

AMR EX. 2123
Samsung v AMR
IPR2025-00558

I. INTRODUCTION

Pursuant to the Amended Docket Control Order (Dkt. No. 57) and Local Patent Rule (“P.R.”) 3-3, Defendants Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (collectively, “Samsung” or “Defendants”), hereby disclose these Third Supplemental Invalidity Contentions in the above-captioned case to Anonymous Media Research Holdings, LLC (“AMRH” or “Plaintiff”). On January 22, 2024, AMRH served Samsung with Plaintiff’s Disclosure of Asserted Claims and Infringement Contentions Pursuant to P.R. 3-1 & P.R. 3-2 Document Production Accompanying Disclosure (its “Infringement Contentions”). On October 21, 2024, AMRH served Samsung with Plaintiff’s Amended Disclosure of Asserted Claims and Infringement Contentions Pursuant to P.R. 3-1 & P.R. 3-2 Document Production Accompanying Disclosure (its “Amended Infringement Contentions”). On January 15, 2025, AMRH served Samsung with Plaintiff’s Second Amended Disclosure of Asserted Claims and Infringement Contentions Pursuant to P.R. 3-1 & P.R. 3-2 Document Production Accompanying Disclosure (its “Second Amended Infringement Contentions”) alleging infringement of the following claims (“Asserted Claims”) of the following patents (“Asserted Patents”):

- 8,296,791 (the “’791 Patent”): Claims 1-3, 5, 7, 9-11
- 8,510,768 (the “’768 Patent”): Claims 1-6, 9-14
- 8,677,389 (the “’389 Patent”): Claims 1, 5-7, 9-10
- 8,756,622 (the “’622 Patent”): Claims 1-3, 5-13
- 10,572,896 (the “’896 Patent”): Claims 1-3, 5, 7, 9-13
- 10,719,848 (the “’848 Patent”): Claims 1-6, 9-14
- 10,719,849 (the “’849 Patent”): Claims 1-3, 5-13
- 10,963,911 (the “’911 Patent”): Claims 1, 5-7, 9-13, 17

(Second Amended Infringement Contentions at 2).¹²

As explained below and in the accompanying exhibits, incorporated by reference herein, Defendants contend that each of the Asserted Claims is invalid under at least 35 U.S.C. §§ 101, 102, 103, and/or 112 (pre-AIA and AIA). In its Second Amended Infringement Contentions, AMRH asserts that each Asserted Patent “is entitled to priority date of May 27, 2004” (Second Amended Infringement Contentions at 4-5), prior to the March 16, 2013 effective date of the Leahy-Smith America Invents Act (“AIA”), which would mean that each of the Asserted Claims falls under pre-AIA law. Defendants do not concede that any or all of the Asserted Claims of the Asserted Patents, including but not limited to those of the ’896, ’848, ’849, and ’911 Patents, the original application for each of which was filed after the March 16, 2013 effective date of the AIA, are entitled to the alleged priority date, and thus may not be subject to pre-AIA treatment. The Local Patent Rules do not require Defendants to provide their alleged priority dates in these Invalidity Contentions and Defendants reserve the right to challenge the alleged priority date for any of the Asserted Claims of the Asserted Patents.

In particular, Plaintiff’s Second Amended Infringement Contentions allege that each Asserted Patent is entitled to the claimed priority date because each claims priority to Provisional

¹ AMRH’s P.R. 3-1(c) claim charts include claims that were not identified in its P.R. 3-1(a) disclosures (“Non-Asserted Claims”), and for which no allegations are provided (see, e.g., Ex. 1 to Infringement Contentions, Claim Chart for the ’768 Patent, at 58). Instead, AMRH purports to reserve the right to assert the Non-Asserted Claims after discovery. Defendants understand the Non-Asserted Claims currently to be beyond the scope of this case and therefore do not include them in their Invalidity Contentions. Should AMRH obtain leave of court to amend its Infringement Contentions to assert any of the Non-Asserted Claims, Defendants reserve the right to supplement their contentions to include any such claims, and AMRH has agreed not to oppose such supplementation.

² On January 21, 2025, AMRH served Samsung with a corrected version of its Second Amended Infringement Contentions, which corrected the listing of Asserted Claims of the ’622 and ’849 Patents.

Application No. 60/574,836 (the “’836 Provisional Application”), filed on May 27, 2004. (Second Amended Infringement Contentions at 4-5.) “An application for patent filed under section 111(a) [] for an invention disclosed in the manner provided by section 112(a) . . . in a provisional application filed under section 111(b) . . . shall have the same effect, as to such invention, as though filed on the date of the provisional application filed under section 111(b)” 35 U.S.C. § 119(e)(1); *see also Uniloc USA, Inc. v. Sega of Am., Inc.*, 711 F. App’x 986, 989 (Fed. Cir. 2017) (“Under pre-AIA 35 U.S.C. §§ 119 and § 120, a patent may claim priority to an earlier application so long as the earlier application satisfies the first paragraph of § 112.”). Section 112 requires that “[t]he specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains . . . to make and use the same” *See* pre-AIA 35 U.S.C. § 112 ¶1; AIA § 112(a). “A disclosure satisfies the written description requirement if it ‘reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date.’” *Uniloc*, 711 F. App’x at 989 (quoting *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (2010) (en banc)). “And ‘[o]ne shows that one is ‘in possession’ of *the invention* by describing *the invention, with all its claimed limitations*, not that which makes it obvious.’” *Id.* (quoting *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997)) (emphasis in original). “This inquiry, as we have long held, is a question of fact.” *Ariad*, 598 F.3d at 1351.

Contrary to Plaintiff’s assertion, the Asserted Patents are not entitled to the priority date of the ’836 Provisional Application. For example, the claims of the ’896, ’848, ’849, and ’911 Patents relate to captured video data. (*See* ’896 Patent at Claim 1 (“the submitted data samples corresponding to video data samples captured at a monitoring device”); ’848 Patent at Claim 1

(“the video data samples comprising representations of video data captured at a media monitoring device”); ’849 Patent at Claim 1 (“the data samples comprising representations of video data captured at a media monitoring device”); ’911 Patent at Claim 1 (“receiving, at one or more computers, video data from a monitoring device, the video data being divisible into samples”).) Each of these patents also includes an additional conclusory paragraph with disclosures related to video data that are not present in the ’791, ’768, ’389, or ’622 Patents, or in the ’836 Provisional Application. (See ’896 Patent at 14:16-29 (“[A]lternative embodiments to . . . the exemplary methods discussed in the context of the audio data-based embodiments illustrated in FIGS. 1-6 rely instead on video data.”); ’848 Patent at 14:16-29 (same); ’849 Patent at 14:18-30 (same); ’911 Patent at 14:17-29 (same)). The first time this paragraph appeared during the prosecution of the Asserted Patents and applications related thereto was in the specification filed on May 3, 2019, as part of U.S. Patent Application 16/403,204 (the “’204 Application”), which issued as the ’896 Patent. The applications that issued as the ’849, ’849, and ’911 Patents are all continuations of the ’204 Application.

To the extent the paragraph added to the specification of the ’204 Application alone provides adequate written description to support the Asserted Claims of the ’896, ’848, ’849, and ’911 Patents claiming methods and systems related to video data, the ’836 Provisional Application lacks such support. The Asserted Claims of the ’896, ’848, ’849, and ’911 Patents therefore are not entitled to the priority date of the ’836 Provisional Application, and the earliest possible priority date for those claims is May 3, 2019. Accordingly, the ’791, ’768, ’389, and ’622 Patents, each of which issued before May 3, 2019, are prior art to the ’896, ’848, ’849, and ’911 Patents under AIA 35 U.S.C. § 102(a).

Further, to the extent that any Asserted Claim of any Asserted Patent is found to be beyond the scope of the subject matter disclosed in the '836 Provisional Application such that it is not entitled to the priority date of the '836 Provisional Application, Defendants reserve all rights, including to seek leave to amend and/or supplement these Invalidity Contentions.

Additionally, should the application for any of the Asserted Patents contain or have contained at any time, a claim having an effective filing date of March 16, 2013, or later, or a specific reference under 35 U.S.C. §§ 120, 121, or 365(c), to any patent or application that contains or contained at any time such a claim, the AIA's provisions would apply to every claim to have issued from such an application. *See* AIA § 3(n)(1). Unless stated otherwise, each citation to any of 35 U.S.C. §§ 101, 102, 103, and/or 112, shall be interpreted as referring to both the pre-AIA and AIA section(s).

For purposes of these Invalidity Contentions, Defendants identify prior art references and provide element-by-element claim charts based, in part, on the apparent claim constructions advanced by Plaintiff in its Second Amended Infringement Contentions. The citation of prior art herein and in the accompanying exhibits is not intended to reflect Defendants' claim construction positions, which will be disclosed in due course in accordance with the Amended Docket Control Order, and may instead reflect Plaintiff's apparent (and potentially erroneous) claim constructions based on its Second Amended Infringement Contentions. Nothing stated herein shall be treated as an admission or suggestion that Defendants agree with Plaintiff regarding either the scope of any of the Asserted Claims or the claim constructions advanced in the Second Amended Infringement Contentions. Moreover, nothing in these Invalidity Contentions shall be treated as an admission that Defendants' accused technology meets any limitations of any Asserted Claim.

Defendants' Invalidity Contentions herein reflect Defendants' knowledge as of this early date in the present action. Defendants reserve the right, to the extent permitted by the Court and the applicable statutes and rules, to modify and/or supplement their Invalidity Contentions in response to becoming aware of additional prior art or information regarding prior art, any modification or supplementation of Plaintiff's Second Amended Infringement Contentions, any claim construction by the Court, or as otherwise may be appropriate.

Defendants' Exhibits attached hereto cite to particular teachings and disclosures of the prior art as applied to features of the Asserted Claims. The disclosures in the prior art are at least as enabling of the claimed features as the specifications of the Asserted Patents. Moreover, persons having ordinary skill in the art ("POSITA") generally view a prior art disclosure in its entirety (e.g., view specific disclosures in the context of the general disclosures), in the context of other publications, literature, products, and understanding and knowledge of such a person. As such, the cited portions of prior art identified herein are exemplary only. Defendants may rely on the entirety of the prior art references listed herein, including un-cited portions of those prior art references, and on other publications, systems, evidence, and expert testimony shedding light on those prior art references or the state of the art in general, including as aids in understanding and interpreting the cited portions, as providing context thereto, and as additional evidence that the prior art discloses a claim limitation.

Defendants may also rely on documents, systems, products, testimony, and other evidence to establish bases for, and motivations to make, combinations of or modifications to certain cited references that render the Asserted Claims obvious. Defendants may rely upon corroborating documents, products, testimony, and other evidence, including materials obtained through further discovery, investigation, and third-party discovery of the prior art identified

herein that describes the invalidating features identified in these contentions; evidence of the state of the art in the relevant time period (irrespective of whether such references themselves qualify as prior art to the Asserted Patents), including prior art listed on the face of the Asserted Patents and/or disclosed in the specification(s) (i.e., applicant admitted prior art); and/or expert testimony to provide context to or aid in understanding the cited portions of the identified prior art.

The references discussed in the Exhibits hereto disclose the elements of the Asserted Claims explicitly, inherently, and/or in combination with other references or the knowledge of one skilled in the art as of the earliest possible priority date(s) of the Asserted Patents. The references also may be relied upon to show the state of the art in the relevant time frame. To the extent the attached claim charts cite to a reference for each element or limitation of an Asserted Claim, Defendants contend that such reference anticipates that claim or renders it obvious, either alone or in combination with other references. To the extent suggested obviousness combinations are included in the attached exhibits, they are provided in the alternative to Defendants' anticipation contentions and are not to be construed to suggest that any reference included in the combinations is not by itself anticipatory.

Pursuant to P.R. 3-3 and 3-4, Defendants provide disclosures and related documents pertaining only to the Asserted Claims as identified by Plaintiff in its Second Amended Infringement Contentions. Defendants will further supplement their P.R. 3-4 document production should they later find additional prior art or obtain translations of previously-produced art. Much of the art identified in the attached Exhibits reflects common knowledge and the state of the art at or around the time of the earliest possible priority date of the Asserted Patents.

Each of the Asserted Claims³ of the Asserted Patents is anticipated by and/or obvious in view of one or more items of prior art identified herein, alone or in combination. Specific examples of this anticipation and obviousness, along with the motivation to combine the selected prior art, are set forth in the attached Claim Charts (Exs. A-F, J-K) and Combinations Exhibits (Exs. G-1 – G-8).

II. BACKGROUND AND STATE OF THE ART⁴

The prior art identified herein and discussed in the Exhibits attached hereto may be relied on to show the state of the art and industry prior to Plaintiff's alleged priority dates for the Asserted Patents. This prior art identification is only exemplary and is not in any way intended to limit the scope of what one of ordinary skill in the art would have understood, or the breadth of the state of the art, at or around the time of the earliest possible priority date. Defendants reserve the right to rely upon additional prior art, information, testimony, and/or knowledge to demonstrate what one of ordinary skill in the art would have understood prior to the earliest possible priority date for the Asserted Claims of the Asserted Patents. Defendants may further rely upon the Admitted Prior Art disclosed in the Asserted Patents, including but not limited to the concepts and prior art references discussed therein. *See infra* Section III.A. Defendants may

³ For reasons analogous to those identified herein, Defendants contend all Non-Asserted Claims of the Asserted Patents are invalid as anticipated and/or obvious in view of the prior art, patent ineligible subject matter, indefinite, not enabled, and/or not supported by the written description.

⁴ Defendants' discussion of the Background and the State of the Art is not intended to reflect Defendants' claim construction positions, which will be disclosed in due course in accordance with the Amended Docket Control Order, and may instead reflect Plaintiff's apparent (and potentially erroneous) claim constructions based on its Second Amended Infringement Contentions. Nothing stated herein shall be treated as an admission or suggestion that Defendants agree with Plaintiff regarding either the scope of any of the Asserted Claims or the claim constructions advanced in the Second Amended Infringement Contentions. Moreover, nothing in these Invalidity Contentions shall be treated as an admission that Defendants' accused technology meets any limitations of the claims.

also rely on patents and/or publications that encompass the state of the art at or around the time of the earliest possible priority date.

Defendants may also rely on certain prior art technologies and/or prior art systems and references as describing or indicating the industry state of the art, as would be known to a person of skill in the art, at or around the time of the earliest possible priority date(s) of the Asserted Claims of the Asserted Patents. These include all technologies, systems, and references cited in the Asserted Patents and related patent applications and/or raised during any proceedings before the U.S. Patent and Trademark Office. Defendants may rely on articles, publications, textbooks, and/or physical devices to establish the state of the art at or around the time of the earliest possible priority date(s) of the Asserted Claims of the Asserted Patents. Samsung reserves the right to add additional documents describing any such system that may become available through further investigation and discovery.

A. Audience Measurement Methods

Nearly as long as there have been audiences, there have been audience measurement systems. Radio broadcasting was first widely used starting in the late 1920s. In the United States shortly thereafter, in the late 1920s–early 1930s, radio audiences first started being measured via survey sampling. *See* Agnes Estibals, *A Statistical Analysis of Television Audience Measurement Systems and Their Implications* (Ph.D. dissertation, The London School of Economics and Political Science) (“Estibals”) at 13. In 1930, the Co-operative of Analysis of Broadcasting provided the first survey of a radio audience for advertisers. *Id.*, Ex. 5. Monitoring continued and advanced with the introduction of televisions, with television monitoring systems appearing in the late 1940s. *Id.* Early monitoring systems at that time were capable of determining when sets were used, who listened, which programs and stations were listened to,

and which programs were preferred. *Id.* Three basic categories of data collection techniques were used around this period.

- 1) Recall techniques, and in particular Day-After-Recall (DAR) techniques, which consists in getting respondents to reconstruct during the interview their contacts with the media over a previous and usually short period of time, typically the day. . .
- 2) Diary techniques, which consist in formatted booklets in which respondents are asked to record their media sessions as they occur over a set period of time, usually over one or a couple of weeks. Diaries are then collected and data are entered. . .
- 3) People-metering techniques, which comprise a set meter, a remote control handset and a central storage unit. The set meter monitors whether the TV set is on and which channel is being displayed. Respondents are asked to log in the remote control handset according to the instructions they have been given. . .

Estibals at 141.

As audiences gained new ways to consume media, new ways emerged to measure those audiences. There also emerged a need for faster, less cumbersome measurement that did not rely on manual input from users. As described in more detail below, various systems and algorithms were developed to accomplish this goal before and around Plaintiff's alleged priority date of May 27, 2004. These methods measured not just radio and satellite television programs but digital media, CDs, portable media players, on-demand television programming, streaming, and more.

As discussed in more detail below, the systems below and also many of those listed in Exhibit I shared key components that were well-known, routine, and conventional prior to the priority date of the asserted patents. For example, each contained the ability to sample data (including audio and video), match samples to data in a database (including through use of signatures), generate lists and reports (inclusive of play streams and media measurement reports), correct for errors (including using reference data), and determine additional information through

analysis of the data (including channel information and user interaction with the media). Critical to each system was the ability to provide accurate and meaningful data, which meant the ability to analyze and correct errors in results. Also common to these systems was the ability to provide that analysis to customers in the form of reports that customers could use to analyze consumption of their media.

Moreover, as acknowledged in the Asserted Patents (*see infra* Section III.A), “[s]ome media measurement systems have used codes to ‘tag’ and track particular content” (’768 Patent at 1:33-35) while “some content recognition systems have recently been deployed which do not rely on codes” (*id.* at 1:37-40).

Systems that utilized codes were able to detect inaudible codes that TV and radio broadcasters as well as cable networks embedded into audio portions of their programming. Devices picked up the codes, sent them for comparison with a database, and a match was made to determine what the user was listening to. *See, e.g., Arbitron Completes First Phase of Portable People Meter U.S. Market Trial*, Business Wire, Dec. 13, 2001.

Other systems did not rely on codes and, e.g., utilized fingerprinting instead. Specifically:

The prime objective of multimedia fingerprinting is an efficient mechanism to establish the perceptual equality of two multimedia objects: not by comparing the (typically large) objects themselves, but by comparing the associated fingerprints (small by design). In most systems using fingerprinting technology, the fingerprints of a large number of multimedia objects, along with their associated meta-data (e.g. name of artist, title and album) are stored in a database. The fingerprints serve as an index to the meta-data. The meta-data of unidentified multimedia content are then retrieved by computing a fingerprint and using this as a query in the fingerprint/meta-data database. The advantage of using fingerprints instead of the multimedia content itself is three-fold:

1. Reduced memory/storage requirements as fingerprints are relatively small;

2. Efficient comparison as perceptual irrelevancies have already been removed from fingerprints;
3. Efficient searching as the dataset to be searched is smaller.

As can be concluded from above, a fingerprint system generally consists of two components: a method to extract fingerprints and a method to efficiently search for matching fingerprints in a fingerprint database.

J.A. Haitzma, *Audio Fingerprinting “A New Technology To Identify Music”* (Master’s dissertation, Eindhoven University of Technology) Aug. 13, 2002.

Preceding the earliest possible priority date of the Asserted Patents (May 27, 2004) numerous systems existed that utilized fingerprinting technology. What follows are examples of popular systems at the time along with descriptions of their additional well known, conventional, and routine features.

B. Nielsen

Arthur C. Nielsen founded Nielsen Media Research in 1923. *How Does the Nielsen System Work* (Dec. 9, 2003), <https://www.today.com/popculture/how-does-nielsen-system-work-wbna3475737>. Since that time, Nielsen has had a long history of innovation in the audience measurement space. Nielsen introduced the Nielsen Rating Index (NRI) in 1942. Estibals, Ex. 5. The NRI was one of the first radio audience measurement systems to use a set metering data collection technique. *Id.* With the invention of television, Nielsen launched the National Television Index (NTI) in 1950, the first television survey using a set metering data collection technique. *Id.* Through the use of this technology, Nielsen was able to tell “when sets in a sample household are on and what channels they are tuned to.” Bill Carter, *TV Viewers, Beware: Nielsen May Be Looking*, N.Y. Times (June 1, 1989), <https://www.nytimes.com/1989/06/01/business/tv-viewers-beware-nielsen-may-be-looking.html>. In 1951 Nielsen launched the Multi-Network Audience, a new service based on NTI’s sub-sample measuring program. Estibals, Ex. 5. Then,

in 1954 Nielsen launched the National Audience Composition for both radio and television media in order to furnish demographic data not provided by AMS based on set meter techniques. In 1973 Nielsen introduced Storage Instantaneous Audi-meter which provided day-after rating for local meter services in New York and Los Angeles and 48-hour ratings for national TV shows. *Id.* In 1977, Nielsen launched Automated Measurement of Lineups which allowed identification of network programs. In 1984, Nielsen began testing its people metering technique and in 1987 it converted its television set meter measurement system into a people meter measurement system using an initial sample of 5,000 households. *Id.* Nielsen introduced the “passive” people meter technique in 1989. Carter at 2; *see also* Celebrating 95 Years of Innovation, Nielsen, <https://sites.nielsen.com/timelines/our-history/>. Nielsen is extremely well known in the industry, and industry leaders rely on Nielsen’s insight and reports, with at least one broadcast entertainment president admitting “she has a fax machine in her bedroom that beeps every morning when the previous night’s ratings come in. *See How Does the Nielsen System Work.* Indeed, the Asserted Patents cite Nielsen under “Other Publications.”

As early as 1999, Nielsen recognized that digital technology brought new challenges to the way monitoring had previously been done. Nielsen also recognized that there were multiple solutions including not just codes but also sample matching. Estibals at 163; *Why Can’t We Count*, Advertising Age, May 10, 1999. By 1999, Nielsen turned its attention to its active/passive people meter, which could use both active codes plus passive signatures to identify what was playing on a television. Estibals at 163.

At that same time, Nielsen was also developing products that “would be capable of identifying [] TV screen content.” *Id.* This new method offered the ability to identify channels in

a non-code based manner by comparing audio and also “picture samples” as described in Estibals, Ex. 32A:

New set-metering technologies

A new generation of set meters is currently being developed in order to identify channels carried out by digital technologies. They are based either on a code signal technology (programmes are encoded with the broadcaster's unique code signal that is decoded by the meter) or on a matching with masters technology (studio samples are compared with audio or picture samples registered in homes).

In addition to the above, Defendants refer to the invalidity contention charts attached hereto. Defendants have produced other documents describing the operation of this system that existed in the prior art, and reserves the right to add additional documents describing this system that may become available through further investigation and discovery.

C. Arbitron

In 1992, Arbitron began developing the Portable People Meter, a pager-sized device that could measure out-of-home broadcast and cable television viewing and radio listening by recording inaudible codes embedded in the programming. Michele Greppi, *Arbitron, Nielsen on the Go*, Hollywood Reporter, June 2, 2000. Arbitron conducted field trials of the device in Manchester, England in 1998 and 1999. *Nielsen, Arbitron Team Up on Portable People Meter*, Multichannel News, June 5, 2000. The device picked up any radio or television audio signal within a certain range of the person wearing the meter. *Id.* Before the user went to bed, they would place the meter in a base station in their home, which extracted data and recharged the meter battery. *Id.* Thus, Arbitron's people meter collected audio samples, compared it to a database, and made an identification of the audio based on matches. The Portable People Meter was the first to measure out of home viewing. *Id.* In 2000, Arbitron partnered with Nielsen to test

the Portable People Meter. *Id.* Nielsen acquired Arbitron in 2013.

<https://sites.nielsen.com/timelines/our-history/>.

Similarly, Arbitron unveiled Media Watch by 1990, which used “[f]rame-by-frame, pattern recognition technology to identify commercials.” *Arbitron to Track TV Commercials*, AdWeek, August 14, 1989. The technology could “scan the content of broadcasts on all stations in the market and identify commercials by distinguishing between program content, credits, station identifications and commercials.” *Arbitron expands use of Media Watch ad monitor system*, Electronic Media, June 24, 1991. Customers would use the resulting data to determine viewership of their commercials.

Arbitron is extremely well known in the industry. Indeed, the Asserted Patents cite Arbitron under “Other Publications.”

In addition to the above, Defendants refer to the invalidity contention charts attached hereto. Defendants have produced other documents describing the operation of this system that existed in the prior art, and reserves the right to add additional documents describing this system that may become available through further investigation and discovery.

D. GraceNote

Around 2000, Gracenote was a music information services provider. Gracenote maintained the CD Data Base (CDDB). When a user inserted a CD into a music player, the player connected to the CDDB and then displayed all of the metadata for the music available on that CD. See Erik Duval & Wayne Hodgins, *Making Metadata Go Away: “Hiding Everything But the Benefits.”* Int’l Conference on Dublin Core & Metadata Applications, 2004, <https://doi.org/10.23106/dcmi.952107672>. To make this possible, Gracenote analyzed music based on regional popularity and created geographically customized databases that were embedded directly onto device hard drives and updated locally. The software developers and

consumer electronics makers who licensed the CDDB service could display artist, album and track name listings and other music related information automatically in their applications once the system matched the song to the database. *See Gracenote CDDB Boasts 2m CDs; Brief Article*, The Online Reporter, Aug. 16, 2003.

Gracenote's system allowed for identification of songs, artists, and albums based on audio samples and also provided error correction. More particularly, as GraceNote described:

“For example, when you insert a music CD in your computer, the software player application on your computer uses our service to first identify the CD, and then display the artist, title, tracklist, and other information to you instantly. Most commercial music CDs do not contain any of this information on the CD itself. That's why we created the service. One of the most interesting features of the service is that it provides a forum for exchange of music information between fans. . . . One of the jobs of the CDDB service is to construct a database from thousands of these submissions every day from all over the world. The service compares edits from multiple submissions, reconciles duplicate entries, corrects errors, combines many submissions into individual records, etc. The result over the many years that the service has been in existence is a massive database compiled from many sources, and made instantly available by high-speed servers with dependable, worldwide, around-the-clock access. That is the CDDB service.” – www.gracenote.com

Bill N. Schilit et al., *Challenge: Ubiquitous Location-Aware Computing and the “Place Lab” Initiative*, Jan. 2003.

Throughout the years Gracenote has evolved beyond CDs, becoming the industry standard for ACR technology. *see An Unprecedented View: Nielsen Acquires Gracenote*, Nielsen, Dec. 2016, <https://www.nielsen.com/news-center/2016/an-unprecedented-view-nielsen-acquires-gracenote/>. Gracenote was acquired by Nielsen in 2017.

<https://sites.nielsen.com/timelines/our-history/>.

In addition to the above, Defendants refer to the invalidity contention charts attached hereto. Defendants have produced other documents describing the operation of this system that

existed in the prior art, and reserves the right to add additional documents describing this system that may become available through further investigation and discovery.

E. Philips

Philips research was using audio fingerprinting to identify music at least as of 2002. Applications of this fingerprinting method extended to “broadcast monitoring” which was inclusive of “radio, television or web broadcasts for, among others, purposes of . . . advertisement verification and people metering.” Haitsma at 14. In particular, Philips utilized fingerprints from audio data samples and matched these to a fingerprint database. *Id.* at 5. In part, the Philips algorithm converted “a stream of audio into a stream of sub-fingerprints” as part of its matching process. *Id.* at 9. Philips also considered when there was a failure to reach a match: “A false negative occurs when the fingerprints of perceptually similar audio clips are too different to lead to a positive match.” *Id.* at 12. The Philips system also scrubbed (i.e., error corrected) using reference information when errors were detected: “Therefore a novel algorithm is devised, which uses the fact that sub-fingerprints sometimes do not contain any bit errors. In case they do, a more sophisticated algorithm can be used, which uses reliability information of the extracted fingerprint bits.” *Id.* at 5; *see also* Jaap Haitsma, et al., *A Highly Robust Audio Fingerprinting System*, Philips Research, 2002.

Philips is well known in the industry. Indeed, the Asserted Patents cite Philips under “Other Publications” and elsewhere in the patent.

In addition to the above, Defendants refer to the invalidity contention charts attached hereto. Defendants have produced other documents describing the operation of this system that existed in the prior art, and reserves the right to add additional documents describing this system that may become available through further investigation and discovery.

F. Shazam

Shazam is a music technology and services company that started in 2000. Avery Li-Chun Wang, *An Industrial-Strength Audio Search Algorithm*, ISMIR, Jan. 2003, at 1. Its flagship product launched by 2002 and allowed users to identify songs, albums, and artists when they heard a song in public. Users would dial Shazam's four-digit number, let their device listen to the song, then receive information about the song. *See IDG Shazam Entertainment closes \$7.5million of equity funding; An exciting new technology to recognise music over mobile phones phones* (M2 Presswire, July 24, 2001); *Shazam Entertainment Launches The World's First-Ever Real-Time Song Identification Service Via Mobile Phones at IDG Executive Forum's DEMOmobile 2002 Conference*, PR Newswire, Sept. 18, 2002.

Similar to Philips, Shazam utilized a fingerprinting (i.e., signature) method instead of using code-based identification. Specifically,

Each audio file is “fingerprinted,” a process in which reproducible hash tokens are extracted. Both “database” and “sample” audio files are subjected to the same analysis. The fingerprints from the unknown sample are matched against a large set of fingerprints derived from the music database. The candidate matches are subsequently evaluated for correctness of match.

Wang at 1.

Shazam likewise indicates when there is no match. Wang at 5-6; Wang at FIGs 2A-B. Shazam likewise discloses production of a play stream or “constellation map” of matching audio samples. Wang at 2-3. As part of this data, Shazam calculates “time offsets.” *Id* at 3. The system also error corrects (or scrubs). *Id.* at 1-2 (“The candidate matches are subsequently evaluated for correctness of match.”).

Shazam was also well known in the industry and the Asserted patents cite it.

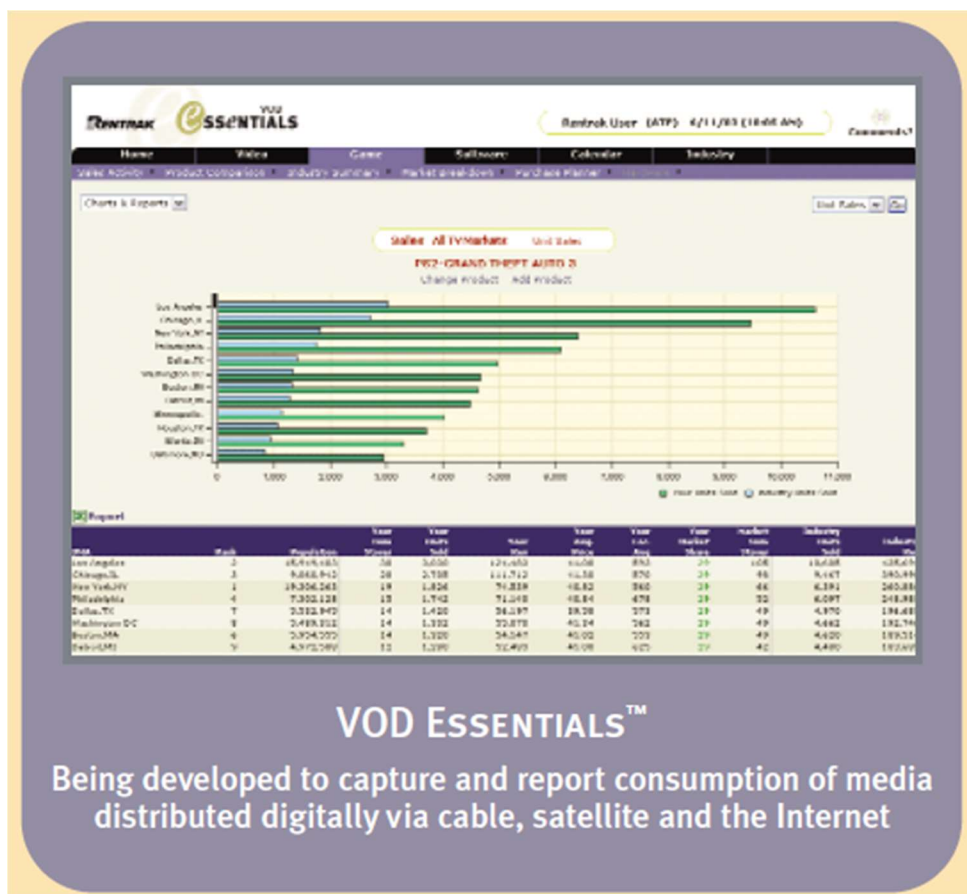
In addition to the above, Defendants refer to the invalidity contention charts attached hereto. Defendants have produced other documents describing the operation of this system that

existed in the prior art, and reserves the right to add additional documents describing this system that may become available through further investigation and discovery.

G. Rentrak

Rentrak applied media measurement methods to video-on-demand (VOD). The system “measures and reports anonymous video-on demand usage data. Called VOD Essentials [aka OnDemand Essentials], the system will deliver an in-depth analysis of aggregate VOD viewership data to better understand viewer preferences and usage of on demand content. ‘As video-on demand continues to experience tremendous growth, we recognize the importance of accurately measuring viewership,’ said Page Thompson, vice president, marketing, New Video Products for Comcast (no relation to OMD's Thompson). The system will provide standardized VOD content performance data at a market-by-market level, assuring efficient and accurate VOD usage measurement.” Jack Myers, *Video-on-Demand Poised to Skyrocket*, Jack Myers Report (Mar. 25, 2004) (“Myers”). Rentrak had a number of other products in its “Essentials” line that measured audiences across various platforms and technologies.

As with other media measurement systems in the industry, Rentrak was able to determine what media viewers were consuming. Moreover, Rentrak provided extensive reporting to customers using the collected data, e.g., as seen below.



Rentrak Corporation 2003 Annual Report, Essential Business Intelligence (2003) (“Annual Report”).

Rentrak was known in the industry including to Plaintiff, who listed it as a competitor in its materials. *See* AMRH_SAMSUNG_00003809-3829 (“Competition: Three analytics companies are measuring TV using digital set-top device data. . . . Rentrak corporation, a leading player in the home video measurement area, is tracking video-on-demand usage through partnerships with cable companies and other content providers and distributors.”).

In addition to the above, Defendants refer to the invalidity contention charts attached hereto. Defendants have produced other documents describing the operation of this system that existed in the prior art, and reserves the right to add additional documents describing this system that may become available through further investigation and discovery.

H. Auditude

Auditude was founded in 2000 as a media recognition company that provided “thumbprinting” technology to analyze the “analog waveform” of an audio sample to identify a song from a database, returning information like song title, artist name, and copyright information to the user. *Demo Download ID3man to see Auditude in Action!*, at 1 (Oct. 1, 2001), available at <https://web.archive.org/web/20021206093721/http://auditude.com/demo.html>. Auditude’s music recognition technology was used by, or incorporated or consolidated into several software products and applications, including but not limited to ID3man and MusiKube. *Id*; *MusiKube and Auditude Launch Joint Venture to Develop Audio Fingerprinting and Identification Technologies*, BUSINESS WIRE, at 1 (July 14, 2003).

In addition to the above, Defendants refer to the invalidity contention charts attached hereto. Defendants have produced other documents describing the operation of this system that existed in the prior art, and reserves the right to add additional documents describing this system that may become available through further investigation and discovery.

I. MusiKube

MusiKube provided a music recognition technology that could be used by a phone, PDA, or MP3 player to identify songs from song excerpts and would provide those identifications to any number of devices, including a PC, cellphone, or PDA. See MusiKube’s public website, at 1, (2003), available at <https://web.archive.org/web/20031203124334/http://www.musikube.com/technology/index.html>. MusiKube achieved these goals by providing a “fingerprinting” tool called fPrint™ which is leveraged to create a centralized song database called EncycloMedia™. *Id*. Like Shazam, the technology worked by dialing a number and waiting 15 seconds, at which point the service compared that sample against a comprehensive database, and returned, via message, metadata

related to the identified song like artist and song title. *See* MusiKube's public website, at 1, (Apr. 2004), available at <https://web.archive.org/web/20040402141141/http://musikube.com/iConnect.htm>. Any song identifications could then be viewed by a user using a mobile portal, and the identifications allowed for a user to instantly make a song purchase via their cell phone. *Id.*

In addition to the above, Defendants refer to the invalidity contention charts attached hereto. Defendants have produced other documents describing the operation of this system that existed in the prior art, and reserves the right to add additional documents describing this system that may become available through further investigation and discovery.

J. Additional State of the Art

In addition to the prior art references charted and otherwise cited herein, Defendants incorporate by reference in its entirety Exhibit I, which identifies additional references that disclose or describe the general state of the art and knowledge of one skilled in the art before, and as of, the time of the purported inventions and the earliest priority date of the Asserted Patents. Samsung denies any and all infringement, but, to the extent that the '896, '848, '849, and '911 Patents have priority dates in 2019, Samsung's ACR technology is evidence of the state of the art, and is invalidating prior art to at least the same extent Plaintiff alleges (incorrectly) that its use by Samsung Ads' infringes the '896, '848, '849, and '911 Patents. These references (without limitation) may be used as evidence of the industry at the relevant time and the state of the art and/or may be used as supporting references in any obviousness combination(s).

III. IDENTIFICATION OF PRIOR ART - LOCAL PATENT RULE 3-3 (A)

In addition to the prior art identified in the prosecution history of the Asserted Patents, Defendants also rely upon the prior art identified pursuant to P.R. 3-3(a) in the attached Exhibits

in support of these Invalidity Contentions. Defendants' identification of patents and publications as prior art herein and in the attached claim charts includes the publications themselves, as well as the use of the products, devices, apparatuses and/or systems described therein. Although Defendants' investigation continues, information available to date indicates that such products, devices, and systems were known or used before the earliest possible priority date(s) of the Asserted Claims. Upon information and belief, these prior art products, devices, apparatuses, and systems, and their associated references anticipate and/or render obvious each of the Asserted Claims. Defendants further intend to rely on inventor admissions concerning the scope of the prior art relevant to the Asserted Patents found in, *inter alia*, the prosecution history of the Asserted Patents and any related patents, patent applications, and/or post-grant proceedings including reexaminations and *inter partes* reviews; any deposition testimony of a named inventor on the Asserted Patents; and the papers filed and any evidence submitted by Plaintiff in conjunction with this litigation.

Discovery is ongoing, and Defendants' prior art investigation, including via party discovery and third-party discovery, therefore is not yet complete. Defendants reserve the right, pursuant to the Court's discretion and the applicable statutes and rules, to rely upon additional evidence of invalidity obtained in the future, to the extent that further investigation and discovery yield information forming the basis for such claims.

A. Applicant–Admitted Prior Art⁵

The Asserted Patents admit that the following techniques and technology were known in the art:

⁵ This section is for illustrative purposes only, as it is not required by the Local Patent Rules. As such, Defendants reserve all rights to contend that additional or different prior art was admitted by the applicant.

- Media measurement systems focused on directly monitoring channels being utilized by audience members. '791 Patent, 1:14-16; '768 Patent, 1:14-16; '389 Patent, 1:14-16; '622 Patent, 1:14-16; '896 Patent, 1:20-22; '848 Patent, 1:22-24; '849 Patent, 1:22-24; '911 Patent, 1:22-24;
- Using codes to “tag” and track particular content. '791 Patent, 1:33-34; '768 Patent, 1:33-34; '389 Patent, 1:33-34; '622 Patent, 1:33-34; '896 Patent, 1:39-40; '848 Patent, 1:40-41; '849 Patent, 1:40-41; '911 Patent, 1:40-41;
- Recognition and identification of songs played into a mobile phone. '791 Patent, 1:39-45; '768 Patent, 1:39-45; '389 Patent, ; '622 Patent, 1:39-45; '896 Patent, 1:45-51; '848 Patent, 1:46-52; '849 Patent, 1:46-52; '911 Patent, ;
- Searching against a large database of media content to recognize and identify media content. '791 Patent, 1:39-46; '768 Patent, 1:39-46; '389 Patent, 1:39-46; '622 Patent, 1:39-46; '896 Patent, 1:45-52; '848 Patent, 1:46-53; '849 Patent, 1:46-53; '911 Patent, 1:46-53;
- Electronics capable of receiving energy captured through a microphone, whether or not a microphone is built into the monitoring device itself. '791 Patent, 3:23-25; '768 Patent, 3:23-25; '389 Patent, 3:23-25; '622 Patent, 3:23-25; '896 Patent, 3:29-32; '848 Patent, 3:29-32; '849 Patent, 3:29-32; '911 Patent, 3:29-32;
- That “content” may refer to data about signals representing the content (e.g., stored signatures and landmarks derivable from a song's audio) and does not necessarily refer to a stored version of the media content itself (e.g. an audio file useable to play the song itself). '791 Patent, 4:17-21; '768 Patent, 4:17-21; '389 Patent, 4:17-21; '622 Patent,

4:17-21; '896 Patent, 4:26-31; '848 Patent, 4:26-31; '849 Patent, 4:26-31; '911 Patent, 4:26-31;

- At the time of the alleged invention, many content recognition methods were known to identify content by extracting parameters from a media signal and applying an algorithm to those parameters to search for a content match. '791 Patent, 5:38-43; '768 Patent, 5:38-43; '389 Patent, 5:38-43; '622 Patent, 5:38-43; '896 Patent, 5:48-54; '848 Patent, 5:48-54; '849 Patent, 5:48-54; '911 Patent, 5:48-54;
- “[M]any of the system components and corresponding functions performed within a system . . . might instead be implemented on the monitoring devices” '791 Patent, 6:28-46; '768 Patent, 6:28-46; '389 Patent, 6:28-46; '622 Patent, 6:28-46; '896 Patent, 6:38-55; '848 Patent, 6:38-55; '849 Patent, 6:38-55; '911 Patent, 6:38-55;
- Depending upon database architecture, data sets might be collected in the same table or be spread out in different tables and/or relational structures. '791 Patent, 10:43-46; '768 Patent, 10:43-46; '389 Patent, 10:43-46; '622 Patent, 10:43-46; '896 Patent, 10:60-63; '848 Patent, 10:60-63; '849 Patent, 10:60-63; '911 Patent, 10:60-63;
- Data sets “might not be stored at all in a database but rather might be generated on the fly and then discarded as mere intermediate steps to generating a particular report that the system is asked to produce.” '791 Patent, 10:46-50; '768 Patent, 10:46-50; '389 Patent, 10:46-50; '622 Patent, 10:46-50; '896 Patent, 10:63-67; '848 Patent, 10:63-67; '849 Patent, 10:63-67; '911 Patent, 10:63-67;
- Recording a television broadcast and playing it at a later time is an example of a time shifting activity time shifting activity. '791 Patent, 10:63-65; '768 Patent, 10:63-65; '389

Patent, 10:63-65; '622 Patent, 10:63-65; '896 Patent, 11:14-16; '848 Patent, 11:14-16;
'849 Patent, 11:14-16; '911 Patent, 11:14-16;

- “[A] media player may be paused, reversed, fast forwarded, and some media players have modes in which skipping back or forward in played content can occur almost instantly, including within the smallest time division useful for a particular data set (e.g., less than five seconds, less than one second, etc.).” '791 Patent, 10:66-11:4; '768 Patent, 10:66-11:4; '389 Patent, 10:66-11:4; '622 Patent, 10:66-11:4; '896 Patent, 11:17-23; '848 Patent, 11:17-23; '849 Patent, 11:17-23; '911 Patent, 11:17-23.

B. Prior Art Patents

Defendants contend that the following prior art patents anticipate or render obvious one or more Asserted Claims of the Asserted Patents under pre-AIA 35 U.S.C. § 102(a), (b), (e), AIA 35 U.S.C. § 102(a), and/or pre-AIA and AIA 35 U.S.C. § 103.

Country	Patent/Publication No.	Issue or Publication Date	Filing Date	Inventor (et al.)
US	8,296,791 B2	10/23/2012	09/11/2008	Steuer ⁶
US	8,510,768 B2	08/13/2013	09/11/2008	Steuer ⁷
US	8,677,389 B2	03/18/2014	09/11/2008	Steuer ⁸
US	8,756,622 B2	06/17/2014	09/11/2008	Steuer ⁹
US	5,481,294 A	01/02/1996	10/27/1993	Thomas

⁶ Claims priority to Provisional Appl. No. 60/574,836 (filed May 27, 2004).

⁷ Claims priority to Provisional Appl. No. 60/574,836 (filed May 27, 2004).

⁸ Claims priority to Provisional Appl. No. 60/574,836 (filed May 27, 2004).

⁹ Claims priority to Provisional Appl. No. 60/574,836 (filed May 27, 2004).

Country	Patent/Publication No.	Issue or Publication Date	Filing Date	Inventor (et al.)
US	6,834,308 B1	12/21/2004	02/17/2000	Ikezoye
US	2007/0168409 A1	07/19/2007	02/16/2005	Cheung ¹⁰
US	8,468,357 B2	06/18/2013	03/09/2010	Roberts ¹¹
US	2003/0135623 A1	07/17/2003	02/05/2002	Schrempp
US	2003/0093790 A1	05/15/2003	06/08/2002	Logan
US	7,284,255 B1	10/16/2007	11/16/1999	Apel
US	2005/0050047 A1	03/03/2005	10/10/2003	Laronne
US	2004/0260682 A1	12/23/2004	06/19/2003	Herley
US	5,581,658 A	12/03/1996	12/14/1993	O'Hagan
US	2002/0083060 A1	06/27/2002	04/20/2001	Wang 060
US	2003/0086341 A1	05/08/2003	07/22/2002	Wells
US	7,248,777 B2	07/24/2007	01/13/2004	Feininger ¹²
US	2004/0230994 A1	11/18/2004	05/16/2003	Urdang
US	2005/0286860 A1	12/29/2005	05/26/2005	Conklin ¹³
US	7,623,823 B2	11/24/2009	08/30/2005	Zito ¹⁴

¹⁰ Claims priority to Provisional Appl. No. 60/547,931 (filed February 26, 2004).

¹¹ Claims priority to Provisional Appl. No. 60/308,594 (filed July 31, 2001).

¹² Claims priority to Application No. PCT/US03/12001 (filed April 17, 2003).

¹³ Claims priority to Application No. PCT/US02/38012 (filed November 27, 2002).

¹⁴ Claims priority to Provisional Appl. No. 60/606,229 (filed August 31, 2004) and Provisional

Country	Patent/Publication No.	Issue or Publication Date	Filing Date	Inventor (et al.)
US	2002/0116195 A1	08/22/2002	02/21/2002	Pitman
US	2002/0120456 A1	08/29/2002	10/23/2001	Berg
US	2005/0193016 A1	09/01/2005	02/17/2005	Seet ¹⁵
WO	2005/079499 A2	09/01/2005	02/18/2005	Wang 499 ¹⁶
US	7,672,843 B2	03/02/2010	06/02/2005	Srinivasan ¹⁷
US	2003/0145319 A1	07/31/2003	07/23/2002	Sato
US	6,633,651 B1	10/14/2003	11/01/1999	Hirzalla
US	2010/0306808 A1	12/02/2010	05/27/2010	Neumeier
JP	2001/083978 A	03/30/2001	06/01/2000	Nakabashi
US	6,104,989 A	08/15/2000	07/29/1998	Kanevsky
US	4,696,039 A	09/22/1987	10/13/1983	Doddington
US	2004/0194130 A1	09/30/2004	03/01/2004	Konig
US	2002/0114299 A1	08/22/2002	12/27/2000	Lu
US	2004/0001160 A1	01/01/2004	07/01/2002	Herley 160
US	2006/0195860 A1	08/31/2006	02/25/2005	Eldering

Appl. No. 60/655.305 (filed February 22, 2005).

¹⁵ Claims priority to Provisional Appl. No. 60/545,681 (filed February 17, 2004).

¹⁶ Claims priority to Provisional Appl. No. 60/545,879 (filed February 19, 2004).

¹⁷ Claims priority to U.S. Patent Appl. No. 09/427,970 (filed October 27, 1999).

Country	Patent/Publication No.	Issue or Publication Date	Filing Date	Inventor (et al.)
US	2006/0184961 A1	08/17/2006	12/20/2005	Lee ¹⁸
US	7,444,353 B1	10/28/2008	05/09/2000	Chen

C. Prior Art Publications to the Asserted Patents

Defendants contend that the following publications anticipate or render obvious one or more Asserted Claims of the Asserted Patents under pre-AIA 35 U.S.C. § 102(a), (b), (e), AIA 35 U.S.C. § 102(a), and/or pre-AIA and AIA 35 U.S.C. § 103.

Publication Title	Date	Publisher	Author (et al.)
Audio Fingerprinting “A New Technology to Identify Music”	08/13/2002	Koninklijke Philips Electronics N.V.	Haitsma
Imputation of Missing Data in Industrial Databases	November 1999	Kluwer Academic Publishers	Lakshminarayan

D. Prior Art Sales, Offers for Sale, Public Disclosures, or Otherwise Available to the Public

On information and belief, Defendants contend that the following items, which were used and/or offered for sale before the relevant priority dates, anticipate or render obvious one or more Asserted Claims of the Asserted Patents under pre-AIA 35 U.S.C. § 102(a), (b), (e), AIA 35 U.S.C. § 102(a), and/or pre-AIA and AIA 35 U.S.C. § 103.

Item Name or Description	Date Available	Manufacturer
Nielsen Active/Passive Meter	1999	Nielsen

¹⁸ Claims priority to Application No. PCT/US03/22562 (filed July 18, 2003) and Provisional Appl. No. 60/480,068 (filed June 20, 2003).

Item Name or Description	Date Available	Manufacturer
Gracenote	2001	Gracenote
Shazam	2002	Shazam
Arbitron Media Watch	1986	Arbitron
Auditudo	2001	Auditudo
MusiKube	2002	MusiKube
Rentrak VOD Essentials	2003	Rentrak
Nielsen products including: Nielsen People Meter (Active and Active/Passive), Nielsen Audio Video Encoders, Nielsen Monitor Plus	1986	Nielsen
Arbitron products including: People Meter	1986	Arbitron
GfK MediaWatch	2004	GfK
Integrated Media Measurement products	2003	Integrated Media Measurement

IV. LOCAL PATENT RULE 3-3(B) AND (C)

In addition to and including the prior art disclosed in the Exhibits incorporated by reference herein and attached hereto, each of the Asserted Claims of the Asserted Patents is anticipated by and/or obvious in view of one or more items of prior art, either alone or in combination, as identified herein. Generally, it would have been obvious to one of ordinary skill in the art to combine or modify any of these references to arrive at the alleged invention. Such a

combination or modification would have yielded predictable results, and a POSITA would have had a reasonable expectation of success.

The Asserted Claims of the Asserted Patents are directed to known and/or obvious combinations of old and familiar elements, each performing the same function it has long been known to perform, which yield nothing more than predictable results. Put another way, the claimed subject matter is obvious because it is nothing more than (i) combinations of prior art elements according to known methods to yield predictable results, (ii) simple substitutions of one known element for another to yield predictable results, (iii) applications of known techniques to known devices ready for improvement to yield predictable results, and/or (iv) obvious to try.

Generally, it would have been obvious to one of ordinary skill in the art to combine any of these systems and/or references to arrive at the claimed invention. The combination of familiar elements according to known methods is obvious here because it would have yielded predictable results. Indeed, nothing in any of the Asserted Patents suggests that anything about the claimed systems and methods concerns an unexpected result or anything but a routine and conventional application of known hardware and software components, performing known or routine and conventional functions, to achieve an expected and predictable result.

One of skill in the art would have been motivated to either modify the prior art identified herein, and in the accompanying invalidity exhibits, or to combine that prior art in view of, for example, their background knowledge, design incentives, effects of demands known to the design community, or other market forces. Further, the prior art discussed in these contentions relates to the same general field of audience measurement systems involving monitoring, collecting, identifying, and processing data related to content played on a digital media device, and addresses many of the same as well as different design and operational features of these

systems. This would have further motivated one of skill in the art to combine the prior art. In view of the simplicity of the claimed subject matter and its use of well-known components performing conventional operations, the common sense of a person skilled in the art also would have served as a motivation to combine any of the identified references, and demonstrates that the Asserted Claims of the Asserted Patents would have been obvious. Moreover, such a combination would have yielded predictable results, and a person of ordinary skill in the art would have had a reasonable expectation of success in configuring and modifying any of the systems, devices, components, processes, and/or functionalities disclosed in the identified prior art references in view of the teachings and/or suggestions in those references and the knowledge of such a skilled person at the relevant time.

Defendants' attached exhibits contain claim charts identifying examples of prior art that anticipate and/or render obvious each of the Asserted Claims of the Asserted Patents ("Invalidity Claim Charts"). Specifically, to the extent the attached Invalidity Claim Charts cite a reference for each element or limitation of an Asserted Claim, Defendants contend that such reference anticipates that claim. *See* P.R. 3-3(b), (c). Defendants incorporate by reference each and every prior art reference of record in the prosecution of the Asserted Patents and related applications, including the statements made therein by the applicant, as well as the prior art discussed in the specification. Defendants further incorporate by reference all *inter partes* review proceedings, *ex parte* reexamination proceedings, and post-grant review proceedings filed in the future that challenge the patentability of any claim of the Asserted Patents, including all prior art, argument, and evidence. In addition, to the extent that the attached Invalidity Claim Charts cite to additional references, Defendants contend, in the alternative, that the Asserted Claims are rendered obvious for the reasons set forth in the attached charts and exhibits. To the extent the

attached Invalidity Claim Charts do not identify any explicit disclosures of the prior art for a claim or claim limitation, Defendants contend those claims or claim limitations are inherently disclosed by the prior art and/or would have been obvious in view of the reference as a whole and/or the knowledge, skill, common sense, and experience of a person having ordinary skill in the art. To the extent any obviousness combinations are included in the attached charts and exhibits, they are provided in the alternative to Defendants' anticipation contentions and are not to be construed to suggest that any reference included in the combinations is not by itself anticipatory.

A. '768 Patent

Invalidity Claim Charts for the '768 Patent	
Exhibit No.	Reference
Ex. A-1	U.S. 5,481,294 A ("Thomas")
Ex. A-2	U.S. 6,834,308 B1 ("Ikezoye")
Ex. A-3	U.S. 2007/0168409 A1 ("Cheung")
Ex. A-4	U.S. 8,468,357 B2 ("Roberts")
Ex. A-5	U.S. 2003/0135623 A1 ("Schrempp")
Ex. A-6	U.S. 2003/0093790 A1 ("Logan")
Ex. A-7	U.S. 7,284,255 B1 ("Apel")
Ex. A-8	U.S. 2005/0050047 A1 ("Laronne")
Ex. A-9	U.S. 2004/0260682 A1 ("Herley")
Ex. A-10	U.S. 5,581,658 A ("O'Hagan")
Ex. A-11	U.S. 2002/0083060 A1 ("Wang 060")
Ex. A-12	U.S. 2003/0086341 A1 ("Wells")

Invalidity Claim Charts for the '768 Patent	
Exhibit No.	Reference
Ex. A-13	U.S. 7,248,777 B2 (“Feininger”)
Ex. A-14	U.S. 2004/0230994 A1 (“Urdang”)
Ex. A-15	U.S. 2005/0286860 A1 (“Conklin”)
Ex. A-16	U.S. 7,623,823 B2 (“Zito”)
Ex. A-17	U.S. 2002/0116195 A1 (“Pitman”)
Ex. A-18	U.S. 2002/0120456 A1 (“Berg”)
Ex. A-19	U.S. 2005/0193016 A1 (“Seet”)
Ex. A-20	WO 2005/079499 A2 (“Wang 499”)
Ex. A-21	U.S. 7,672,843 B2 (“Srinivasan”)
Ex. A-22	Haitsma
Ex. A-23	Nielsen People Meter (Active/Passive)
Ex. A-24	Gracenote
Ex. A-25	Shazam
Ex. A-26	Arbitron Media Watch
Ex. A-27	Auditude
Ex. A-28	MusiKube
Ex. A-29	Rentrak VOD Essentials
Ex. A-30	Lakshminarayan
Ex. A-35	U.S. 6,633,651 B1 (“Hirzalla”)

B. '622 Patent

Invalidity Claim Charts for the '622 Patent	
Exhibit No.	Reference
Ex. B-1	U.S. 5,481,294 A (“Thomas”)
Ex. B-2	U.S. 6,834,308 B1 (“Ikezoye”)
Ex. B-3	U.S. 2007/0168409 A1 (“Cheung”)
Ex. B-4	U.S. 8,468,357 B2 (“Roberts”)
Ex. B-5	U.S. 2003/0135623 A1 (“Schrempp”)
Ex. B-6	U.S. 2003/0093790 A1 (“Logan”)
Ex. B-7	U.S. 7,284,255 B1 (“Apel”)
Ex. B-8	U.S. 2005/0050047 A1 (“Laronne”)
Ex. B-9	U.S. 2004/0260682 A1 (“Herley”)
Ex. B-10	U.S. 5,581,658 A (“O’Hagan”)
Ex. B-11	U.S. 2002/0083060 A1 (“Wang 060”)
Ex. B-12	U.S. 2003/0086341 A1 (“Wells”)
Ex. B-13	U.S. 7,248,777 B2 (“Feininger”)
Ex. B-14	U.S. 2004/0230994 A1 (“Urdang”)
Ex. B-15	U.S. 2005/0286860 A1 (“Conklin”)
Ex. B-16	U.S. 7,623,823 B2 (“Zito”)
Ex. B-17	U.S. 2002/0116195 A1 (“Pitman”)
Ex. B-18	U.S. 2002/0120456 A1 (“Berg”)
Ex. B-19	U.S. 2005/0193016 A1 (“Seet”)
Ex. B-20	WO 2005/079499 A2 (“Wang 499”)
Ex. B-21	U.S. 7,672,843 B2 (“Srinivasan”)

Invalidity Claim Charts for the '622 Patent	
Exhibit No.	Reference
Ex. B-22	Haitsma
Ex. B-23	Nielsen People Meter (Active/Passive)
Ex. B-24	Gracenote
Ex. B-25	Shazam
Ex. B-26	Arbitron Media Watch
Ex. B-27	Auditude
Ex. B-28	MusiKube
Ex. B-29	Rentrak VOD Essentials
Ex. B-35	U.S. 6,633,651 B1 (“Hirzalla”)

C. '791 Patent

Invalidity Claim Charts for the '791 Patent	
Exhibit No.	Reference
Ex. C-1	U.S. 5,481,294 A (“Thomas”)
Ex. C-2	U.S. 6,834,308 B1 (“Ikezoye”)
Ex. C-3	U.S. 2007/0168409 A1 (“Cheung”)
Ex. C-4	U.S. 8,468,357 B2 (“Roberts”)
Ex. C-5	U.S. 2003/0135623 A1 (“Schrempp”)
Ex. C-6	U.S. 2003/0093790 A1 (“Logan”)
Ex. C-7	U.S. 7,284,255 B1 (“Apel”)
Ex. C-8	U.S. 2005/0050047 A1 (“Laronne”)
Ex. C-9	U.S. 2004/0260682 A1 (“Herley”)
Ex. C-10	U.S. 5,581,658 A (“O’Hagan”)

Invalidity Claim Charts for the '791 Patent	
Exhibit No.	Reference
Ex. C-11	U.S. 2002/0083060 A1 (“Wang 060”)
Ex. C-12	U.S. 2003/0086341 A1 (“Wells”)
Ex. C-13	U.S. 7,248,777 B2 (“Feininger”)
Ex. C-14	U.S. 2004/0230994 A1 (“Urdang”)
Ex. C-15	U.S. 2005/0286860 A1 (“Conklin”)
Ex. C-16	U.S. 7,623,823 B2 (“Zito”)
Ex. C-17	U.S. 2002/0116195 A1 (“Pitman”)
Ex. C-18	U.S. 2002/0120456 A1 (“Berg”)
Ex. C-19	U.S. 2005/0193016 A1 (“Seet”)
Ex. C-20	WO 2005/079499 A2 (“Wang 499”)
Ex. C-21	U.S. 7,672,843 B2 (“Srinivasan”)
Ex. C-22	Haitsma
Ex. C-23	Nielsen People Meter (Active/Passive)
Ex. C-24	Gracenote
Ex. C-25	Shazam
Ex. C-26	Arbitron Media Watch
Ex. C-27	Auditude
Ex. C-28	MusiKube
Ex. C-29	Rentrak VOD Essentials
Ex. C-31	U.S. 2003/0145319 A1 (“Sato”)
Ex. C-35	U.S. 6,633,651 B1 (“Hirzalla”)

D. '389 Patent

Invalidity Claim Charts for the '389 Patent	
Exhibit No.	Reference
Ex. J-1	U.S. 5,481,294 A (“Thomas”)
Ex. J-11	U.S. 2002/0083060 A1 (“Wang 060”)
Ex. J-18	U.S. 2002/0120456 A1 (“Berg”)
Ex. J-22	Haitsma
Ex. J-23	Nielsen People Meter (Active/Passive)
Ex. J-24	Gracenote
Ex. J-25	Shazam
Ex. J-26	Arbitron Media Watch
Ex. J-27	Auditude
Ex. J-28	MusiKube
Ex. J-29	Rentrak VOD Essentials
Ex. J-36	U.S. 2010/0306808 A1 (“Neumeier”)
Ex. J-37	JP 2001/083978 A (“Nakabashi”)
Ex. J-38	U.S. 6,104,989 A (“Kanevsky”)
Ex. J-39	U.S. 4,696,039 A (“Doddington”)
Ex. J-40	U.S. 2004/0194130 A1 (“Konig”)
Ex. J-41	U.S. 2002/0114299 A1 (“Lu”)
Ex. J-42	U.S. 2004/0001160 A1 (“Herley 160”)
Ex. J-43	U.S. 2006/0184961 A1 (“Lee”)
Ex. J-44	U.S. 7,444,353 (“Chen”)
Ex. J-45	U.S. 2006/0195860 (“Eldering”)

E. '848 Patent

Invalidity Claim Charts for the '848 Patent	
Exhibit No.	Reference
Ex. D-1	U.S. 5,481,294 A (“Thomas”)
Ex. D-2	U.S. 6,834,308 B1 (“Ikezoye”)
Ex. D-3	U.S. 2007/0168409 A1 (“Cheung”)
Ex. D-4	U.S. 8,468,357 B2 (“Roberts”)
Ex. D-5	U.S. 2003/0135623 A1 (“Schrempp”)
Ex. D-6	U.S. 2003/0093790 A1 (“Logan”)
Ex. D-7	U.S. 7,284,255 B1 (“Apel”)
Ex. D-8	U.S. 2005/0050047 A1 (“Laronne”)
Ex. D-9	U.S. 2004/0260682 A1 (“Herley”)
Ex. D-10	U.S. 5,581,658 A (“O’Hagan”)
Ex. D-11	U.S. 2002/0083060 A1 (“Wang 060”)
Ex. D-12	U.S. 2003/0086341 A1 (“Wells”)
Ex. D-13	U.S. 7,248,777 B2 (“Feininger”)
Ex. D-14	U.S. 2004/0230994 A1 (“Urdang”)
Ex. D-15	U.S. 2005/0286860 A1 (“Conklin”)
Ex. D-16	U.S. 7,623,823 B2 (“Zito”)
Ex. D-17	U.S. 2002/0116195 A1 (“Pitman”)
Ex. D-18	U.S. 2002/0120456 A1 (“Berg”)
Ex. D-19	U.S. 2005/0193016 A1 (“Seet”)
Ex. D-20	WO 2005/079499 A2 (“Wang 499”)
Ex. D-21	U.S. 7,672,843 B2 (“Srinivasan”)

Invalidity Claim Charts for the '848 Patent	
Exhibit No.	Reference
Ex. D-22	Haitsma
Ex. D-23	Nielsen People Meter (Active/Passive)
Ex. D-24	Gracenote
Ex. D-25	Shazam
Ex. D-26	Arbitron Media Watch
Ex. D-27	Auditude
Ex. D-28	MusiKube
Ex. D-29	Rentrak VOD Essentials
Ex. D-30	Lakshminarayan
Ex. D-32	U.S. 8,510,768 B2 (“Steuer”)
Ex. D-35	U.S. 6,633,651 B1 (“Hirzalla”)
Ex. D-36	U.S. 2010/0306808 A1 (“Neumeier”)

F. '849 Patent

Invalidity Claim Charts for the '849 Patent	
Exhibit No.	Reference
Ex. E-1	U.S. 5,481,294 A (“Thomas”)
Ex. E-2	U.S. 6,834,308 B1 (“Ikezoye”)
Ex. E-3	U.S. 2007/0168409 A1 (“Cheung”)
Ex. E-4	U.S. 8,468,357 B2 (“Roberts”)
Ex. E-5	U.S. 2003/0135623 A1 (“Schrempp”)
Ex. E-6	U.S. 2003/0093790 A1 (“Logan”)
Ex. E-7	U.S. 7,284,255 B1 (“Apel”)

Invalidity Claim Charts for the '849 Patent	
Exhibit No.	Reference
Ex. E-8	U.S. 2005/0050047 A1 (“Laronne”)
Ex. E-9	U.S. 2004/0260682 A1 (“Herley”)
Ex. E-10	U.S. 5,581,658 A (“O’Hagan”)
Ex. E-11	U.S. 2002/0083060 A1 (“Wang 060”)
Ex. E-12	U.S. 2003/0086341 A1 (“Wells”)
Ex. E-13	U.S. 7,248,777 B2 (“Feininger”)
Ex. E-14	U.S. 2004/0230994 A1 (“Urdang”)
Ex. E-15	U.S. 2005/0286860 A1 (“Conklin”)
Ex. E-16	U.S. 7,623,823 B2 (“Zito”)
Ex. E-17	U.S. 2002/0116195 A1 (“Pitman”)
Ex. E-18	U.S. 2002/0120456 A1 (“Berg”)
Ex. E-19	U.S. 2005/0193016 A1 (“Seet”)
Ex. E-20	WO 2005/079499 A2 (“Wang 499”)
Ex. E-21	U.S. 7,672,843 B2 (“Srinivasan”)
Ex. E-22	Haitsma
Ex. E-23	Nielsen People Meter (Active/Passive)
Ex. E-24	Gracenote
Ex. E-25	Shazam
Ex. E-26	Arbitron Media Watch
Ex. E-27	Auditude
Ex. E-28	MusiKube
Ex. E-29	Rentrak VOD Essentials

Invalidity Claim Charts for the '849 Patent	
Exhibit No.	Reference
Ex. E-33	U.S. 8,756,622 B2 (“Steuer”)
Ex. E-35	U.S. 6,633,651 B1 (“Hirzalla”)
Ex. E-36	U.S. 2010/0306808 A1 (“Neumeier”)

G. '896 Patent

Invalidity Claim Charts for the '896 Patent	
Exhibit No.	Reference
Ex. F-1	U.S. 5,481,294 A (“Thomas”)
Ex. F-2	U.S. 6,834,308 B1 (“Ikezoye”)
Ex. F-3	U.S. 2007/0168409 A1 (“Cheung”)
Ex. F-4	U.S. 8,468,357 B2 (“Roberts”)
Ex. F-5	U.S. 2003/0135623 A1 (“Schrempp”)
Ex. F-6	U.S. 2003/0093790 A1 (“Logan”)
Ex. F-7	U.S. 7,284,255 B1 (“Apel”)
Ex. F-8	U.S. 2005/0050047 A1 (“Laronne”)
Ex. F-9	U.S. 2004/0260682 A1 (“Herley”)
Ex. F-10	U.S. 5,581,658 A (“O’Hagan”)
Ex. F-11	U.S. 2002/0083060 A1 (“Wang 060”)
Ex. F-12	U.S. 2003/0086341 A1 (“Wells”)
Ex. F-13	U.S. 7,248,777 B2 (“Feininger”)
Ex. F-14	U.S. 2004/0230994 A1 (“Urdang”)
Ex. F-15	U.S. 2005/0286860 A1 (“Conklin”)
Ex. F-16	U.S. 7,623,823 B2 (“Zito”)

Invalidity Claim Charts for the '896 Patent	
Exhibit No.	Reference
Ex. F-17	U.S. 2002/0116195 A1 (“Pitman”)
Ex. F-18	U.S. 2002/0120456 A1 (“Berg”)
Ex. F-19	U.S. 2005/0193016 A1 (“Seet”)
Ex. F-20	WO 2005/079499 A2 (“Wang 499”)
Ex. F-21	U.S. 7,672,843 B2 (“Srinivasan”)
Ex. F-22	Haitsma
Ex. F-23	Nielsen People Meter (Active/Passive)
Ex. F-24	Gracenote
Ex. F-25	Shazam
Ex. F-26	Arbitron Media Watch
Ex. F-27	Auditude
Ex. F-28	MusiKube
Ex. F-29	Rentrak VOD Essentials
Ex. F-31	U.S. 2003/0145319 A1 (“Sato”)
Ex. F-34	U.S. 8,296,791 B2 (“Steuer”)
Ex. F-35	U.S. 6,633,651 B1 (“Hirzalla”)
Ex. F-36	U.S. 2010/0306808 A1 (“Neumeier”)

H. '911 Patent

Invalidity Claim Charts for the '911 Patent	
Exhibit No.	Reference
Ex. K-1	U.S. 5,481,294 A (“Thomas”)
Ex. K-11	U.S. 2002/0083060 A1 (“Wang 060”)

Invalidity Claim Charts for the '911 Patent	
Exhibit No.	Reference
Ex. K-18	U.S. 2002/0120456 A1 (“Berg”)
Ex. K-22	Haitsma
Ex. K-23	Nielsen People Meter (Active/Passive)
Ex. K-24	Gracenote
Ex. K-25	Shazam
Ex. K-26	Arbitron Media Watch
Ex. K-27	Auditude
Ex. K-28	MusiKube
Ex. K-29	Rentrak VOD Essentials
Ex. K-36	U.S. 2010/0306808 A1 (“Neumeier”)
Ex. K-37	JP 2001/083978 A (“Nakabashi”)
Ex. K-38	U.S. 6,104,989 A (“Kanevsky”)
Ex. K-39	U.S. 4,696,039 A (“Doddington”)
Ex. K-40	U.S. 2004/0194130 A1 (“Konig”)
Ex. K-41	U.S. 2002/0114299 A1 (“Lu”)
Ex. K-42	U.S. 2004/0001160 A1 (“Herley 160”)
Ex. K-43	U.S. 2006/0184961 A1 (“Lee”)
Ex. K-44	U.S. 7,444,353 (“Chen”)
Ex. K-45	U.S. 2006/0195860 (“Eldering”)
Ex. K-46	U.S. 8,677,389 (“Steuer”)

To the extent not identified above in Sections II and III, Defendants identify all references listed in the above tables as prior art references anticipating and/or rendering obvious

one or more Asserted Claims of the Asserted Patents and incorporate the identification of those references into Sections II and III.

To the extent that Plaintiff contends that any one of the references in the above Invalidity Claim Charts does not disclose one or more elements of the Asserted Claims, it would have been obvious to combine the references in the Invalidity Claim Charts with one another as discussed more fully in each of the Invalidity Claim Charts, and the Combinations Exhibits (Exs. G-1 – G-8). In presenting the obviousness positions identified herein, Defendants do not concede or represent that any element in any of the Asserted Claims is not disclosed or otherwise anticipated by the prior art reference(s) as indicated in Defendants' anticipation contentions.

All of the Asserted Claims of the Asserted Patents are anticipated, expressly or inherently, and therefore fail to meet one or more of the requirements for patentability, as detailed in the anticipatory Invalidity Claim Charts. Additionally, and in the alternative, the Asserted Claims of the Asserted Patents are obvious in view of the state of the prior art (including Admitted Prior Art) alone and/or in combination with the references described in the above-referenced Invalidity Claim Charts. The alleged inventions claimed in the Asserted Claims of the Asserted Patents would have been obvious because the prior art, common knowledge, and the nature of the problems, viewed through the eyes of a person ordinarily skilled in the art, disclosed or suggested the claimed elements. A person of ordinary skill in the relevant fields would have possessed knowledge and skills rendering him or her capable of combining or modifying the prior art references with knowledge in the field and common sense. Moreover, the Asserted Claims represent well-known combinations of familiar and pre-existing elements, yielding only predictable results. Additional reasons that a person of ordinary skill in

the art would have been motivated to combine the identified prior art are provided in the Exhibits attached hereto.

In addition to the specific combinations of prior art and the specific combinations of groups of prior art disclosed, Defendants may rely on any other combination of any prior art references disclosed herein, and upon prior art disclosed within the prosecution history of the references cited herein or incorporated by reference into the disclosed prior art. The obviousness combinations set forth in these contentions reflect Defendants' present understanding of the potential scope of the claims that Plaintiff appears to be advocating and should not be seen as Defendants' acquiescence to Plaintiff's interpretation of the Asserted Claims. Defendants will amend or supplement these contentions regarding anticipation or obviousness of the Asserted Claims as appropriate under the applicable rules, including in response to further information from Plaintiff, information discovered during discovery, and/or the Court's claim constructions. Plaintiff has not identified what elements or combinations it alleges were not known to one of ordinary skill in the art at the time of the alleged invention. Therefore, for any claim limitation that Plaintiff alleges is not disclosed in a particular prior art reference, Defendants reserve the right to assert that any such limitation is either inherent in the disclosed reference or obvious to one of ordinary skill in the art at the time in light of the same, or that the limitation is disclosed in another of the references disclosed herein and in combination would have rendered the Asserted Claim obvious.

In an effort to focus the issues, Defendants have cited representative portions of identified references, even where a reference may contain additional support for a particular claim element. In addition, persons of ordinary skill in the art generally read a prior art reference as a whole and in the context of other publications and literature. Thus, to understand and interpret any specific

statement or disclosure within a prior art reference, such persons would rely on other information within the reference, along with other publications and their general scientific knowledge. As noted above, Defendants will rely upon the prior art references identified herein in their entirety, including un-cited portions.

Additionally, any reference or combination of references that anticipates or renders obvious an asserted independent claim also renders obvious any asserted claim dependent on that independent claim because every element of each dependent claim was known by a person of ordinary skill at the time of the alleged invention, and it would have been obvious to combine those known elements with the independent claims at least as a matter of common sense and routine innovation.

Exemplary combinations of references demonstrating the obviousness of the Asserted Claims of the Asserted Patents under pre-AIA and AIA 35 U.S.C. § 103 are listed in the Combinations Exhibits. *See* Exs. G-1 – G-8. In addition to the specific combinations of prior art references and the motivations to combine discussed in Exhibits G-1 – G-8, a person of ordinary skill would have been motivated to address the alleged problems or achieve the purported objectives identified in the Asserted Patents. Moreover, the Asserted Patents admit that numerous claim features were well-known at the time of the alleged invention including, for example, those identified above in Section III.A.¹⁹

¹⁹ Additionally, as stated below, Defendants believe some of these elements to be indefinite and do not concede they are adequately disclosed or delineated in the Asserted Patents. Rather, Defendants simply believe that the Asserted Patents admit these elements are not novel based on Plaintiff's apparent constructions in the Second Amended Infringement Contentions. In addition, this list is only illustrative because it is not required by the local patent rules, and Defendants do not concede that other claim elements not listed here are not expressly or implicitly admitted by the patentees to be present in the prior art.

Further, the asserted claims of the '768, '622, '791, '389, '848, '849, '896, and '911 Patents are invalid for obviousness-type double patenting as they are not patentably distinct from claims in earlier filed patents from which they claim priority. *See P&G v. Teva Pharm. USA, Inc.*, 566 F.3d 989, 999 (Fed. Cir. 2009).

I. LOCAL PATENT RULE 3-3 (D)

In addition to and including the grounds of invalidity set forth above, Defendants contend that the Asserted Claims of the Asserted Patents are invalid under pre-AIA and AIA 35 U.S.C. § 112 for at least the following reasons.

A. Indefiniteness Under 35 U.S.C. § 112

The Asserted Claims of the Asserted Patents are invalid because they fail to comply with the definiteness requirement of 35 U.S.C. § 112. *See* pre-AIA 35 U.S.C. § 112 ¶2 (“The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or joint inventor regards as the invention.”); AIA § 112(b) (same). “[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2124 (2014).

Furthermore, a patent claim is invalid for indefiniteness when it recites “both a system and the method for using that system,” because “it does not apprise a person of ordinary skill in the art of its scope.” *IPXL Holdings, L.L.C. v. Amazon.com, Inc.*, 430 F.3d 1377, 1384 (Fed. Cir. 2005) (holding claim invalid as indefinite where unclear whether infringement occurs when one creates a system that allows user to change predicted transaction information or accept the displayed transaction, or whether infringement occurs when the user actually uses the input

means to change transaction information or uses the input means to accept a displayed transaction). For example, the following asserted claims are indefinite under *IPXL*:

- '622 Patent: Claims 10, 11, 13
- '849 Patent: Claims 10, 11, 13

The Asserted Claims are indefinite at least because they fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.

Furthermore, claims are indefinite under 35 U.S.C. § 112(b) because the language used is for an open grouping and hence a person skilled in the art cannot determine the metes and bounds of the claimed invention. *See* MPEP §§ 2117; 2111.03; 2173.05(h); *Ex parte Markush*, 1925 Dec. Comm'r Pat. 126, 127 (1924); *Abbott Labs v. Baxter Pharmaceutical Products, Inc.*, 334 F.3d 1274, 1280-81, 67 USPQ2d 1191, 1196-97 (Fed. Cir. 2003). Specifically, a *Markush* grouping that requires a material selected from an open list of alternatives (*e.g.*, selected from the group “comprising” the recited alternatives) is indefinite under pre-AIA 35 U.S.C. 112 ¶2 and/or AIA § 112(b) because it is unclear what other alternatives are intended to be encompassed by the claim. *See, e.g.*, Claim 1 of the '768 Patent (“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 . . .”); *id.* (“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 . . .”); Claim 2 of the '768 Patent (“sample sequence data includes at least one of log times, content identifiers, and content offsets”); Claim 9 of the '791 Patent (“play-altering

actions include actions that alter at least one of a pace and a sequence of a media stream”); Claim 10 of the ’791 Patent (“play-altering actions include at least one of fast forwarding, rewinding, and pausing a media stream”); Claim 11 of the ’791 Patent (“play-altering actions include at least one of skipping forward and skipping backward in a media stream”); Claim 7 of the ’389 Patent (“content data includes at least one of content type and content length”); Claim 1 of the ’848 Patent (“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 . . .”); *id.* (“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 . . .”); Claim 2 of the ’848 Patent (“sample sequence data includes at least one of log times, content identifiers, and content offsets”); Claim 9 of the ’896 Patent (“play-altering actions include actions that alter at least one of a pace and a sequence of a media stream”); Claim 10 of the ’896 Patent (“play-altering actions include at least one of fast forwarding, rewinding, and pausing a media stream”); Claim 11 of the ’896 Patent (“play-altering actions include at least one of skipping forward and skipping backward in a media stream”); Claim 12 of the ’896 Patent (“at least one of a play list and a play stream is generated”); Claim 13 of the ’896 Patent (“at least one of a play stream and play list including content offset data comprises the play stream of content identification results”); Claim 7 of the ’911 Patent (“content data includes at least one of content type and content length”).

Additionally, at least the terms or phrases listed below (alone, either in their entirety or in part, in combination, and/or in context) render the Asserted Claims of the Asserted Patents

indefinite. To the extent other Asserted Claims contain one or more of these terms or phrases, either directly or through depending from a claim that does, those Asserted Claims are also invalid under 35 U.S.C. § 112. These terms and phrases reflect revisions to the claim language of the '791 Patent made pursuant to a Certificate of Correction that issued on February 19, 2013, revisions to the claim language of the '768 Patent made pursuant to a Certificate of Correction that issued on March 7, 2023, and revisions to the claim language of the '848 Patent made pursuant to a Certificate of Correction that issued on March 28, 2023.

1. '768 Patent

'768 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 9	“audio data samples”
1, 9	“data for a sequence of audio data samples”
1	“receiving over a network . . . data for a sequence of audio data samples”
9	“receive, over the network, data for a sequence of audio data samples”
1, 6, 9, 14	“representations of audio data” / “audio data representation[s]”
1, 9	“audio data samples comprising representations of audio data captured at a media monitoring device”
1, 9	“plurality of audio data samples being submitted over the network”
1, 3, 4, 9, 11, 12	“raw play stream”
1, 9	“generating a raw play stream, the raw play stream comprising a sequence of content identification results corresponding to the sequence of audio data samples”

'768 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 9	“likely match[es]”
1, 9	“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”
1, 9	“a respective audio data representation that is determined to be a respective likely match with a respective one of the audio data samples”
1, 9	“indication of the absence of a respective likely match between a respective audio data sample and an audio data representation”
1, 4, 9, 12	“change a result of the sequence of content identification results”
1, 9	“pattern of the sample sequence data of the raw play stream”
1, 9	“expected pattern of sample sequence data”
1, 9	“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 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”
1, 5, 9, 13	“clean play stream”
1, 9	“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”
3, 11	“channel data”

'768 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
3, 11	“scrubbing the raw play stream further comprises analyzing channel data as part of determining whether to change a result of the sequence of content identification results”
4, 12	“using audience data as part of determining whether to change a result of the sequence of content of identification results”
5, 13	“clean play list”
5	“a clean play list is generated from the clean play stream”
6, 14	“audio signatures”
13	“generating a clean play list from the clean play stream”

2. '622 Patent

'622 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 5, 6, 9, 10, 13	“play stream”
1	“generate a play stream of content identification results corresponding to a sequence of data samples”
6, 10	“generating a play stream of content identification results corresponding to a sequence of data samples”
1, 6, 10	“representations of audio data”
1, 6, 10	“data samples comprising representations of audio data captured at a media monitoring device”
1, 6, 10	“content identifiers of the play stream's content identification results”
1, 6, 10	“content identifiers of the play stream's content identification results are obtained by using corresponding

'622 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
	data samples to search a computerized database of known content”
1, 2, 5-7, 9-11, 13	“a channel”
1, 5, 6, 9, 10, 13	“a channel corresponding to the data samples”
1, 5	“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”
2, 3, 7, 8, 11, 12	“raw play stream”
2, 7, 11	“format usable for searching channel data”
2, 7, 11	“converting a raw play stream to a format usable for searching channel data to identify a channel to associate with content of the raw play stream”
3, 8, 12	“play list”
3	“the raw play stream is converted to a play list”
5, 9, 11	“channel type[s]”
5, 9, 11	“broadcast media channel type”
5, 9, 11	“non-broadcast playable media channel type”
6, 10	“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”
8, 12	“converting the raw play stream to a play list”
9, 13	“utilizing an order of at least two different obtained content identifiers in the play stream to identify a channel corresponding to the data samples”

3. '791 Patent

'791 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 5, 9, 12, 13	"play stream"
1, 9	"submitted data samples"
1, 9	"generate a play stream of content identification results corresponding to a sequence of submitted data samples"
1, 9	"submitted data samples corresponding to audio data samples captured at a monitoring device"
1, 9	"monitoring device associated with a monitored audience member"
1-3, 9-12	"play-altering actions"
1, 9	"utilize sample sequence data and content offset data to deduce play-altering actions of the monitored audience member"
1, 9	"sample sequence data corresponding to a sequence of the content identification results"
1, 9	"content offset data including content offsets associated with the content identification results"
1, 9	"content offset indicating a time position of a content identification result within identified content"
1, 9	"particular plurality of submitted data samples and corresponding content identification results"
1, 9	"progression of log times"
1, 7, 9	"progression of content offsets"
1, 9	"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"

'791 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 9	“deduced play altering actions”
2	“play list”
2	“play list including content offset data”
2	“generating a play list including content offset data as part of deducing media play-altering actions of a monitored audience member”
3	“channel data”
3	“utilizing sample sequence data together with corresponding channel data to deduce play-altering actions of a monitored audience member”
5	“raw play stream”
7	“discontinuities . . . in the progression of content offsets”
7	“utilizing further comprises determining if one or more discontinuities exist in the progression of content offsets”
9-11	“a media stream”
9	“a pace . . . of a media stream”
9	“a sequence of a media stream”
9	“actions that alter at least one of a pace and a sequence of a media stream”

4. '389 Patent

'389 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1	“audio data”

'389 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1	“receiving, at one or more computers, audio data from a monitoring device”
1	“audio data being divisible into samples”
1, 5, 6, 9, 10	“sample[s]”
1, 5, 6, 9, 10	“next sample”
1	“a next sample of the audio data for attempted identification of a media content item corresponding to the next sample”
1	“determining, using the one or more computers, a next sample . . . by adjusting a length of a time window of the next sample”
1	“adjusting a length of a time window”
1	“length of a time window”
1	“time window”
1	“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”
1	“first prior sample”
1	“time length window”
1	“the time length window of the next sample is changed relative to a time length window of the first prior sample”
1	“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”
1	“second prior sample”
5	“channel data”

'389 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
5	“channel data is used in determining the next sample”
5	“channel data relating to recently identified samples”
5, 6	“recently identified samples”
6, 7	“content data”
6	“content data is used in determining the next sample”
6	“content data relating one or more recently identified samples”
7	“content type”
7	“content length”
7	“content data includes at least one of content type and content length”
9	“log data”
9	“log data is used in determining the next sample”
9	“log data relating to a media player of an audience member using the monitoring device”
9	“a media player of an audience member using the monitoring device”
10	“location data”
10	“location data is used in determining the next sample”
10	“location data relating to a media player of an audience member using the monitoring device”

5. '848 Patent

'848 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 9	“video data samples”
1, 9	“data for a sequence of video data samples”
1	“receiving over a network . . . data for a sequence of video data samples”
9	“receive, over the network, data for a sequence of video data samples”
1, 6, 9, 14	“representations of video data” / “video data representation[s]”
1, 9	“video data samples comprising representations of video data captured at a media monitoring device”
1, 9	“plurality of video data samples being submitted over the network”
1, 3, 4, 9, 11, 12	“raw play stream”
1, 9	“generating a raw play stream, the raw play stream comprising a sequence of content identification results corresponding to the sequence of video data samples”
1, 9	“likely match[es]”
1, 9	“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”
1, 9	“a respective video data representation that is determined to be a respective likely match with a respective one of the video data samples”

'848 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 9	"indication of the absence of a respective likely match between a respective video data sample and an video data representation"
1	"change a result of the sequence of content of identification results"
4, 9, 12	"change a result of the sequence of content identification results"
1, 9	"pattern of the sample sequence data of the raw play stream"
1, 9	"expected pattern of sample sequence data"
1	"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"
9	"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 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"
1, 5, 9, 13	"clean play stream"
1, 9	"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"
3, 11	"channel data"
3, 11	"scrubbing the raw play stream further comprises analyzing channel data as part of determining whether to change a result of the sequence of content identification results"

'848 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
4, 12	“using audience data as part of determining whether to change a result of the sequence of content of identification results”
5, 13	“clean play list”
5	“a clean play list is generated from the clean play stream”
6, 14	“video signatures”
13	“generating a clean play list from the clean play stream”

6. '849 Patent

'849 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 5, 6, 9, 10, 13	“play stream”
1	“generate a play stream of content identification results corresponding to a sequence of data samples”
6, 10	“generating a play stream of content identification results corresponding to a sequence of data samples”
1, 6, 10	“representations of video data”
1, 6, 10	“data samples comprising representations of video data captured at a media monitoring device”
1, 6, 10	“content identifiers of the play stream's content identification results”
1, 6, 10	“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”
1, 2, 5-7, 9-11, 13	“a channel”
1, 5, 6, 9, 10, 13	“a channel corresponding to the data samples”

'849 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 5	“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”
1, 6, 10	“a media measurement report”
1, 6, 10	“utilize an identified channel corresponding to the data samples to generate a media measurement report”
2, 3, 7, 8, 11, 12	“raw play stream”
2, 7, 11	“format usable for searching channel data”
2, 7, 11	“converting a raw play stream to a format usable for searching channel data to identify a channel to associate with content of the raw play stream”
3, 8, 12	“play list”
3	“the raw play stream is converted to a play list”
5, 9, 11	“channel type[s]”
5, 9, 11	“broadcast media channel type”
5, 9, 11	“non-broadcast playable media channel type”
8, 12	“converting the raw play stream to a play list”
6, 10	“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”
9, 13	“utilizing an order of at least two different obtained content identifiers in the play stream to identify a channel corresponding to the data samples”

7. '896 Patent

'896 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 5, 9, 12, 13	"play stream"
1, 9	"submitted data samples"
1, 9	"generate a play stream of content identification results corresponding to a sequence of submitted data samples"
1, 9	"submitted data samples corresponding to video data samples captured at a monitoring device"
1, 9	"monitoring device associated with a monitored audience member"
1-3, 9-12	"play-altering actions"
1, 9	"utilize sample sequence data and content offset data to deduce play-altering actions of the monitored audience member"
1, 9	"sample sequence data corresponding to a sequence of the content identification results"
1, 9	"content offset data including content offsets associated with the content identification results"
1, 9	"content offset indicating a time position of a content identification result within identified content"
1, 9	"particular plurality of submitted data samples and corresponding content identification results"
1, 9	"progression of log times"
1, 7, 9	"progression of content offsets"
1, 9	"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"

'896 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 9	“deduced play altering actions”
1, 9	“a media measurement report”
1, 9	“utilize deduced play altering actions of the monitored audience member to generate a media measurement report”
2, 12, 13	“play list”
2, 13	“play list including content offset data”
2	“generating a play list including content offset data as part of deducing media play-altering actions of a monitored audience member”
3	“channel data”
3	“utilizing sample sequence data together with corresponding channel data to deduce play-altering actions of a monitored audience member”
5	“raw play stream”
7	“discontinuities . . . in the progression of content offsets”
7	“to utilize further comprises determining if one or more discontinuities exist in the progression of content offsets”
9-11	“a media stream”
9	“a pace . . . of a media stream”
9	“a sequence of a media stream”
9	“actions that alter at least one of a pace and a sequence of a media stream”
12	“at least one of a play list and a play stream is generated, by one or more computers, including content offset data as part of deducing media play-altering actions of a monitored audience member”

'896 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
13	"the at least one of a play stream and play list including content offset data comprises the play stream of content identification results"

8. '911 Patent

'911 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 11, 12, 17	"video data"
1, 11	"receiving, at one or more computers, video data from a monitoring device"
1, 11	"video data being divisible into samples"
1, 5, 6, 9, 10, 11, 12, 13, 17	"sample[s]"
1, 5, 6, 9, 10, 11, 17	"next sample"
1	"a next sample of the video data for attempted identification of a media content item corresponding to the next sample"
1	"determining, by the one or more computers, a next sample . . . by adjusting a length of a time window of the next sample"
1	"adjusting a length of a time window"
1	"length of a time window"
1	"time window"
1	"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"
1, 11, 17	"first prior sample"
1	"time length window"

'911 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1	"the time length window of the next sample is changed relative to a time length window of the first prior sample"
1	"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 prior sample indicating a result that is different than a result of an attempt to identify a second prior sample"
1, 11, 17	"second prior sample"
1, 11	"the determined next sample"
1, 11	"play stream"
1, 11	"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"
1, 11	"a series of samples comprising the determined next sample"
5	"channel data"
5	"channel data is used in determining the next sample"
5	"channel data relating to recently identified samples"
5, 6	"recently identified samples"
6, 7	"content data"
6	"content data is used in determining the next sample"
6	"content data relating one or more recently identified samples"
7	"content type"
7	"content length"

'911 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
7	"content data includes at least one of content type and content length"
9	"log data"
9	"log data is used in determining the next sample"
9	"log data relating to a media player of an audience member using the monitoring device"
9	"a media player of an audience member using the monitoring device"
10	"location data"
10	"location data is used in determining the next sample"
10	"location data relating to a media player of an audience member using the monitoring device"
11	"determining, by the one or more computers, a next sample for attempted identification based at least in part upon a result of an attempt by the one or more computers to identify prior samples against a computerized database of known content"
11, 17	"prior samples"
11	"determining the next sample comprises selecting a relative time location of the next sample within the video data such that the relative time location of the next sample is selected to be between a relative time location of the first prior sample and a relative time location of the second prior sample based on a result of attempting to identify a first prior sample against the computerized database of known content being different from a result of attempting to identify a second prior sample against the computerized database of known content"
11, 17	"relative time location"

'911 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
11, 17	“relative time location of the next sample within the video data”
11	“relative time location of the first prior sample”
11	“relative time location of the second prior sample”
11	“a result of attempting to identify a first prior sample against the computerized database of known content being different from a result of attempting to identify a second prior sample against the computerized database of known content”
12	“series of samples of the video data”
12	“determining a sample by selecting an $(n \pm r)$ 'th sample for to be submitted for content recognition”
12	“ $(n \pm r)$ 'th sample”
12	“determining a sample by selecting an $(n \pm r)$ 'th sample for to be submitted for content recognition wherein r is determined at least in part based upon an identification result corresponding to the n'th sample”
12	“determined at least in part based upon an identification result corresponding to the n'th sample”
12, 13	“n'th sample”
13	“the magnitude of r”
13	“the magnitude of r is increased from a prior value if the identification result corresponding to the n'th sample does not indicate an identification”
17	“the result of attempting to identify the first prior sample against the computerized database of known content does not differ from the result of attempting to identify the second prior sample against the computerized database of known content”

'911 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
17	“if the result of attempting to identify the first prior sample against the computerized database of known content does not differ from the result of attempting to identify the second prior sample against the computerized database of known content, then the relative time location of the next sample within the video data is selected to be after relative time locations of the first and second prior samples”
17	“the relative time location of the next sample within the video data is selected to be after relative time locations of the first and second prior samples”
17	“relative time locations of the first and second prior samples”

B. Lack of Enablement Under 35 U.S.C. § 112

The Asserted Claims of the Asserted Patents are invalid because they are not enabled as required by 35 U.S.C. § 112. *See* pre-AIA 35 U.S.C. § 112 ¶1 (“The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same.”); AIA § 112(a) (same). *See AK Steel Corp. v. Sollac*, 344 F.3d 1234, 1244 (Fed. Cir. 2003) (“The enablement requirement is satisfied when one skilled in the art, after reading the specification, could practice the claimed invention without undue experimentation.”) (citing *In re Wands*, 858 F.2d 731, 736–37 (Fed. Cir. 1988)). Because the Asserted Patents do not disclose sufficient information to enable a person having ordinary skill in the field of the alleged invention(s) to make and use the full scope of the alleged invention(s), as set forth in the claims, at the time of filing without undue experimentation, the Asserted Claims are invalid for lack of enablement.

In particular, at least the following terms or phrases listed below (alone, either in their entirety or in part, in combination, and/or in context) are not enabled. To the extent other Asserted Claims contain one of these terms or phrases, either directly or through being dependent on a claim that does, those Asserted Claims are also invalid under 35 U.S.C. § 112. These terms and phrases reflect revisions to the claim language of the '791 Patent made pursuant to a Certificate of Correction that issued on February 19, 2013, revisions to the claim language of the '768 Patent made pursuant to a Certificate of Correction that issued on March 7, 2023, and revisions to the claim language of the '848 Patent made pursuant to a Certificate of Correction that issued on March 28, 2023. Defendants reserve the right to supplement these contentions to identify specific claims that are invalid for lack of enablement as discovery continues, in response to any amendment Plaintiff may be permitted to make to its infringement contentions, and/or after claim construction.

1. '768 Patent

'768 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 9	“audio data samples”
1, 9	“data for a sequence of audio data samples”
1	“receiving over a network . . . data for a sequence of audio data samples”
9	“receive, over the network, data for a sequence of audio data samples”
1, 6, 9, 14	“representations of audio data” / “audio data representation[s]”
1, 9	“audio data samples comprising representations of audio data captured at a media monitoring device”

'768 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 9	“plurality of audio data samples being submitted over the network”
1, 9	“generating a raw play stream, the raw play stream comprising a sequence of content identification results corresponding to the sequence of audio data samples”
1, 9	“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”
1, 9	“a respective audio data representation that is determined to be a respective likely match with a respective one of the audio data samples”
1, 9	“indication of the absence of a respective likely match between a respective audio data sample and an audio data representation”
1, 9	“expected pattern of sample sequence data”
1, 9	“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 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”
1, 9	“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”
3, 11	“scrubbing the raw play stream further comprises analyzing channel data as part of determining whether to change a result of the sequence of content identification results”

'768 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
4, 12	“using audience data as part of determining whether to change a result of the sequence of content of identification results”
5	“a clean play list is generated from the clean play stream”
6, 14	“audio signatures”
13	“generating a clean play list from the clean play stream”

2. '622 Patent

'622 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 5, 6, 9, 10, 13	“play stream”
1	“generate a play stream of content identification results corresponding to a sequence of data samples”
6, 10	“generating a play stream of content identification results corresponding to a sequence of data samples”
1, 6, 10	“representations of audio data”
1, 6, 10	“data samples comprising representations of audio data captured at a media monitoring device”
1, 6, 10	“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”
1, 5	“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”
2, 7, 11	“format usable for searching channel data”

'622 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
2, 7, 11	“converting a raw play stream to a format usable for searching channel data to identify a channel to associate with content of the raw play stream”
3	“the raw play stream is converted to a play list”
5, 9, 11	“channel type[s]”
5, 9, 11	“broadcast media channel type”
5, 9, 11	“non-broadcast playable media channel type”
6, 10	“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”
8, 12	“converting the raw play stream to a play list”
9, 13	“utilizing an order of at least two different obtained content identifiers in the play stream to identify a channel corresponding to the data samples”

3. '791 Patent

'791 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 9	“submitted data samples”
1, 9	“generate a play stream of content identification results corresponding to a sequence of submitted data samples”
1, 9	“submitted data samples corresponding to audio data samples captured at a monitoring device”
1, 9	“monitoring device associated with a monitored audience member”

'791 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 9	“utilize sample sequence data and content offset data to deduce play-altering actions of the monitored audience member”
1, 9	“sample sequence data corresponding to a sequence of the content identification results”
1, 9	“content offset data including content offsets associated with the content identification results”
1, 9	“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”
2	“generating a play list including content offset data as part of deducing media play-altering actions of a monitored audience member”
3	“utilizing sample sequence data together with corresponding channel data to deduce play-altering actions of a monitored audience member”
7	“utilizing further comprises determining if one or more discontinuities exist in the progression of content offsets”
9-11	“a media stream”
9	“a pace . . . of a media stream”
9	“a sequence of a media stream”
9	“actions that alter at least one of a pace and a sequence of a media stream”

4. '389 Patent

'389 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1	"audio data"
1	"receiving, at one or more computers, audio data from a monitoring device"
1	"audio data being divisible into samples"
1	"a next sample of the audio data for attempted identification of a media content item corresponding to the next sample"
1	"determining, using the one or more computers, a next sample . . . by adjusting a length of a time window of the next sample"
1	"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"
1	"the time length window of the next sample is changed relative to a time length window of the first prior sample"
1	"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"
5	"channel data is used in determining the next sample"
5	"channel data relating to recently identified samples"
6	"content data is used in determining the next sample"
6	"content data relating one or more recently identified samples"
7	"content type"
7	"content length"

'389 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
7	“content data includes at least one of content type and content length”
9	“log data is used in determining the next sample”
9	“log data relating to a media player of an audience member using the monitoring device”
10	“location data is used in determining the next sample”
10	“location data relating to a media player of an audience member using the monitoring device”

5. '848 Patent

'848 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 9	“video data samples”
1, 9	“data for a sequence of video data samples”
1	“receiving over a network . . . data for a sequence of video data samples”
9	“receive, over the network, data for a sequence of video data samples”
1, 6, 9, 14	“representations of video data” / “video data representation[s]”
1, 9	“video data samples comprising representations of video data captured at a media monitoring device”
1, 9	“plurality of video data samples being submitted over the network”
1, 9	“generating a raw play stream, the raw play stream comprising a sequence of content identification results corresponding to the sequence of video data samples”

'848 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 9	“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”
1, 9	“a respective video data representation that is determined to be a respective likely match with a respective one of the video data samples”
1, 9	“indication of the absence of a respective likely match between a respective video data sample and an video data representation”
1, 9	“expected pattern of sample sequence data”
1	“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”
9	“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 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”
1, 9	“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”
3, 11	“scrubbing the raw play stream further comprises analyzing channel data as part of determining whether to change a result of the sequence of content identification results”

'848 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
4, 12	“using audience data as part of determining whether to change a result of the sequence of content of identification results”
5	“a clean play list is generated from the clean play stream”
6, 14	“video signatures”
13	“generating a clean play list from the clean play stream”

6. '849 Patent

'849 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 5, 6, 9, 10, 13	“play stream”
1	“generate a play stream of content identification results corresponding to a sequence of data samples”
6, 10	“generating a play stream of content identification results corresponding to a sequence of data samples”
1, 6, 10	“representations of video data”
1, 6, 10	“data samples comprising representations of video data captured at a media monitoring device”
1, 6, 10	“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”
1, 5	“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”
1, 6, 10	“a media measurement report”
1, 6, 10	“utilize an identified channel corresponding to the data samples to generate a media measurement report”

'849 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
2, 7, 11	“format usable for searching channel data”
2, 7, 11	“converting a raw play stream to a format usable for searching channel data to identify a channel to associate with content of the raw play stream”
3	“the raw play stream is converted to a play list”
5, 9, 11	“channel type[s]”
5, 9, 11	“broadcast media channel type”
5, 9, 11	“non-broadcast playable media channel type”
6, 10	“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”
8, 12	“converting the raw play stream to a play list”
9, 13	“utilizing an order of at least two different obtained content identifiers in the play stream to identify a channel corresponding to the data samples”

7. '896 Patent

'896 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 9	“generate a play stream of content identification results corresponding to a sequence of submitted data samples”
1, 9	“submitted data samples corresponding to video data samples captured at a monitoring device”
1, 9	“monitoring device associated with a monitored audience member”
1, 9	“utilize sample sequence data and content offset data to deduce play-altering actions of the monitored audience member”

'896 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 9	"sample sequence data corresponding to a sequence of the content identification results"
1, 9	"content offset data including content offsets associated with the content identification results"
1, 9	"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"
1, 9	"a media measurement report"
1, 9	"utilize deduced play altering actions of the monitored audience member to generate a media measurement report"
2	"generating a play list including content offset data as part of deducing media play-altering actions of a monitored audience member"
3	"utilizing sample sequence data together with corresponding channel data to deduce play-altering actions of a monitored audience member"
7	"to utilize further comprises determining if one or more discontinuities exist in the progression of content offsets"
9-11	"a media stream"
9	"a pace . . . of a media stream"
9	"a sequence of a media stream"
9	"actions that alter at least one of a pace and a sequence of a media stream"
12	"at least one of a play list and a play stream is generated, by one or more computers, including content offset data as part of deducing media play-altering actions of a monitored audience member"

'896 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
13	“the at least one of a play stream and play list including content offset data comprises the play stream of content identification results”

8. '911 Patent

'911 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 11, 12, 17	“video data”
1, 11	“receiving, at one or more computers, video data from a monitoring device”
1, 11	“video data being divisible into samples”
1	“a next sample of the video data for attempted identification of a media content item corresponding to the next sample”
1	“determining, by the one or more computers, a next sample . . . by adjusting a length of a time window of the next sample”
1	“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”
1	“the time length window of the next sample is changed relative to a time length window of the first prior sample”
1	“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 prior sample indicating a result that is different than a result of an attempt to identify a second prior sample”
1, 11	“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”

'911 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 11	"a series of samples comprising the determined next sample"
5	"channel data is used in determining the next sample"
5	"channel data relating to recently identified samples"
6	"content data is used in determining the next sample"
6	"content data relating one or more recently identified samples"
7	"content type"
7	"content length"
7	"content data includes at least one of content type and content length"
9	"log data is used in determining the next sample"
9	"log data relating to a media player of an audience member using the monitoring device"
10	"location data is used in determining the next sample"
10	"location data relating to a media player of an audience member using the monitoring device"
11	"determining, by the one or more computers, a next sample for attempted identification based at least in part upon a result of an attempt by the one or more computers to identify prior samples against a computerized database of known content"
11	"determining the next sample comprises selecting a relative time location of the next sample within the video data such that the relative time location of the next sample is selected to be between a relative time location of the first prior sample and a relative time location of the second prior sample based on a result of attempting to identify a first

'911 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
	prior sample against the computerized database of known content being different from a result of attempting to identify a second prior sample against the computerized database of known content"
11	"a result of attempting to identify a first prior sample against the computerized database of known content being different from a result of attempting to identify a second prior sample against the computerized database of known content"
12	"determining a sample by selecting an $(n \pm r)$ 'th sample for to be submitted for content recognition"
12	" $(n \pm r)$ 'th sample"
12	"determining a sample by selecting an $(n \pm r)$ 'th sample for to be submitted for content recognition wherein r is determined at least in part based upon an identification result corresponding to the n'th sample"
12	"determined at least in part based upon an identification result corresponding to the n'th sample"
12, 13	"n'th sample"
13	"the magnitude of r"
13	"the magnitude of r is increased from a prior value if the identification result corresponding to the n'th sample does not indicate an identification"
17	"the result of attempting to identify the first prior sample against the computerized database of known content does not differ from the result of attempting to identify the second prior sample against the computerized database of known content"
17	"if the result of attempting to identify the first prior sample against the computerized database of known content does

'911 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
	not differ from the result of attempting to identify the second prior sample against the computerized database of known content, then the relative time location of the next sample within the video data is selected to be after relative time locations of the first and second prior samples”
17	“the relative time location of the next sample within the video data is selected to be after relative time locations of the first and second prior samples”

C. Lack of Written Description Under 35 U.S.C. § 112

The Asserted Claims of the Asserted Patents are invalid because they fail to meet the written description requirement of 35 U.S.C. § 112. *See* pre-AIA 35 U.S.C. § 112 ¶1 (“The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms”); AIA § 112(a) (same). “Specifically, the description must ‘clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed. . . . In other words, the test for sufficiency is whether the disclosure of the application relied upon reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date.” *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (citing *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563 (Fed. Cir. 1991)) (internal citations omitted); *id.* at 1349 (“Although many original claims will satisfy the written description requirement, certain claims may not. For example, a generic claim may define the boundaries of a vast genus of chemical compounds, and yet the question may still remain whether the specification, including original claim language, demonstrates that the applicant has invented species sufficient to support a claim to a genus. The problem is especially acute with genus claims that use functional language to

define the boundaries of a claimed genus. In such a case, the functional claim may simply claim a desired result, and may do so without describing species that achieve that result. But the specification must demonstrate that the applicant has made a generic invention that achieves the claimed result and do so by showing that the applicant has invented species sufficient to support a claim to the functionally-defined genus.”). Because the Asserted Patents do not describe the limitations or combination of limitations of the Asserted Claims in sufficient detail that a person of ordinary skill in the art would recognize that the inventor possessed the full scope of the alleged invention(s) at the time of filing, the Asserted Claims do not meet the written description requirement.

In particular, at least the following terms or phrases listed below lack sufficient written description. To the extent other Asserted Claims contain one of these terms or phrases, either directly or through being dependent on a claim that does, those Asserted Claims are also invalid under 35 U.S.C. § 112. These terms and phrases reflect revisions to the claim language of the ’791 Patent made pursuant to a Certificate of Correction that issued on February 19, 2013, revisions to the claim language of the ’768 Patent made pursuant to a Certificate of Correction that issued on March 7, 2023, and revisions to the claim language of the ’848 Patent made pursuant to a Certificate of Correction that issued on March 28, 2023.

1. ’768 Patent

’768 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 9	“audio data samples”
1, 9	“data for a sequence of audio data samples”

'768 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1	“receiving over a network . . . data for a sequence of audio data samples”
9	“receive, over the network, data for a sequence of audio data samples”
1, 6, 9, 14	“representations of audio data” / “audio data representation[s]”
1, 9	“audio data samples comprising representations of audio data captured at a media monitoring device”
1, 9	“plurality of audio data samples being submitted over the network”
1, 9	“generating a raw play stream, the raw play stream comprising a sequence of content identification results corresponding to the sequence of audio data samples”
1, 9	“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”
1, 9	“a respective audio data representation that is determined to be a respective likely match with a respective one of the audio data samples”
1, 9	“indication of the absence of a respective likely match between a respective audio data sample and an audio data representation”
1, 9	“expected pattern of sample sequence data”
1, 9	“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 identification results in view of a pattern of the sample sequence data of

'768 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
	the raw play stream compared to an expected pattern of sample sequence data”
1, 9	“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”
3, 11	“scrubbing the raw play stream further comprises analyzing channel data as part of determining whether to change a result of the sequence of content identification results”
4, 12	“using audience data as part of determining whether to change a result of the sequence of content of identification results”
5	“a clean play list is generated from the clean play stream”
6, 14	“audio signatures”
13	“generating a clean play list from the clean play stream”

2. '622 Patent

'622 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 5, 6, 9, 10, 13	“play stream”
1	“generate a play stream of content identification results corresponding to a sequence of data samples”
6, 10	“generating a play stream of content identification results corresponding to a sequence of data samples”
1, 6, 10	“representations of audio data”
1, 6, 10	“data samples comprising representations of audio data captured at a media monitoring device”

'622 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 6, 10	“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”
1, 5	“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”
2, 7, 11	“format usable for searching channel data”
2, 7, 11	“converting a raw play stream to a format usable for searching channel data to identify a channel to associate with content of the raw play stream”
3	“the raw play stream is converted to a play list”
5, 9, 11	“channel type[s]”
5, 9, 11	“broadcast media channel type”
5, 9, 11	“non-broadcast playable media channel type”
6, 10	“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”
8, 12	“converting the raw play stream to a play list”
9, 13	“utilizing an order of at least two different obtained content identifiers in the play stream to identify a channel corresponding to the data samples”

3. '791 Patent

'791 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 9	“submitted data samples”

'791 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 9	“generate a play stream of content identification results corresponding to a sequence of submitted data samples”
1, 9	“submitted data samples corresponding to audio data samples captured at a monitoring device”
1, 9	“monitoring device associated with a monitored audience member”
1, 9	“utilize sample sequence data and content offset data to deduce play-altering actions of the monitored audience member”
1, 9	“sample sequence data corresponding to a sequence of the content identification results”
1, 9	“content offset data including content offsets associated with the content identification results”
1, 9	“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”
2	“generating a play list including content offset data as part of deducing media play-altering actions of a monitored audience member”
3	“utilizing sample sequence data together with corresponding channel data to deduce play-altering actions of a monitored audience member”
7	“utilizing further comprises determining if one or more discontinuities exist in the progression of content offsets”
9-11	“a media stream”
9	“a pace . . . of a media stream”
9	“a sequence of a media stream”

'791 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
9	“actions that alter at least one of a pace and a sequence of a media stream”

4. '389 Patent

'389 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1	“audio data”
1	“receiving, at one or more computers, audio data from a monitoring device”
1	“audio data being divisible into samples”
1	“a next sample of the audio data for attempted identification of a media content item corresponding to the next sample”
1	“determining, using the one or more computers, a next sample . . . by adjusting a length of a time window of the next sample”
1	“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”
1	“the time length window of the next sample is changed relative to a time length window of the first prior sample”
1	“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”
5	“channel data is used in determining the next sample”
5	“channel data relating to recently identified samples”
6	“content data is used in determining the next sample”

'389 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
6	“content data relating one or more recently identified samples”
7	“content type”
7	“content length”
7	“content data includes at least one of content type and content length”
9	“log data is used in determining the next sample”
9	“log data relating to a media player of an audience member using the monitoring device”
10	“location data is used in determining the next sample”
10	“location data relating to a media player of an audience member using the monitoring device”

5. '848 Patent

'848 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 9	“video data samples”
1, 9	“data for a sequence of video data samples”
1	“receiving over a network . . . data for a sequence of video data samples”
9	“receive, over the network, data for a sequence of video data samples”
1, 6, 9, 14	“representations of video data” / “video data representation[s]”
1, 9	“video data samples comprising representations of video data captured at a media monitoring device”

'848 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 9	“plurality of video data samples being submitted over the network”
1, 9	“generating a raw play stream, the raw play stream comprising a sequence of content identification results corresponding to the sequence of video data samples”
1, 9	“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”
1, 9	“a respective video data representation that is determined to be a respective likely match with a respective one of the video data samples”
1, 9	“indication of the absence of a respective likely match between a respective video data sample and an video data representation”
1, 9	“expected pattern of sample sequence data”
1	“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”
9	“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 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”

'848 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 9	“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”
3, 11	“scrubbing the raw play stream further comprises analyzing channel data as part of determining whether to change a result of the sequence of content identification results”
4, 12	“using audience data as part of determining whether to change a result of the sequence of content of identification results”
5	“a clean play list is generated from the clean play stream”
6, 14	“video signatures”
13	“generating a clean play list from the clean play stream”

6. '849 Patent

'849 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 5, 6, 9, 10, 13	“play stream”
1	“generate a play stream of content identification results corresponding to a sequence of data samples”
6, 10	“generating a play stream of content identification results corresponding to a sequence of data samples”
1, 6, 10	“representations of video data”
1, 6, 10	“data samples comprising representations of video data captured at a media monitoring device”
1, 6, 10	“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”

'849 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 5	“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”
1, 6, 10	“a media measurement report”
1, 6, 10	“utilize an identified channel corresponding to the data samples to generate a media measurement report”
2, 7, 11	“format usable for searching channel data”
2, 7, 11	“converting a raw play stream to a format usable for searching channel data to identify a channel to associate with content of the raw play stream”
3	“the raw play stream is converted to a play list”
5, 9, 11	“channel type[s]”
5, 9, 11	“broadcast media channel type”
5, 9, 11	“non-broadcast playable media channel type”
6, 10	“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”
8, 12	“converting the raw play stream to a play list”
9, 13	“utilizing an order of at least two different obtained content identifiers in the play stream to identify a channel corresponding to the data samples”

7. '896 Patent

'896 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 9	“generate a play stream of content identification results corresponding to a sequence of submitted data samples”

'896 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 9	“submitted data samples corresponding to video data samples captured at a monitoring device”
1, 9	“monitoring device associated with a monitored audience member”
1, 9	“utilize sample sequence data and content offset data to deduce play-altering actions of the monitored audience member”
1, 9	“sample sequence data corresponding to a sequence of the content identification results”
1, 9	“content offset data including content offsets associated with the content identification results”
1, 9	“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”
1, 9	“a media measurement report”
1, 9	“utilize deduced play altering actions of the monitored audience member to generate a media measurement report”
2	“generating a play list including content offset data as part of deducing media play-altering actions of a monitored audience member”
3	“utilizing sample sequence data together with corresponding channel data to deduce play-altering actions of a monitored audience member”
7	“to utilize further comprises determining if one or more discontinuities exist in the progression of content offsets”
9-11	“a media stream”
9	“a pace . . . of a media stream”

'896 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
9	“a sequence of a media stream”
9	“actions that alter at least one of a pace and a sequence of a media stream”
12	“at least one of a play list and a play stream is generated, by one or more computers, including content offset data as part of deducing media play-altering actions of a monitored audience member”
13	“the at least one of a play stream and play list including content offset data comprises the play stream of content identification results”

8. '911 Patent

'911 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1, 11, 12, 17	“video data”
1, 11	“receiving, at one or more computers, video data from a monitoring device”
1, 11	“video data being divisible into samples”
1	“a next sample of the video data for attempted identification of a media content item corresponding to the next sample”
1	“determining, by the one or more computers, a next sample . . . by adjusting a length of a time window of the next sample”
1	“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”
1	“the time length window of the next sample is changed relative to a time length window of the first prior sample”

'911 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
1	“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 prior sample indicating a result that is different than a result of an attempt to identify a second prior sample”
1, 11	“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”
1, 11	“a series of samples comprising the determined next sample”
5	“channel data is used in determining the next sample”
5	“channel data relating to recently identified samples”
6	“content data is used in determining the next sample”
6	“content data relating one or more recently identified samples”
7	“content type”
7	“content length”
7	“content data includes at least one of content type and content length”
9	“log data is used in determining the next sample”
9	“log data relating to a media player of an audience member using the monitoring device”
10	“location data is used in determining the next sample”
10	“location data relating to a media player of an audience member using the monitoring device”

'911 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
11	“determining, by the one or more computers, a next sample for attempted identification based at least in part upon a result of an attempt by the one or more computers to identify prior samples against a computerized database of known content”
11	“determining the next sample comprises selecting a relative time location of the next sample within the video data such that the relative time location of the next sample is selected to be between a relative time location of the first prior sample and a relative time location of the second prior sample based on a result of attempting to identify a first prior sample against the computerized database of known content being different from a result of attempting to identify a second prior sample against the computerized database of known content”
11	“a result of attempting to identify a first prior sample against the computerized database of known content being different from a result of attempting to identify a second prior sample against the computerized database of known content”
12	“determining a sample by selecting an $(n \pm r)$ 'th sample for to be submitted for content recognition”
12	“ $(n \pm r)$ 'th sample”
12	“determining a sample by selecting an $(n \pm r)$ 'th sample for to be submitted for content recognition wherein r is determined at least in part based upon an identification result corresponding to the n'th sample”
12	“determined at least in part based upon an identification result corresponding to the n'th sample”
12, 13	“n'th sample”
13	“the magnitude of r”

'911 Patent	
Asserted Claim(s)	Term(s) or Phrase(s)
13	“the magnitude of r is increased from a prior value if the identification result corresponding to the n'th sample does not indicate an identification”
17	“the result of attempting to identify the first prior sample against the computerized database of known content does not differ from the result of attempting to identify the second prior sample against the computerized database of known content”
17	“if the result of attempting to identify the first prior sample against the computerized database of known content does not differ from the result of attempting to identify the second prior sample against the computerized database of known content, then the relative time location of the next sample within the video data is selected to be after relative time locations of the first and second prior samples”
17	“the relative time location of the next sample within the video data is selected to be after relative time locations of the first and second prior samples”

II. ELIGIBILITY CONTENTIONS - LACK OF PATENT ELIGIBILITY UNDER 35 U.S.C. § 101

Defendants' eligibility contentions are set forth below and in the attached Exhibits H-1 – H-8. Defendants incorporate by reference the discussion of the state of the art, set forth in Section II, *supra*, the identification of prior art, set forth in Section III, *supra*, as well as the exhibits attached hereto. Defendants intend to rely on those materials in challenging the subject-matter eligibility of the Asserted Claims, and may rely on additional information identified or learned during this case, including through discovery. These contentions are subject to revision and amendment pursuant to Federal Rule of Civil Procedure 26(e) to the extent appropriate in light of further investigation and discovery, the Court's construction of the Asserted Claims, the positions

taken during expert discovery, and/or any future prosecution history for the Asserted Claims or claims in related patents (including, but not limited to, during *inter partes* review, *ex parte* reexamination, or post-grant review of any claims).

A. Lack of Patentable Subject Matter

Defendants contend that the Asserted Claims are invalid under 35 U.S.C. § 101 (pre-AIA and AIA) because they are directed to abstract ideas and do not contain an inventive concept sufficient to transform the abstract idea into a patent-eligible invention. *See Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2357-58 (2014). Judicial precedent has “long held that [§ 101] contains an important implicit exception” in that “[l]aws of nature, natural phenomena, and abstract ideas are not patentable.” *Id.* at 2354 (2014).

35 U.S.C. § 101 lists four broad categories of patent-eligible subject matter but is subject to “an important implicit exception” that “[l]aws of nature, natural phenomena, and abstract ideas,” which form the “basic tools of scientific and technological work,” are not eligible for patent protection. *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 573 U.S. 208, 216 (2014) (internal quotation marks omitted). “The ‘abstract ideas’ category embodies ‘the longstanding rule that an idea of itself is not patentable.’” *Id.* at 209 (quoting *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972) (quoting *Rubber-Tip Pencil Co. v. Howard*, 87 U.S. 498 (1874))).

Alice set forth a two-step inquiry. “First, we determine whether the claims at issue are directed to one of those patent-ineligible concepts.” *Id.* at 217. In making this inquiry, the claims “must be considered as a whole.” *Alice*, 573 U.S. at 218 n.3 (quoting *Diamond v. Diehr*, 450 U.S. 175, 188 (1981)). If the claims recite an abstract idea, the second step requires a “search for an ‘inventive concept’—an element or combination of elements that is ‘sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.’”

Id. at 218 (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 73 (2016)). “A claim that recites an abstract idea must include ‘additional features’ to ensure ‘that the claim is more than a drafting effort designed to monopolize the abstract idea.’” *Id.* at 221 (quoting *Mayo*, 566 U.S. at 78) (alterations omitted). The recited “additional features must be more than well-understood, routine, conventional activity.” *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 1335, 1339 (Fed. Cir. 2013) (internal quotations omitted). The Asserted Claims fail both steps of the *Alice* analytical framework and thus are patent-ineligible.

The below chart identifies each exception to eligibility to which each Asserted Claim is directed, and whether one or more of the Asserted Claims is representative of any other claim(s). Further detail regarding the factual and legal basis is presented in Exhibits H-1 – H-8.

1. '768 Patent

'768 Patent		
Asserted Claim	Exception to Eligibility	Representative of Other Claims
1	Abstract Idea	Representative of every Asserted Claim in all Asserted Patents because all Asserted Claims concern performance of the same basic process. In the alternative, Samsung contends that this claim is representative of the other asserted claims in this patent only.
2	Abstract Idea	
3	Abstract Idea	
4	Abstract Idea	
5	Abstract Idea	
6	Abstract Idea	

'768 Patent		
Asserted Claim	Exception to Eligibility	Representative of Other Claims
9	Abstract Idea	Representative of every Asserted Claim in all Asserted Patents because all Asserted Claims concern performance of the same basic process. In the alternative, Samsung contends that this claim is representative of the other asserted claims in this patent only.
10	Abstract Idea	
11	Abstract Idea	
12	Abstract Idea	
13	Abstract Idea	
14	Abstract Idea	

2. '622 Patent

'622 Patent		
Asserted Claim	Exception to Eligibility	Representative of Other Claims
1	Abstract Idea	Representative of every Asserted Claim in all Asserted Patents because all Asserted Claims concern performance of the same basic process. In the alternative, Samsung contends that this claim is representative of the other asserted claims in this patent only.
2	Abstract Idea	
3	Abstract Idea	
5	Abstract Idea	

'622 Patent		
Asserted Claim	Exception to Eligibility	Representative of Other Claims
6	Abstract Idea	Representative of every Asserted Claim in all Asserted Patents because all Asserted Claims concern performance of the same basic process. In the alternative, Samsung contends that this claim is representative of the other asserted claims in this patent only.
7	Abstract Idea	
8	Abstract Idea	
9	Abstract Idea	
10	Abstract Idea	Representative of every Asserted Claim in all Asserted Patents because all Asserted Claims concern performance of the same basic process. In the alternative, Samsung contends that this claim is representative of the other asserted claims in this patent only.
11	Abstract Idea	
12	Abstract Idea	
13	Abstract Idea	

3. '791 Patent

'791 Patent		
Asserted Claim	Exception to Eligibility	Representative of Other Claims
1	Abstract Idea	Representative of every Asserted Claim in all Asserted Patents because all Asserted Claims concern performance of the same basic process.

'791 Patent		
Asserted Claim	Exception to Eligibility	Representative of Other Claims
		In the alternative, Samsung contends that this claim is representative of the other asserted claims in this patent only.
2	Abstract Idea	
3	Abstract Idea	
5	Abstract Idea	
7	Abstract Idea	
9	Abstract Idea	Representative of every Asserted Claim in all Asserted Patents because all Asserted Claims concern performance of the same basic process. In the alternative, Samsung contends that this claim is representative of the other asserted claims in this patent only.
10	Abstract Idea	
11	Abstract Idea	

4. '389 Patent

'389 Patent		
Asserted Claim	Exception to Eligibility	Representative of Other Claims
1	Abstract Idea	Representative of every Asserted Claim in all Asserted Patents because all Asserted Claims concern performance of the same basic process. In the alternative, Samsung contends that this claim is representative of the other asserted claims in this patent only.

'389 Patent		
Asserted Claim	Exception to Eligibility	Representative of Other Claims
5	Abstract Idea	
6	Abstract Idea	
7	Abstract Idea	
9	Abstract Idea	
10	Abstract Idea	

5. '848 Patent

'848 Patent		
Asserted Claim	Exception to Eligibility	Representative of Other Claims
1	Abstract Idea	Representative of every Asserted Claim in all Asserted Patents because all Asserted Claims concern performance of the same basic process. In the alternative, Samsung contends that this claim is representative of the other asserted claims in this patent only.
2	Abstract Idea	
3	Abstract Idea	
4	Abstract Idea	
5	Abstract Idea	
6	Abstract Idea	
9	Abstract Idea	Representative of every Asserted Claim in all Asserted Patents because all Asserted Claims concern performance of the same basic process.

'848 Patent		
Asserted Claim	Exception to Eligibility	Representative of Other Claims
		In the alternative, Samsung contends that this claim is representative of the other asserted claims in this patent only.
10	Abstract Idea	
11	Abstract Idea	
12	Abstract Idea	
13	Abstract Idea	
14	Abstract Idea	

6. '849 Patent

'849 Patent		
Asserted Claim	Exception to Eligibility	Representative of Other Claims
1	Abstract Idea	Representative of every Asserted Claim in all Asserted Patents because all Asserted Claims concern performance of the same basic process. In the alternative, Samsung contends that this claim is representative of the other asserted claims in this patent only.
2	Abstract Idea	
3	Abstract Idea	
5	Abstract Idea	
6	Abstract Idea	Representative of every Asserted Claim in all Asserted Patents because all Asserted Claims concern performance of the same basic process.

'849 Patent		
Asserted Claim	Exception to Eligibility	Representative of Other Claims
		In the alternative, Samsung contends that this claim is representative of the other asserted claims in this patent only.
7	Abstract Idea	
8	Abstract Idea	
9	Abstract Idea	
10	Abstract Idea	Representative of every Asserted Claim in all Asserted Patents because all Asserted Claims concern performance of the same basic process. In the alternative, Samsung contends that this claim is representative of the other asserted claims in this patent only.
11	Abstract Idea	
12	Abstract Idea	
13	Abstract Idea	

7. '896 Patent

'896 Patent		
Asserted Claim	Exception to Eligibility	Representative of Other Claims
1	Abstract Idea	Representative of every Asserted Claim in all Asserted Patents because all Asserted Claims concern performance of the same basic process. In the alternative, Samsung contends that this claim is representative of the other asserted claims in this patent only.

'896 Patent		
Asserted Claim	Exception to Eligibility	Representative of Other Claims
2	Abstract Idea	
3	Abstract Idea	
5	Abstract Idea	
7	Abstract Idea	
9	Abstract Idea	Representative of every Asserted Claim in all Asserted Patents because all Asserted Claims concern performance of the same basic process. In the alternative, Samsung contends that this claim is representative of the other asserted claims in this patent only.
10	Abstract Idea	
11	Abstract Idea	
12	Abstract Idea	
13	Abstract Idea	

8. '911 Patent

'911 Patent		
Asserted Claim	Exception to Eligibility	Representative of Other Claims
1	Abstract Idea	Representative of every Asserted Claim in all Asserted Patents because all Asserted Claims concern performance of the same basic process. In the alternative, Samsung contends that this claim is representative of the other asserted claims in this patent only.

'911 Patent		
Asserted Claim	Exception to Eligibility	Representative of Other Claims
5	Abstract Idea	
6	Abstract Idea	
7	Abstract Idea	
9	Abstract Idea	
10	Abstract Idea	
11	Abstract Idea	Representative of every Asserted Claim in all Asserted Patents because all Asserted Claims concern performance of the same basic process. In the alternative, Samsung contends that this claim is representative of the other asserted claims in this patent only.
12	Abstract Idea	
13	Abstract Idea	
17	Abstract Idea	

Representative claims may be used for the *Alice* analysis when the claims are “substantially similar and linked to the same abstract idea.” *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat’l Ass’n*, 776 F.3d 1343, 1348 (Fed. Cir. 2014); *Smart Sys. Innovations, LLC v. Chicago Transit Auth.*, 873 F.3d 1364, 1368 n.7 (Fed. Cir. 2017) (concluding that claims “should rise or fall together” when they “contain only minor differences in terminology but require performance of the same basic process”) (internal quotation omitted). This Court applies a burden-shifting framework, in which “[t]he party asserting invalidity may overcome the presumption of independent validity by offering a substantial rationale for treating a claim as representative.” *PPS*

Data, LLC v. Jack Henry & Assocs., 2019 U.S. Dist. LEXIS 169218, at *9, 11 (E.D. Tex. Sept. 6, 2019) (Gilstrap, J.). “Once the defendant has made a prima facie case the burden shifts to the plaintiff to identify limitations that are present in the asserted claims but that are not represented by the allegedly representative claim.” *Id.* at *13. Further, “the representativeness inquiry must be ‘directly tethered to the claim language.’” *Id.* at *11 (quoting *Solutran, Inc. v. Elavon, Inc.*, 931 F.3d 1161, 1168 (Fed. Cir. 2019)). Should Plaintiff contend that any Asserted Claims are not represented by the representative claim, as Defendants identified above, Defendants’ reserve the right to supplement or amend these Subject Matter Ineligibility Contentions (including the attached exhibits) in response.

As set forth in Exhibits H-1 – H-8, each of the Asserted Claims relates to an abstract idea. Aside from these abstract ideas, the Asserted Claims include only well-understood, routine, and conventional components and steps. The Asserted Claims do not improve any aspect of technology, as they recite nothing more than using generic known components to perform well-known functions. The well-understood, routine, and conventional nature of the components and steps of the Asserted Claims are demonstrated by the discussion of the state of the art, set forth in Section II, *supra*, and the identification of prior art and prior art itself, set forth in Section III, *supra*, including the charts attached to this document. The claims fail to provide any sort of inventive concept that would transform the abstract ideas to which they are directed into patent-eligible inventions. Exhibits H-1 – H-8 attached hereto further detail Defendants’ factual and legal bases for their Subject Matter Ineligibility Contentions.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing document has been served
via email on all counsel of record on January 21, 2025.

/s/ Robert W. Unikel

Robert W. Unikel