obtain a corresponding sequence of content identification results by querying a database of known content on a matching server.[23]

[20] Samsung DSP Documentation, *Audiences*, available at https://adgear.atlassian.net/wiki/spaces/SDD/pages/2254110859/Audiences (last visited Sept. 8, 2023).
[21] Samsung DSP Documentation, *Linear TV*, available at https://adgear.atlassian.net/wiki/spaces/SDD/pages/19005343759/Linear+TV (last visited Sept. 8, 2023).
[22] Samsung ACR Guide at 7.
[23] Samsung ACR Guide at 6, 7.

57. These content identification results in the raw play stream comprise either (i) a content identifier associated in the electronic database with a respective audio data representation that is determined to be a respective likely match with a respective one of the audio data samples; or (ii) an indication of the absence of a respective likely match between a respective audio data sample and an audio data representation in the electronic database. The Accused ACR Instrumentalities indicate the absence of a likely match at least, for example, in instances where content does not exist in Samsung's reference library:[24]

> *Linear TV* only contains shows or programs that are aired on Automatic Content Recognition (ACR) covered channels. The Program/Episode/Series names are provided by a 3rd party. If a specific program or show is not found in the search it implies that it is not covered by Samsung ACR.
>
> - **Series**: e.g., HBO Games of Thrones
> - **Episode**: e.g., Season 1, Episode 7, of Friends
> - **Movie**: e.g., It's a Wonderful Life, Batman Forever, The Lego Movie, etc.

58. For example, Nielsen, whom Samsung discloses as a data source for its ACR technology, stated in 2022 that reference libraries underlying ACR technology did not cover at least 23% of minutes monitored in a study of Nielsen's ACR provider partners.[25]

59. The Accused ACR Instrumentalities generate a raw play stream that, under various circumstances, includes either: at least two different content identifiers obtained from the electronic database; or at least one content identifier obtained from the electronic database and at least one indication of the absence of a respective likely match between a respective audio data sample and an audio data representation in the electronic database. For example, a raw play stream may include more than one unique "Program ID" corresponding to different content, *see supra*

[24] Samsung DSP Documentation, *Linear TV*, available at https://adgear.atlassian.net/wiki/spaces/SDD/pages/19005343759/Linear+TV (last visited Sept. 8, 2023).
[25] Nielsen, *Big Data from Smart TVs Isn't Enough to Measure Audiences*, available at https://www.nielsen.com/insights/2022/big-data-from-smart-tvs-isnt-enough-to-measure-audiences (last visited Sept. 8, 2023).

¶ 55, or at least one "Program ID" paired with at least one indication that no likely match exists in a reference library on a matching server.

60. The Accused ACR Instrumentalities scrub the raw play stream by analyzing sample sequence data of the raw play stream. As such, Samsung determines whether to change a result of the sequence of content of identification results in view of a pattern of the sample sequence data of the raw play stream compared to an expected pattern of sample sequence data. For example, Samsung performs scrubbing to solve inaccuracies or better identify content playing at a certain time on the smart device.[26]

> Once the data has been collected, TV analytics companies ingest ACR data and combine it with other data sets to make it more accurate and usable.
>
> ACR data is "dirty," said Denise Colella, NBCUniversal's SVP of advanced advertising products and strategy. "You have to make sure it's been cleaned and organized and processed in the proper way. It takes a lot of time to ingest that data and learn how to use it."
>
> Each company has a different methodology around cleansing their ACR data, and many validate it by cross-referencing it with other data sets.
>
> For example, Nielsen uses its panel as a truth set for its ACR data, said Kelly Abcarian, GM of advanced video advertising at Nielsen.

[26] *See* Ad Exchanger, *The Marketer's Guide to ACR Tech in Smart TVs*, available at https://www.adexchanger.com/ad-exchange-news/the-marketers-guide-to-acr-tech-in-smart-tvs (last visited Sept. 8, 2023).

> **Who are the vendors and how much scale do they have?**
>
> Each ACR company supplied AdExchanger with information about their opted-in US footprint:
>
> **Nielsen Gracenote:** 18.9 million devices in the United States. Works with 12 TV manufacturers. In TVs since 2013. It licenses data to others on this list.
>
> **Inscape:** 11.2 million opted-in TV sets from Vizio in the United States. In TVs since 2014. Purely a data licensing business.
>
> **Samsung Ads:** 33 million opted-in Samsung TVs in the United States. Does not sell or license its data.
>
> **Roku:** More than 10 million US TVs have opted in over past two years. Over 10 manufacturers, including TCL, Hisense, Sharp and Hitachi, include the Roku OS. Does not sell or license data.

61. The Accused ACR Instrumentalities generate a clean play stream from the raw play stream by making any changes to the raw play stream that are determined to be made by the scrubbing. Samsung uses the resulting clean play stream generated by the Accused ACR Instrumentalities to generate advertising insights and reports that Samsung monetizes, including through its Samsung DSP platform.

62. For example, said clean play stream applies said scrubbing to ensure that viewing history data is accurate across the entire duration of monitoring a smart device. The Samsung DSP platform uses this scrubbed clean play stream at least in generating "Audience" reports, which offer the feature of differentiating consumers based on dayparts they watched and the timeframe they watched specific content:[27]

[27] Samsung DSP Documentation, *Audiences*, available at https://adgear.atlassian.net/wiki/spaces/SDD/pages/2254110859/Audiences (last visited Sept. 8, 2023); *see also* Samsung DSP Documentation, *Linear TV*, available at https://adgear.atlassian.net/wiki/spaces/SDD/pages/19005343759/Linear+TV (last visited Sept. 8, 2023).

- **Daypart**: Daypart filtering refers to a general time of tune-in. You can select different day(s) in a week and specific timeframes in the day(s) for Daypart targeting. Essentially, you can build an audience of people who saw an episode on specific days of the week, but only during breakfast time, for example.
- **Timeframes**: Timeframes can be used in conjunction with the Daypart option, in that you can combine all three advanced settings as needed. Days are separated into the following timeframes:
  - **Late Night**: Between 11:00pm – 2:00am
  - **Overnight**: Between 2:00am – 6:00am
  - **Breakfast**: Between 6:00am – 10:00am
  - **Daytime**: Between 10:00am – 5:00pm
  - **National Prime Time**: Between 5:00pm – 11:00pm

63. Samsung committed the infringing activities without license from AMRH. Samsung's acts of infringement have damaged AMRH, as owner of the '768 Patent. AMRH is entitled to recover from Samsung the damages it has sustained as a result of Samsung's wrongful acts in an amount subject to proof at trial. The infringement of the '768 Patent by Samsung has damaged and will continue to damage Plaintiff.

64. Samsung's infringement of AMRH's '768 Patent has been willful, and continues to be willful. In addition, or in the alternative, Samsung's infringement of AMRH's '768 Patent is willful at least of the date of the service of AMRH's Original Complaint.

Count II: Infringement of U.S. Patent No. 8,756,622

65. All preceding factual allegations are incorporated as if fully set forth herein.

66. The USPTO duly and legally issued U.S. Patent No. 8,756,622 ("'622 Patent") to Anonymous Media Research, LLC with Mr. Jonathan Steuer and Mr. Chris Otto as named inventors. Anonymous Media Research, LLC subsequently assigned all rights, titles, and interests in the '622 Patent to AMRH.

67. The '622 Patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code.

68. Samsung has directly infringed and continues to directly infringe the '622 Patent. The infringing acts include, but are not limited to, the manufacture, use, sale, importation, and/or

offer for sale of the Accused ACR Instrumentalities to practice the claimed invention in the '622 Patent. For example, Claim 6 of the '622 Patent[28] recites:

> A computer program product in a non-transitory computer readable medium comprising instructions executable by one or more processors of one or more computers, the instructions comprising instructions for:
>
> > generating a play stream of content identification results corresponding to a sequence of data samples, the data samples comprising representations of audio data captured at a media monitoring device, wherein content identifiers of the play stream's content identification results are obtained by using corresponding data samples to search a computerized database of known content; and
> >
> > in response to obtaining the content identifiers, utilizing a sequential order of at least two different obtained content identifiers in the play stream to identify a channel corresponding to the data samples, the at least two different obtained content identifiers identifying different media content items.

The Accused ACR Instrumentalities meet the recited elements of the claimed media measurement system in Claim 6.

69. For instance, Samsung uses the Accused ACR Instrumentalities to measure viewership on Smart TVs:[29]

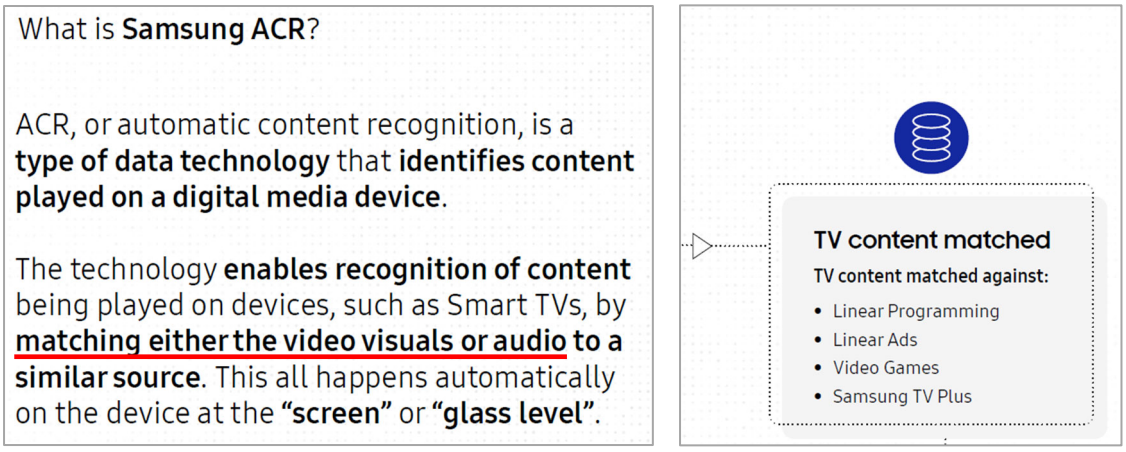
> Samsung Ads has developed its proprietary ACR technology which **powers our insights, targeting and measurement** across millions of Samsung Smart TVs around the world.

70. One or more computers in the Accused ACR Instrumentalities generate a play stream of content identification results corresponding to a sequence of submitted data samples. For example, Samsung's ACR data flow is configured to capture and transmit a real-time sequence of ACR fingerprint data.[30] Samsung uses this ACR fingerprint data to obtain a corresponding

[28] Claim 6 is referenced herein for representative purposes. Plaintiff intends to identify additional asserted claims and reserves its right to provide greater detail and scope via its Infringement Contentions at the time required under this Court's scheduling order.
[29] Samsung ACR Guide at 4.
[30] Samsung ACR Guide at 7.

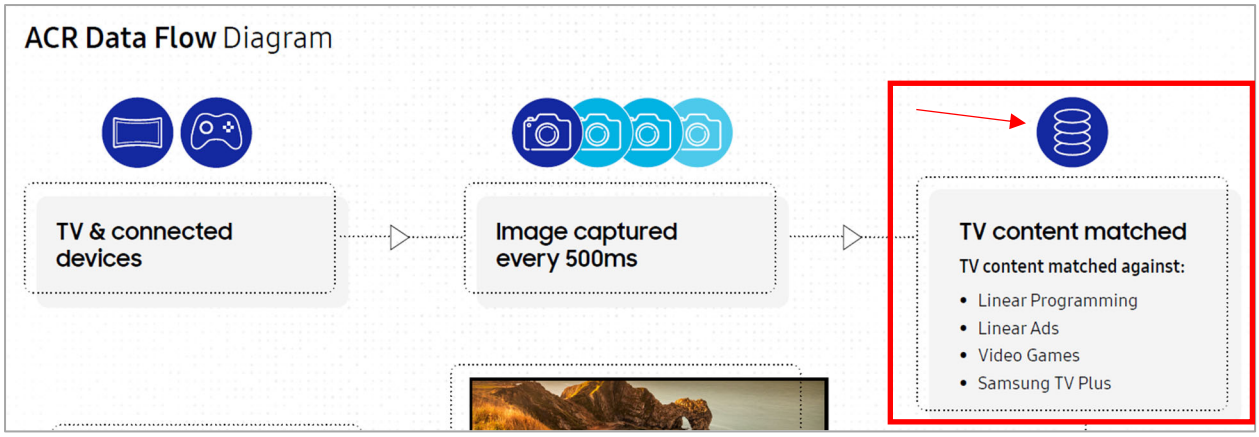
sequence of content identification results by querying a database of known content on a matching server.[31]

71. The Accused ACR Instrumentalities collect and use data samples which comprise representations of audio data captured at a media monitoring device. For example, the Accused ACR Instrumentalities use computer servers, including a "matching server," to receive real-time ACR fingerprint data submitted by a Smart TV over an Internet network:[32]



72. The content identifiers of the play stream's content identification results in the Accused ACR instrumentalities are obtained by using corresponding data samples to search a computerized database of known content. For example, a data flow diagram from Samsung's marketing materials depicts the use of an electronic database to match ACR fingerprint data against a wide range of content, including linear programming, linear ads, video games, and Samsung TV Plus:[33]

[31] Samsung ACR Guide at 6, 7.
[32] Samsung ACR Guide at 4, 6, 7.
[33] Samsung ACR Guide at 7.



73. The Accused ACR Instrumentalities perform, in response to obtaining the content identifiers, using one or more computers to utilize a sequential order of at least two different obtained content identifiers in the play stream to identify a channel corresponding to the data samples, the at least two different obtained content identifiers identifying different media content items. For example, Samsung has stated its ACR data provides "real-time insight into what the viewer was exposed to — including channels, shows, linear ads, streaming apps, game consoles and titles . . ."[34]

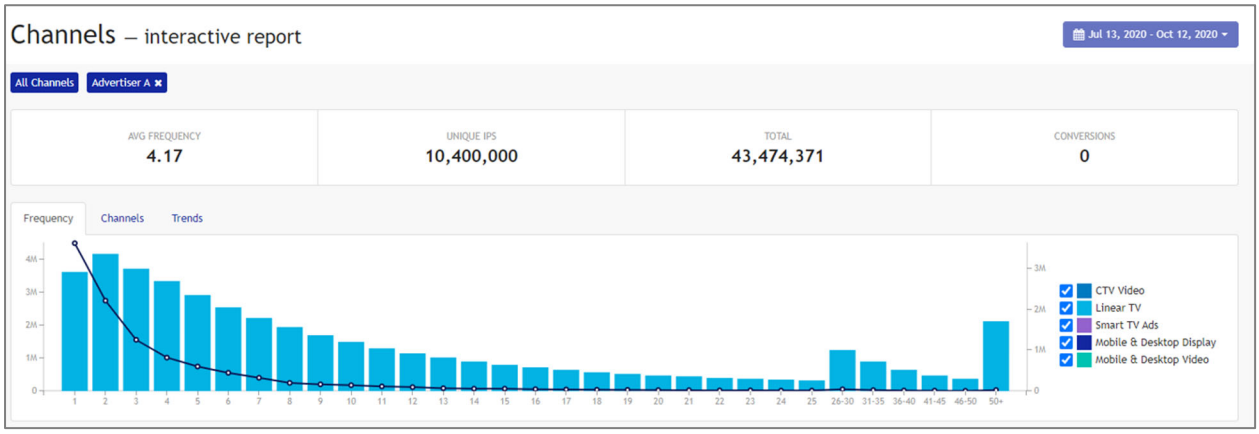
74. Samsung's Smart TV Privacy Policy further states that it tracks information about channels viewed on a Smart TV:[35]

> In addition, if you enable the collection of information about video streams viewed on your SmartTV, we may collect that information and additional information about the network, channels, and programs that you view through the SmartTV. We will use such information to improve the recommendations that we deliver to you on the SmartTV.

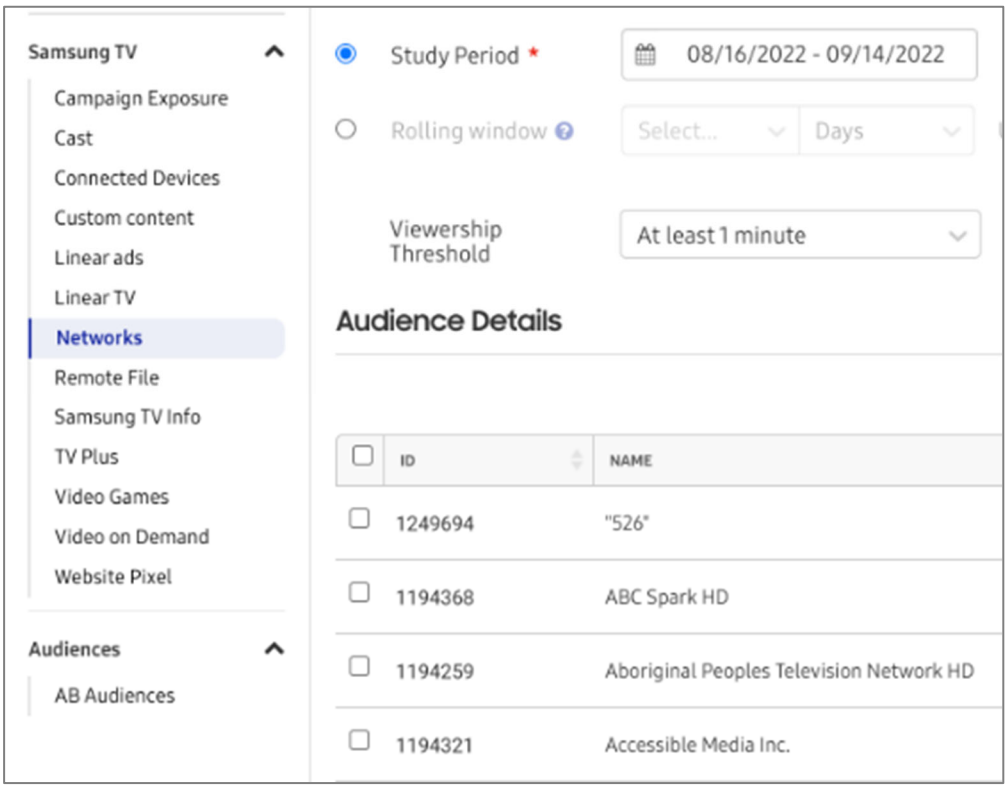
75. Samsung DSP relies on this channel identification in the context of measuring exposure to advertisements, such as, for example, when third-party advertisers generate a

[34] Samsung Ads CA, *Understanding Automatic Content Recognition (ACR): A Samsung Ads Guide for Advertisers* at 5, available at https://assets.mediafly.com/shares/9f64474af5054ab6a91e2eeae6e638f3product6857361/a1f4d (last visited Sept. 8, 2023).
[35] Samsung, *Samsung, Privacy Policy – Smart TV Supplement*, available at https://www.samsung.com/us/info/privacy/smarttv (last visited Sept. 8, 2023)

"Channels" report that differentiates views based on "[t]he channel of the ad (e.g., CTV Video, Linear TV, Smart TV Ads, Mobile & Desktop Display and Mobile & Desktop Video.)."[36]



76. As another example, Samsung DSP relies on channel identification when differentiating views of linear program content based on a broadcast network:[37]



[36] Samsung DSP Documentation, *Channels*, available at https://adgear.atlassian.net/wiki/spaces/SDD/pages/2320499649/Channels (last visited Sept. 8, 2023).
[37] Samsung DSP Documentation, *Networks*, available at https://help.dsp.samsungads.com/docs/networks (last visited Sept. 8, 2023).

77. Samsung committed the infringing activities without license from AMRH. Samsung's acts of infringement have damaged AMRH, as owner of the '622 Patent. AMRH is entitled to recover from Samsung the damages it has sustained as a result of Samsung's wrongful acts in an amount subject to proof at trial. The infringement of the '622 Patent by Samsung has damaged and will continue to damage Plaintiff.

78. Samsung's infringement of AMRH's '622 Patent has been willful, and continues to be willful. In addition, or in the alternative, Samsung's infringement of AMRH's '622 Patent is willful at least of the date of the service of AMRH's Original Complaint.

Count III: Infringement of U.S. Patent No. 8,296,791

79. All preceding factual allegations are incorporated as if fully set forth herein.

80. The USPTO duly and legally issued U.S. Patent No. 8,296,791 ("'791 Patent") to Anonymous Media Research, LLC with Mr. Jonathan Steuer and Mr. Chris Otto as named inventors. Anonymous Media Research, LLC subsequently assigned all rights, titles, and interests in the '791 Patent to AMRH.

81. The '791 Patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code.

82. Samsung has directly infringed and continues to directly infringe the '791 Patent. The infringing acts include, but are not limited to, the manufacture, use, sale, importation, and/or offer for sale of the Accused ACR Instrumentalities to practice the claimed invention in the '791 Patent. For example, Claim 9 of the '791 Patent[38] recites:

A media measurement method comprising:

[38] Claim 9 is referenced herein for representative purposes. Plaintiff intends to identify additional asserted claims and reserves its right to provide greater detail and scope via its Infringement Contentions at the time required under this Court's scheduling order.

> using one or more computers to generate a play stream of content identification results corresponding to a sequence of submitted data samples, the submitted data samples corresponding to audio data samples captured at a monitoring device associated with a monitored audience member; and
>
> using one or more computers to utilize sample sequence data and content offset data to deduce play-altering actions of the monitored audience member, the sample sequence data corresponding to a sequence of the content identification results, wherein play-altering actions include actions that alter at least one of a pace and a sequence of a media stream, the content offset data including content offsets associated with the content identification results, a content offset indicating a time position of a content identification result within identified content, wherein to utilize comprises, for a particular plurality of submitted data samples and corresponding content identification results, comparing a progression of log times associated with capture timing of each of the particular plurality of submitted data samples and a progression of content offsets of the corresponding content identification results.

The Accused ACR Instrumentalities perform the recited steps of the claimed media measurement method in Claim 9.

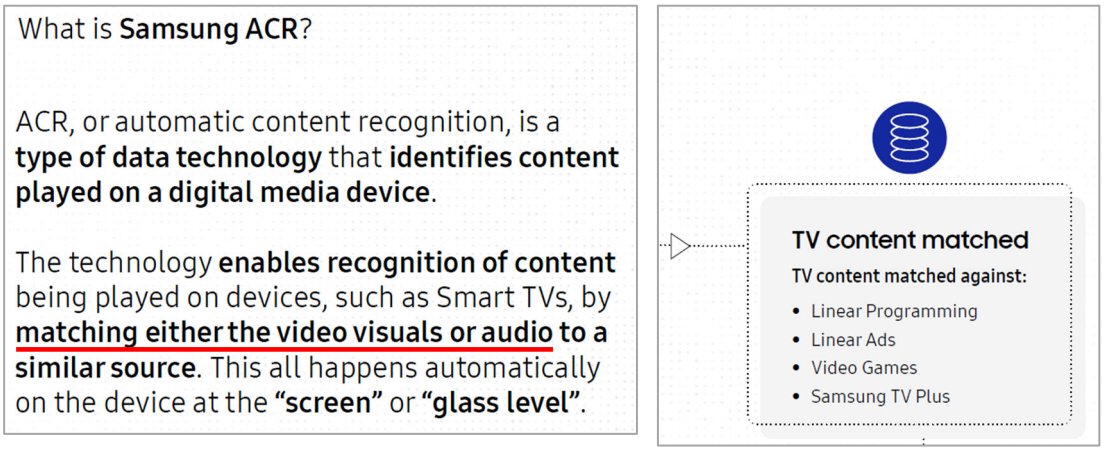
83. For instance, Samsung uses the Accused ACR Instrumentalities to measure viewership on Smart TVs:[39]

> Samsung Ads has developed its proprietary ACR technology which **powers our insights, targeting and measurement** across millions of Samsung Smart TVs around the world.

84. The Accused ACR Instrumentalities perform the functionality of using one or more computers to generate a play stream of content identification results corresponding to a sequence of submitted data samples. For example, Samsung's ACR data flow is configured to capture and transmit a real-time sequence of ACR fingerprint data.[40] Samsung uses this ACR fingerprint data to obtain a corresponding sequence of content identification results by querying a database of known content on a matching server.[41]

[39] Samsung ACR Guide at 4.
[40] Samsung ACR Guide at 7.
[41] Samsung ACR Guide at 6, 7.

85. The Accused ACR Instrumentalities collect and use submitted data samples which correspond to audio data samples captured at a monitoring device associated with a monitored audience member.[42]



86. For example, Samsung has disclosed that it monitors audio data from Smart TVs and other smart devices used by consumers:[43]

> To make these kinds of enhancements available, we provide video or audio snippets of the program you're watching to third-party providers that use this information in order to return content or advertising "synched" to what you're watching. These providers may receive information about your device (e.g., its IP address and device identifiers) and your interactions with the content and advertising they provide. You may disable these interactive marketing features at any time by visiting the "settings" menu. The choices you make with respect to interactive marketing features will not affect whether you receive other types of ads and marketing on your SmartTV.

87. The Accused ACR Instrumentalities use one or more computers to utilize sample sequence data and content offset data to deduce play-altering actions of the monitored audience member. For example, Samsung owns and operates servers that use ACR technology to detect

[42] Samsung ACR Guide at 4, 6, 7.
[43] Samsung, *Privacy Policy – Smart TV Supplement*, available at https://www.samsung.com/us/info/privacy/smarttv (last visited Sept. 8, 2023).

whether viewers are watching a television program at the exact time it was broadcast, as opposed to at a later time after the original air date:[44]

> **Time-Shifted Viewing**: *Time-Shifting* allows viewers to watch live programs after their initial broadcast by automatically recording and storing them on a *Digital Video Recorder* (DVR) provided by their cable television service provider. Use this option to benefit from Samsung's ACR Technology for differentiating viewers watching programs broadcast live from those relying on DVR. By default, the following three filtering values are added:
>
> - ***LIVE***: This includes viewers who watched the program at the exact airing time and date it was broadcast on TV networks.
> - ***Plus +3*:** This includes viewers who watched the program within 1-3 days of the broadcast.
> - ***Plus +7*:** This includes viewers who watched the program within 3-7 days of the broadcast.

88. Other examples of play-altering actions deduced in a similar manner using the Accused ACR Instrumentalities include, for example, ad-skipping, time-shifting, channel-surfing, fast-forwarding, and binge-viewing.[45]

89. The Accused ACR Instrumentalities use sample sequence data that corresponds to the sequence of the content identification results. For example, Samsung has stated that its ACR data offers "real-time insight into what the viewer was exposed to – including channels, shows, linear ads, streaming apps, game consoles and titles, and metrics including total time spent, household reach, and frequency."[46] Accordingly, there are instances where sample sequence data

[44] Samsung DSP Documentation, *Linear TV*, available at https://adgear.atlassian.net/wiki/spaces/SDD/pages/19005343759/Linear+TV (last visited Sept. 8, 2023).

[45] *See* Extreme Reach, *Automated Content Recognition: A Technology to Turbo-charge Addressable TV*, available at https://extremereach.com/blog/automated-content-recognition-a-technology-to-turbo-charge-addressable-tv (last visited Sept. 8, 2023) ("[ACR] allows content to be recognized by video, audio or watermark cues and matched back to a source database for reference and verification. This includes . . . behaviors associated with what's being watched (ad-skipping, binge-watching) . . . .") ; IAB Australia, *IAB Member Q&A: Use of Data in Connected TV*, available at https://iabaustralia.com.au/resource/iab-member-qa-use-of-data-in-connected-tv (last visited Sept. 8, 2023) ("Advertisers can access key behaviours associated with TV viewership such as ad-skipping, time-shifting, streaming, and binge-watching to better understand the viewing habits, lifestyle and interests of their target audience to inform media planning and CTV activation."); *see also* Samsung DSP Help Center, *Delivery*, available at https://help.dsp.samsungads.com/v1/docs/delivery (last visited Sept. 20, 2023).

[46] Samsung Ads CA, *Understanding Automatic Content Recognition (ACR): A Samsung Ads Guide for Advertisers* at 5, available at https://assets.mediafly.com/shares/9f64474af5054ab6a91e2eeae6e638f3product6857361/a1f4d (last visited Sept. 8, 2023).

corresponds to a sequence of content identification results, which results from querying a database of known content on a matching server. *See supra* ¶ 84.

90. The play-altering actions deduced by the Accused ACR Instrumentalities include actions that alter at least one of a pace and a sequence of a media stream. *See supra* ¶¶ 87–88.

91. The recited content offset data, utilized by the Accused ACR Instrumentalities, include content offsets associated with the content identification results, wherein a content offset indicates a time position of a content identification result within identified content.

92. To utilize—as performed by the Accused ACR Instrumentalities—comprises, for a particular plurality of submitted data samples and corresponding content identification results, comparing a progression of log times associated with capture timing of each of the particular plurality of submitted data samples and a progression of content offsets of the corresponding content identification results.

93. Samsung committed the infringing activities without license from AMRH. Samsung's acts of infringement have damaged AMRH, as owner of the '791 Patent. AMRH is entitled to recover from Samsung the damages it has sustained as a result of Samsung's wrongful acts in an amount subject to proof at trial. The infringement of the '791 Patent by Samsung has damaged and will continue to damage Plaintiff.

94. Samsung's infringement of AMRH's '791 Patent has been willful, and continues to be willful. In addition, or in the alternative, Samsung's infringement of AMRH's '791 Patent is willful at least of the date of the service of AMRH's Original Complaint.

Count IV: Infringement of U.S. Patent No. 8,677,389

95. All preceding factual allegations are incorporated as if fully set forth herein.

96. The USPTO duly and legally issued U.S. Patent No. 8,677,389 ("'389 Patent") to Anonymous Media Research, LLC with Mr. Jonathan Steuer and Mr. Chris Otto as named

inventors. Anonymous Media Research, LLC subsequently assigned all rights, titles, and interests in the '389 Patent to AMRH.

97. The '389 Patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code.

98. Samsung has directly infringed and continues to directly infringe the '389 Patent. The infringing acts include, but are not limited to, the manufacture, use, sale, importation, and/or offer for sale of the Accused ACR Instrumentalities to practice the claimed invention in the '389 Patent. For example, Claim 1 of the '389 Patent[47] recites:

> A media measurement method comprising:
>
> > receiving, at one or more computers, audio data from a monitoring device, the audio data being divisible into samples; and
> >
> > determining, using the one or more computers, a next sample of the audio data for attempted identification of a media content item corresponding to the next sample by adjusting a length of a time window of the next sample based at least in part upon a result of an attempt using the one or more computers to identify a first prior sample as corresponding to a media content item stored in a computerized database of reference content; wherein, if the attempt to identify the first prior sample indicates a result that is different than a result of an attempt to identify a second prior sample, then the time length window of the next sample is changed relative to a time window of the first prior sample.

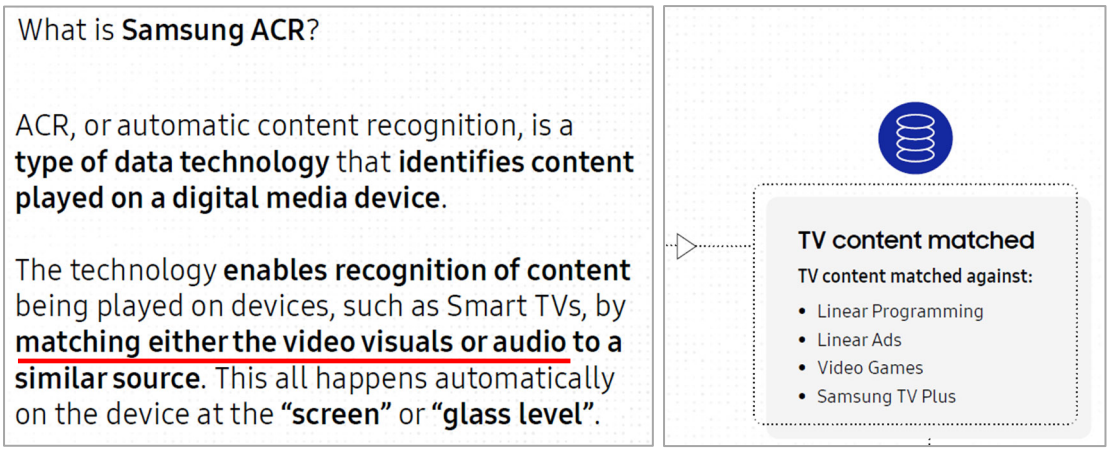
The Accused ACR Instrumentalities perform the recited steps of the claimed media measurement method in Claim 1.

99. For instance, Samsung uses the Accused ACR Instrumentalities to measure viewership on Smart TVs:[48]

[47] Claim 1 is referenced herein for representative purposes. Plaintiff intends to identify additional asserted claims and reserves its right to provide greater detail and scope via its Infringement Contentions.
[48] Samsung ACR Guide at 4.

> Samsung Ads has developed its proprietary ACR technology which **powers our insights, targeting and measurement** across millions of Samsung Smart TVs around the world.

100. The Accused ACR Instrumentalities perform the functionality of receiving, at one or more computers, audio data from a monitoring device, the audio data being divisible into samples. For example, Samsung's ACR data flow is designed to capture audio data related to the content playing on a Smart TV.[49] Samsung processes this audio data at one or more computers, allowing it identify content by matching ACR fingerprint data.[50]



101. The Accused ACR Instrumentalities determine, using the one or more computers, a next sample of the audio data for attempted identification of a media content item corresponding to the next sample. For example, Samsung performs an attempted identification by using ACR fingerprint data and querying an electronic database of known content.[51]

102. Discovery has revealed that the Accused ACR Instrumentalities adjust a length of a time window of the next sample based at least in part upon a result of an attempt using the one or more computers to identify a first prior sample as corresponding to a media content item stored

[49] Samsung ACR Guide at 7.
[50] Samsung ACR Guide at 7.
[51] Samsung ACR Guide at 6, 7.

in a computerized database of reference content. Moreover, if the attempt to identify the first prior sample in the Accused ACR Instrumentalities indicates a result that is different than a result of an attempt to identify a second prior sample, then the time length window of the next sample is changed relative to a time window of the first prior sample. AMRH is contemporaneously serving Infringement Contentions under Local Patent Rule 3-1 reflecting these infringing activities and functionalities by Samsung's Accused ACR Instrumentalities.

103. Samsung committed the infringing activities without license from AMRH. Samsung's acts of infringement have damaged AMRH, as owner of the '389 Patent. AMRH is entitled to recover from Samsung the damages it has sustained as a result of Samsung's wrongful acts in an amount subject to proof at trial. The infringement of the '389 Patent by Samsung has damaged and will continue to damage Plaintiff.

104. Samsung's infringement of AMRH's '389 Patent has been willful, and continues to be willful. In addition, or in the alternative, Samsung's infringement of AMRH's '389 Patent is willful at least of the date of the service of this Amended Complaint.

Count V: Infringement of U.S. Patent No. 10,719,848

105. All preceding factual allegations are incorporated as if fully set forth herein.

106. The USPTO duly and legally issued U.S. Patent No. 10,719,848 ("'848 Patent") to Anonymous Media Research, LLC with Mr. Jonathan Steuer and Mr. Chris Otto as named inventors. Anonymous Media Research, LLC subsequently assigned all rights, titles, and interests in the '848 Patent to AMRH.

107. The '848 Patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code.

108. Samsung has directly infringed and continues to directly infringe the '848 Patent. The infringing acts include, but are not limited to, the manufacture, use, sale, importation, and/or

offer for sale of the Accused ACR Instrumentalities to practice the claimed invention in the '848 Patent. For example, Claim 9 of the '848 Patent[52] recites:

> A computer program product in a non-transitory computer readable medium comprising instructions executable by one or more processors of one or more computers, the one or more computers being coupled to a network to receive, over the network, data for a sequence of video data samples, the video data samples comprising representations of video data captured at a media monitoring device, the plurality of video data samples being submitted over the network, the instructions comprising instructions for:
>
> (a) using the one or more computers to query an electronic database of a plurality of video data representations and corresponding content identifiers;
>
> (b) generating a raw play stream, the raw play stream comprising a sequence of content identification results corresponding to the sequence of video data samples; wherein:
>
> the sequence of content identification results is obtained by querying the electronic database to attempt to determine respective likely matches between respective video data samples in the sequence of video data samples and respective video data representations in the electronic database;
>
> a content identification result of the sequence of content identification results comprises either: (i) a content identifier associated in the electronic database with a respective video data representation that is determined to be a respective likely match with a respective one of the video data samples; or (ii) an indication of the absence of a respective likely match between a respective video data sample and a video data representation in the electronic database; and
>
> the raw play stream includes either: at least two different content identifiers obtained from the electronic database; or at least one content identifier obtained from the electronic database and at least one indication of the absence of a respective likely match between a respective video data sample and a video data representation in the electronic database;
>
> (c) scrubbing the raw play stream by analyzing sample sequence data of the raw play stream to determine whether to change a result of the sequence of content of identification results in view of a pattern of the sample sequence data of the raw play stream compared to an expected pattern of sample sequence data; and
>
> (d) generating a clean play stream from the raw play stream by making any changes to the raw play stream that are determined to be made by the scrubbing.

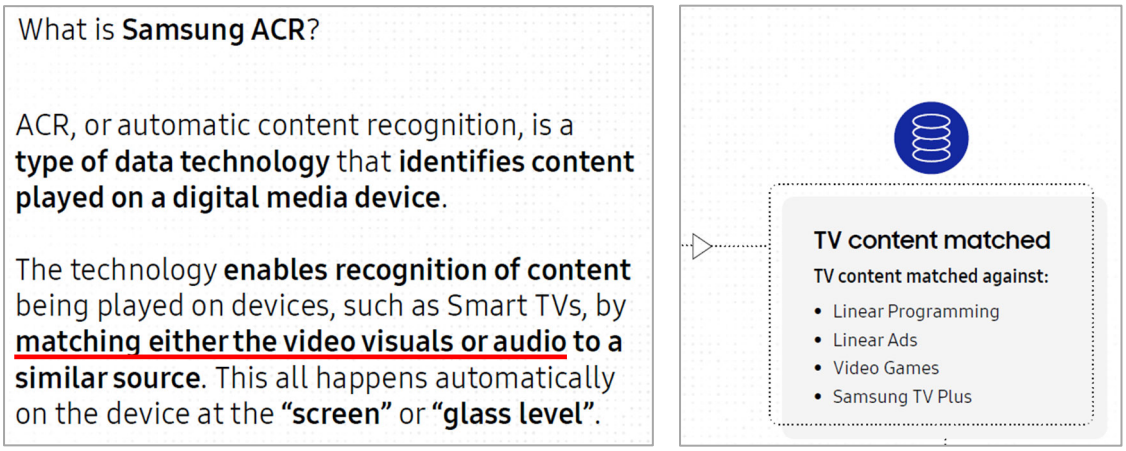
[52] Claim 9 is referenced herein for representative purposes. Plaintiff intends to identify additional asserted claims and reserves its right to provide greater detail and scope via its Infringement Contentions at the time required under this Court's scheduling order.

The Accused ACR Instrumentalities meet the recited elements of the media measurement system in Claim 9.

109. For instance, Samsung uses the Accused ACR Instrumentalities to measure viewership on Smart TVs:[53]

> Samsung Ads has developed its proprietary ACR technology which **powers our insights, targeting and measurement** across millions of Samsung Smart TVs around the world.

110. The Accused ACR Instrumentalities receive over a network, at one or more computers, data for a sequence of video data samples. For example, the Accused ACR Instrumentalities use computer servers, including a "matching server," to receive real-time ACR fingerprint data submitted by a Smart TV over an Internet network:[54]



111. The Accused ACR Instrumentalities collect and use video data samples comprising representations of video data captured at a media monitoring device, the plurality of video data samples being submitted over the network. For example, Samsung has disclosed that it monitors video data from smart devices, such as Smart TVs:[55]

[53] Samsung ACR Guide at 4.
[54] Samsung ACR Guide at 4, 6, 7.
[55] Samsung, *Privacy Policy – Smart TV Supplement*, available at https://www.samsung.com/us/info/privacy/smarttv (last visited Sept. 8, 2023).

> To make these kinds of enhancements available, we provide video or audio snippets of the program you're watching to third-party providers that use this information in order to return content or advertising "synched" to what you're watching. These providers may receive information about your device (e.g., its IP address and device identifiers) and your interactions with the content and advertising they provide. You may disable these interactive marketing features at any time by visiting the "settings" menu. The choices you make with respect to interactive marketing features will not affect whether you receive other types of ads and marketing on your SmartTV.

112. One or more computers in the Accused ACR Instrumentalities query an electronic database of a plurality of video data representations and corresponding content identifiers. For example, Samsung Ads documentation states that Samsung compares fingerprint data against a reference library of content sourced from third-party vendors such as "*Numerator*, *Nielsen* (Linear Ads), *Gracenote* (Linear TV, Video on Demand), and *Gameopedia* (Video Games)."[56]

113. Samsung documentation further discloses that it stores content identifiers corresponding to content metadata from these vendors. As one example, for linear TV programs, Samsung stores a "Program ID" associated with a given series, season, episode, or movie:[57]

TITLE	PROGRAM ID	CONTENT TYPE	ORIGINAL AIR DATE
The Walking Dead	237394	Series	2022-02-27
The Walking Dead	1081952	Series	2010-10-31

114. The Accused ACR Instrumentalities generate a raw play stream comprising a sequence of content identification results corresponding to the sequence of video data samples.

[56] Samsung DSP Documentation, *Audiences*, available at https://adgear.atlassian.net/wiki/spaces/SDD/pages/2254110859/Audiences (last visited Sept. 8, 2023).
[57] Samsung DSP Documentation, *Linear TV*, available at https://adgear.atlassian.net/wiki/spaces/SDD/pages/19005343759/Linear+TV (last visited Sept. 8, 2023).

For example, Samsung's ACR data flow is configured to capture and transmit a real-time sequence of ACR fingerprint data.[58] Samsung uses this ACR fingerprint data to obtain a corresponding sequence of content identification results by querying a database of known content on a matching server."[59]

115. These content identification results in the raw play stream comprise either (i) a content identifier associated in the electronic database with a respective video data representation that is determined to be a respective likely match with a respective one of the video data samples; or (ii) an indication of the absence of a respective likely match between a respective video data sample and a video data representation in the electronic database. The Accused ACR Instrumentalities indicate the absence of a likely match at least, for example, in instances where content does not exist in Samsung's reference library:[60]

> *Linear TV* only contains shows or programs that are aired on Automatic Content Recognition (ACR) covered channels. The Program/Episode/Series names are provided by a 3rd party. If a specific program or show is not found in the search it implies that it is not covered by Samsung ACR.
>
> - **Series**: e.g., HBO Games of Thrones
> - **Episode**: e.g., Season 1, Episode 7, of Friends
> - **Movie**: e.g., It's a Wonderful Life, Batman Forever, The Lego Movie, etc.

116. For example, Nielsen, whom Samsung discloses as a data source for its ACR technology, stated in 2022 that reference libraries underlying ACR technology did not cover at least 23% of minutes monitored in a study of Nielsen's ACR provider partners.[61]

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[58] Samsung ACR Guide at 7.
[59] Samsung ACR Guide at 6, 7.
[60] Samsung DSP Documentation, *Linear TV*, available at https://adgear.atlassian.net/wiki/spaces/SDD/pages/19005343759/Linear+TV (last visited Sept. 8, 2023).
[61] Nielsen, *Big Data from Smart TVs Isn't Enough to Measure Audiences*, available at https://www.nielsen.com/insights/2022/big-data-from-smart-tvs-isnt-enough-to-measure-audiences (last visited Sept. 8, 2023).

117. The Accused ACR Instrumentalities generate a raw play stream that, under various circumstances, includes either: at least two different content identifiers obtained from the electronic database; or at least one content identifier obtained from the electronic database and at least one indication of the absence of a respective likely match between a respective video data sample and a video data representation in the electronic database. For example, a raw play stream may include more than one unique "Program ID" corresponding to different content, *see supra* ¶ 102, or at least one "Program ID" paired with at least one indication that no likely match exists in a reference library on a matching server.

118. The Accused ACR Instrumentalities scrub the raw play stream by analyzing sample sequence data of the raw play stream. As such, Samsung determines whether to change a result of the sequence of content of identification results in view of a pattern of the sample sequence data of the raw play stream compared to an expected pattern of sample sequence data. For example, Samsung performs scrubbing to solve inaccuracies or better identify content playing at a certain time on the smart device.[62]

> Once the data has been collected, TV analytics companies ingest ACR data and combine it with other data sets to make it more accurate and usable.
>
> ACR data is "dirty," said Denise Colella, NBCUniversal's SVP of advanced advertising products and strategy. "You have to make sure it's been cleaned and organized and processed in the proper way. It takes a lot of time to ingest that data and learn how to use it."

> Each company has a different methodology around cleansing their ACR data, and many validate it by cross-referencing it with other data sets.
>
> For example, Nielsen uses its panel as a truth set for its ACR data, said Kelly Abcarian, GM of advanced video advertising at Nielsen.

[62] *See* Ad Exchanger, *The Marketer's Guide to ACR Tech in Smart TVs*, available at https://www.adexchanger.com/ad-exchange-news/the-marketers-guide-to-acr-tech-in-smart-tvs (last visited Sept. 8, 2023).

> **Who are the vendors and how much scale do they have?**
>
> Each ACR company supplied AdExchanger with information about their opted-in US footprint:
>
> **Nielsen Gracenote:** 18.9 million devices in the United States. Works with 12 TV manufacturers. In TVs since 2013. It licenses data to others on this list.
>
> **Inscape:** 11.2 million opted-in TV sets from Vizio in the United States. In TVs since 2014. Purely a data licensing business.
>
> **Samsung Ads:** 33 million opted-in Samsung TVs in the United States. Does not sell or license its data.
>
> **Roku:** More than 10 million US TVs have opted in over past two years. Over 10 manufacturers, including TCL, Hisense, Sharp and Hitachi, include the Roku OS. Does not sell or license data.

119. The Accused ACR Instrumentalities generate a clean play stream from the raw play stream by making any changes to the raw play stream that are determined to be made by the scrubbing. The resulting clean play stream generated by the Accused ACR Instrumentalities is used by Samsung to generate advertising insights and reports that Samsung monetizes, including through its Samsung DSP platform.

120. For example, said clean play stream applies said scrubbing to ensure that viewing history data is accurate across the entire duration of monitoring a smart device. The Samsung DSP platform uses this scrubbed clean play stream at least in generating "Audience" reports, which offer the feature of differentiating consumers based on dayparts they watched and the timeframe they watched specific content:[63]

[63] Samsung DSP Documentation, *Audiences*, available at https://adgear.atlassian.net/wiki/spaces/SDD/pages/2254110859/Audiences (last visited Sept. 8, 2023); *see also* Samsung DSP Documentation, *Linear TV*, available at https://adgear.atlassian.net/wiki/spaces/SDD/pages/19005343759/Linear+TV (last visited Sept. 8, 2023).

- **Daypart**: Daypart filtering refers to a general time of tune-in. You can select different day(s) in a week and specific timeframes in the day(s) for Daypart targeting. Essentially, you can build an audience of people who saw an episode on specific days of the week, but only during breakfast time, for example.
- **Timeframes**: Timeframes can be used in conjunction with the Daypart option, in that you can combine all three advanced settings as needed. Days are separated into the following timeframes:
  - **Late Night**: Between 11:00pm – 2:00am
  - **Overnight**: Between 2:00am – 6:00am
  - **Breakfast**: Between 6:00am – 10:00am
  - **Daytime**: Between 10:00am – 5:00pm
  - **National Prime Time**: Between 5:00pm – 11:00pm

121. Samsung committed the infringing activities without license from AMRH. Samsung's acts of infringement have damaged AMRH, as owner of the '848 Patent. AMRH is entitled to recover from Samsung the damages it has sustained as a result of Samsung's wrongful acts in an amount subject to proof at trial. The infringement of the '848 Patent by Samsung has damaged and will continue to damage Plaintiff.

122. Samsung's infringement of AMRH's '848 Patent has been willful, and continues to be willful. In addition, or in the alternative, Samsung's infringement of AMRH's '848 Patent is willful at least of the date of the service of AMRH's Original Complaint.

Count VI: Infringement of United States Patent No. 10,719,849

123. All preceding factual allegations are incorporated as if fully set forth herein.

124. The USPTO duly and legally issued U.S. Patent No. 10,719,849 ("'849 Patent") to Anonymous Media Research, LLC with Mr. Jonathan Steuer and Mr. Chris Otto as named inventors. Anonymous Media Research, LLC subsequently assigned all rights, titles, and interests in the '849 Patent to AMRH.

125. The '849 Patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code.

126. Samsung has directly infringed and continues to directly infringe the '849 Patent. The infringing acts include, but are not limited to, the manufacture, use, sale, importation, and/or

offer for sale of the Accused ACR Instrumentalities to practice the claimed invention in the '849 Patent. For example, Claim 10 of the '849 Patent[64] recites:

> A computer system comprising one or more computers configured by computer code stored in the one or more computers, the computer code comprising instruction executable by one or more processors of the one or more computers, the instructions comprising instructions for:
>
> generating a play stream of content identification results corresponding to a sequence of data samples, the data samples comprising representations of video data captured at a media monitoring device, wherein content identifiers of the play stream's content identification results are obtained by using corresponding data samples to search a computerized database of known content;
>
> in response to obtaining the content identifiers, utilizing a sequential order of at least two different obtained content identifiers in the play stream to identify a channel corresponding to the data samples, the at least two different obtained content identifiers identifying different media content items; and
>
> using one or more computers to utilize an identified channel corresponding to the data samples to generate a media measurement report.

The Accused ACR Instrumentalities meet the recited elements of the claimed media measurement system in Claim 10.

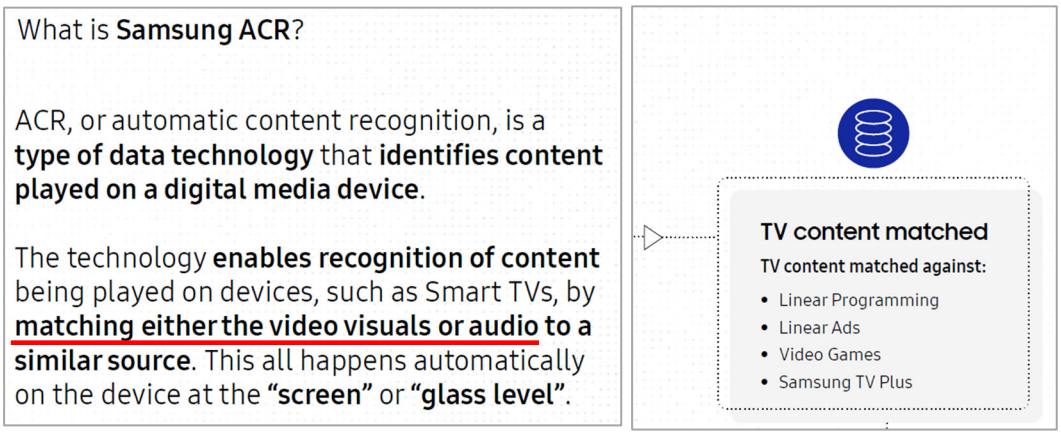
127. For instance, the Accused ACR Instrumentalities comprise a computer system with one or more computers configured by computer code comprising instruction that practices claim 10 of the '849 Patent, *see infra*.

128. The Accused ACR Instrumentalities generate a play stream of content identification results corresponding to a sequence of submitted data samples. For example, Samsung's ACR data flow is configured to capture and transmit a real-time sequence of ACR fingerprint data.[65] Samsung

[64] Claim 10 is referenced herein for representative purposes. Plaintiff intends to identify additional asserted claims and reserves its right to provide greater detail and scope via its Infringement Contentions at the time required under this Court's scheduling order.
[65] Samsung ACR Guide at 7.

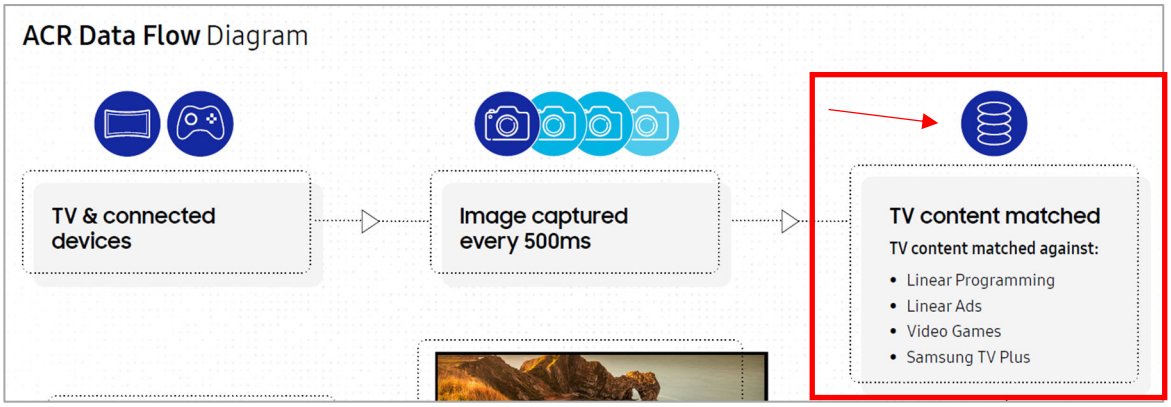
uses this ACR fingerprint data to obtain a corresponding sequence of content identification results by querying a database of known content on a matching server.[66]

129. The Accused ACR Instrumentalities collect and use data samples which comprise representations of video data captured at a media monitoring device. For example, the Accused ACR Instrumentalities use computer servers, including a "matching server," to receive real-time ACR fingerprint data submitted by a Smart TV over an Internet network:[67]



130. The content identifiers of the play stream's content identification results in the Accused ACR Instrumentalities are obtained by using corresponding data samples to search a computerized database of known content. For example, a data flow diagram from Samsung's marketing materials depicts the use of an electronic database to match ACR fingerprint data against a wide range of content, including linear programming, linear ads, video games, and Samsung TV Plus:[68]

[66] Samsung ACR Guide at 6, 7.
[67] Samsung ACR Guide at 4, 6, 7.
[68] Samsung ACR Guide at 7.



131. The Accused ACR Instrumentalities perform, in response to obtaining the content identifiers, using one or more computers to utilize a sequential order of at least two different obtained content identifiers in the play stream to identify a channel corresponding to the data samples, the at least two different obtained content identifiers identifying different media content items. For example, Samsung has stated its ACR data provides "real-time insight into what the viewer was exposed to — including channels, shows, linear ads, streaming apps, game consoles and titles . . ."[69]

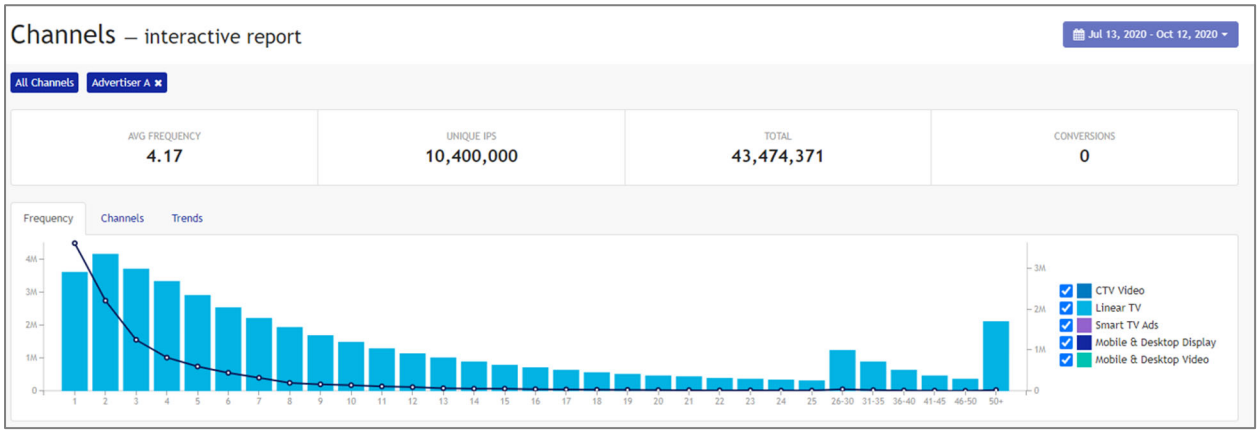
132. Samsung's Smart TV Privacy Policy further states that it tracks information about channels viewed on a Smart TV:[70]

> In addition, if you enable the collection of information about video streams viewed on your SmartTV, we may collect that information and additional information about the network, channels, and programs that you view through the SmartTV. We will use such information to improve the recommendations that we deliver to you on the SmartTV.

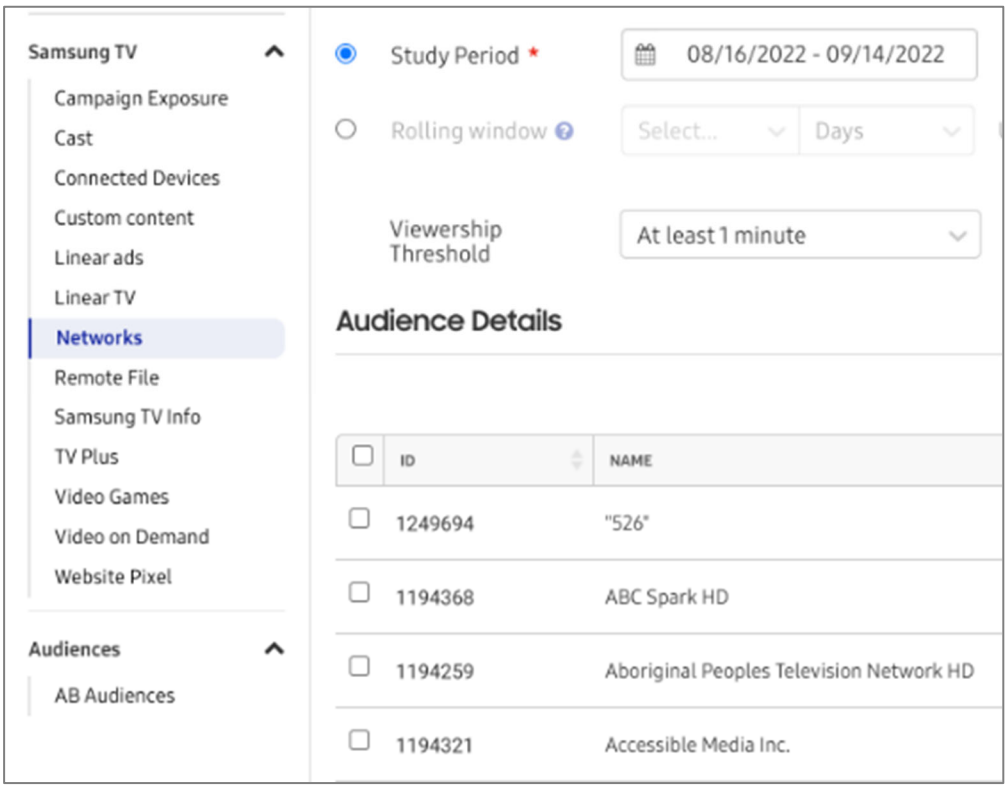
133. Samsung DSP relies on this channel identification in the context of measuring exposure to advertisements, such as, for example, when third-party advertisers generate a

[69] Samsung Ads CA, *Understanding Automatic Content Recognition (ACR): A Samsung Ads Guide for Advertisers* at 5, available at https://assets.mediafly.com/shares/9f64474af5054ab6a91e2eeae6e638f3product6857361/a1f4d (last visited Sept. 8, 2023).
[70] Samsung, *Privacy Policy – Smart TV Supplement*, available at https://www.samsung.com/us/info/privacy/smarttv (last visited Sept. 8, 2023).

"Channels" report that differentiates views based on "[t]he channel of the ad (e. g. CTV Video, Linear TV, Smart TV Ads, Mobile & Desktop Display and Mobile & Desktop Video.)."[71]



134. As another example, Samsung DSP relies on channel identification when differentiating views of linear program content based on a broadcast network:[72]



[71] Samsung DSP Documentation, *Channels*, available at https://adgear.atlassian.net/wiki/spaces/SDD/pages/2320499649/Channels (last visited Sept. 8, 2023).
[72] Samsung DSP Documentation, *Networks*, available at https://help.dsp.samsungads.com/docs/networks (last visited Sept. 8, 2023).

135. The Accused ACR Instrumentalities utilize the identified channel corresponding to the data samples to generate a media measurement report, including, for example, a "Channels" report that differentiates views based on "[t]he channel of the ad (e.g. CTV Video, Linear TV, Smart TV Ads, Mobile & Desktop Display and Mobile & Desktop Video.)."[73] *See supra* ¶ 122.

136. Samsung committed the infringing activities without license from AMRH. Samsung's acts of infringement have damaged AMRH, as owner of the '849 Patent. AMRH is entitled to recover from Samsung the damages it has sustained as a result of Samsung's wrongful acts in an amount subject to proof at trial. The infringement of the '849 Patent by Samsung has damaged and will continue to damage Plaintiff.

137. Samsung's infringement of AMRH's '849 Patent has been willful, and continues to be willful. In addition, or in the alternative, Samsung's infringement of AMRH's '849 Patent is willful at least of the date of the service of AMRH's Original Complaint.

Count VII: Infringement of United States Patent No. 10,572,896

138. All preceding factual allegations are incorporated as if fully set forth herein.

139. The USPTO duly and legally issued U.S. Patent No. 10,572,896 ("'896 Patent") to Anonymous Media Research, LLC with Mr. Jonathan Steuer and Mr. Chris Otto as named inventors. Anonymous Media Research, LLC subsequently assigned all rights, titles, and interests in the '896 Patent to AMRH.

140. The '896 Patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code.

141. Samsung has directly infringed and continues to directly infringe the '896 Patent. The infringing acts include, but are not limited to, the manufacture, use, sale, importation, and/or

[73] Samsung DSP Documentation, *Channels*, available at https://adgear.atlassian.net/wiki/spaces/SDD/pages/2320499649/Channels (last visited Sept. 8, 2023).

offer for sale of the Accused ACR Instrumentalities to practice the claimed invention in the '896 Patent. For example, Claim 1 of the '896 Patent[74] recites:

> A media measurement method comprising:
>
> > using one or more computers to generate a play stream of content identification results corresponding to a sequence of submitted data samples, the submitted data samples corresponding to video data samples captured at a monitoring device associated with a monitored audience member;
> >
> > using one or more computers to utilize sample sequence data and content offset data to deduce play-altering actions of the monitored audience member, the sample sequence data corresponding to a sequence of the content identification results, the content offset data including content offsets associated with the content identification results, a content offset indicating a time position of a content identification result within identified content, wherein to utilize comprises, for a particular plurality of submitted data samples and corresponding content identification results, comparing a progression of log times associated with capture timing of each of the particular plurality of submitted data samples and a progression of content offsets of the corresponding content identification results; and
> >
> > using one or more computers to utilize deduced play altering actions of the monitored audience member to generate a media measurement report.

The Accused ACR Instrumentalities perform the recited steps of the claimed media measurement method in Claim 1.

142. For instance, Samsung uses the Accused ACR Instrumentalities to measure viewership on Smart TVs:[75]

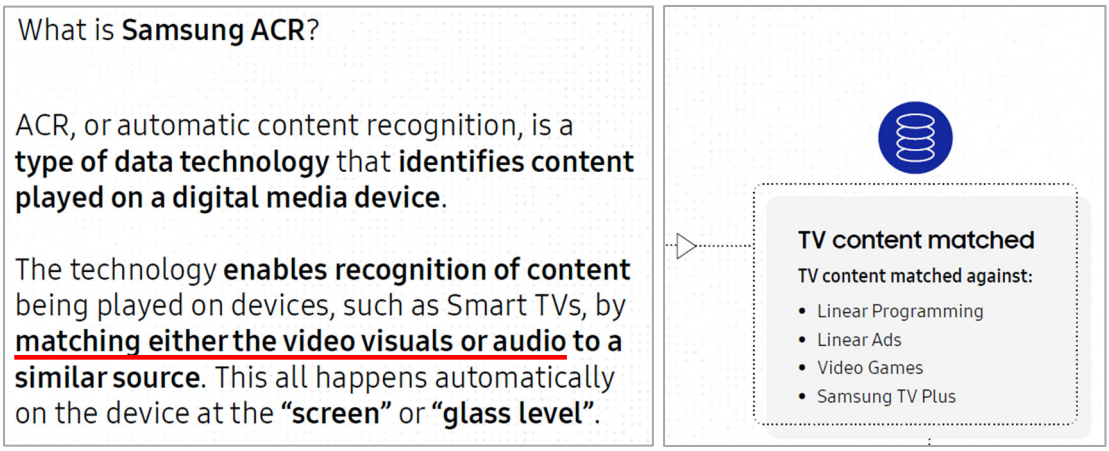
> Samsung Ads has developed its proprietary ACR technology which **powers our insights, targeting and measurement** across millions of Samsung Smart TVs around the world.

143. The Accused ACR Instrumentalities perform the functionality of using one or more computers to generate a play stream of content identification results corresponding to a sequence

[74] Claim 1 is referenced herein for representative purposes. Plaintiff intends to identify additional asserted claims and reserves its right to provide greater detail and scope via its Infringement Contentions at the time required under this Court's scheduling order.
[75] Samsung ACR Guide at 4.

of submitted data samples. For example, Samsung's ACR data flow is configured to capture and transmit a real-time sequence of ACR fingerprint data.[76] Samsung uses this ACR fingerprint data to obtain a corresponding sequence of content identification results by querying a database of known content on a matching server.[77]

144. The Accused ACR Instrumentalities collect and use submitted data samples which correspond to video data samples captured at a monitoring device associated with a monitored audience member.[78]



145. For example, Samsung has disclosed that it monitors video data from Smart TVs and other smart devices used by consumers:[79]

> To make these kinds of enhancements available, we provide video or audio snippets of the program you're watching to third-party providers that use this information in order to return content or advertising "synched" to what you're watching. These providers may receive information about your device (e.g., its IP address and device identifiers) and your interactions with the content and advertising they provide. You may disable these interactive marketing features at any time by visiting the "settings" menu. The choices you make with respect to interactive marketing features will not affect whether you receive other types of ads and marketing on your SmartTV.

[76] Samsung ACR Guide at 7.
[77] Samsung ACR Guide at 6, 7.
[78] Samsung ACR Guide at 4, 6, 7.
[79] Samsung, *Privacy Policy – Smart TV Supplement*, available at https://www.samsung.com/us/info/privacy/smarttv (last visited Sept. 8, 2023).

146. The Accused ACR Instrumentalities perform the function of using one or more computers to utilize sample sequence data and content offset data to deduce play-altering actions of the monitored audience member. For example, Samsung owns and operates servers that use ACR technology to detect whether viewers are watching a television program at the exact time it was broadcast, as opposed to at a later time after the original air date:[80]

> **Time-Shifted Viewing**: *Time-Shifting* allows viewers to watch live programs after their initial broadcast by automatically recording and storing them on a *Digital Video Recorder* (DVR) provided by their cable television service provider. Use this option to benefit from Samsung's ACR Technology for differentiating viewers watching programs broadcast live from those relying on DVR. By default, the following three filtering values are added:
>
> - ***LIVE***: This includes viewers who watched the program at the exact airing time and date it was broadcast on TV networks.
> - ***Plus +3*:** This includes viewers who watched the program within 1-3 days of the broadcast.
> - ***Plus +7*:** This includes viewers who watched the program within 3-7 days of the broadcast.

147. Other examples of play-altering actions deduced in a similar manner using the Accused ACR Instrumentalities include, for example, ad-skipping, pausing time-shifting, channel-surfing, fast-forwarding, and binge-viewing.[81]

148. The Accused ACR Instrumentalities use sample sequence data that corresponds to the sequence of the content identification results. For example, Samsung has stated that its ACR data offers "real-time insight into what the viewer was exposed to – including channels, shows, linear ads, streaming apps, game consoles and titles, and metrics including total time spent,

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[80] Samsung DSP Documentation, *Linear TV*, available at https://adgear.atlassian.net/wiki/spaces/SDD/pages/19005343759/Linear+TV (last visited Sept. 8, 2023).

[81] *See* Extreme Reach, *Automated Content Recognition: A Technology to Turbo-charge Addressable TV*, available at https://extremereach.com/blog/automated-content-recognition-a-technology-to-turbo-charge-addressable-tv (last visited Sept. 8, 2023) ("[ACR] allows content to be recognized by video, audio or watermark cues and matched back to a source database for reference and verification. This includes . . . behaviors associated with what's being watched (ad-skipping, binge-watching) . . . .") ; IAB Australia, *IAB Member Q&A: Use of Data in Connected TV*, available at https://iabaustralia.com.au/resource/iab-member-qa-use-of-data-in-connected-tv (last visited Sept. 8, 2023) ("Advertisers can access key behaviours associated with TV viewership such as ad-skipping, time-shifting, streaming, and binge-watching to better understand the viewing habits, lifestyle and interests of their target audience to inform media planning and CTV activation."); *see also* Samsung DSP Help Center, *Delivery*, available at https://help.dsp.samsungads.com/v1/docs/delivery (last visited Sept. 20, 2023).

household reach, and frequency."[82] Accordingly, there are instances where sample sequence data corresponds to a sequence of content identification results, which results from querying a database of known content on a matching server. *See supra* ¶ 132.

149. The play-altering actions deduced by the Accused ACR Instrumentalities include actions that alter at least one of a pace and a sequence of a media stream. *See supra* ¶¶ 135–136. The recited content offset data, utilized by the Accused ACR Instrumentalities, include content offsets associated with the content identification results, wherein a content offset indicates a time position of a content identification result within identified content. The utilization of that content offset data as performed by the Accused ACR Instrumentalities comprises, for a particular plurality of submitted data samples and corresponding content identification results, comparing a progression of log times associated with capture timing of each of the particular plurality of submitted data samples and a progression of content offsets of the corresponding content identification results.

150. The Accused ACR Instrumentalities utilize the deduced play altering actions to generate media measurement reports.

151. Samsung committed the infringing activities without license from AMRH. Samsung's acts of infringement have damaged AMRH, as owner of the '896 Patent. AMRH is entitled to recover from Samsung the damages it has sustained as a result of Samsung's wrongful acts in an amount subject to proof at trial. The infringement of the '896 Patent by Samsung has damaged and will continue to damage Plaintiff.

[82] Samsung Ads CA, *Understanding Automatic Content Recognition (ACR): A Samsung Ads Guide for Advertisers* at 5, available at https://assets.mediafly.com/shares/9f64474af5054ab6a91e2eeae6e638f3product6857361/a1f4d (last visited Sept. 8, 2023).

152. Samsung's infringement of AMRH's '896 Patent has been willful, and continues to be willful. In addition, or in the alternative, Samsung's infringement of AMRH's '896 Patent is willful at least of the date of the service of AMRH's Original Complaint.

Count VIII: Infringement of United States Patent No. 10,963,911

153. All preceding factual allegations are incorporated as if fully set forth herein.

154. The USPTO duly and legally issued U.S. Patent No. 10,963,911 ("'911 Patent") to Anonymous Media Research, LLC with Mr. Jonathan Steuer and Mr. Chris Otto as named inventors. Anonymous Media Research, LLC subsequently assigned all rights, titles, and interests in the '911 Patent to AMRH.

155. The '911 Patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code.

156. Samsung has directly infringed and continues to directly infringe the '911 Patent. The infringing acts include, but are not limited to, the manufacture, use, sale, importation, and/or offer for sale of the Accused ACR Instrumentalities to practice the claimed invention in the '911 Patent. For example, Claim 1 of the '911 Patent[83] recites:

> A media measurement method comprising:
>
> > receiving, at one or more computers, video data from a monitoring device, the video data being divisible into samples; and
> >
> > determining, by the one or more computers, a next sample of the video data for attempted identification of a media content item corresponding to the next sample by adjusting a length of a time window of the next sample based at least in part upon a result of an attempt by the one or more computers to identify a first prior sample as corresponding to a media content item stored in a computerized database of reference content; wherein the time length window of the next sample is changed relative to a time length window of the first prior sample based on the attempt to identify the first

[83] Claim 1 is referenced herein for representative purposes. Plaintiff intends to identify additional asserted claims and reserves its right to provide greater detail and scope via its Infringement Contentions.

prior sample indicating a result that is different than a result of an attempt to identify a second prior sample;

submitting, by the one or more computers, the determined next sample for attempted content identification; and

generating, by the one or more computers, a play stream of content identifications based on results of attempts to identify a series of samples comprising the determined next sample.

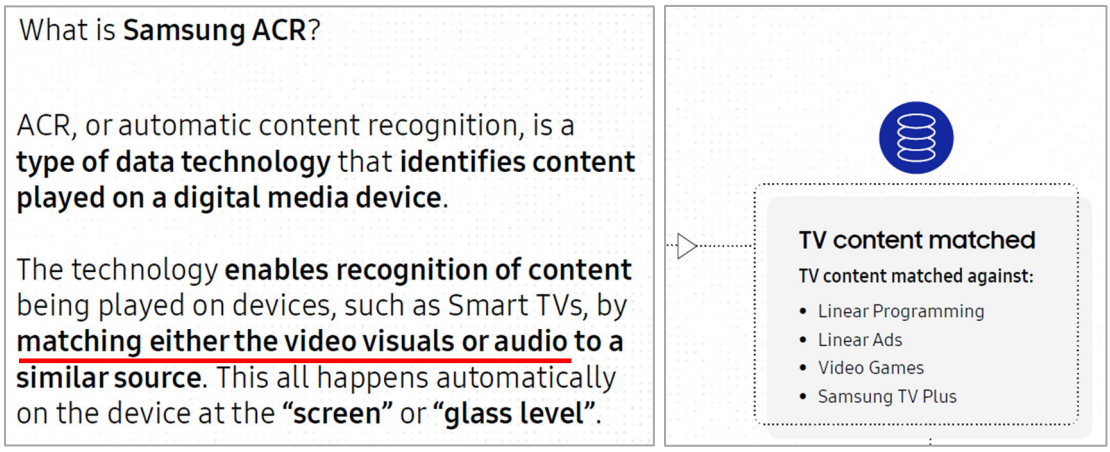
The Accused ACR Instrumentalities perform the recited steps of the claimed media measurement method in Claim 1.

157. For instance, Samsung uses the Accused ACR Instrumentalities to measure viewership on Smart TVs:[84]

> Samsung Ads has developed its proprietary ACR technology which **powers our insights, targeting and measurement** across millions of Samsung Smart TVs around the world.

158. The Accused ACR Instrumentalities perform the functionality of receiving, at one or more computers, video data from a monitoring device, the video data being divisible into samples. For example, Samsung's ACR data flow is designed to capture video data related to the content playing on a Smart TV.[85] Samsung receives and processes this video data at one or more computers, allowing it identify content by matching ACR fingerprint data.[86]

[84] Samsung ACR Guide at 4.
[85] Samsung ACR Guide at 7.
[86] Samsung ACR Guide at 7.



159. The Accused ACR Instrumentalities determine, using the one or more computers, a next sample of the video data for attempted identification of a media content item corresponding to the next sample. For example, Samsung performs an attempted identification by using ACR fingerprint data and querying an electronic database of known content.[87]

160. Discovery has revealed that the Accused ACR Instrumentalities adjust a length of a time window of the next sample based at least in part upon a result of an attempt by the one or more computers to identify a first prior sample as corresponding to a media content item stored in a computerized database of reference content. Moreover, the time length window of the next sample in the Accused ACR Instrumentalities is changed relative to a time length window of the first prior sample based on the attempt to identify the first prior sample indicating a result that is different than a result of an attempt to identify a second prior sample. AMRH is contemporaneously serving Infringement Contentions under Local Patent Rule 3-1 reflecting these infringing activities and functionalities by Samsung's Accused ACR Instrumentalities.

161. The Accused ACR Instrumentalities submit, by the one or more computers, the determined next sample for attempted content identification. For example, the Accused ACR

[87] Samsung ACR Guide at 6, 7.

Instrumentalities use computer servers, including a "matching server," to perform a matching query using real-time ACR fingerprint data submitted by a Smart TV:[88]

162. The Accused ACR Instrumentalities generate, by the one or more computers, a play stream of content identifications based on results of attempts to identify a series of samples comprising the determined next sample. Samsung obtain a series of content identifications by using ACR fingerprint data to query a database of known content on a matching server.[89]

163. Samsung committed the infringing activities without license from AMRH. Samsung's acts of infringement have damaged AMRH, as owner of the '911 Patent. AMRH is entitled to recover from Samsung the damages it has sustained as a result of Samsung's wrongful acts in an amount subject to proof at trial. The infringement of the '911 Patent by Samsung has damaged and will continue to damage Plaintiff.

164. Samsung's infringement of AMRH's '911 Patent has been willful, and continues to be willful. In addition, or in the alternative, Samsung's infringement of AMRH's '911 Patent is willful at least of the date of the service of this Amended Complaint.

JURY DEMAND

165. AMRH hereby demands a trial by jury on all issues.

PRAYER

Wherefore, AMRH prays for entry of judgment as follows:

166. A judgment in favor of AMRH that Samsung has infringed and is infringing, either literally and/or under the doctrine of equivalents, the Asserted Patents;

167. A judgment in favor of AMRH that Samsung's infringement has been and continues to be willful; in the alternative, a judgment in favor of AMRH that Samsung's infringement is

[88] Samsung ACR Guide at 4, 6, 7.
[89] Samsung ACR Guide at 6, 7.

willful and continues to be willful as of the date Samsung received notice of its infringement through this lawsuit;

168. An award of damages in favor of AMRH adequate to compensate AMRH for Samsung's infringement of the Asserted Patents which shall in no event be less than a reasonable royalty, together with interest and cost as fixed by the court pursuant to 35 U.S.C. § 284;

169. An award of enhanced damages in favor of AMRH against Samsung for up to three times the award of actual damages for Samsung's willful infringement of the Asserted Patents pursuant to 35 U.S.C. § 284;

170. A permanent injunction in favor of AMRH against Samsung enjoining Samsung, its officers, agents, employees, and others acting in privity, from further infringement of the Asserted Patents;

171. An award of an ongoing royalty for Samsung's post-judgment infringement in the event a permanent injunction is not granted;

172. An award of attorneys' fees pursuant to 35 U.S.C. § 285 or as otherwise permitted by law in an amount deemed just and appropriate by the Court;

173. An award of costs and expenses as deemed appropriate by the Court; and

Any other legal or equitable relief to which AMRH is justly entitled.

Dated: November 7, 2024

Respectfully submitted,

/s/ Jason S. McManis

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a true and correct copy of the above and foregoing document was filed electronically on November 7, 2024. As such, this document was served on all counsel of record pursuant to the Federal Rules of Civil Procedure.

/s/ Jason S. McManis
Jason S. McManis