Nielsen

Fall 2021

Local Radio Syndicated Services Description of Methodology

PPM: July—Holiday 2021

Continuous Diary Measurement: July—December 2021

Diary: Fall 2021

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Chapter One – Introduction

Service overview

In our local radio syndicated services, we report audience estimates for FCC-licensed radio stations and these stations' streams. We collect listening information from sample households via PPM or Diaries. After we collect the listening information, we edit it and apply weighting procedures. We then report our audience estimates in an array of services. The marketplace uses the estimates for buying and selling radio advertising and for other analyses.

Local Radio Syndicated Services Description of Methodology (DOM)

This booklet is the *Local Radio Syndicated Services Description of Methodology* (DOM). It provides a high-level description of the methodology, policy, and procedures we use to determine the estimates that we report for markets in the 50 United States, the District of Columbia, and Puerto Rico. It is our hope that this information will increase your confidence and satisfaction in our services.

We do not intend for this DOM to be an encyclopedia of our methodology. To complement the information included in this booklet, we also publish other documents that provide detailed information upon different aspects of our methods, policies, and procedures (see Additional Disclosures below).

As you read this DOM, please be mindful that it is our official statement of methodology and constitutes part of the terms and conditions of your Nielsen agreement, and that the methods, policies, and procedures we use in other services, reports, and tests may differ from those we describe here.

Schedule, name, and scope

We will publish a new issue of the DOM two times per year. This schedule exceeds MRC requirements. We may elect to publish additional issues of this DOM as business conditions warrant.

We name each issue of the DOM for the calendar season in which we publish it, either Spring or Fall. The scope of the Spring DOM is the January-June PPM report periods, the January-June Continuous Diary Measurement periods, and the Spring Diary survey. The scope of the Fall DOM is the July-Holiday PPM report periods, the July-December Continuous Diary Measurement periods, and Fall Diary survey. If a particular issue of the DOM applies to another period, we will indicate that on the volume's cover page.

Readers should be mindful that the DOM is, by nature, a 'backwards-looking' document in that it describes the state of our methodology at the time of the document's publication. Information in a particular issue of the DOM may not be the most up-to-date information at the time the client reads it.

Additional disclosures

MRC-facing disclosures

We disclose all methods, treatment, and policy changes to the MRC via a series of confidential communications. We disclose these changes prior to the start of the applicable survey/report period.

The Pre Survey bulletin

Prior to the start of each PPM report period and Diary survey, we publish a 'Pre Survey Bulletin' (PSB). A client may access the PSB via Nielsen Portal.

Each issue of the PSB includes a summary of significant methods, policy, and procedure changes that we will be making for the noted report period/survey. If information in the PSB conflicts with information in the most recent DOM, you should assume the information in the PSB to be the most up-to-date.

We do not report all methods, treatment, or policy changes on the PSB; many of the methodology disclosures that we report to the MRC are Nielsen-focused, include proprietary information, or must remain confidential. Generally, we will report method changes on the PSB that have the potential to directly impact the data or that a client may take into account when making business decisions.

Occasionally, we may also include details regarding market-specific statistical treatments usually reserved for our confidential MRC communications in the PSB. Should we determine that a change in a market-specific statistical treatment warrants disclosure to the general marketplace, but we are unable to pre-disclose that change because the survey has already begun, we will publish that disclosure on the next issue of the Pre-Survey Bulletin.

Additional client documents

To help clients better understand our methods, policies, and procedures, we publish an array of other documents that complement and expand upon the DOM. Examples of these documents include policy briefs, slide decks, research-oriented 'white papers,' product notices, etc. These documents are available on Nielsen Portal or from your Client Services representative, and become part of this DOM by reference.

Copyright

Reservation of rights

We reserve the right to prospectively or retroactively modify, waive, suspend, or change any policy or procedure described in this DOM, and/or implement a new policy, as business conditions or research considerations warrant in our judgment.

What MRC accreditation means

The Diary-based Nielsen Information has been accredited by the Media Rating Council (MRC) since 1968. Accreditation applies to all markets measured as a part of the Diary service that are located in the 50 United States and the District of Columbia.

The MRC has accredited monthly Personal People Meter (PPM) Average Quarter Hour estimates for:

Atlanta (accredited March 2011)
Baltimore (accredited July 2012)
Charlotte-Gastonia-Rock Hill (accredited February 2013)
Chicago (accredited February 2013)
Cincinnati (accredited March 2011)
Cleveland (accredited August 2013)
Columbus, OH (accredited May 2018)
Dallas-Ft. Worth (accredited August 2013)
Denver-Boulder (accredited August 2013)
Detroit (accredited August 2013)
Greensboro-Winston Salem-High Point (accredited May 2018)
Houston-Galveston (accredited January 2007)
Indianapolis (accredited May 2018)
Jacksonville (accredited May 2018)
Kansas City (accredited March 2011)
Los Angeles (accredited July 2012)
Miami-Ft. Lauderdale-Hollywood (accredited August 2013)
Milwaukee-Racine (accredited March 2011)
Minneapolis-St. Paul (accredited January 2010)
Nassau-Suffolk (Long Island) (accredited August 2013)
Philadelphia (accredited March 2011)
Phoenix (accredited March 2011)
Pittsburgh, PA (accredited August 2013)
Portland, OR (accredited August 2013)
Riverside-San Bernardino (accredited July 2012)
Salt Lake City-Ogden-Provo (accredited May 2018)
San Antonio (accredited July 2012)
San Diego (accredited February 2013)
St. Louis (accredited March 2011)
Tampa-St. Petersburg-Clearwater (accredited July 2012)

To merit continued MRC accreditation, Nielsen:

1. Adheres to the Council's Minimum Standards for Media Rating Research;
2. Supplies full information to the MRC regarding details of its operation;
3. Conducts its measurement service substantially in accordance with representations to its authorized users and the Council; and
4. Submits to, and pays the cost of, thorough annual audits of accredited Nielsen services by CPA firms engaged by the MRC.

In addition to paying sizable audit charges, Nielsen provides office and file space for MRC auditors as well as considerable staff and computer time involved in various aspects of the audit.

Further information about the MRC's accreditation and auditing procedures can be obtained from:

Executive Director

Media Rating Council, Inc.

420 Lexington Avenue, Suite 343

New York, NY 10170

Chapter Two – Survey Areas

In our currency Audio services, we report audience estimates for radio stations and streams in different survey areas. This chapter provides a broad overview of those areas, the key policies we used to define them, and information about a Metro's life cycle. The information in this chapter is for general information purposes only, and is not the full body of our methodology, policy, or procedure.

The sampling unit

We build our survey areas by grouping 'sampling units' together. A sampling unit may correspond to a county, a county equivalent (such as a parish or incorporated city), or a portion of a county.

The metro

The Metro Survey Area, or 'Metro' is the radio market's primary mercantile area. Generally, the Metro includes the market's population center; areas with similar commuting patterns that border the Metro; and the radio stations that serve the area direct their sales, marketing, and promotional efforts toward persons that live and/or work in the Metro.

An *embedded Metro* is a unique mercantile area that is within the boundaries of a larger Metro. We use a detailed set of criteria determine where to establish an embedded Metro. These criteria are very narrow and apply to very few markets. (Additional information is available upon request.)

Designated Market Area[1] region

The Designated Market Area (DMA®) region is a geographic region used to report television audiences. In the *Nielsen Audio Radio Ratings Data and/or Nielsen Audio Measurement Service* (referred to as "Nielsen Information") or eBook, we report DMA region-level audience estimates for select markets two times per year. Each issue of the Houston-Galveston Nielsen Information includes DMA region estimates.

Total Survey Area

A Total Survey Area, or 'TSA,' includes all of the market's Metro counties and surrounding counties where respondents report listening to Home-to-Metro stations. We review all Diary-market TSA counties each odd numbered calendar year to determine if the county should remain in that TSA.

A county qualifies to be in a market's TSA if we must have received a minimum of 10 In-Tab Diaries from the county, Home-to-Metro stations must have received a cumulative 10 mentions in those diaries, and the mentions to the Home-to-Metro stations must account for at least 15% of all mentions in the county.

In order for us to retain a county in the TSA during this review, we must have received a minimum of 10 In-Tab Diaries from the county, Home-to-Metro stations must have received a cumulative 10 mentions in those diaries, and the mentions to the Home-to-Metro stations must account for at least 10% of all mentions in the county.

Custom Survey Area

We may also prepare a report for a custom survey area. Examples of custom area reports include regional reports and reports for a survey area specified by the party that commissioned the report.

[1] DMA® is a registered trademark of The Nielsen Company (US), LLC.

Market name

A market's name is descriptive of the area surveyed. A market's name generally reflects the common name of the mercantile area, the market's nickname, or other preferred term. We may use the Government name for new markets should the Radio Metro geography correspond to the Office of Management and Budget's Metropolitan Statistical Area at the time of Radio Metro Startup, or, we may include the name(s) of the most populous cities or counties.

We may limit Radio Metro names to no more than three cities or counties in descending order of estimated population to be included in a Metro market name. We may use a two-letter state abbreviation to differentiate markets that have the same name, markets that include counties from multiple states, and/or smaller markets.

A nickname or other preferred term can be requested at any time from a local Radio Metro station client. To change a Radio Metro name requires client consensus from all local station clients in the Radio Metro. We may modify and/or update a market's name given a change of a market's survey area geography without client consensus. These Market Name guidelines apply to Radio Metros and Custom Survey Areas only.

Geo-split counties

To account for significant differences in radio listening patterns and/or better manage sample in one part of a diary-measured county as compared to another part of that county, we may 'geo-split' the county into smaller pieces. Once split, we treat each of the subdivided pieces of a geo-split county as individual sampling units.

We do not geo-split PPM-measured counties; instead, we may establish 'Geo-Zones' in these counties. For additional information on Geo-Zones, see Chapter Three of this *Description of Methodology.*

Differential Survey Treatment

A differential survey treatment (DST) is a special procedure we use to help maximize participation in the survey or panel by Persons in a demographic with a history of under-representation in survey research.

The specific procedures we apply as part of a DST may vary from Metro to Metro. When determining these procedures, we take marketplace, demographic, and research considerations into account.

We will apply a Black DST in any Metro when the Metro's Persons 12+ population is at least 9.5% Black *or* when the Metro's Black Persons 12+ population numbers 75,000 persons and accounts for between 4.5% and 9.5% of the Metro's Persons 12+ population.

We will apply a Hispanic DST in a PPM-measured Metro when the Metro's Persons 12+ population is at least 9.5% Hispanic *or* when the Metro's Hispanic Persons 12+ population numbers 75,000 and accounts for between 4.5% and 9.5% of the Metro's Persons 12+ population.

We will apply a Hispanic DST in a Diary-measured Metro when *either* the Metro's Persons 12+ population is at least 9.5% Hispanic *or* when the Metro's Hispanic Persons 12+ population numbers 75,000 and accounts for between 4.5% and 9.5% of the Metro's Persons 12+ population, *and* at least one of the following statements is true for the Metro: we apply a language usage or a Hispanic weighting model in the Metro; we prepare a Hispanic Summary Data Set for the Metro; at least one of the Metro's counties includes a High Density Hispanic Area (see below); or a Spanish-language radio station is either 'Home' or FCC-licensed to the Metro. We apply these criteria to Diary Metros to help minimize the potential impact to audience estimates that could result in those Metros from applying a DST to a population with low Hispanic proportionality.

Prior to the start of the spring survey/April report period each year, we evaluate each Metro that has a DST to determine if we should apply the DST in future surveys/report periods. In addition prior to the start of the fall survey each year, we further evaluate Diary Metros for application of Hispanic DST.

High-density areas

A High-Density Area (HDA) is a zip code-defined area within a Metro county in an ethnic DST market that includes a high concentration of ethnic (Black or Hispanic) populations. For sampling purposes, we treat an HDA as a discrete sampling unit. Doing so helps to improve the In-Tab sample's ethnic representation in that area. An HDA may also be eligible for separate weighting and individual reporting (subject to applicable criteria).

We will establish a Black HDA in a sampling unit if the zip codes that we intend to include in the HDA have a collective In-Tab target of 21 or more and if 35% or more of all persons living in each of those zip codes is Black.

We will establish a Hispanic HDA in a sampling unit if the zip codes that we intend to include in the HDA have a collective In-Tab target of 21 or more and if 40% or more of all persons living in each of those zip codes are Hispanic.

In select sampling units, we may establish both a Black and Hispanic HDA.

Two times each year, we evaluate all DST Metros to determine if zip codes should be added or removed from the Metro's HDAs. PPM Metro HDAs may be subject to Geo Zone review.

Metro start-up

In order for us to start a new Metro service, the area must have a population of at least 50,000 Persons 12+; 30% of all radio listening returned in diaries from the proposed Metro's counties must be credited to stations that would be home to the Metro; at least 15% of commuting in the area must be either inter county or to another county in the proposed Metro; and the proposed Metro service must have a station subscriber or prospect.

Metro redefinition

To help ensure that a Metro appropriately reflects the marketplace, we may add or remove counties from the Metro (e.g. 'redefine the Metro').

We prepare a Metro redefinition analysis as often as once each calendar year for a Diary measured Metro and as often as once every three calendar years for a PPM measured Metro. We conduct a redefinition analysis for all Metros following the release of each decennial U.S. census.

After careful review of the analyses findings, Home-to-Metro clients may elect to amend their licensing agreements to redefine the metro based on our eligibility criteria and deadlines. By amending their license agreements, authorized users agree to the cost of any sample increase needed to maintain the statistical reliability of the redefined Metro's audience estimates. The users also agree to a three-year freeze on additional redefinition analyses in that Metro.

A contiguous county is eligible to be added to the Metro with 75% acceptance from owners/operators of commercial home-to-metro stations that are licensed to use the Nielsen Radio Market Report for the given Metro (client consensus) if the sum of the percentage of listening to metro based stations and commuting from the county into the Metro is 70 percentage points or more. For the county to meet the 70-point criteria, the county's percentage of total unweighted quarter-hour listening to Metro stations must be 55% or more.

In addition, a contiguous county is eligible to be added with 66% client consensus if the sum of the percentage of listening to metro based stations and commuting from the county into the Metro is 100 points or more. For a contiguous county to meet the 100-point criteria, the county's percentage of total unweighted quarter-hour listening to Metro stations must be 75% or more.

An existing Metro county is eligible to be removed with 75% client consensus if the sum of the county's percent of listening to Metro stations plus the county's percent of commuting into the Metro is less than 70 percentage points or if less than 55% of radio listening in that county was credited to stations that are home to the Metro.

Owners or operators of multiple stations in a market may count no more than once toward the 66% or 75% threshold. Consensus of partial subscribers, owners or operators of multiple stations in a market that do not purchase all currency data available by the respective market's currency report cadence, may be applied at a fractional value.

Metro cancellation

We may cancel a Metro service at any time. It is not likely, however, that we would cancel a Metro service to which a station subscribes or to which there is a prospect.

Upon cancellation, all research activity in the Metro in the context of the Nielsen Information ends, and the countdown on the authorized user's window of access to and use of the Metro's data starts.

Clients may use data from a cancelled PPM metro for three months following the final Metro data release. After this period of time, rights and licenses granted to Client to use the Nielsen Information shall cease and Client shall remove the Nielsen Information from its systems and records, and destroy tangible forms thereof.

For a cancelled Diary Metro that was measured four times per year, Clients may use data for three months following the final Metro data release. For a cancelled Metro that was measured twice per year, Clients may use data for six months following the final data release. After this period of time, rights and licenses granted to Client to use the Nielsen Information shall cease and Client shall remove the Nielsen Information from its systems and records, and destroy tangible forms thereof.

We will continue to place Diaries in the cancelled Metro's counties during future surveys for our Nationwide, RADAR®, and Radio County Coverage™ services.

In response to *extraordinary* conditions that radically changed the market or disrupted business within it, we may elect to cancel a Metro in order to start a new, different Metro in its place, with the agreement of all subscribing stations. As the loss of all historical data for the cancelled Metro is a byproduct of this approach, it may lead to additional marketplace disruption. This approach may not be an option available to all Metros.

Personal People Meter (PPM) markets

Atlanta	Jacksonville	Pittsburgh, PA
Austin	Kansas City	Portland, OR
Baltimore	Las Vegas	Providence-Warwick-Pawtucket
Boston	Los Angeles	Raleigh-Durham
Charlotte-Gastonia-Rock Hill	Memphis	Riverside-San Bernardino
Chicago	Miami-Ft. Lauderdale-Hollywood	Sacramento
Cincinnati	Middlesex-Somerset-Union	Salt Lake City-Ogden-Provo
Cleveland	Milwaukee-Racine	San Antonio
Columbus, OH	Minneapolis-St. Paul	San Diego
Dallas-Ft. Worth	Nashville	San Francisco
Denver-Boulder	Nassau-Suffolk (Long Island)	San Jose
Detroit	New York	Seattle-Tacoma
Greensboro-Winston-Salem-High Point	Norfolk-Virginia Beach-Newport News	St. Louis
Hartford-New Britain-Middletown	Orlando	Tampa-St. Petersburg-Clearwater
Houston-Galveston	Philadelphia	Washington, DC
Indianapolis	Phoenix	West Palm Beach-Boca Raton

Continuous Diary Measurement markets

Akron
Albany-Schenectady-Troy
Albuquerque
Allentown-Bethlehem
Bakersfield
Baton Rouge
Birmingham
Buffalo-Niagara Falls
Charleston, SC
Chattanooga
Colorado Springs
Columbia, SC
Dayton
Des Moines
El Paso
Fresno
Ft. Myers-Naples
Grand Rapids
Greenville-New Bern-Jacksonville
Greenville-Spartanburg
Harrisburg-Lebanon-Carlisle
Honolulu
Huntsville
Jackson, MS
Knoxville
Little Rock
Louisville
Madison
Metro Fairfield County
Mobile
Monterey-Salinas-Santa Cruz
New Orleans
Oklahoma City
Omaha-Council Bluffs
Puerto Rico
Richmond
Rochester, NY
Spokane
Springfield, MA
Syracuse
Toledo
Tucson
Tulsa
Wichita
Wilkes Barre-Scranton

Two-book diary markets

Anchorage
Appleton-Oshkosh
Asheville
Atlantic City-Cape May
Augusta, GA
Bangor
Biloxi-Gulfport-Pascagoula
Binghamton
Bloomington
Boise
Burlington-Plattsburgh
Canton
Cedar Rapids
Columbus, GA
Concord (Lakes Region)
Corpus Christi
Daytona Beach
Duluth-Superior
Erie
Eugene-Springfield
Evansville
Fargo-Moorhead
Fayetteville, NC
Flint
Frederick, MD
Fredericksburg
Ft. Pierce-Stuart-Vero Beach
Ft. Wayne
Gainesville-Ocala
Green Bay
Hudson Valley
Huntington-Ashland
Johnson City-Kingsport-Bristol
Kalamazoo
Lafayette, LA
Lakeland-Winter Haven
Lancaster
Lansing-East Lansing
Lexington-Fayette
Lincoln
Lubbock
Macon
Manchester
McAllen-Brownsville-Harlingen
Melbourne-Titusville-Cocoa
Modesto
Monmouth-Ocean
Montgomery
Montpelier-Barre-St. Johnsbury
Morristown, NJ
New Haven
Oxnard-Ventura
Palm Springs
Pensacola
Peoria
Portland, ME
Portsmouth-Dover-Rochester
Pueblo
Quad Cities (Davenport-Rock Island-Moline)
Reno
Roanoke-Lynchburg
Rockford
Salisbury-Ocean City
Sarasota-Bradenton
Savannah
Shreveport
Springfield, MO
Stockton
Tallahassee
Terre Haute
Topeka
Trenton
Tyler-Longview
Utica-Rome
Victor Valley
Visalia-Tulare-Hanford
Wheeling
Wilmington, DE
Worcester
York
Youngstown-Warren

Two-book average diary markets

Abilene, TX	Hagerstown-Chambersburg-Waynesboro, MD-PA	Redding, CA
Albany, GA	Harrisonburg, VA	Rochester, MN
Amarillo, TX	Hot Springs, AR	Saginaw-Bay City-Midland, MI
Ann Arbor, MI	Jackson, TN	Salina-Manhattan, KS
Augusta-Waterville, ME	Joplin, MO	San Angelo, TX
Beaumont-Port Arthur, TX	Killeen-Temple, TX	San Luis Obispo, CA
Bismarck, ND	La Crosse, WI	Santa Barbara, CA
Bowling Green, KY	Lake Charles, LA	Santa Maria-Lompoc, CA
Brunswick, GA	Laredo, TX	Sheboygan, WI
Bryan-College Station, TX	Las Cruces-Deming, NM	Sioux City, IA
Cape Cod, MA	Laurel-Hattiesburg, MS	Sioux Falls, SD
Charleston, WV	Lebanon-Hanover-White River Junction, NH-VT	South Bend, IN
Cheyenne, WY	Lima-Van Wert, OH	St. Cloud, MN
Chico, CA	Monroe, LA	Sunbury-Selinsgrove-Lewisburg, PA
Columbia, MO	Morgantown-Clarksburg-Fairmont, WV	Sussex, NJ
Danbury, CT	Muncie-Marion, IN	Tuscaloosa, AL
Dothan, AL	Muskegon, MI	Traverse City-Petoskey, MI
Eau Claire, WI	Myrtle Beach, SC	Valdosta, GA
Elmira-Corning, NY	New London, CT	Waco, TX
Fayetteville (North West Arkansas)	Newburgh-Middletown, NY	Waterloo-Cedar Falls, IA
Florence, SC	Odessa-Midland, TX	Watertown, NY
Florence-Muscle Shoals, AL	Olean, NY	Wausau-Stevens Point, WI (Central WI)
Ft. Collins-Greeley, CO	Panama City, FL	Wichita Falls, TX
Ft. Smith, AR	Parkersburg-Marietta, WV-OH	Williamsport, PA
Ft. Walton Beach-Destin, FL	Poughkeepsie, NY	Winchester, VA
Grand Forks, ND-MN	Rapid City-Spearfish, SD	
Grand Island-Kearney-Hastings, NE	Reading, PA	

Limitations

Zip code information used to produce the Nielsen Information is subject to defects and limitations that are inherent in the estimates based thereon.

Reservation of rights

All determinations regarding Nielsen survey areas remain solely with Nielsen. We reserve the right to prospectively or retroactively modify, waive, suspend, or change any policy or procedure described above, and/or implement a new policy, as business conditions or research considerations warrant in our judgment.

Chapter Three – Sampling and Recruitment

This chapter provides a broad overview of the methodology we use to select and recruit respondents to participate in Diary surveys and PPM® panels. The descriptions included in this chapter are for general information purposes only, and do not constitute the full body of our methodology, policy, or procedure.

Diary surveys

a. **Sample Universe**

The Universe for Diary Surveys is Persons aged 12 and older.

Estimates that are census-based use the latest updates available from the Census Bureau at the time to calculate the growth rates used in estimation. All estimates are projected to the same date. For example, while race/ethnicity growth rates are generally based on previous year data and total population growth rates are based on current year data, in both cases, population estimates are projected to represent the expected populations as of the same given date taking into account the growth that is expected to occur/have occurred between the effective date of the input and the effective date of the population estimate used for sample planning and weighting.

b. **Sample Target**

A Diary Metro's sample target is the In-Tab sample size objective for that Metro. Each Metro's in-tab target is reported in the eBook report.

Non-Metro areas are generally sampled at a lower rate than metro areas and targets are allocated by county. Nielsen uses the highest available county target whether that target was determined for the Metro of an adjacent market, TSA, DMA, or as the County Coverage minimum.

Sample targets are based on a variety of factors including market characteristics and business considerations. We reserve the right to adjust in-tab targets as business conditions or research considerations warrant.

c. **Sample Frame**

In Metro counties, the survey sample frame is a hybrid "landline/address" frame that includes both residential phone numbers and addresses.

In non-Metro counties and counties that are not a part of any market segment, the survey sample frame is addresses.

The sampling process begins when the data vendor provides us with a list of addresses and with a list of telephone hundred blocks (e.g., groupings of 100 telephone numbers where at least two are residential phone numbers). The vendor filters the lists to exclude known part-time residences, businesses, and group quarters dwellings (such as barracks, a dormitory, or a prison).

d. **Selection From the "Landline Frame"**

One may refer to the telephone number portion of the sample frame as the "landline" or "RDD" (e.g., "random digit dial") frame.

Within each Metro, the sampling system (and/or a data vendor) randomly selects numbers from the hundred blocks; an interviewer then calls the number to attempt to recruit the household to participate in the survey. To help ensure that we apply the same recruitment procedures to households, a centralized computer-assisted system manages respondent communication. English-Spanish bilingual interviewers are available to speak with a household as necessary.

Within each market, the sampling system organizes the telephone numbers into several different categories that reflect whether the telephone number is listed or unlisted and whether or not the address that corresponds to the telephone number is known. We report sample performance metrics for these categories as applicable.

e. **Selection From the "Address Frame"**

One may refer to the address portion of the sample frame as the "address-based" or "ABS" frame.

The sampling system (and/or a data vendor) randomly selects addresses in the market and attempts to match each to a landline telephone number. In Metro geographies, any address that can be matched to a phone number is discarded from the address frame because that household is already eligible for selection from the landline frame. The non-Metro address-based frame consists of both matched and unmatched sample.

Next, we mail a short questionnaire to the selected addresses. Most of the households that return a completed questionnaire are placed in the pool of households to which we may send Diaries.

Each week during the survey, we review the market's in-tab and sample performance; we may select households from the pool and mail Diaries to the selected households as research considerations warrant. As always, our goal is for the market's In-Tab to hit the applicable target and maintain appropriate proportionality.

Note: Our vendor includes select demographic information with addresses (as applicable) in both the landline and address frames. We use this data during the sample ordering process to help improve the final in-tab sample's proportionality, particularly for young persons and persons of Hispanic origin.

f. **Incentives**

We use a complex and multi-tiered set of incentives to secure a respondent's participation in the survey. The types and values of the incentive(s) offered to a respondent, and the schedule for distributing the incentive to the respondent, will vary depending upon that respondent's demographic characteristics, location, and sample frame designation. We apply special procedures for Persons 18-34 in all markets and for Black, Hispanic, and Black/Hispanic persons in applicable High Density Areas.

g. **Second Chance**

In continuously measured sampling units, landline households that consented to participate in the survey but that did not return any diaries are offered a "second chance" to participate in the survey. An interviewer re-contacts applicable households by phone approximately four calendar weeks after the household's original survey week in order to determine if the household's eligibility to participate in the survey has changed, to re-verify the respondent's name and address, and to gain consent to send new diaries. If the household is still eligible to participate, we will mail the household another set of diaries.

Sampling procedures in Continuous Diary Markets

The sampling practices described above will remain the same in Continuous Diary Measurement markets.

PPM panels

a. **Universe**

The Universe for PPM panels is Persons aged 6 and older living in the Metro.

Estimates that are census-based use the latest updates available from the Census Bureau at the time to calculate the growth rates used in estimation. All estimates are projected to the same date. For example, while race/ethnicity growth rates are generally based on previous year data and total population growth rates are based on current year data, in both cases, population estimates are projected to represent the expected populations as of the same given date taking into account the growth that is expected to occur/have occurred between the effective date of the input and the effective date of the population estimate used for sample planning and weighting.

b. **Sample Target**

A PPM Metro's sample target represents the average daily in-tab objective. This target is provided for each market in its eBook report.

Sample targets are based on a variety of factors including market characteristics and business considerations. We reserve the right to adjust in-tab targets as business conditions or research considerations warrant.

c. **The Sample Frame**

The sample frame for PPM panels is a list of residential addresses. A sample vendor filters the list to exclude known part-time residences, businesses, and group quarters dwellings (such as barracks, a dormitory, or a prison). The vendor attempts to match each address on the list to a telephone number. The vendor will successfully match a subset of the addresses to phone numbers.

d. **The Address Pool**

The vendor provides addresses and any matched phone numbers from the list; at this stage of the process, each of these records represents a household. The sampling system will store these households in an address pool. We will select households for sample prep from this pool as necessary. A household is retired from the pool if the sampling system does not select that household within two years from the date it was loaded into the sampling system.

e. **Sample Prep**

During the sample prep select, the system classifies each household as a Basic or as an Alternate. This classification is important because we use different approaches for recruiting Basic and Alternate households.

In order to increase the number of households with eligible demographics within the Alternate recruitment pool, we use differential sampling rates for the demographic strata. This approach increases the probability that the enumerated households will have demographic characteristics that address the recruitment pool's needs.

An interviewer will call any household for which a telephone number was matched to an address. When the Alternate household answers the call and provides the interviewer with the household's demographic information, the sampling system places that household in the pool of households for recruitment via a telephone interview. A Basic household will be placed into the pool for recruitment whether we are able to capture demographic information or not.

We mail a short questionnaire to the households in the pool for which a telephone number wasn't matched to an address. When the Alternate household returns the questionnaire and provides the household's demographic information and a contact telephone number, that household is also placed in the pool of households for recruitment via a telephone interview. When the Basic household returns a questionnaire and provides a contact telephone number, that household is placed into the pool for recruitment via a telephone interview whether we are able to capture demographic information or not.

The sampling system will retire an Alternate household from the recruitment pool if it does not select that household within 18 months of its final contact with the household. Basic households are retired within 10 months of its final contact with the household.

f. **Basic and Alternate Recruitment**

The sampling system randomly selects Basic and Alternate households from the recruitment pool as needed. The system organizes its Basic pool by placing each Basic household into one of two mutually exclusive demographic categories. The system organizes its Alternate pool by placing each Alternate household into mutually exclusive demographic categories. These demographic categories are market specific and may be updated throughout the year based on performance. If a Basic household refuses to participate in the panel, we attempt to recruit an Alternate household to meet the demographic needs of that market's panel.

Telephone recruitment procedures include a complex set of scripted communications, premiums, and incentives. The number of communication attempts, the types of premiums, and the amount of incentives offered may vary from market to market and from demo to demo.

g. **In-Person Recruitment**

Basic and Alternate households that did not return a completed questionnaire are placed into the pool of addresses that may be selected for an in-person recruitment visit. The sampling system randomly selects these addresses from the pool as needed. A Nielsen representative attempts to recruit the household residing at a selected address during a visit to the household. If the household agrees to participate, the Nielsen representative collects demographic information about the household members, explains the incentive program, provides the household with PPM equipment, and assists with the installation of the equipment.

h. **Geo-Zones**

In PPM-measured counties, we conduct all sampling activities within the context of the Geo-Zone (rather than in the larger context of the sampling unit). A "Geo-Zone" is a group of zip codes within a county or sampling unit that are in close proximity to each other and contain clusters of residents with similar demographic and socioeconomic characteristics.

Due to the small size of a Geo-Zone and the narrow demographic range of respondents within it, using a Geo-Zone model aids in selecting and managing sample at a more discrete level and will provide a finer level of geographic control for each sampling unit. We use a structured set of criteria to determine what zip codes to include in a particular Geo-Zone; these criteria take into account such factors as geography, socioeconomic characteristics (when possible), population density, and that sampling unit's In-Tab target into account.

We review Geo-Zones once each year, and will update a Geo-Zone, as applicable, for the October report period.

i. **Panel Tenure**

The maximum amount of time any household can be in the Panel is 26 months from the date the household first agreed to participate. As a practical matter, it is very likely that we will either replace a household, or that household will choose to leave the panel, well before reaching that maximum.

We will remove a household from the Panel if that household moves out of the Metro, if the household is not compliant with our instructions, or if other changes in the household make the household no longer eligible to participate.

j. **Additional Studies**

We may recruit Panelists from the market's currency PPM panel to participate in additional research studies. A PPM panelist will remain eligible to participate in the currency PPM panel regardless of whether he or she agrees to also participate in the additional studies.

k. **Ascription of Demographic Information**

Our interviewers collect a wide range of demographic information from households and panelists. We use a subset of this information to weight the In-Tab sample. We will not include a Panelist in the In-Tab sample if that Panelist does not provide information necessary for sample weighting.

We use another subset of this information for purposes unrelated to sample weighting. While unlikely, it is possible that a household will have been recruited without having provided the full complement of this non-essential information. To account for missing data in this data set, we will ascribe a value for missing household income, personal education, and birth month to a panelist as necessary.

(Users of the data should be mindful that these characteristics may be used as weighting variables in other services and reports; ascription rates are disclosed in applicable reports.)

I. The Houston-Galveston Panel

The Houston-Galveston panel was the PPM demonstration panel. As such, there are procedures in Houston-Galveston that are different from all other PPM Metro services. This section addresses some of the key differences.

The Houston-Galveston market includes all Metro and non-Metro counties in the DMA region. The sample frame for the market is a list of residential addresses.

The sampling system organizes the addresses by census blocks within the address' sampling unit or "cluster." Next, the system randomly designates one address as the Basic and the remaining addresses as Alternates; a cluster will always contain one Basic address and up to 75 Alternate addresses. We mail a questionnaire to each Basic address on the list to collect some general demographic information about the household residing at that address.

Because the system designates Basics and Alternates within the cluster, a particular Alternate is always within close geographic proximity to the Basic that it may someday replace.

Our first attempt to recruit a Basic household is via telephone interview. If the household refuses to participate in the panel, we will send a representative to recruit the household with an in-person visit to the household. If the household cannot be recruited either via a telephone interview or an in-person visit, we will attempt to recruit an Alternate household to maintain demographic representation within the market.

Custom Survey Area reports

A Custom Survey Area's (CSA) target is based upon each sampling unit's available in-tab target as already placed with our syndicated service. Should a CSA sampling unit have more than one sample target, we will use the higher of the targets. We may add extra sample to the CSA per the customer's specifications or as business conditions warrant. CSA sampling units may be eligible for differential survey treatments with the exception of regional or state CSA's that are not eligible for DST as a whole.

Sample performance metrics

We report a wide range of sample performance metrics for our Diary surveys and PPM panels including consent rate, return rate, response rate, unified sample performance indicator, average unified weekly In-Tab, alternate response rate, and designated delivery index, as applicable.

Limitations

Known commercial establishments and other known nonresidential facilities are specifically excluded from the sample frames. Reasonable steps are taken during sampling and recruitment to further exclude, to the extent possible: business or other nonresidential telephone numbers inadvertently included in the sample, residents of media-affiliated households, and group quarters residences containing 10 or more unrelated individuals or containing 17 or more individuals regardless of relationship. Additionally, all possible sample units may not be included in the frame employed for sample selection. Persons not included in the sample may have media habits that differ from those of persons included in the sample.

The language-usage population estimates that Nielsen uses in weighting the sample are subject to all of the limitations existing in those results, which may include: sampling errors, methodological errors, processing errors, and recording errors.

There may be instances where the interviewer or Panel Relations staff does not follow instructions.

Non-responding Persons and other limitations in the original designated sample prevent the In-Tab sample from being a perfect probability sample.

Nielsen places sample at the county, county equivalent, or sub-county level, not the individual zip code level. From reporting period to reporting period, there may be greater variation in the number of panelists at the zip code level than at the county (or county equivalent) level.

Reservation of rights

We reserve the right to prospectively or reactively change, modify, waive, or suspend any aspect of the methodology, policies, or procedures described herein and/or implement new policy or procedures at any time as research conditions or business conditions warrant.

Chapter Four – Reference Data

Our systems process and report Panelist/Diarykeeper listening data nearly every day of the year. For this reason, it is in a station's interest to have up-to-date station reference data on file with us at all times. If a station's reference data is out of date, we may be prevented from assigning proper listening credit or reporting the audience estimates appropriately.

This chapter includes an overview of the station reference data we collect, the collection process, and additional important information. The descriptions in this chapter are for general information purposes only and do not constitute the full body of our methods, policies, or procedures.

Reference data we collect

We collect an array of reference data from AM, FM, and HD-multicast stations, including the station's call sign, frequency, station name, format, network affiliation, effective radiated power, and height above average terrain.

We also collect some business-related information about the station, including the station's FCC-designated city and county of license, mailing address, email address, telephone numbers, and contact information for key station personnel (General Manger, Program Director, and Operations Manager).

Should the station indicate that it also streams its signal, we will collect similar details about the stream.

Reference data collection process

Online station information form (eSIP)

A radio station may submit a reference data update at any time via the Nielsen Audio Online Station Information Form or eSIP. When an authorized station representative submits a station information update request via this form, a member of the Station Relations team will review the requested update, confirm that it conforms to applicable business rules, and update the station's information in our radio station information database. In some circumstances, the Station Relations associate may contact the station for additional information. A station's manager designates station staff that have authorization to the eSIP system.

Station relations team

Our Station Relations Team manages the collection, input, and storage of station reference data. This team is a radio station's primary point of contact for all inquiries pertaining to station reference data. The Station Relations Team is available during Eastern business hours via telephone at 667-786-4710 or via email at rsimail@nielsen.com.

Radio Station Information database (RSI)

The Radio Station Information Database (RSI) is our centralized station reference data warehouse. The RSI database feeds information into our PPM and Diary crediting and reporting systems. The station relations team inputs all of the station information that it collects from stations into this database. The RSI database includes multiple safeguards that help to ensure that all information input into it conforms to applicable business rules and that the systems drawing information from the database use the information appropriately.

Certification

By submitting a station information update request, the requesting party certifies that the information represented in the request is accurate. Should we discover that a station either knowingly or unknowingly submitted inaccurate station reference data, we will take action as warranted in our sole judgment.

When to submit a reference data update

Our recommendation

We recommend that a station submit a reference data update as soon as possible after making facility or station changes. Timeliness of station information updates is particularly crucial in PPM and Continuous Diary measurement markets.

Reference data carry-forward

If a station did not make any changes or report any updates during a report period, our systems carry forward the current report period's information to the next report period.

Periodic data review

Even if a station has no changes or updates to report, we recommend that an authorized user log in to eSIP on a regular basis to review the station's information and verify that it is accurate, complete, and up-to-date.

A station that wishes to review the reference data that we have on file for another station may do so by accessing the Online Station Information profile via the applicable link on the client's Nielsen login page.

Inaccurate reference data

A FUNDAMENTAL ASPECT OF OUR SERVICES IS THAT A STATION'S STAFF IS RESPONSIBLE FOR THE ACCURACY OF THE STATION'S REFERENCE DATA. WHILE WE HAVE CHECKS AND BALANCES IN PLACE TO IDENTIFY AND MINIMIZE POTENTIAL FOR STATION REFERENCE DATA INACCURACIES, THESE DO HAPPEN. OUR LONG-STANDING POLICY IS TO CORRECT THE INACCURATE INFORMATION WHEN DISCOVERED AND PROSPECTIVELY APPLY IT TO THE CURRENT AND FUTURE REPORT PERIOD/SURVEY. ONCE A REPORT PERIOD/SURVEY IS COMPLETE, WE WILL NOT RETROACTIVELY UPDATE OUT-OF-DATE OR INACCURATE STATION INFORMATION IN ORDER TO RECREDIT LISTENING OR REPROCESS/REISSUE THE PUBLISHED AUDIENCE ESTIMATES.

FM translators

We do not collect or store FM translator information as if the translator were a full service radio station. Instead, we consider the translator to be an attribute of the station that retransmits its signal on the translator. A broadcaster should submit translator information using the appropriate form within the eSIP application.

New stations

Members of our Station Relations team carefully monitor FCC notices and other sources for information regarding any new AM or FM station that signs on-air. Should these reviews, or information provided by any other reliable source, include evidence that a new AM/FM station has signed on-air, a member of our Station Relations team will reach out to the station to collect station reference data. In select circumstances we may add a new station to our database without contacting the station. In such instances, we will include the minimum reference data needed to support proper crediting and reporting.

Off-air stations

"Off-air" stations are not eligible for crediting or reporting in our services. We will classify a station as off-air when the station has ceased regular broadcasting and the FCC has terminated the station's license, or if the license's owner has let the license expire, or if a licensed station has been dark for a period of six continuous calendar months.

Unique marketplace conditions

Stations in the same market, or stations that have overlapping signal coverage areas, may make changes that introduce ambiguity regarding a station's identity or dial position. Examples of these unique marketplace conditions include when a station moves from one dial position to another (i.e. a 'frequency move'), when two stations "exchange" dial positions, or when two (or more) stations within the same area use the same call sign during the survey ('hot call letters'). Upon client request, we will work with the client stations to determine the best manner in which to represent the changes in our databases. We will base that decision upon consultation with the client, independent analysis and interpretation of the information as provided, and information on file with the FCC.

Limitations

Certain data, such as call letters in effect, format, or programming, are based on data supplied by stations, the FCC, industry publications or notices, and/or other sources. These data may not be accurate or timely. Some of the data may affect the way certain audience estimates are reported.

The digital radio Band ID labels referenced in this report are proprietary to Nielsen and protected under terms of Nielsen authorized user agreements and/or federal copyright and trademark law. Authorized users and purchasers of Nielsen data may display and use the Band ID labels provided the user clearly states that the labels are proprietary to Nielsen (e.g., "Nielsen retains all copyrights or other legal rights to the Band ID labels used herein."). The reports may be used in accordance with the applicable Nielsen Agreement between the authorized user and Nielsen. Unless Nielsen's prior written approval is obtained, all other uses are expressly forbidden, and may subject the user to legal action, damages, and recovery of Nielsen's legal expenses incurred in enforcing its intellectual property and proprietary rights.

Reservation of rights

We reserve the right to prospectively or retroactively modify, waive, suspend, or change any policy or procedure described above, and/or implement a new policy, as business conditions or research considerations warrant in our judgment.

Chapter Five – Encoding

This chapter provides a broad overview of our PPM encoding technology and the key policies we developed to support it. The descriptions in this chapter apply to our local syndicated Audio services only; policies and procedures for other services, tests, and for media outlets other than radio stations or streams, may differ from those described here. The descriptions included in this chapter are for general information purposes only, and do not constitute the full body of our methodology, policy, or procedure.

What is a PPM code?

In the scientific sense, a PPM code is a sound wave. In each PPM code/sound wave is an attention signal that indicates to a panelist's meter that additional information is forthcoming, a unique station identifier, a time stamp that notes when the encoder transmitted the code, and other information. Detailed information regarding our PPM codes is confidential, patented, and proprietary.

PPM hardware encoder

A hardware PPM encoder is the piece of studio equipment that inserts PPM codes into a media outlet's audio signal. As it inserts codes into the outlet's signal, the encoder continuously analyzes the audio to determine the amplitude at which to insert the codes so that they will not be audible to the human ear.

Our general recommendation is that a station engineer install the PPM encoder in the station's air chain after all audio processors or pre-processors (as applicable). By doing so, the engineer helps ensure that the signal's encoding remains inaudible and free from any unintended artifacts or degradation that could result from additional audio processing.

Because station signals are unique, the ideal position for the encoder may vary from station-to-station. A Nielsen engineer will work with the station engineer to determine the most advantageous position within the air chain to install the station's encoder.

As with any piece of audio equipment that is added to an audio path and because our encoders do add energy to the audio, it may be necessary to make minor adjustments to the audio processing in order to compensate for this added energy.

Audio software encoder

An audio software encoder is software that functions the same as a hardware PPM encoder. The broadcaster may elect to use the audio software encoder option with a compatible/certified audio processor *rather than* encode the station's signal with a PPM hardware encoder. For additional information regarding the audio software encoder, your station's Engineer should reach out to his or her Nielsen contact.

CBET and enhanced CBET

Our PPM encoding technology's formal name is 'Critical Band Encoding' or 'CBET.' In late 2015, we provided all encoded radio stations with a PPM-encoder firmware update. This firmware update included our next generation version of CBET or 'enhanced CBET.' Enhanced CBET has been our encoding standard since it was introduced.

Stations eligible to encode

AM, FM, and HD radio stations that are FCC-licensed to a county in a PPM Metro's DMA region, or that have signal coverage in a PPM Metro county, are eligible to encode. The streaming versions of client AM, FM, and HD radio are also eligible to encode.

The encoding agreement

The Encoding Agreement is a contract that establishes an encoding relationship between a station, group, or broadcaster and Nielsen. By signing the agreement, the user agrees to all of the terms and conditions of the agreement, including those relating to the authorized uses of encoding equipment and encoded signals.

The in-station PPM encoding monitor

An in-station PPM encoding monitor is a piece of audio equipment that is always listening for a station's PPM codes. The PPM encoding monitor will alarm any time it does not 'hear' the correct PPM codes in the station's signal.

We encourage station engineers to integrate the station's PPM encoding monitor into the station's critical alarm systems. An engineer that does so helps ensure that he or she will be notified quickly in the event of an alarm.

Nielsen recommends the in-station encoding monitor be installed such that it receives program material that has exited the transmitter, or 'over-the-air' broadcasts. The monitor should receive the same signal that will be detected by PPM devices worn by panelists.

It is the responsibility of an encoded radio station's staff to monitor the station's encoding. As such, many stations and engineers have made in-station PPM encoding monitoring a business priority.

Multi-channel encoding monitor

Hardware

The Multi-Channel Encoding Monitor (MCEM) has an array of features not available on earlier-generation monitors. The MCEM includes a web interface that provides details about the station's current encoding status. Additional features include the ability to monitor up to four stations with one monitor, an expanded array of alert/alarm conditions, and reports that provide the user an assessment of the monitored signal's 'encodability' and the codes' 'detectability.'

The MCEM accepts professional balanced analog inputs via the XLR connector, and also accepts consumer level audio via the tip and sleeve quarter-inch connector.

Encodability

'Encodability' is an objective measure of an audio signal's capacity to be PPM-encoded. Encodability is determined by dividing the number of PPM codes inserted into the left and right signal channels by the maximum possible number of codes that could be inserted.

Detectability

'Detectability' is a subjective assessment from 0 (worst) to 4 (best) of the likelihood a Panelist's meter will detect PPM codes in an audio source. Detectability is determined by averaging the audio's message signal strength over the past 60 seconds and comparing that average to a set of thresholds. Detectability is an estimate, however, because it is not possible for the algorithm to take into account all of the factors in any particular Panelist's listening environment (i.e. radio volume, meter position, background noise, etc.) that could affect the code being detected.

Configuration / terms of use

Prior to providing a multi-channel encoding monitor to a station, we must collect additional technical/configuration information from the station Engineer, and a station manager (or other designated corporate officer) must review, click-through, and agree to the monitor's Terms of Use Acknowledgement. If the station does not provide the necessary configuration information and/or does not agree to the updated Terms of Use, we will be unable to provide the station with a multi-channel encoding monitor.

Monitor alarms

In circumstances where a station is on-air and its encoding monitor has alarmed, the station engineer should enable the station's backup encoder. If the station has a MCEM, the log files can be accessed to determine if there was an actual issue and offer insight to the type of action to be taken.

Monitor alarms that are shorter than three continuous minutes in duration generally indicate a temporary pause in encoding continuity that is unlikely to affect a station's listening credit.

Regardless of the type of monitor, when a station has experienced an alarm for three continuous minutes or longer, the station engineer should contact our Encoding and Monitoring Team for additional instruction.

If the monitor alarms and no backup encoder is available, check the audio feed to the monitor to ensure the correct encoded audio is present. Check the encoder routing to verify the audio input is correct and the output of the encoder is being sent to the transmitter. As a final step, place the encoder into "BYPASS", unplug it, and wait 10 seconds. Plug in the encoder, wait for it to boot up, and then "ENABLE" the encoder. If you are unable to resolve the alarm, the Station Engineer should contact our Encoding and Monitoring Team for additional instruction.

Daily listening data reviews

To supplement in-station monitoring, the Encoding and Monitoring team indirectly observes a station's encoding by reviewing unedited data returned from the panel each day. Stations that generally meet MRS are reviewed daily. Should a data review indicate a potential encoding problem, a Nielsen broadcast engineer will contact the station engineer. We do not intend for stations to rely upon these data reviews as a PPM encoding 'monitoring service.' In-station self-monitoring is the primary method for a station to verify that its signal is properly encoded.

Proactive monitoring

Proactive Monitoring is a service available to stations which use our Multi-Channel Encoding Monitor (MCEM). Proactive Monitoring allows Nielsen to actively monitor data from a station's MCEM and alert stations more quickly should any issues arise.

This process supplements existing steps we use to ensure encoding quality. These current steps include enabling station technical contacts to evaluate code quality via the MCEM and Nielsen's ongoing monitoring of the audience estimates each day to identify potential issues. Proactive Monitoring helps ensure programming is encoded appropriately with more timely alerts should any problems need to be addressed.

The PPM code policy

Because every station's PPM codes are unique, our firm policy is that all radio stations must transmit the appropriate, unique PPM codes (and only those PPM codes). We program the station's PPM codes into the encoders we provide to the station. To comply with this policy, a radio station must simply use the equipment and/or software that we provided according to our instructions.

Because of the direct link between encoding and listening credit, a station must also carefully manage the distribution of its PPM-encoded signal. For example, a station may not provide its encoded signal to any other radio station for re-transmission. The station must also refrain from transmitting any other station's PPM codes, either instead of or in addition to its own codes. Similarly, the station may not stream its on-air encoded signal (dedicated stream encoding equipment is available for that purpose).

Station encoding activities that do not comply with the PPM Code Policy violate the terms of the station's Encoding Agreement and may constitute Rating Distortion.

Should we discover that a station did not comply with our PPM Code Policy, we reserve the right to take action as warranted in our judgment.

EAS and emergency conditions

The PPM Code policy does not apply to radio stations during Emergency Alert System broadcasts or tests. We may also waive the PPM Code Policy for stations that suspend regular programming in favor of special programming broadcast in response to a weather event, natural disaster, or other emergency.

FM translators

From both an FCC broadcast regulations perspective and from a ratings perspective, an FM translator is not a standalone 'radio station' on par with full-service FM radio stations. As such, our standard station reporting and encoding policies do not apply to translators. To help ensure that a station receives credit for audience delivered by a translator, the station should send its PPM-encoded signal to the translator for re-transmission. (Note: Our FM translator policies also apply to boosters and repeaters.)

HD1

Today, we automatically include audience delivered via an HD1 or 'HD primary' channel in the audience estimates we report for the HD1's analog FM counterpart. For this reason, the broadcaster may use one encoder/the same PPM code to encode the analog FM and HD1 signals. Because there is no business reason or ratings advantage to encode an HD1 channel with a unique code, nearly all radio stations transmit the same PPM codes in their analog/HD1 signals.

Audio delivered via social media

An encoded radio station may re-transmit its encoded signal for portions of the broadcast day via a social media outlet so long as that re-transmission is a live, real-time re-transmission of the station's on-air signal.

Reminder: Radio stations and streams that are eligible to be reported in our services may not re-transmit another station's PPM codes.

Time-shifted / on-demand radio

An encoded radio station may digitize its signal as an audio file and make that file available for a user to download and replay. The broadcaster may digitize the station's encoded on-air signal for this purpose. In select circumstances, the radio station may receive listening credit when a Panelist downloads and replays the audio file. For additional information, see this DOM's Station Reporting chapter.

Code layering

An encoder can 'layer' different PPM codes in the same audio. For example, a particular radio broadcast may include a code for the station that broadcast the audio, another code indicating the radio network that programmed the audio, and another code that identifies the audio content. For the purposes of our local radio syndicated services, we use 'station' layer encoding only. The presence of codes on these different layers does not degrade either audio or code quality.

Unencoded intervals

When an encoded radio station is on-air but is not encoded, the station receives no listening credit. Such a period is an 'unencoded interval.' We list the details of all station-confirmed unencoded intervals in the Special Notices section of the applicable *Nielsen Audio Radio Ratings Data and/or Nielsen Audio Measurement Service* (referred to as "Nielsen Information") or eBook.

"Double encoding"

A station is 'double encoding' when more than one of the station's encoders are simultaneously encoding the station's signal with codes on the same layer (see 'code layering' above).

We list the details of station-confirmed double encoding circumstances that occurred in the Monday-Sunday 6AM to Midnight daypart in the Special Notices section of the applicable Nielsen Information.

Because a station generally receives credit for each Quarter-Hour of listening when it was double encoded, it is not possible to estimate the degree to which double encoding may or may not have affected the station's audience estimates.

Encoding verification / quality of service test

A station engineer that has concerns regarding his or her station's encoding or that the in-station monitor is functioning properly may request that we perform a Quality of Service test. To request the test, the station engineer should reach out to his or her Encoding and Monitoring Team contact.

For this test, we recommend that the station engineer record a five-minute sample of the station's on-air, encoded audio. To ensure a complete test, we ask that the engineer record a separate five-minute sample for each of the station's encoders. The engineer should save these samples as digital files and note the date/time of each recording, the encoder's chain name, and the unit's serial number. The engineer should then send the samples and recording information to us via email. We will then test the audio samples and notify the engineer of the results.

PPM encoding health check

In an effort to ensure proper performance, we periodically reach out to an encoded station to verify that its signal is encoded. This periodic request is part of Nielsen's continuing efforts to support encoding in all PPM markets. The process includes contacting all eligible stations in every PPM market via email and validating that they are compliant with current standards and that the encoding equipment they possess is within proper operating parameters. Stations will be instructed to notify the Encoding and Monitoring Team if a problem is discovered and assistance is needed.

Best practices / additional information

Additional information regarding PPM encoding best practices and other topics described in this chapter are available in the 'Policy & Guidelines' section of Nielsen Portal, in the technical manuals we provided with your encoding equipment, or from our Encoding and Monitoring team upon request.

Reservation of rights

We reserve the right to prospectively or retroactively modify, waive, suspend, or change any policy or procedure described above, and/or implement a new policy, as business conditions or research considerations warrant in our judgment.

Chapter Six – Meters and Panel Relations

The data collection instruments for our PPM panels are PPM 360™[2], and starting with our live test in September 2021, PPM Wearables. This chapter provides an overview of our meters, information regarding our Panel Relations team, and our instructions to Panelists. The information included in this chapter is for general information purposes only, and does not constitute the full body of our methodology policy, or procedure.

PPM 360

Design

The PPM 360 resembles a flip model cellular phone. Inside each PPM 360 is a battery, a superior-quality microphone, an accelerometer, a data storage system, and cellular technology. Each meter's shell has a small LCD screen that can be used to display messages to the Panelist. To help a Panelist personalize his or her meter, we offer an array of different meter carry cases and other accessories.

Function

As a Panelist is exposed to encoded media, PPM 360 detects and stores the PPM codes from the audio portion of the media. Throughout the day, PPM 360 also captures detailed information regarding the Panelist's motion.

Packing and activation

The household's PPM equipment arrives in a user-friendly package. This package includes the household's meters, charging cables, headphone adapters, in-home beacons, information about Nielsen and the Panel, and activation instructions.

Shortly after the household receives its equipment, we verify that each household member activated his or her meter. A household is eligible to contribute data to the ratings once we confirm that all of the household's meters have been successfully activated.

In-home beacon

We provide each Panel household with two in-home beacons; these beacons emit a low power radio frequency (RF) signal. When a Panelist is exposed to encoded media at home, the Panelist's meter appends the beacons' RF marker to the PPM codes that it received in the audio portion of the media. We use these markers to help classify and report radio listening that takes place 'At Home.'

PPM wearables

The PPM Wearable is Nielsen's new portable meter. The PPM Wearable is smaller with an updated design that is more aligned with current wearable technology trends.

We began integrating PPM wearables into the panel as part of the live Wearables test with the September 2021 report period. The PPM Wearable is planned to replace today's PPM 360 device starting once the test is complete in 2022.

2 PPM 360™ is a registered trademark of The Nielsen Company (US), LLC.

Design

The PPM Wearable resembles a fitness tracker or smart watch. Inside each PPM Wearable is a battery, a superior-quality microphone, an accelerometer, and a data storage system. Each meter's shell has a small LED screen that can be used to display messages to the Panelist. To help a Panelist carry his or her meter, we offer three carry accessories including a wristband, a clip, and a lanyard.

Function

As a Panelist is exposed to encoded media, PPM Wearables detect and store the PPM codes from the audio portion of the media. Throughout the day, PPM Wearables also capture detailed information regarding the Panelist's motion.

Packing and activation

The household's PPM equipment arrives in a user-friendly package. This package includes the household's meters, charging cables, a hub, an in-home beacon, information about Nielsen and the Panel, and activation instructions.

Shortly after the household receives its equipment, we verify that each household member activated his or her meter. A household is eligible to contribute data to the ratings once we confirm that all of the household's meters have been successfully activated.

Household equipment

We provide each Panel household with two pieces of household equipment: a hub and a beacon. The Wearable connects to the hub using lower-power radio frequency (RF) signals, and the hub in turn transmits data between Nielsen and the Wearable using cellular technology. Both the hub and beacon also emit a low-power RF signal. When a Panelist is exposed to encoded media at home, the Panelist's meter appends the hub or beacons' RF marker to the PPM codes that it received in the audio portion of the media. We use these markers to help classify and report radio listening that takes place 'At Home.'

Companion APP

Panelists are also eligible and encouraged to download the new Meter Companion app. The Meter Companion app serves as a Panelists engagement tool as well as a secondary gateway for connecting the PPM Wearable back to Nielsen when the Panelist is away from the hub.

Panel relations team

Our Panel Relations Team interacts with Panelists. Members of that team are available to answer Panelist questions, explain the incentive structure, coach Panelists, and provide additional support.

By maintaining a dynamic and personalized relationship with Panelists, the Panel Relations team helps keep Panelists motivated to participate.

Instructions and compliance

Wear or carry

We instruct each Panelist to wear or carry his or her PPM during all waking hours, and charge the meter when retiring for the day. We closely monitor how each Panelist complies with these instructions.

As we evaluate a Panelist's compliance, we consider how special circumstances may prevent the Panelist from following this instruction. Examples of such special circumstances include a school's or employer's prohibition against carrying electronic devices, chronic illness, an extended power outage, etc.

Travel

If the Panelist will be traveling away from home for less than two weeks, we instruct the Panelist to wear his or her meter while traveling. For longer trips, we instruct the Panelist to leave the meter at home.

Coaching

Should we determine that a Panelist is not following our instructions, we may coach the Panelist. We use a structured set of criteria to identify Panelists in need of additional coaching, and a standardized approach to communicating with the Panelists.

If the Panelist's compliance with our instructions does not improve after coaching, we may remove that Panelist's household from the Panel.

Security

Data

We have built multiple safeguards into our PPM data collection and processing systems. Because of the nature of these safeguards, detailed information about these safety measures is confidential.

Panelist confidentiality

We firmly instruct Panelists to refrain from proactively discussing their participation in the Panel in any live setting or in social media. We routinely monitor Panelist compliance with this instruction. We also provide Panelists with guidance on how to respond to questions he or she may receive about the meter.

If we discover that a Panelist has disclosed his or her participation in the Panel to a radio station employee or representative, we will immediately remove that Panelist's household from the Panel.

If we discover that a radio station employee or representative has attempted to, or has succeeded in, learning a Panelist's identify or contacting a Panel household, we will take action against that station.

Other circumstances

Whether by accident or intention, it is possible that a Panelist carries another household member's meter, carries multiple meters, or otherwise misuses meters. We have a robust set of protocols, analyses, and procedures in place to identify such circumstances. Because of their sensitive nature, these procedures and analyses remain confidential. We will take action, as appropriate, should we determine that a Panelist or household misused a meter or meters.

Incentives and premiums

We compensate Panelists for their cooperation via a multi-tiered set of incentives and premiums. The form, amount, and timing of these may vary from market to market, from report period to report period, and from demo to demo.

There is no connection between the types or amount of media the Panelist consumed, or will consume, and our incentives and premiums. We provide clear verbal and written statements to all Panelists stating this is the case.

Demographics update

A Panelist's demographic characteristics may change during his or her time in the Panel. We automatically update a Panelist's age in our system each year during the Panelist's birth month. We also periodically re-contact Panelists to verify and update other demographic information, as necessary.

Tenure

The maximum amount of time a household may participate in the Panel is approximately 26 months from the date the household agreed to participate in the Panel. Most households choose to exit the Panel before their term of eligibility expires.

Limitations

Panelists may not wear or carry their meters from rise to retire as instructed, and to the extent this occurs, the media exposure data collected may be incomplete.

Nielsen conducts research involving new methods of improving Panel cooperation and/or securing additional information from Panelists. Occasionally, a portion of this research may be integrated with syndicated data and, if and when so done, may cause the degree of variance in the data to be greater than that expected from sampling variance alone.

Non-responding Persons may have listening habits that differ from those of respondents.

Reservation of rights

We reserve the right to prospectively or retroactively modify, waive, suspend, or change any policy or procedure described above, and/or implement a new policy, as business conditions or research considerations warrant in our judgment.

Chapter Seven – The Diary and Diary Processing

This chapter provides an overview of the radio listening Diary, how we process diaries, and key Diary edit procedures. The descriptions provided in this chapter are for general information purposes only and do not constitute the full body of our methodology policy, or procedure.

The standard diary

The radio listening Diary is a paper survey booklet. Each Diary includes an instruction page, Daypages, a comments page, and a set of demographic/lifestyle question pages. The Diary is self-contained within a postage-paid mailer.

Instructions page

On the Diary's instructions page, we instruct the respondent to "...record all your listening...," with listening defined as: "...any time you can hear a radio—whether you choose the station or not. You may be listening to radio on AM, FM, the Internet or satellite." The instructions page includes example listening entries.

Daypages

The Diary includes seven Daypages—one for each day of the survey week. The respondent records his or her listening on these pages. Each daypage includes areas for the respondent to record the essential details of each radio listening occasion, including start and stop times, station identifier(s), AM/FM indicator(s), and listening location(s). Each Daypage also includes a checkbox at the bottom of the page that the respondent may use to indicate that he or she did not listen to any radio on that particular day.

Comments page

The Diary also includes an open-ended 'comments page.' On this page, the respondent may write comments or additional information. Generally, we do not use comments page information when crediting diaries; we may, however, refer to information recorded on this page during quality assurance audits and re-crediting.

Demographic and lifestyle question pages

Each Diary includes a set of demographic and lifestyle questions. On these Diary pages, we collect the respondent's age, gender, employment status, ethnicity, race, and, in applicable areas, the primary language spoken in the respondent's home (e.g., English or Spanish).

Should a respondent return a Diary that does not include age or gender information, an interviewer will attempt to contact the Diarykeeper via telephone and collect this information. If the interviewer is unable to collect this information, we will discard the Diary.

Should a respondent return a Diary that does not include race, ethnicity, or primary language spoken in the home, an interviewer will attempt to collect the information via telephone. If the interviewer is unable to collect the information, we will assign a value for the missing information. To determine the value to assign, we review information returned from other respondents in the household and/or information collected during recruitment.

The qualitative diary

The qualitative Diary is an expanded version of the Diary that contains additional lifestyle and consumer behavior questions.

The bilingual diary

Standard and qualitative diaries are available in a Spanish-English bilingual format. We mail bilingual diaries to all Hispanic households in an HDHA, to any household that requests them, and to all households in the Puerto Rico market. Every bilingual Diary includes a question on whether English or Spanish is the primary language spoken in the home.

Overview of diary processing

Upon receipt of a Diary, we scan images of the Diary's cover and pages into our processing system. Staff and/or vendors then key-enter the information represented on the Daypages into the Diary processing databases.

Once all of the Diarykeeper responses are key-entered, the processing system groups the responses into complete listening entries. The system then organizes entries within each Diary into chronological sequence. Staff members review and resolve conflicting start/stop times according to established policy and protocol. If the chronology of listening events in the Diary is ambiguous to the extent that conflicts cannot be resolved, we discard the Diary.

Next, the Diary processing system and Diary Creditors assign listening credit to radio stations for the listening information the respondent recorded in the Diary. To assign listening credit, the Diary processors use a complex suite of online tools that cross-reference information contained in the diaries with reference data we collect from radio stations.

Last, a team of analysts reviews the market's crediting. During this analysis, the team identifies crediting anomalies that fall outside of acceptable tolerances. This team will re-credit entries, or take other action, as necessary.

Upon completion of these analyses, the Diary processing system transfers the final credited results to sample weighting and estimates reporting modules.

Diary usability

We make a reasonable effort to use all returned diaries. There are conditions, however, that make it impossible for us to use a particular Diary. Examples of such conditions include if the respondent mailed his or her Diary too early or too late, if the Diary is not complete, or if the Diary includes amounts of listening in excess of the applicable thresholds.

We have developed quality checks at various points of the Diary processing workflow to identify diaries that we will not be able to use. Each check serves as a gate through which a Diary must pass to proceed to the next stage of processing. The Diary processing system rejects and discards diaries that do not pass these checks.

To complement these standard usability checks, we also use procedures to identify Diary tampering; because of their sensitive nature, these procedures remain confidential.

We provide data pertaining to unusable diaries to the Media Rating Council. This information is otherwise unavailable.

Diary edit procedures

We use a complex body of Diary edit procedures to assign listening credit to radio stations for the entries recorded in diaries. The following sections provide a summary of several key Diary edit procedures. Additional information regarding specific procedures is available upon request.

Station reach

On-air radio stations are eligible for listening credit in any sampling unit where the radio station may be heard. A data vendor estimates the reach of radio stations into sampling units based upon the station's antenna height and effective radiated power plus a mileage allowance (as applicable). We calibrate our crediting tools to account for the data vendor's results. When crediting diaries, we may also consider other factors including commuting patterns in the area and the results of prior surveys. Radio station streams are eligible for credit in all sampling units.

Call letter hierarchy

Diarykeeper confusion over a station's call letters, band, and/or unclear handwriting may result in key-entered call letters that are unlicensed or are the call letters of a radio station that does not reach into the sampling unit. Through an automated series of sequential and logical steps, the Diary processing system assigns credit to radio stations for such call letter entries.

Station credit and FM translators

We do not consider an FM translator to be a 'station.' As such, we do not assign listening credit 'to' any translator. Instead, we assign listening credit for Diary entries that report listening to a translator to the station that re-transmits its signal on the translator.

The 1% rule and ascription

In circumstances where two or more AM, FM, or HD multicast with translators stations are eligible for credit of the same Diary entry, we will use the '1% Rule' to assign listening credit.

To qualify for credit via the 1% Rule, the station must have received listening credit in 1% (or more) of all In-Tab Diaries returned from that sampling unit during the previous survey year.

In the event that only one of the eligible stations 'makes 1%,' we will credit that station. If both stations make 1%, we will assign credit via ascription. If neither of the stations make 1%, we will credit the entry to 'Unidentified Listening' (see below).

(Note: Radio station streams are not eligible to receive listening credit via the 1% Rule.)

The "blank station" edit

A 'blank station' Diary entry does not include a station identifier. In certain circumstances, we may assign credit for a blank station entry based upon patterns of listening entries recorded elsewhere in the Diary.

Special handling

In the unlikely instance that standard Diary edit procedures may not assign credit for a particular entry appropriately, we may use special edit procedures.

For an entry to be considered eligible for such special handling, the entry must be received in diaries from the same market over the course of multiple surveys. Based upon an in-depth analysis of those entries, we will develop a special edit rule for crediting the entries.

We re-evaluate all special handling rules as necessary to determine if we should maintain, update or retire the special handling rule.

Unidentified listening

If we are certain that a particular entry reports listening to radio, but we are unable to credit an entry to any *specific* radio station, we will credit the entry to 'unidentified listening.' We include all Quarter Hours of unidentified listening in our Persons Using Radio estimates.

Deleted listening

We discard Diary entries that report listening to traffic or weather band stations, two-way radio services (such as police, fire, air traffic, and marine radio), amateur/HAM radio transmitters, subcarriers and wired radio services, pirate radio stations, and streaming/mobile audio that is not also broadcast on-air.

Modeled daypages

The threshold for the minimum number of completed Daypages in an In-Tab Diary is five. In diaries with one or two blank Daypages, the Diary processing system will impute final credit from other days in the Diary to the blank day(s). The system imputes listening based upon a predetermined, empirically derived substitution matrix. The system will reject any Diary in which both Saturday and Sunday are blank.

Lifestyle question edits

The system will impute a value to an unanswered lifestyle (i.e., "qualitative") question. The system determines what value to assign based upon how other respondents of similar age or gender answered the question. If the respondent records multiple answers to a lifestyle question with mutually exclusive categories, the system uses the highest or the affirmative value.

(Note: Gender, age, employment status, race, ethnicity, or primary language spoken in the home are not "qualitative" questions; we process responses to these questions separately, and in advance of, the answers to qualitative questions.)

Continuous Diary Measurement (CDM) markets

In Continuous Diary Measurement markets, we release new currency data each month. As such, our ability to change the credit results for prior survey months in these markets is limited. For example, we will not be able to retroactively recredit April diaries to account for station information changes that are made in May. For this reason, it is *essential* that we have up to date station information on file at all times.

Quality assurance

Each day, we audit a randomly selected sample of each associate's work and our vendors' work. During these audits we maintain a detailed log of all errors and/or deviations from procedures. Managers use this information to identify staff in need of additional training and to identify procedures that may require additional development.

To complement these daily reviews, we also monitor overall accuracy rates month-to-month via a separate end to end process audit of randomly selected Diaries processed each phase.

Client diary review

A client (or the client's designated representative) may review Diary images. For additional information, contact your Nielsen Client Services representative.

Retention period

We retain the electronic images of diaries scanned into its system for 4 years and 3 months from the date of the release of the last syndicated report that includes information collected in those Diaries.

We retain paper diaries for 60 days after the release of the final *Nielsen Audio Radio Ratings Data and/or Nielsen Audio Measurement Service* (referred to as "Nielsen Information") for which the diaries were In-Tab.

Limitations

Diaries, or portions thereof, may be completed improperly if the diary instructions are not followed by Diarykeepers. Such diaries may be unusable and excluded from the survey. Some diary entries may have been made on the basis of hearsay, recall, Diarykeeper approximations, or could have been influenced by comments made by the interviewer or others to Diarykeepers.

Data analysis, preprocessing preparation, ascription of the data, or post-survey week telephone validation calls may affect diary listening entries before the data are projected. Diaries, or portions thereof, may thereby be modified or excluded from the survey. These procedures may affect the audience estimates or the station's ability to meet Minimum Reporting Standards (“MRS”).

Situations in which stations use or have used the same call letters or frequency, or have changed call letters or frequency, may result in Diarykeeper confusion in correctly identifying the station to which the listening occurred.

Non-responding Persons may have listening habits that differ from those of respondents.

In addition to direct responses to the qualitative questions at the back of the qualitative diary, the final qualitative database may contain derived responses to qualitative questions. For example, the qualitative database contains information on Household Size. Household Size can be determined by combining a response to the qualitative question for Number of Children less than 12 years of age with placement diary information for Number of Persons 12+.

Reservation of rights

We reserve the right to prospectively or retroactively modify, waive, suspend, or change any policy or procedure described above, and/or implement a new policy, as business conditions or research considerations warrant in our judgment.

Chapter Eight – PPM Data Editing

The PPM data processing system applies a series of edits to the data it collects from the panel. As a group, these edits transform the raw data into a meaningful record of the panel's radio listening. The edits also increase the validity of PPM audience estimates compared to what the estimates' validity may have been, had we used unedited data to produce them.

This chapter offers a broad overview of several key PPM data edit procedures we use in our local Audio syndicated services. Edits for other services and research tests may differ from those described here. The descriptions included in this chapter are for general information purposes only, and do not constitute the full body of our methodology, policy, or procedure.

When a panelist listens to encoded radio

When a Panelist listens to an encoded radio station, the Panelist's meter receives the codes in the audio and stores them in its memory. The meter then adds its own time stamp to each code indicating the time that it received the code and a marker that indicates the meter's assessment of the code's quality. The collection of codes, time stamps, and quality markers form a "log" of the Panelist's radio listening. Throughout the day, the Panelist's meter also maintains a record of the Panelist's motion.

The media day and in-tab

For data collection and editing purposes, the media day begins at 4AM and continues until 4AM the next day. Each day, the PPM system collects data from the panel for the previous media day. A Panelist is eligible to be In-Tab for a particular media day if the Panelist wore or carried his or her meter for the applicable number of hours that day.

To be In-Tab on a particular media day, a Panelist aged 18 years or older must have worn or carried his or her meter for at least eight hours that media day; a Panelist aged 6-17 must have worn or carried his or her meter for at least five hours on that media day.

Segments and intervals

The PPM system downloads the In-Tab Panelist's listening log in chronologically ordered 15-second segments; the system then groups the 15-second segments into 30-second intervals that correspond to either the first or second half of a clock minute.

Last best code

While most intervals will include a single station's code, if a particular interval includes two different codes, suggesting that the Panelist tuned into more than one station during that 30-second interval, the system keeps the last code in the sequence. If, however, the first code in the sequence is complete and the second code is not, the system will keep the first code.

Incomplete codes

While most of the codes that the system will eventually credit to a radio station are complete when received by the Panelist's meter, it is possible that the meter may not receive all of a particular code.

When a meter does not receive all of a code, the data processing system reviews other codes in that Panelist's listening log in the 15 minutes prior to and the 15 minutes following the incomplete code. If the incomplete code is "one character-off" from a code within that 30 minute window and meets other technical criteria, the system credits that code to the time corresponding to the incomplete code.

When it does not meet the one-off criteria, the system will credit a code from the media outlet broadcasting in that same medium (i.e., radio or television) as the incomplete code that is nearest to the time corresponding to the incomplete code. When it applies the "same medium" edit, the system looks to the five minutes before and the five minutes after the incomplete code for a code to credit.

Lead-in edit

To account for the possibility that it may take a moment for the Panelist's meter to receive the station's code when the Panelist first tunes into the station, the PPM edit system applies a "lead-in" edit to the beginning of each listening event.

Via the lead-in edit, a radio station receives credit for up to the 60 seconds immediately prior to when the Panelist tuned into a station —assuming, of course, that the Panelist was not tuned into *another* station at that time. The lead-in may also bridge a brief interruption within an extended listening period.

Consolidating segments into minutes

The system then bundles the 30-second segments into minutes of listening. If two different stations receive credit for a particular clock minute's 30-second segments, then *both* stations receive credit for the minute. Because of the way the system organizes listening, it is not possible for more than two radio stations to be eligible to receive credit for a single minute.

Building quarter-hours

The system then builds Quarter-Hours of listening credit by combining minutes of listening. The system will credit a code for any Quarter-Hour when the Panelist listened to the station for five or more cumulative minutes during that Quarter-Hour.

Station credit

In the final step of the process, the PPM data processing system cross references the codes against our station information database. During this translation, the system assigns credit to a station for all of its codes and the Quarter-Hours of listening associated with them.

Time

Time stamps

By comparing a PPM code's time stamp and the time stamp the Panelist's meter appended to the code, the PPM system determines if the Panelist listened to encoded audio at a time *later* than the broadcast time. Recent analysis demonstrate that 'time-shifted' radio listening is *very* rare.

Podcast radio

Today, we assume that isolated instances of time-shifting within a Panelist's listening log is likely to indicate that the Panelist listened to a radio podcast. In select circumstances, the radio station may receive listening credit for a Panelist's radio podcast listening. For additional information, see this DOM's Station Reporting chapter.

Correction factor

Should the PPM data processing system discover that *all* of an encoder's time stamps do not match the corresponding time stamps across all Panelists' meters, it will apply a correction factor to the encoder time stamps. By bringing the meters' and encoder's time stamps into better alignment, this data adjustment helps ensure that the station receives listening credit for the appropriate Quarter Hours.

Headphone adjustment

Nielsen's policy is to adjust AM, FM, and HD-multicast radio station streams by an adjustment factor. The headphone adjustment is intended to better account for the variety of ways panelists hear radio station streams whether out loud via radio speaker, computer speaker, or privately via wired or wireless headphone.

We determined the adjustment factors based on an online survey focused of the audio listening habits of approximately 5,400 former PPM panelists. Nielsen used the results of the survey to determine adjustment factors. The headphone adjustment process and the specific value of the factors is patented and proprietary.

The headphone adjustment is applied to the quarter-hours of listening to encoded streams. The adjustment factors will be the same for all markets and dayparts, but will differ slightly by broad demo groups. The actual lift that an individual stream will receive depends on the demographic composition of the stream's listeners and the number of Quarter Hours credited to the stream. All encoded streams are eligible for the adjustment. Our systems apply the headphone adjustment after all other data editing is complete.

Outlier mitigation

In some cases, a station may have an unusual increase in the ratings based on a single panelist or home with *very* heavy listening. We call these situations "Outliers."

For the purpose of our Outlier Mitigation methodology, we define an outlier as a Panelist that accounts for 50% or more of the station's total listening within the Metro, that ranks in the 99.5th percentile of the Metro's listeners, and that exhibits no security risk. With Outlier Mitigation, panelists identified as Outliers will remain in the panel, but tuning that exceeds the specified threshold will be trimmed to the level of the next heaviest listener to the station outside of the household. This approach will address the most significant cases without detracting from Persons Using Measured Media (PUMM) or removing compliant homes from the panel.

Outlier mitigation will be applied based on evaluating listening among Persons 6+, Persons 18-34, and Persons 25-54 for the total week. We expect Outlier Mitigation to be applied to approximately 3-4 households, per market, per week. While Outlier Mitigation will not solve every unexplained jump, it will put guardrails around the most impactful cases. Disclosures will be provided via eBook to quantify how many panelists in a market for the currency data month were mitigated.

Household non-compliance

We developed a series of protocols to help ensure that our audience estimates do not include inauthentic listening, the listening of unauthorized or ineligible individuals, or a single Panelist's listening represented as the listening of multiple Panelists. When these protocols identify a Panelist or household for review, we investigate. If we determine the listening in question does not represent actual listening, we will take action as appropriate. Our protocols, supporting analyses, and follow-up procedures are systematic, objective, and empirical. Due to their sensitive nature, additional information about these is proprietary and remain confidential.

We developed another series of protocols to help identify 'outlier' households. An outlier household is a household that listens to a large amount of radio, includes individuals that are heavy listeners to a particular station, and accounts for a large proportion of a station's total audience. If our analyses determine the listening is not the byproduct of non-compliant behavior, we will leave the household in the Panel. If we find otherwise, we will take action as appropriate.

Quality assurance

We built quality assurance checks and measures into each process step and software module of the end-to-end PPM data processing system. Because of their sensitive nature, detailed information about these measures also remains confidential.

Reservation of rights

We reserve the right to prospectively or retroactively modify, waive, suspend, or change any policy or procedure described above, and/or implement a new policy, as business conditions or research considerations warrant in our judgment.

Chapter Nine – Sample Weighting

Survey researchers generally use some form of sample weighting to compensate for the disproportionate representation of specific segments of the population in the sample. As such, weighting is a tool that helps the sample more closely represent the universe from which it was selected.

This chapter provides a broad overview of the methodology we use to weight the In-Tab sample for Diary and PPM *Nielsen Audio Radio Ratings Data and/or Nielsen Audio Measurement Service* (referred to as "Nielsen Information") or eBook. The descriptions included herein are for general information purposes only, and do not represent the full body of our methodology, policy, or procedure.

Sample balancing

Our method of sample weighting is *sample balancing*. This method of sample weighting was developed by Drs. W. Edwards Deming and Fredrick F. Stephan, and is widely used in survey research. [For a detailed explanation of sample balancing, see Chapter Seven of Dr. Deming's book, *Statistical Adjustment of Data* (Dover Publications, 1964).]

Population estimates

We weight our In-Tab samples to the applicable population estimates. In each issue of the Nielsen Information, we disclose the population estimates we used for weighting the sample.

Generally we use a set of population estimates for one year; with the start of each Fall survey/October PPM report period, we will use an updated set of population estimates. Population estimates used for language weighting are updated in each Winter survey/January PPM report period.

Weighting variables

We may weight In-Tab sample on up to six variables including geography, sex/age, race/ethnicity, dominant language, employment status, and the presence of children in the household. The specific variables used to weight the sample will vary from Diary Surveys to PPM panels, by product, and from market to market.

a. Geography

   We weight all sample to the county, county-equivalent, or county cluster level. Thus, the number of geographic classes may vary considerably from one market to the next.

b. Sex/Age

We weight our In-Tab Diary sample to 16 sex/age classes:

Males	Females
12-17	12-17
18-24	18-24
25-34	25-34
35-44	35-44
45-49	45-49
50-54	50-54
55-64	55-64
65+	65+

We weight our In-Tab PPM sample to 18 sex/age classes:

Males	Females
6-11	6-11
12-17	12-17
18-24	18-24
25-34	25-34
35-44	35-44
45-49	45-49
50-54	50-54
55-64	55-64
65+	65+

Note: During recruitment for the PPM panel as well as the Tri-annual Characteristic Update (TCU), if a respondent will not provide his or her exact age, we ask the respondent to identify his or her age range from a series of mutually exclusive categories. If the respondent selects an age range, we classify the respondent's age as the midpoint of the selected range. If the respondent refuses to provide an exact age or to select an age range, that respondent is ineligible to be a panelist.

c. Race/Ethnicity

In ethnic-controlled Metros, we weight the sample to race/ethnicity. There could be two or three race/ethnic classes, Black and Other; Hispanic and Other; or Black, Hispanic, and Other.

For sample balancing purposes, Black and Hispanic are considered mutually exclusive categories. We classify respondents who indicate that they are both Black and Hispanic as Hispanic.

Metros that do not qualify for ethnic controls but that are embedded in ethnically controlled Metros may qualify for race/ethnic weighting, based on certain thresholds for race/ethnic estimated population percentages and expected race/ethnic In-Tab.

d. Dominant Language

In Hispanic-controlled Metros where universe estimates are available, we weight Hispanic In-Tab sample to one of two dominant language classes: English-dominant or Spanish-dominant. (Note: We also use these population estimates for a calendar year, and start using a new set of estimates each January.)

e. Employment Status

We weight the PPM In-Tab to one of two employment statuses—full-time or not full-time. Note: We do not weight panelists under the age of 18 by employment status.

f. Presence of Children

We weight the PPM In-Tab sample based on the presence of children in the household under the age of 18.

Example of sample weighting

Following is an example of how we weight our sample. This example assumes that the survey area has two ethnic classes (Hispanic and Other), 16 sex/age classes, and three county classes. While this example applies directly to Diary surveys, the statistical principles demonstrated in the example also apply to PPM panels.

Step One: If Hispanic Persons 12+ represented 15% of the population but only 12% of the In-Tab, a weight of 1.25 (0.15 ÷ 0.12) would be assigned to all Hispanic diaries. Similarly, since Other (non-Hispanic) Persons 12+ represented 85% of the population but 88% of the In-Tab, a weight of 0.97 (0.85 ÷ 0.88) would be assigned to all Other Diaries.

Step Two: If, after summing the Step One weights for the diaries in County A, County A represented only 15% of the population but 20% of the In-Tab, a weight of 0.75 (0.15 ÷ 0.20) would be assigned to all County A diaries. The same process applies to County B diaries and County C diaries.

Step Three: If, after summing the products of the Step One and Step Two weights for Women 35-44, Women 35-44 represented 6% of the population but only 5% of the In-Tab, a weight of 1.20 (0.06 ÷ 0.05) would be applied to all Women 35-44 diaries. The same process applies for the 15 remaining sex/age classes.

In this example, each diary has been weighted three times: once for ethnicity, once for geography, and once for sex/age, with each successive adjustment taking into account the results of previous adjustments. The example shows collective (i.e., class-level) adjustments because that is how the adjustments are determined, but in effect, each individual diary—which started out with a value of 1—is being continually adjusted around that value until convergence (see below) is attained.

It is extremely unlikely that, after the county and sex/age adjustments, the weighted Hispanic In-Tab would still equal 15% of the total sample. Because we weighted some Hispanic respondents up for county, some down for county, some up for sex/age, and some down for sex/age, the weighted Hispanic In-Tab might now be only 14.5% of the total sample. In this case, we automatically initiate a second iteration of weighting.

Step One: This time, the weights will be much smaller than before. For example, 0.15 ÷ 0.145 would produce a weight of only 1.03 for all Hispanic diaries, and 0.85 ÷ 0.855 would produce a weight of only 0.99 for all non-Hispanic diaries.

Step Two: Another round for county.

Step Three: Another round for sex/age (end of second iteration).

The successive adjustments for any particular class—one additional adjustment per class per iteration—are multiplicative. For example, Hispanic diaries received a weight of 1.25 in the first iteration and 1.03 in the second, for a total adjustment of 1.29 (1.25 x 1.03) thus far. The iterations will continue until no further adjustment is necessary (i.e., until the adjustment for each marginal category is so slight that it does not affect the proportions for any of the other categories). This point of resolution is called *convergence*. The resulting weights will be the basis for diary values used to process the data in each Nielsen Information.

Determining weights

Our sample balancing procedures produce weights for each marginal class within a survey area. Because each In-Tab respondent belongs to one class within each marginal category, we weight every respondent multiple times. In the above example, a respondent who is a Hispanic woman age 42 from County A might receive the following weights:

Hispanic weight	=	1.29
County A weight	=	0.79
W 35-44 weight	=	1.23

This would compute to an overall weight of 1.25 (1.29 x 0.79 x 1.23). The final Diary PPDV or PPM weight would be equal to the model population divided by the model In-Tab (or average weight) times 1.25. Example: If the model population was 82,500 and the In-Tab was 165, the average weight would be 500; with a weighting factor of 1.25, the example respondent would have a final weight of 500 x 1.25, or 625. This weight is the number of persons that the respondent represents.

In non-embedded condensed Metros, data collected during two survey periods are combined in each release of the Nielsen Information. For example, data to be included in the Fall 2021 report included data collected during the 24 weeks of the Fall 2021 and Spring 2021 surveys. For estimates published in the Nielsen Information in these Metros, we derive PPDVs as described above for each individual survey period and then divide them in half, so that the sum of the PPDVs for all In-Tab diaries returned during the two-survey reporting period will approximate population estimates for each marginal class.

When determining final weights, we round to tenths.

Maximum respondent weight

During preliminary rounds of sample balancing, should a respondent's weight exceed the pre-determined maximum permitted weight, we will adjust that respondent's weight by applying a factor to the weight so that, once all sample balancing routines are complete, the respondent's weight will not exceed the maximum. In such circumstances, we redistribute the weight adjusted to other respondents with similar weighting characteristics.

During any particular survey or report period, we expect to apply these procedures to a small percentage of the In-Tab sample. Over the broad continuum of time, however, these procedures may help to reduce survey-to-survey bounce in a station's estimates that may have resulted from a survey that included In-Tab with heavy listening to the station combined with an excessive weight.

Based on a detailed analysis of empirical data, once each year we determine a maximum weight threshold for all Diarykeepers and a threshold for all Panelists. Once determined, our expectation is that the threshold will remain in place for the next 12 calendar months of audience measurement. We may, however, prospectively reset these thresholds for any survey as business conditions or research considerations warrant.

Due to their sensitive nature, our maximum respondent weight thresholds are proprietary and remain confidential.

Diary survey models

The context in which the researcher performs sample balancing (e.g., the particular group of diaries being sample-balanced together) is a "model." Previous sections of this chapter explained how we perform marginal weighting for a particular group of diaries in a "survey area." While models generally correspond to a survey area, or a subset of survey areas, this may not always be the case.

Following is an example of a common weighting model. This example reflects a typical model configuration for a market that qualifies for DMA region reporting, and presumes that there are no Metro counties that are not also in the DMA region, and that there are no DMA region counties that are not also in the TSA:

Model 1: Metro/DMA region counties—All Diaries

Model 2: Non-Metro TSA/DMA region counties—All Diaries

Model 3: Non-Metro TSA-only counties—All Diaries

A model may also correspond to race or ethnicity within a particular Metro. Generally, we use race/ethnic models if the theoretical In-Tab target for each applicable category is at least 160. If neither criteria is met, race/ethnicity remains a marginal category within the model.

For example, following is a typical model configuration for a market where the Metro qualifies for Black DST but the market does not qualify for DMA region reporting:

Model 1: Metro counties—Black Diaries

Model 2: Metro counties—Other Diaries

Model 3: Non-Metro TSA counties—All Diaries

In the two Metro models above ("Metro—Black" and "Metro—Other"), race would not be a marginal category; the only marginal categories in each model would be sex/age and county.

Regardless of how the models are defined, every diary in a market is assigned to one, and only one, model. However, due to overlapping markets (primarily overlapping TSAs), a diary may be sample-balanced multiple times—once for each market.

Design weights

Because a household that is in both the telephone and address sample frames has a greater probability of selection than does a household that is in only one frame, we apply a factor or "design weight" to all diaries returned from households that could have been in both frames. This factor "pre-weights" the household's In-Tab diaries prior to sample balancing.

PPM sample balancing configurations

In some Metros, we balance the entire PPM In-Tab sample to one set of independent population estimates. In other Metros, we sample-balance applicable race/ethnic classes to race/ethnic, sex/age, and geographic population estimates separately and then balance the entire Metro's In-Tab to population estimates for other marginal variables.

The particular model we use to balance a Metro's sample depends upon that Metro's specifications and service level. Note: For sample balancing purposes, PPM-measured non-Metro DMA region counties in the Houston-Galveston market are combined with Metro counties.

Daily and weekly weights

Because we produce daily and weekly PPM audience estimates, a particular panelist may have different weights in different services; a panelist's weight depends upon the weighting model we use for that particular service.

In general, we use a "daily weight" to derive daily audience estimates such as daily Cume and AQH. Panelists who are In-Tab for at least six days during the media week (Thursday-Wednesday) qualify for weekly In-Tab. We weight the final weekly In-Tab sample for each media week to produce a weekly weight, which we then use to determine weekly estimates, such as average weekly Cume and TSL.

CSAR sample weighting

We also weight In-Tab diaries for Custom Survey Area Reports by the methods described above. When weighting Diary CSAR sample, we combine the county's "special" CSAR over-sample with the county's sample for its syndicated reports and weight the aggregated sample as a single unit. If a custom survey area includes a PPM or Diary Metro county (or counties), we use the respondents' currency weights whenever possible.

Limitations

The sample design and/or response patterns may preclude proportional representation of certain groups within the population, such as ethnic groups, racial groups, or persons in certain income or education groups. Such persons may have radio listening habits that differ from those of other persons.

The language-usage population estimates that Nielsen uses in weighting the sample are subject to all of the limitations existing in those results, which may include: sampling errors, methodological errors, processing errors, and recording errors.

The dominant language spoken by a Diary keeper or panelist may influence his or her listening behavior, and Persons whose dominant language is not English may be differentially represented in the sample. In-Tab sample is weighted by the dominant language spoken by respondents where dominant Spanish-language-usage population estimates are available.

The population estimates used in designing and weighting the sample are based on the decennial U.S. Census and are subject to all the limitations inherent therein. In addition, population estimates are subject to limitations such as sampling errors, errors in locating undocumented populations, and processing and recording errors.

Furthermore, the sources used to update populations between decennial Census dates may not include adjustments for known or unknown over counts or undercounts of various segments of the population, including undocumented population groups. In addition, annual population updates may be based on historic rates of change that may not be sensitive to current conditions.

The data upon which Nielsen has based its in-tab sample weighting, including racial or ethnic identification, may not be precise.

Reservation of rights

We reserve the right to waive, suspend, change, or modify any element of the methodology described above as business conditions warrant. All determinations regarding the sample weighting policy and procedure, including weighting variables, models, maximum weights, and sample balancing configurations, remain solely with Nielsen.

Chapter Ten – Audience Estimates

This chapter provides a broad overview of the audience estimates that we report in the local radio syndicated services. This overview is for general information purposes only and does not constitute the full body of our methodology, policy, or procedures.

Demos and dayparts

We report audience estimates for stations across a range of standard demos and dayparts in the *Nielsen Audio Radio Ratings Data and/or Nielsen Audio Measurement Service* (referred to as "Nielsen Information"). The demos and dayparts included in a particular report will depend upon the Metro's survey instrument and service specifications. To complement the standard demos and dayparts, a licensed user of the data may use our software programs to create custom reports that reflect non-standard demos and dayparts.

Cume

a. **Cume Persons**

A station's "Cume Persons" or "Cume" is the number of unique persons that listened to the station during the specified daypart. We determine a radio station's Cume Persons by summing the PPDV's or weekly panelist weights averaged across the report period (as applicable) for each of the station's listeners and rounding that sum to hundreds.

b. **Cume Rating**

A station's "Cume Rating" is the percent of a demo's population that listened to the station during an average week of the survey or report period. We determine a station's Cume Rating by dividing that station's Cume Persons by the specified demo's population and then multiplying that product by 100.

c. **Cume Duplication Percent**

A station's Cume duplication percent with another station represents the percent of the station's listeners that also listened to that other station. We determine a pair of stations' Cume Duplication Percent by dividing the sum of the PPDVs or weekly panelist weights averaged across the report period (as applicable) for respondents that listened to both stations during the survey or report period by the selected station's Cume Persons and then multiplying that product by 100.

Average quarter-hour

a. **Average Quarter-Hour Persons**

A station's "Average Quarter-Hour Persons" or "AQH Persons" is the average number of persons that listened to the station during a 15-minute period in the specified daypart during the survey or report period.

We determine a station's AQH Persons by multiplying each listener's PPDV or daily weight across the number of days in the daypart (as applicable) by the number of Quarter-Hours that respondent listened to the station. We then sum the products of those equations, divide by the total number of Quarter-Hours in the daypart, and round to hundreds. For PPM, we also divide by the number of days in the survey within the daypart requested to arrive at Average Daily AQH.

b. **Average Quarter-Hour Rating**

A station's Average Quarter-Hour rating is the percent of a target demo's population that listened to the station during the specified daypart. In a Diary-based report, we determine a station's AQH rating by dividing the station's AQH persons for the specified demo by that demo's population and then multiplying that product by 100. In a PPM-based report, we determine a station's AQH rating by dividing its Average Daily AQH by the Average Daily Population for the demo and then multiplying by 100.

c. Average Quarter-Hour Share

A station's AQH share is the percent of all radio listening represented by that station's audience. To determine a station's AQH share, we divide the station's AQH Persons by the Market Total AQH Persons for the applicable demo and daypart and then multiply that product by 100. In a PPM-based report, we determine a station's AQH Share by dividing its Average Daily AQH by the Market Total Average Daily AQH for the demo and then multiplying by 100.

Time spent listening

A station's Time Spent Listening (TSL) is the average number of Quarter-Hours the station's listeners listened to that station during the survey or report period. To determine a station's TSL, we multiply the number of Quarter-Hours in the daypart by the station's AQH or Average Daily AQH (as applicable) in that daypart and then divides by the station's Cume or Average Daily Cume for the daypart. TSL estimates are expressed in hours and minutes.

(Note: We report the estimate "Average Weekly Time Exposed" in select software services. While similar in concept to TSL, the calculations that we use to determine the two estimates are slightly different. For additional information on AWTE, see the software's reference materials.)

Composition

In select reports, we provide a "Composition Report" that includes station estimates based upon a subset of respondents. We determine these estimates described as above for the applicable demos and dayparts.

Listening location

In select reports, we provide a "Listening Location" report that includes station estimates based upon the respondents' listening location including "At Home," "Away from Home," "In a Car," "At Work" or "Other Place," as applicable.

Exclusive listening

A station's "Exclusive Cume" is the number of respondents that listened only to that station during the survey or report period. We determine a station's Exclusive Cume by summing the PPDVs or weekly panelist weights averaged across the report period (as applicable) for all respondents that listened only to that station during the survey or report period and then rounding to hundreds.

Multibook averages

In select Diary-based reports, we report a two-book or four-book average for select station estimates. We determine these multibook averages by averaging audience estimates for the applicable surveys. We will not report a multibook average for any station unless that station met minimum reporting standards for each of the surveys included in the multibook average. Additionally, we do not publish estimates under the heading "4-book" or "2-book" in reports for non-embedded condensed markets (e.g., "two-book average" markets) because station estimates in these markets reflect information from a two-survey reporting period.

Limitations

Rounding occurs at various stages in the determination of audience estimates, at demographic and daypart summation levels. Due to rounding, mathematical manipulation by the user of estimates for narrow dayparts and/or demographic groups may produce a result that may be incongruent with estimates for broader dayparts and/or demographic groups.

Estimates reported for different reporting periods may not be comparable over time due to: methodological or operational changes; changes in survey area definitions or populations; changes in a station's or a combo's Total Line Reporting status; changes in station operations or facilities; special station activities and other factors.

Reservation of rights

We reserve the right to prospectively or retroactively modify, waive, suspend, or change any policy or procedure described above, and/or implement a new policy, as business conditions or research considerations warrant in our judgment.

Chapter Eleven – Station Reporting

We do not report audience estimates for *all* radio stations in our reports and services. Were we to do that, the report would be so large that it would be difficult for clients to use and it would include a considerable amount of information that would be of limited interest to the market.

To help ensure our reports are easy to use and meet our clients' needs, we have, organically over time, developed a robust body of station reporting policies.

This chapter provides an overview of our key reporting policies. These descriptions are for general information purposes only, and do not constitute the full body of our methodology, policy, or procedure.

Reporting policy

The Summary Data Set (SDS) is the Nielsen Audio data set used by third-party software providers to buy, sell, and plan radio advertising.

Nielsen subscribing, FCC-licensed AM, FM, and HD-multicast radio stations are eligible for reporting in the Summary Data Set. These stations' subscribing internet streams and Total Line Reporting combos are also eligible to be reported.

Additionally, home-to-Metro AM and FM radio stations that are minority or female-owned with less than seven million dollars in annual cluster revenue or non-profit 501(c)(3) tax exempt are also eligible to be reported in their home Metro regardless of subscriber status.

Subscribers may view data for non-subscribing stations in reports that use respondent-level data, including TAPSCAN, the PPM Analysis Tool, and PD Advantage.

Minimum Reporting Standard

Nielsen will report audience estimates for subscribing radio station in both the summary and respondent-level data sets in any Metro (and/or DMA as applicable) to which the station subscribes if the station has at least one Quarter Hour of listening from a Panelist or Diarykeeper. We will also report estimates for that station in the respondent-level data set for any Metro (and/or DMA as applicable) where the station does not subscribe if the station's unrounded AQH Rating is 0.1 or greater.

Currency report cadence

We publish currency data for each market based upon a cadence that is applicable to that market. The following is a table that outlines the cadence for each of our market types.

Market Type	Measurement Period	Currency Report Cadence
PPM	28 Day Report Period	Monthly
Continuous Diary	Most recent 12 survey weeks	Monthly
Two-Book	12 Week Spring or Fall Survey	2X per year -- Spring, Fall
Two-Book Average	Average of most recent 24-weeks	2X per year -- Spring, Fall

We apply the policies and procedures described in this chapter in each market for each report independently. As such, the roster of stations that may appear in a market may vary from one report to the next.

Stations eligible to be reported

Full power radio stations

FCC-licensed AM FM, and LPFM radio stations are eligible to be reported in our local services. Client HD-multicast stations are also eligible to be reported.

FM translators, boosters, and repeaters

We automatically include audience delivered via a translator in the estimates we report for the station that retransmits its signal on the translator. We do not report estimates for a translator as if it were a stand-alone, full service radio station. We apply this same policy to boosters and repeaters.

Other stations

Canadian stations licensed by the CRTC, Mexican stations licensed by COFETEL, and FCC-licensed analog LPTV channel 6 stations (that operate as radio stations), may also eligible to be reported, subject to the applicable encoding and crediting policies. Additional information is available upon request.

Streams eligible to be reported

AM, FM, and HD streams

Client AM, FM, and HD-multicast radio station streams are eligible to be reported in our local services.

Streaming program loop

A streaming program loop (SPL) is a radio station stream that streams just one of the station's programs over and over each day. Client SPLs are eligible to be reported in PPM-based reports. If a panelist listens to an encoded SPL, the station receives credit as if the panelist had listened to the program live on-air.

Radio-video stream

A radio video stream is a radio station stream that combines the station's on-air audio with a video program (such as the view from an in-studio camera).

A radio video stream that streams during all of the station's broadcast hours is eligible to be measured as a standalone radio station in our PPM and Diary services so long as the streaming audio is a 100% simulcast of the station's signal (including all programming and commercials), the stream's video program is related to the broadcast or radio station, and the video program does not include any visual advertising.

A radio video stream that streams for just a portion of the station's broadcast day is eligible to be measured in our PPM service. For 'part time' radio video streams, the broadcaster may retransmit the station's PPM codes within the radio video stream (i.e. send a PPM-encoded audio feed to the video stream for streaming). To qualify for this policy, the part-time radio stream must be a live, real-time stream; the streaming audio must be the same as broadcast on-air (including all programming and commercials); and the video program may not contain any sold-separately advertising.

Station combos / Total Line Reporting

A "Total Line Reporting combo" is a group of stations. For client stations that request Total Line Reporting (TLR), we sum the stations' audiences and report that sum as if it were one station's audience.

We do not report standalone audience estimates for any station or stream that is a part of a Total Line Reporting combo in any syndicated report.

The option of Total Line Reporting is available to clients only.

We list all stations that are a part of a TLR combo in each eBook / *Radio Market Report* and on Nielsen Portal.

Eligible combos

To be eligible for TLR, the client stations must broadcast the same programming and commercials for at least 95% of all Quarter Hours during the report period/survey. The stations may break simulcast and remain eligible for TLR under the following circumstances: the stations break simulcast to broadcast different programming *and* different commercials; each simulcast break is at least one hour; and no single simulcast break is more than 12 continuous hours. (Note: Breaks that occur in the overnight daypart do not count toward the 95% threshold.).

Combos with a digital/streaming partner

Combos that include an on-air radio station and a radio station stream can break simulcast in an additional set of circumstances and remain TLR-eligible. These exceptions reflect marketplace norms and business practices.

PLAY-BY-PLAY: A broadcaster that owns the broadcast rights for play-by-play programming may be contractually prohibited from streaming that programming. An on-air/digital combo can remain TLR-eligible in instances where the combo breaks simulcast during hours of play-by-play programming so long as the streaming partner streams non-monetized content, streams a blackout message, or ceases streaming during the breaks for play-by-play.

GEO-FENCED AD REPLACEMENT: An on-air/digital combo can remain TLR-eligible in instances where on-air and digital listeners inside the station's home DMA hear the same programming and commercials, but the broadcaster replaces commercials in the streaming audio delivered to listeners outside the station's home DMA. (Note: Today's ad-replacement technology is largely based upon the location services settings on the user's device. If the user disables location services on a mobile device or uses a desktop computer/smart speaker to listen to the stream, the user may prevent the broadcaster from full compliance with our geo-targeting guidelines. In such instances, we do not consider the broadcaster who has otherwise made a good faith effort to comply with the policy to be non-compliant with the policy.)

ADVERTISER OPT OUT AD REPLACEMENT: An on-air/digital combo will also remain TLR-eligible if the broadcaster replaces a commercial in the stream at the *advertiser's* request. In place of the removed advertisements, the broadcaster may stream a cleared commercial for the same advertiser or other non-commercial content.

(Note: Broadcasters to whom the 'advertiser opt out' provision of the policy applies must secure the advertiser's consent for this arrangement. In select circumstances, we may request a station provide us with that documentation.)

TLR request and timing

In PPM markets, a broadcaster must be TLR-eligible for the whole report period and request TLR by the end of that report period in order to be reported via TLR during that report period.

In two-book Diary markets, a broadcaster must be TLR-eligible for the whole quarterly Diary survey and request TLR by the last day of the survey in order to be reported via TLR.

In continuous-measurement Diary markets, the broadcaster must be TLR-eligible for the 12-week interval that corresponds to a traditional quarterly Diary survey. When the broadcaster requests, TLR will affect the first report period where we will be able to report the combo via TLR. See the below table for additional information:

TLR Effective Month	First Report with TLR
July	Jul/Aug/Sep
August	Oct/Nov/Dec
September	Oct/Nov/Dec
October	Oct/Nov/Dec
November	Jan/Feb/Mar
December	Jan/Feb/Mar
January	Jan/Feb/Mar
February	Apr/May/Jun
March	Apr/May/Jun
April	Apr/May/Jun
May	Jul/Aug/Sep
June	Jul/Aug/Sep

Estimates labeling

In our reports, we label each station's audience estimates with a unique label that includes the station's FCC-designated call sign that was in effect on the last day of the survey followed by a suffix that indicates the station's band or the media outlet's "type" as follows:

Band ID	Station	Example
AM	AM radio station	WAAA-AM
FM	FM radio station	WBBB-FM
IA	AM station's stream	WAAA-IA
IF	FM station's stream	WBBB-IF
F2, F3	HD-multicast station	WBBB-F2, WBBB-F3
G2, G3	FM HD station's stream	WBBB-G2, WBBB-G3
A8	AM station radio-video stream	WAAA-A8
F8	FM station radio-video stream	WAAA-F8

We label a TLR combo's estimates with the primary station's call sign as indicated by the broadcaster (e.g. the combo's 'primary' call sign).

Time-shifted / on-demand radio

In our PPM service, it is possible for a radio station to receive listening credit when a Panelist listens to a radio broadcast at a time later than the audio's original broadcast time.

In order to receive credit for the time-shifted/on-demand listening credit, the audio must have been broadcast on-air; that audio must be PPM-encoded; the digital file/recording to be replayed must include at least five minutes of audio from the same Quarter Hour; and the Panelist must replay the audio within a day of the audio's original broadcast.

In our Diary service, a radio station may receive listening credit for diary entries that combine words that indicate time-shifted/on-demand audio listening and that *clearly* identify a particular station (for example, the station's call letters, or the station's name and frequency, etc.). If such an entry is received, we will credit the station for the listening at the time recorded by the Diarykeeper.

In both PPM and Diary, we discard time-shifted/on-demand listening that we are unable to credit to any radio station.

Radio-over-TV

We use the term 'radio over TV' to indicate when a TV channel simulcasts a radio station's audio. A radio station may receive PPM-listening credit for audience delivered via the TV channel in circumstances where *all* of the following conditions are true: the radio and TV outlets are home to the same DMA; the radio and TV signals' audio is 100% simulcast, including all programming and commercials; the radio-TV simulcast is live, real-time; each episode of the radio-TV simulcast is at least seven (7) continuous Quarter Hours in duration; the radio-TV outlets simulcast on multiple days of the week; during the simulcast, the video program does not include any content unrelated to the radio program and/or any sold-separately visual advertising, and; the television channel's audio is encoded with a unique PPM code during the simulcast hours.

Home status

We automatically list radio stations as Home to the Metro if the station's city of license is located within a Nielsen radio Metro Survey Area. In addition, we may grant requests from stations that are FCC-licensed outside the Metro to be listed as Home to the Metro ("Elective Metro Home Status").

The option of elective Home to Metro reporting is available to clients only.

For reporting purposes, we consider a radio station stream to be home to same market as the stream's on-air counterpart.

Authorized users

We indicate stations and streams that are authorized to use our data with the indicator "(s)" next to the outlet's call sign on the Station Information Page(s) of the report.

Special notices

In the "Special Notices" section of the report, we include information to assist users in making evaluations of the data.

Reissue

General policy

If we determine that an error or policy violation affected the published data, we may elect to correct the problem and reissue the report if, in our opinion, the revised estimates are likely to have a material effect on client transactions.

ROOT cause

In addition to materiality, the error's root cause is a primary factor we evaluate when determining if a reissue is appropriate. In our methodology, there are two categories of root causes: those that lie with Nielsen and those that lie with another party. In general, if the error's root cause lies with a Nielsen team member, process, or system, we will be more inclined to reissue than if the error's root cause lies with another party. For example, if a Diary creditor credited diary entries in error and that error had a material impact on the data, we would be open to reissue. Conversely, if we followed all procedures and credit for station name diary entries was still compromised because a station failed to update its station name in a timely manner, then we would be less likely to reissue.

Average Quarter Hour persons change

When evaluating a potential reissue, we will compare revised estimates to the published estimates for Persons 6+ (PPM markets only), 12+ (Diary markets only), 18-34, 18-49, and 25-54 for the Monday-Sunday 6AM to Midnight daypart and Monday-Friday 6AM to 7PM daypart for stations that met minimum reporting standards in the market/survey in question.

We will consider reissuing the estimates if the revised AQH Persons for any significantly ranked station differs by 5% (or more) from the published estimate in the demos mentioned above, and if the difference in AQH Persons results in a rank change.

Other reissue considerations

When determining if a reissue may be in order, we will also consider: the reissue's potential change in average weekly cume, the effect reprocessing may have in estimates for other key demos, the extent to which reprocessing will affect the lineup of stations, whether advertisers are likely to buy time on the affected station(s), the importance of the affected demo to the affected station(s), the affected station's performance in other dayparts and demos, and other relevant factors. As a matter of policy, we will always reissue the data if a subscribing station has been omitted from the report.

Reissue of report periods other than the most recent survey

There may be occasions when we need to consider reissuing reports that are older than the current survey. In these cases, we will consider the length of time the marketplace used the original report and the effect the revised estimates may have on multi-book averages. Generally speaking, we will be more likely to reissue more current reports and less likely to reissue older reports.

Non-currency data

Our currency reports may also include some non-currency data. In the event that there is an error in the reported non-currency data, we will not reissue the report but may issue a product notice notifying the marketplace of the error (in some circumstances).

Decision/reservation of rights

The final decision regarding whether or not to reprocess and/or reissue a report lies solely with Nielsen. We reserve the right not to reissue in circumstances where the disruption to the marketplace that would occur from reissue outweighs the benefits of the reissue. We also reserve the right to amend and/or waive our reissue policy at any time as business conditions or research considerations warrant in our judgment. We may also elect to take action other than to reissue as warranted in our judgment.

Station reporting in a diary meter combo DMA region

We report DMA region-level audience estimates two times per year in 100 U.S. markets. A market where we measure Metro counties via PPM and the non-Metro DMA region by diaries is a 'Diary Meter Combo DMA Region."

We determine a station's Diary Meter Combo (DMC) audience estimates using the listening information we collect from respondents 12 years of age and older.

To determine an encoded station's DMC ratings estimates, we sum the station's Metro and non-Metro audience and then divide by the DMA region's Persons 12+ population.

DMC estimates for a station that is not eligible to encode or that elected not to encode reflect that station's non-Metro audience divided by the DMA region's Persons 12+ population.

We will report DMC estimates for any station that has a Cume Rating of 0.495 or greater in the Monday-Sunday 6AM-Midnight daypart for the applicable survey and report periods.

The MRC has accredited our DMA region audience estimates in all Diary-measured markets, and in the Houston-Galveston market. We plan to seek accreditation for our other PPM-based DMC estimates.

Software solutions providers

Users of our data may access the data via software and reports provided by a third party software solutions provider. A software solutions provider that uses our data may apply unique reporting policies and station labeling schema in its systems and services. Contact the vendor for additional information.

Extraordinary events

In response to an *extraordinary* event outside of Nielsen's reasonable control, such as an extended power outage, mail disruption, strike, weather event, natural disaster, pandemic, or any other event that precluded respondents in the marketplace from completing the survey, returning diaries, carrying their meters, or from transferring meter data to Nielsen for an extended period, Nielsen reserves the right to publish a report for the Metro that reflects a special survey area and/or truncated survey period. When determining if the issuance of a standard or special report is warranted, Nielsen will consider a range of factors including (but not limited to) conditions in the marketplace, the utility of the data in light of the marketplace conditions, and Nielsen's estimation of the data's validity and reliability.

Reservation of rights

We reserve the right to prospectively or retroactively modify, waive, suspend, or change any policy or procedure described above, and/or implement a new policy, as business conditions or research considerations warrant in our judgment.

Chapter Twelve – Special Station Activities

Years ago, the industry convened a task force of researchers, radio broadcasters, advertisers, and industry stakeholders to help define station activities that have the potential to undermine the data's credibility. Over time, we evolved those guidelines into the dynamic policy that we enforce today.

This chapter includes an overview of our 'Special Station Activities' policy. Station activities include activities by station employees, independent contractors, or others associated with the station. The descriptions in this chapter are for general information purposes only and do not constitute the full body of our methodology, policy, or procedure.

Media affiliation

Any household that includes an employee of a radio station, television station, or cable television network is ineligible to participate in a Diary survey or PPM panel.

Additionally, any household that includes an employee of a broadcast television network or advertising agency may not participate in a PPM panel.

We ask every recruited housed a media affiliation question. We rely on the household's response.

Should we discover that a media-affiliated individual participated in a Diary survey or PPM panel prior to the release of the audience estimates, we will remove that household's data from the In-Tab sample.

If we discover the media affiliation after the release of the estimates, we will take additional action, as warranted, which may include reissue of the report, delistment of the station with which the household is affiliated, or other actions.

Effort is made to exclude households with media affiliation. The inclusion or exclusion of such households from the sample is dependent upon information revealed by the household in response to the media affiliation question at the time of recruitment, or anytime thereafter, or from other sources.

Rating Distortion

Rating Distortion includes any act or statement by a person employed by or acting for a station that may prompt a respondent to identify his or her participation in a Nielsen survey or panel, surrender control of the survey instrument, misreport listening, misuse the meter, or provide us with false household information. The misuse of in-station PPM encoders may also constitute Rating Distortion.

Rating Bias

Rating Bias includes any act or statement made by a person either employed by or acting for the station that may 'over sensitize' the station's listeners to the survey as compared to other stations' listeners.

Examples of station activities with Rating Bias potential include, but are not limited to: activities that may differentially prompt the station's listeners to participate in the survey (relative to other stations' listeners); differentially prompt panelists to wear their meters when listening to that station (relative to wearing their meters when listening to other stations); prompt a listener to report listening to that station differently than listening to other stations; emphasize the importance of the survey to the station's success; alert the audience to a current or future survey; or discuss survey methodology.

Violations

Should we determine that a station has violated our Rating Distortion or Rating Bias guidelines, we will take appropriate action as warranted in our judgment.

Examples of actions that we have taken in the past include removal of a station from the report (i.e., "delisting"), listing the station out of alphabetical sequence below a special distinguishing line ("below the line" listing), citation of the event in the report, and/or other special communications with the marketplace.

We reserve the right to take other appropriate action depending upon the content, context, frequency, or repetition of the activity.

Social media

Our Rating Distortion and Rating Bias guidelines also apply to social media activities in which a radio station or station personnel engage, including activities on publicly-accessible 'personal' accounts associated with station personnel.

Other media and platforms

Our Rating Distortion and Rating Bias guidelines apply to communications across all other media and platforms including broadcast, streaming, internet, mobile, multimedia, and print.

Estimate sourcing

Generally, we do not consider a station referring to its success in previous surveys or report periods to be Rating Bias. We may consider such a remark to be Rating Bias, however, if it is made in the context of an appeal for support.

Pre-review

To avoid activities that may have Rating Distortion or Rating Bias potential, a station can submit an overview of planned activities for a confidential pre-review. A radio station may also request an inquiry into the activities of another radio station.

Additional information

For additional information, to request a pre-review or for access to the *Rating Distortion and Rating Bias Handbook*, contact the Special Station Activities Committee or your account executive.

Reservation of rights

We reserve the right to prospectively or retroactively modify, waive, suspend, or change any policy or procedure described above, and/or implement a new policy, as business conditions or research considerations warrant in our judgment.

Chapter Thirteen – Reliability

One can think of *reliability* and *validity* as measures of a survey's accuracy. Reliability refers specifically to sampling error and validity refers to non-sampling error. Just like any other survey's results, our local radio services' audience estimates are subject to both sampling and non-sampling error.

This chapter provides a broad conceptual overview of the principles of statistical reliability and the measures we use to determine the estimates' reliability. The descriptions in this chapter are for general information purposes only, and do not constitute the full body of our methodology, policy, or procedure.

Estimated reliability

This chapter is specifically concerned with *estimated reliability*, which refers to how close the estimate would come, in repeated applications of the sampling procedures, to the result that would be achieved through a complete census of the same population (defined by the sample frame using the same methods and procedures).

It is important to keep in mind that reliability is not a measure of the validity of the estimate. Instead, reliability provides the user with information that's important to understanding the role that sample design and other procedures may play in determining the estimates.

Reliability measures

There's more to a rating than simply the reported value. The reported value is only an estimate of the actual rating that exists for the entire population; reliability measures supplement the reported ratings.

For example, if we report an AQH rating of 0.5 for a station in a given survey, that means the information from the sample for that survey indicates that, on average, .5% of persons in the market were exposed to the station for at least five minutes during each 15-minute period.

However, that's only part of the story. The natural question is what is this average for all people in the market? Perhaps, the average for the market population is actually 0.4 or 0.7. Reliability measures provide a likely range for that population average.

Standard error

Because we base our radio audience estimates on a sample of the population, the estimates are subject to uncertainty. As it applies to our local radio services, the statistical concept of "standard error" can be thought of as the amount of uncertainty involved in estimating the size of a radio audience.

The uncertainty comes from the fact that any one of the possible random samples of the population will result in different estimates than any other. The variation in these hypothetical estimates over all possible samples is called sampling error. The standard error is a measure of this sampling error.

Confidence interval

As it applies to our local radio services, the statistical concept of a "confidence interval" can be thought of as the range of plausible values for the actual population average.

For example, a confidence interval range of 0.4 to 0.7 for an AQH rating of 0.5 indicates that it is likely that the actual population rating is somewhere between 0.4 and 0.7.

Users of the data should exercise caution when interpreting confidence interval ranges, however, as they do not provide a complete picture of the likelihood of the population rating being *any* particular value.

For instance, in this example, the most likely value of the population rating is 0.5 and the values near 0.5 are more likely values for the population rating than are the extremes of the confidence interval.

Each confidence interval references a specific confidence level. The confidence level indicates how strong the evidence is that the population rating is contained in the confidence interval range. The larger the confidence level, the larger the likelihood that the range contains the population rating.

Replication study

From 2007 to 2009, Arbitron conducted several replication studies of PPM and Diary radio ratings in a number of markets. We used the findings of that study as the basis for our Ratings Reliability Estimator (RRE). These replication studies were similar in concept and design to previous studies, including the 2005-2006 PPM replication studies and 1981's *Replication II* study.

Ratings Reliability Estimator (RRE)

The RRE is a web-based application that a client can use to determine standard error estimates and confidence intervals for our currency radio audience estimates. The client may find a link to the RRE on his or her secure customer website.

Clients should be mindful that -- due to the limitations described in the applicable chapters of this *Local Radio Syndicated Services Description of Methodology* -- it is not possible to determine the reliability of our estimates, data, reports and their statistical evaluators to any precise mathematical value or definition.

Chapter Fourteen – The Puerto Rico Market

We report audience estimates for the Puerto Rico radio market. Puerto Rico is a continuously-measured market within our local syndicated service, not a service separate and distinct from it. As such, we generally apply the same methods, policies, and procedures in Puerto Rico that we apply in all other US Diary markets.

However, due to the market's infrastructure, its location and geography, and the population's demographics, we also apply a small body of unique procedures in the market. This chapter outlines those unique procedures and additional key points of interest.

Except for as specifically described below, users of the data should presume that all of the policies and procedures described in this *Description of Methodology* also apply to the Puerto Rico market.

The market

Because we treat the whole of the island as a market, the Puerto Rico market does not have a Metro or TSA in the traditional sense.

The basic sampling unit in the Puerto Rico market is the municipio. There are 78 different municipios on the island. All municipios are 'home' to the market; there are no 'non-Metro' municipios.

To reflect how the market buys and sells radio, we also group municipios into mercantile regions; these regions reflect the area's topography and marketplace preference.

Sampling and recruitment

a. **Landline Sample Frame**

   The market's landline sample frame is a list of telephone numbers known to be part of a working telephone exchange. Because we do not match telephone numbers and addresses in the market, our initial contact with all landline households is by telephone.

b. **Cell Phone Sample Frame**

   The market's cell phone sample frame is a list of addresses that are likely to exist. We develop this list using a proprietary methodology that estimates addresses that may exist from detailed information pertaining to known addresses.

   We mail a short questionnaire to addresses randomly selected from this list. The screener we use on the island is a condensed version of the screener we use in other markets and mails with the Spanish version on top.

c. **Differential Survey Treatments**

   Due to the market's sample performance history, we do not apply any differential survey treatments in the market.

d. **Bilingual Survey Materials**

   We mail Spanish-English bilingual survey materials to all households in the market that agree to participate in the survey.

Diary edit procedures

a. **Frequency**

We adapted our frequency edit procedures to account for the fact that all radio stations on the island are home to the market; that few home-to-market radio stations broadcast at the same dial position; and that radio station signals from other markets cannot reach the island.

When a station is the only station broadcasting at a particular dial position on the island, that station will receive credit for all diary entries that include that frequency.

If two stations broadcast at the same dial position, and only one of the stations reaches the municipio from which the diary was received, the reaching station will receive listening credit.

In the event that two stations broadcast at the same dial position and both stations reach the municipio from which the diary was received, the Diary creditor will attempt to assign listening credit based upon information recorded elsewhere in the Diary. If he or she cannot assign listening credit based on that information, the 1% rule will be applied to the frequency entry.

In the event that two stations broadcast at the same dial position and both stations do not reach the municipio from which the diary was received, the Diary creditor will attempt to assign listening credit based upon information recorded elsewhere in the Diary. If he or she cannot assign listening credit based on that information, we will credit the entry as "Unidentified Listening".

b. **The 1% Rule**

Diary creditors apply the 1% Rule and ascription, as necessary, to station name, network, frequency, and program entries.

c. **Program Entry Edit Procedures**

As compared to respondents in other markets, a significantly greater proportion of Puerto Rico respondents report listening via entries that include the name of a program or personality. For this reason, we collect detailed program information from Puerto Rico radio stations. Diary creditors refer to this information when crediting diaries.

Sample weighting

We do not apply any ethnic or language weighting in the Puerto Rico market.

Station reporting

In the Puerto Rico *Nielsen Audio Radio Ratings Data and/or Nielsen Audio Measurement Service* (referred to as "Nielsen Information") or eBook, we report audience estimates for radio stations in the market as a whole.

Nielsen-subscribing, FCC-licensed AM, FM, and HD-multicast radio stations are eligible for reporting in the Puerto Rico market's Summary Data Set. These stations' subscribing internet streams and Total Line Reporting combos are also eligible to be reported.

In the TAPSCAN service, we report audience estimates for radio stations in the market as a whole and pre-tabulated estimates for each of the market's mercantile areas.

The user may also create custom reports in TAPSCAN. Because we do not weight the sample by language or by ethnicity, "Other" is the only ethnic/demographic option the user may select.

MRC accreditation

As of this writing, we are evaluating the Puerto Rico market for accreditation consideration. We will notify the marketplace should we elect to submit the market for accreditation.

Limitations

The limitations in data from Customer Analytics, the third-party vendor that supplies market information for Puerto Rico, are inherent in the Nielsen estimates based thereon. The population estimates from Custom Analytics used in designing and weighting the sample are based upon the decennial U.S. Census and are subject to all of the limitations inherent therein. In addition, population estimates are subject to limitations such as sampling errors, errors in locating undocumented populations, and processing and recording errors. Furthermore, the sources used by Customer Analytics to update populations between decennial census dates may not include adjustments for known or unknown over- or undercounts of various segments of the population, including undocumented population groups. In addition, annual population updates may be based on the results of sample surveys and are subject to their respective limitations.

Reservation of rights

We reserve the right to prospectively or retroactively modify, waive, suspend, or change any policy or procedure described above, and/or implement a new policy, as business conditions or research considerations warrant in our judgment.

Chapter Fifteen – Radio County Coverage

In our *Radio County Coverage* service we publish audience estimates for radio stations county by county.

Because we port final In-Tab data from our local currency services to *Radio County Coverage*, the methods, policies, and procedures we describe in this DOM are latent in *Radio County Coverage.*

This chapter provides an overview of the unique methods, policies, and procedures we apply to *Radio County Coverage.*

MRC accreditation

Radio County Coverage is not part of a regular syndicated service accredited by the MRC. Nielsen does provide one or more services which are accredited by the MRC. A list of the accredited and non-accredited Nielsen Audio services can be found at Nielsen Portal.

The reports

We publish *Radio County Coverage* audience estimates in printed books. We prepare a book for each state and the District of Columbia. We mail the books to clients at the end of March. Clients may use the software program 'Custom Coverage' to create custom reports.

Survey area

The survey area for a *Radio County Coverage* report is all counties, county equivalents, and county clusters within the state.

Survey instruments

We use either diaries or PPM to measure radio listening in a county. We note each county's survey instrument at the top of that county's page(s) in the report.

Survey period

The *Radio County Coverage* survey period is the "fieldwork year." A county's fieldwork year includes all days of audience measurement that we conducted in that county during the calendar year.

In PPM-measured counties, the "Holiday" report period may span New Year's week. As such, a PPM county's fieldwork year may include up to a few days of the next calendar year.

Minimum county in-tab

We will prepare and report *Radio County Coverage* audience estimates for any county from which we have collected data from 30 or more respondents during the fieldwork year.

County clustering

If we collect data from fewer than 30 respondents in a county, we may combine or 'cluster' that county with an adjacent county (or similar county) in that same state and time zone that we measured via the same instrument. If we cluster counties, we weight the sample and report estimates for the cluster as if it were one county.

Factors we consider when determining if it is appropriate to cluster counties include the counties' populations and In-Tab (we won't cluster counties that are too dissimilar), market conditions, and broadcaster preference.

Additionally, we will not cluster a county if we collected "zero" In-Tab from the county. Due to the nature of random sampling, it is very unlikely that we would not collect *any* In-Tab from a county. Counties that have no qualifying stations will be removed from the Coverage Report.

Credited listening

We determine a station's *Radio County Coverage* audience estimates by aggregating all Quarter-Hours of that station's listening credit in the county and weighting it according to the methods described below.

Modeled PPM media days

Before it weights the data, the *Coverage* processing system imputes the final credited results of a panelist's In-Tab PPM media days to other media days when the panelist was not In-Tab.

The system imputes final credit results on a same day-of-week model with, for example, listening from one of the previous four Tuesdays copied to an out-of-tab Tuesday.

We report the percentage of media days modeled in a county on our secure client website. Reminder: we do not model PPM days in the local radio syndicated service.

Weighting

We use 'cell weighting' for *Radio County Coverage*; this method is materially different than the method we use for our local currency services.

In *Coverage's* cell weighting methodology, we assign each In-Tab diary or PPM panelist a weight. In Diary-measured counties, we determine this weight by dividing that cell's population by that cell's In-Tab. In PPM-measured counties, we determine this weight by dividing that cell's population by that cell's Unique Weekly Qualified In-Tab (adjusted for the number of weeks each panelist was In-Tab).

We use ethnicity as a weighting variable for every county or county equivalent which we applied an ethnic control for all surveys or report periods (as applicable) for the whole of the fieldwork year as long as each ethnicity within the county receives a minimum of 30 In-Tab.

For *Radio County Coverage* weighting, we use the county's (or county equivalent's) population estimates for the Fall survey / October-November-December report periods

We also apply a weighting factor to PPM In-Tab to normalize it to the format of Diary In-Tab. This is necessary because a single panelist may contribute up to 52 weeks of data to the report.

We apply a different weighting factor to the Diary In-Tab to account for the fact that some households could be included in multiple sample frames (and thus may be more likely to be selected for the sample than are other households).

Demo

The demo for *Radio County Coverage* is Persons 12+.

Dayparts

We report *Radio County Coverage* audience estimates for the Monday-Sunday 6AM-Midnight and Monday-Friday 6AM-7PM Dayparts.

Station information

We apply the station information on file for the last day of the Fall survey/December report period to the whole fieldwork year.

Eligible stations

FCC-licensed, commercial AM and FM radio stations and Total Line Reporting combos that have signal coverage in a county are eligible to be reported in that county's audience estimates.

Minimum Reporting Standard

In counties from which we collected In-Tab data from fewer than 350 respondents, we will report estimates for a station or combo if three or more of the respondents listened to the station.

In counties from which we collected 350 or more respondents, we will report estimates for a station if 1% or more of the respondents listened to the station or combo.

In the rare instance that no stations met minimum reporting standard in a particular county, we will not include that county in the report.

Total Line Reporting

If a client's station requested Total Line Reporting (TLR) in our local services, we will also report that station via TLR in Radio County Coverage.

However, because Radio County Coverage estimates reflect a station's listening for the whole fieldwork year, it will materially affect how we report estimates for a TLR combo if the combo starts, ends, adds partners, or removes partners during the fieldwork year.

In circumstances where all of the client's stations in the combo requested Total Line Reporting for the whole fieldwork year, the combo's Radio County Coverage estimates will include the primary and partner stations' listening for the whole year.

In circumstances where the combo stations did not request Total Line Reporting for the whole of the fieldwork year, the primary station's County Coverage estimates will include listening credited to that station for the whole of the fieldwork year plus listening credited to the combo's partner stations during surveys and reports for which the combo requested Total Line Reporting.

In circumstances where a combo's Total Line Reporting relationship ends prior to the Fall survey of the fieldwork year, audience estimates published for the combo's partner station will reflect only the listening credited to the station while it was not a part of the combo. (Listening credited to the station while it was a part of the combo is reported in estimates published for the combo's primary station for the applicable surveys/reports.)

If a reported TLR combo includes a streaming partner, the estimates reported for the combo will include the streaming partner's audience, but that streaming audience will not reflect the headphone adjustment applied in our local service.

Reporting sequence

We list stations and combos in a *Radio County Coverage* report alphabetically by call sign, with stations that are home to a Metro grouped ahead of stations that are not.

"Others"

We also report an estimate listed as 'Others'. This estimate is an aggregate of listening credited to stations that did not meet the applicable minimum reporting standard, stations that are not eligible for reporting, stations that signed off-air during the fieldwork year, and listening reported by Diary keepers that we could not credit to any particular radio station.

Special notices

An "unencoded interval" is a period where an encoded radio station is on-air but not encoding.

A 'technical difficulty' is a period where a station is off-air, broadcasting at reduced or intermittent power, or experiencing signal interference.

Both unencoded intervals and technical difficulties can affect a station's audience estimates.

With the release of each edition of *Radio County Coverage,* we will publish notices that detail stations' unencoded intervals and technical difficulties that accounted for 5% or more of the fieldwork year's broadcast hours. These notices will be available for view via the secure client website.

Remedial action and reissue

Should we discover that a data, processing, or other error affected a *Radio County Coverage* report, we may elect to correct the error and issue a revised report. We will generally reissue a report in circumstances where correction will substantially change a significantly ranked station's audience estimates. When determining if we will reissue a report, we will also consider the amount of time that the marketplace used the original estimates and the extent to which the affected station's audience estimates are available in other services.

Statistical reliability

Clients can find the estimates' statistical reliability and information on how to interpret that information by using the online *Radio County Coverage* reliability estimate calculator available via the secure client website.

Restrictions on use, disclaimer of warranties, warnings

The restrictions on use and sourcing guidelines described in Chapter 16 of this DOM also apply to the *Radio County Coverage* service.

Reservation of rights

We reserve the right to modify, waive, or suspend any *Radio County Coverage* method, policy, or procedure that would appear to be unreasonable, illogical, or impractical in light of known conditions.

We also reserve the right not to produce *Radio County Coverage* in circumstances where there is insufficient data available to meet our minimum research standards or when any event has jeopardized the reliability of the data.

All determinations about the *Radio County Coverage* service, including crediting, clustering, weighting, and reporting, lie solely with Nielsen.

Chapter Sixteen – Restrictions on Use of Nielsen Information and Sourcing

Restrictions on use of Nielsen information

All *Nielsen Audio Radio Ratings Data and/or Nielsen Audio Measurement Service* (including, all Nielsen services reported through eBooks or elsewhere), (collectively, the "Nielsen Information"), is confidential, and protected by various intellectual property laws, including state and federal copyright laws. Nielsen Information is provided to properly licensed authorized users pursuant to the terms and conditions of their agreement(s) with Nielsen ("Nielsen Agreement"), and in accordance with the restrictions and limitations on use stated therein.

All Nielsen Information is for the exclusive use of properly licensed Clients, and may be disclosed only as set forth in the Nielsen Agreement, and through advertising or promotional literature as permitted hereunder. Any permitted use of quotations by authorized users of the estimates for purposes of advertising or promotion must identify Nielsen as the source and must also reflect that Nielsen data, estimates, reports, and software are copyrighted by Nielsen. Such advertisements or promotions must also mention that the audience estimates are subject to all qualifications and limitations stated in the Nielsen report and shall include the appropriate market, survey period, type of audience estimate, applicable daypart(s), and applicable demographic group(s) (e.g., New York Metro, January 2020, Average Quarter-Hour Estimates, Monday-Friday 6AM-Midnight, Persons 25-54). In cases where claims of ratings performance are made against competitors, authorized users must also add the following disclaimer to the sourcing information: "Claims of ratings performance included herein have been developed by a licensee of Nielsen ratings data. Nielsen does not endorse these claims."

The Nielsen Information shall not be used by unauthorized parties in any manner or for any purpose without the express written permission of Nielsen.

Users of audience estimates are also referred to the current policies of the Federal Trade Commission relating to the use of audience estimates.

All Nielsen Information (including without limitation Nielsen audience estimates and maps) is proprietary and confidential. Each Nielsen audience estimate and map is protected by various intellectual property laws.

Disclaimer of warranties

Nielsen Information represents Nielsen's opinion based on its analysis of data and information, including data from sample households and other sources that may not be under Nielsen's control, and therefore, Nielsen cannot guarantee the accuracy of Nielsen Information. Without limiting the foregoing, NIELSEN DISCLAIMS, AND CLIENT HEREBY WAIVES, ANY AND ALL WARRANTIES, WHETHER EXPRESS OR IMPLIED, TO CLIENT OR TO ANY THIRD PARTY, CONCERNING THE SERVICE OR NIELSEN INFORMATION PROVIDED HEREUNDER INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY, NON-INFRINGEMENT, QUALITY OR FITNESS FOR ANY PARTICULAR PURPOSE. The foregoing disclaimer shall not act as or constitute an admission by Nielsen that the Service or Nielsen Information constitutes goods, commodities or tangible personal property under applicable law.

Special notices

To the extent that any provisions contained in this *Local Radio Syndicated Services Description of Methodology* are inconsistent or conflict with any provision contained in the "Special Notices" section of the Nielsen Information, such Special Notices are deemed to supersede and/or amend this *Local Radio Syndicated Services Description of Methodology.*

FTC guidelines

The FTC has issued Guidelines regarding deceptive claims of Broadcasting Audience Coverage (issued July 8, 1965). These Guidelines are still in effect and are reprinted in full here:

> The Commission believes that...television and radio broadcasters, other persons selling advertising or broadcasting time or programs, advertising agencies, and advertisers should, in making claims based on survey results, or data, observe the following basic Guidelines:
>
> 1. A person (or firm) making a claim concerning the size, composition, or other important characteristics of a listening or viewing audience is responsible for seeing to it that the claim is truthful and not deceptive. If he bases his claim on the results of an audience survey, he assumes responsibility for interpreting the data accurately. Thus, he should not engage in activities calculated to distort or to inflate such data—for example, by conducting a special contest—or otherwise varying his usual programming, or instituting unusual advertising or other promotion efforts, designed to increase audiences only during the survey period. Such variation from normal practices is known as "hypoing." It is also improper to cite or quote from a survey report or survey data in such a way as to create a misleading impression of the results of the survey, as by unfairly basing audience claims on results achieved only during certain periods of the broadcast day or on a survey of only a segment of the total potential audience.
> 2. Audience data are based on sample surveys not derived from complete measurements of audiences. As such, they are statistical estimates, and, at best, are of only limited reliability due to errors and distortions inherent in the statistical methods yielding such data. Claims as to audience coverage based on audience surveys should therefore be qualified in recognition of the fact that survey data are inherently imperfect. Any such claim should be accompanied by a disclosure that any figures cited or quoted are estimates only or are based upon estimates, and are not accurate to any precise mathematical degree unless based upon a true probability sample. Audience surveys are not in practice based upon true probability samples.
> 3. Such claims should not be based on data obtained in a survey that the person (or firm) making the claim knows or has reason to know was not designed, conducted, and analyzed in accordance with accepted statistical principles and procedures, reasonably free from avoidable bias and based on a properly selected sample of adequate size. Such claims should not be based on survey reports or data that do not reasonably reflect current audience coverage, either because the passage of time has made the data outdated, or because a later survey report encompassing essentially the same area has been published, or because of the entry or departure of a competitor, or for any other reason.
>
> These Guidelines are offered for consideration to broadcasters and others concerned with avoiding possible violation of the Federal Trade Commission Act. These Guidelines may be updated from time to time by the FTC and should be consulted to ensure compliance. Moreover, there may be other FTC and other regulatory rules, laws, and Guidelines that may be applicable, and the onus is on the Client to ensure compliance.

Sourcing

A Client may refer to Nielsen data in promotional materials. While we encourage Clients to take advantage of this benefit, there are some guidelines that the Client must follow when using our data in this way.

Guidelines

A Client can refer to Nielsen data in their promotional materials so long as the Client is licensed to use the data, sources the data correctly, and is factual.

The guidelines apply to all client types including, but not limited to: radio stations, radio groups, radio networks and any other licensed entity that has a business relationship with the station.

The guidelines apply to all modes of communication including, but not limited to: radio, television, digital, print, in-person, and outdoor mediums.

Licensed to use the data

All Nielsen Information is copyrighted and reserved for the exclusive use of properly licensed Clients. The *specific* data to which a Client is licensed to use is defined in that Client's Nielsen license agreement. A Client **may not use** (or refer to) any Nielsen data that is not licensed under the Client's license agreement.

Sourcing

The term 'sourcing' refers to the proper disclosure of Nielsen as the source of the audience estimates. When sourcing audience estimates, the Client **must** include the market name, survey period, type of audience estimate, applicable daypart, and applicable demo. For example: "New York Metro, January 2019, Average Quarter-Hour Estimates, Monday-Friday 6AM-Midnight, Persons 25-54." The Client should also mention that the audience estimates are subject to all qualifications and limitations stated in the report.

Claims

When including additional information or perspective within the promotional materials (i.e. making a 'claim' about the audience data), it is essential that the claim be *factual.*

The Federal Trade Commission has issued guidelines regarding deceptive claims of broadcasting audience coverage. To conform to the FTC guidelines, a claim should be supported by the sourced data; should be plain-spoken and clear; should not omit any published data that disproves or conflicts with claim; nor be misleading in any way.

For additional information regarding the FTC guidelines, please see above.

Employees and social media

While media-related employees are authorized users of Nielsen data in the context of their employment with the Client organization, a media-employed individual is not a licensed user of Nielsen data *per se*. As such, a media-related employee may not post any Nielsen data or claim based upon Nielsen data on a social media outlet unless the posting is a re-posting of a station-originated posting in its entirety (including all required sourcing).

Violations

Station promotions and employee social media postings that do not conform to the guidelines described above are in violation of the Client's license agreement and our policy. We reserve the right to take action, as warranted in our sole judgement, in response to such violations. We consider all circumstances and options on a case-by-case basis.

PPM ratings are based on audience estimates and are the opinion of Nielsen and should not be relied on for precise accuracy or precise representativeness of a demographic or radio market.

Chapter Seventeen – Glossary of Selected Terms

Important information

In this glossary we provide the formal business definition for selected terms as they are generally used in the context of the local radio syndicated services. The reader should assume that a term applies to both PPM Panels and Diary Surveys unless we note otherwise. If the same term has a different meaning in PPM and Diary, we note the applicable survey instrument in the entry's header. If a term applies exclusively to PPM or Diary, we indicate the applicable survey instrument in parenthesis.

Glossary of selected terms

ABS: Operational acronym for the address-based sample frame.

Alternates (PPM)**:** Non-Basic households recruited to participate in the panel if the Basic household cannot be recruited, refuses to participate, or cannot be maintained in the panel.

Alternate Response Rate "ARR" (PPM)**:** A metric which measures the performance of Alternate (non-Basic) sample within a Panel. This metric includes all address-based sample including sample that can be matched to a telephone number and sample that cannot. It reflects the aggregate performance for all stages of the process including enumeration, recruitment, daily compliance, and panel tenure.

Ascription: A probabilistic statistical procedure that assigns values for missing or incomplete data.

Average Daily Cume Persons (PPM)**:** The estimated number of different (unduplicated) persons exposed to an encoded station for at least five minutes in a quarter-hour within a specified time period during an average day.

Average Weekly Cume Rating (PPM)**:** The estimated number of different (unduplicated) persons exposed to an encoded station for at least five minutes within a quarter-hour within a specified time period expressed as a percentage of the appropriate estimated population during an average week.

Average Daily Time Exposed (ADTE): (See "Time Spent Listening.")

Average Quarter-Hour Persons, Diary: The estimated average number of persons who listened to a station for a minimum of five minutes within a reported daypart.

Average Quarter-Hour Persons, PPM: The estimated average number of persons exposed to an encoded station for at least five minutes within a quarter-hour during a daypart.

Average Quarter-Hour Rating: A station's Average Quarter-Hour Persons estimate expressed as a percentage of the appropriate estimated population.

Average Quarter-Hour Share: A station's Average Quarter-Hour Persons estimate expressed as a percentage of the Market Total Average Quarter-Hour Persons estimate within a reported daypart.

Average Quarter-Hour Composition (PPM)**:** An encoded station's Target AQH Persons divided by its Total Persons 6+ AQH audience.

Average Time Exposed (ATE): (See "Time Spent Listening.")

Average Weekly Cume Rating: The number of different (unduplicated) persons exposed to an encoded station for at least five minutes within a quarter-hour within a specified time period expressed as a percentage of the population in an average week.

Away Station: A station that is not "home" to a particular Metro and/or DMA Region.

Basics (PPM)**:** A randomly selected household(s) chosen to represent a sampling unit in the panel.

CBET (PPM)**:** Our PPM encoding technology's formal name.

Compliance Rate (PPM)**:** The number of In-Tab panelists divided by the number of Compliance-Capable Persons.

Compliance-Capable Person (PPM)**:** An online panelist that is not prevented from being In-Tab on a given media day due to travel away from home or due to a technical problem with his or her meter or household equipment.

Consent Rate (Diary)**:** The proportion of sampled households that agree to participate in the survey in relation to all usable households.

Continuous Diary Measurement (CDM): Nielsen's program to report refreshed currency audience estimates each month in markets that were previously surveyed four times per year.

Country of Origin: Country or region of origin as reported by Hispanic panelists. We determine a panelist's country of origin based upon the outcome of interviews with the panelist's household. We based our country/region classifications, and the wording of the applicable interview questions, on the U.S. Census Bureau's American Community Survey. We report country of origin within select services and reports.

Cume Composition (PPM)**:** An encoded station's Weekly Cume Persons divided by its Total Persons 6+ Weekly Cume audience.

Cume Duplication: The percentage of estimated Cume Persons for one station who also listened to another specific station.

Cume Persons, Diary: The estimated number of different persons who listened to a station for a minimum of five minutes in a quarter-hour within a reported daypart.

Cume Persons, PPM: The estimated number of different persons exposed to an encoded station for at least five minutes in a quarter-hour within a specified time period during an average week.

Cume Rating: The estimated number of Cume Persons expressed as a percentage of the appropriate estimated population.

Daily Weight (PPM)**:** Numeric value assigned to an In-Tab panelist for the given media day for the purpose of projecting audience estimates to the population. The daily weight reflects the number of persons in the panelist's geographic, sex, and age group, and (if applicable) other groups, including dominant language (Spanish/English in Metros where Spanish-dominant language usage universe estimates are available), employment status, and the presence of children in the household.

Daypart: A time period for which audience estimates are reported (e.g., Monday-Sunday 6AM-Mid, Monday-Friday 6AM-10AM, Weekend 6AM-Mid).

De-installed Household (PPM)**:** A household that was at one time, but is not currently, participating in the panel.

Demographic Groups (Demos): Classifications of populations according to sex, age, race, ethnicity, income, etc.

Designated Delivery Index/"DDI": A measure of sample delivery in Diary surveys and PPM panels. We determine DDI with the following equation: (Actual In-Tab/In-Tab Target) x 100. DDI may be determined for the In-Tab sample as a whole, for particular demos, or for particular geographies.

Designated Market Area (DMA® Region): Nielsen's proprietary geographic market boundaries used to measure television audiences. Every county in the United States is assigned exclusively to one DMA Region.

Design Weight (Diary)**:** Pre-weight applied to In-Tab diaries returned from households that have a dual probability of selection.

Detectability: A subjective assessment from 0 (worst) to 4 (best) of the likelihood a Panelist's meter will detect PPM codes in an audio source. Detectability is determined by averaging the audio's message signal strength over the past 60 seconds and comparing that average to a set of thresholds. Detectability is an estimate, however, because it is not possible for the algorithm to take into account all of the factors in any particular Panelist's listening environment (i.e. radio volume, meter position, background noise, etc.) that could affect the code being detected. The Multi-Channel Encoding Monitor (MCEM) provides the user with detectability reports.

Diary Mentions: The number of different In-Tab diaries in which a station received credit for at least one quarter-hour of listening.

Diarykeeper: Any individual to whom we send Diaries.

Differential Survey Treatment (DST): Special survey procedures used to increase participation rates of targeted demographic groups (e.g., Black, Hispanic, young males) that tend to be underrepresented in surveys.

Digital Radio Station: Term used to refer to radio stations that broadcast in digital format rather than an analog format. Types of digital stations include digital AM, digital FM, HD-multicast, and the Internet streams of radio stations. The term is also used as a noun to refer to the group of all digital stations.

Double Encoding (PPM)**:** A period when more than one of the station's encoders is simultaneously encoding the station's signal.

Effective Sample Base (ESB): An estimate of the size of a simple random sample that would be required to produce the same degree of reliability (amount of sampling error) as the sample for a complex survey such as a radio Diary survey.

Elective Home to Metro Reporting: Option available to Nielsen-subscribing stations to have the station listed as Home to Metro other than its Metro or license (under certain qualifying conditions).

Encodability: An objective measure of an audio signal's capacity to be PPM-encoded. Encodability is determined by dividing the number of PPM codes inserted into the left and right signal channels by the maximum possible number of codes that could be inserted. The Multi-Channel Encoding Monitor (MCEM) provides the user with encodability reports.

Encoder (PPM)**:** Audio equipment or software that embeds a PPM code into an audio signal of a broadcast.

Encoder Time Stamp (PPM)**:** Characters within a length of encoding that indicate the time when the encoded audio was broadcast.

Ethnic Composition: Audience estimates for Total, Black, and/or Hispanic persons, ratings, and composition percents. Ethnic composition estimates are based on total Metro In-Tab and are reported for the Metro if at least 30 Black and/or Hispanic Diaries or panelists are In-Tab for the Metro, as applicable.

Ethnic Controls: The collective term for procedures designed to improve the representation of Black and Hispanic populations in our services. These procedures include Black and Hispanic Differential Survey Treatments, Black and Hispanic weighting of the In-Tab sample, High-Density Black and Hispanic Areas, and bilingual (Spanish-English) survey materials for Hispanics.

Frequency Exchange: Coined term that describes when multiple subscribing stations in the same area make a series of sequenced station call letter and format changes in a manner to suggest that stations "A" and station "B" exchanged dial positions. With the frequency exchange process, both stations retain their listening histories achieved when at their previous respective dial positions.

Frequency Move: Coined term that describes when the FCC reassigned a subscribing station's call sign from one channel to another channel within the same geographic area. If the client requests frequency move processing, the station will retain its listening history the station achieved when at its previous dial position.

Geo Zone: A cluster of zip codes within a sampling unit.

Group Quarters, Diary: For Diary survey sampling purposes, group quarters refers to living arrangements such as college dormitories, military barracks, nursing homes, and prisons, plus dwelling units of 10 or more individuals. However, residents of college dorms, military housing, etc., are considered eligible to participate in the survey if the telephone number is assigned to a private telephone serving fewer than 10 individuals.

Group Quarters, PPM: For PPM panel sampling purposes, group quarters is defined as more than nine unrelated persons or more than 16 related persons living at the same address.

Headphone Adjustment (PPM): Adjustment applied to radio station stream audiences to better account for the variety of ways panelists hear radio station stream whether out loud via radio speaker, computer speaker, or privately via wired or wireless headphone.

High-Density Area (HDA): A zip code-defined sampling unit—either a High-Density Black Area (HDBA) or High-Density Hispanic Area (HDHA)—that may be established in a county within the Metro of an ethnically controlled market.

Home Station: A station licensed to a city located within a particular radio Metro (or a reported DMA Region).

Hot Call Letter Change: Coined term that describes when the FCC licenses more than one radio station in the same area to identify with the same four letter call sign during a survey or report period.

Impressions: An estimate of the number of individuals or households exposed to a media schedule.

Installed Household (PPM)**:** A household that includes online Panelists.

In-Station PPM Encoding Monitor (PPM)**:** Piece of audio equipment that a station uses to verify that its signal is PPM-encoded.

In-Tab/Usable Sample: Sample that is in-tabulation; sample that is used in the production of audience estimates.

In-Tab Rate (PPM)**:** The number of In-Tab panelists divided by the total number of installed panelists.

Landline Frame: Operational pseudonym for the random digit dial sample frame that is applied to landline telephone numbers.

Layering: The embedding of multiple CBET codes into an audio broadcast on different layers. For example, a particular radio broadcast may include different PPM codes for a station, a network, and program on different layers.

Listed Sample (Diary)**:** Telephone numbers for which names and mail able addresses are published in telephone directories.

Listening Location: A location for which we report audience estimates. In Diary-based reports, listening locations include: "At Home," "In a Car," "At Work," "Other Place." In PPM-based reports, listening locations include: "At Home" and "Away From Home."

Market Totals: (See "Metro Totals/DMA Region Totals.")

Media-Affiliated Household: An umbrella term to indicate any person employed by, retained by, contracting for, interning, or volunteering at a radio station, satellite radio broadcaster, broadcast television station or network, cable television station or network, or advertising agency. Media-affiliated persons are not eligible to participate in any PPM Panel, Diary survey, or other Nielsen research panel. An individual living in a media-affiliated person's household is also ineligible to participate in a panel or survey. People that do not reside in the media-affiliated person's household, but that have a personal or business relationship with the media-affiliated person are also ineligible to participate in a panel or survey.

Media Day (PPM)**:** Time periods corresponding to individual days of the week used to organize panelist exposure data. The media day begins at 4AM and ends at 4AM the next day.

Media Rating Council® (MRC): An organization that accredits media ratings services.

Meter Time Stamp (PPM)**:** Information appended to CBET encoding that indicates the time when the panelist's meter was exposed to the encoding.

Metro In-Tab Target Index, Diary: The ratio of the number of Metro In-Tab diaries to the Metro sample target, generally expressed as a whole number.

Metro In-Tab Target Index, PPM: The ratio of the Metro's Average Daily In-Tab panelists to the Metro sample target, generally expressed as a whole number.

Metro Survey Area (Metro): The primary reporting area for local radio audience estimates. Metro Survey Area definitions may correspond to the federal government's Office of Management and Budget's (OMB) Metropolitan Statistical Area, subject to exceptions dictated by historical industry usage or other marketing considerations.

Metro Totals/DMA Region Totals, Diary: Total reported listening to radio in the Metro or DMA Region (could refer to AQH or Cume estimates), which includes listening to reported stations, non-qualifying commercial stations, noncommercial stations, satellite radio, the Internet streams of AM, FM, and HD radio stations and unidentified listening. This is also referred to as Persons Using Radio (PUR).

Metro Totals PPM: Total reported exposure to encoded media in the Metro (could refer to AQH or Cume estimates). This is also referred to as Persons Using Measured Media (PUMM).

Minimum Reporting Standard (MRS): Criteria we use to determine which stations to list in a report or data set. In PPM and Diary, we will report estimates for any station that received listening credit from a Panelist or Diarykeeper.

Multi-Channel Encoding Monitor (MCEM): Nielsen's next generation in-station encoding monitor.

***Nielsen Audio Radio Ratings Data and/or Nielsen Audio Measurement* Service (including, all Nielsen services reported through eBooks):** The formal name of the syndicated report that provides audience measurement estimates of radio listening in the applicable markets. Also referred to as "Nielsen Information."

Offline Status (PPM)**:** Status indicating that a panelist is not eligible to be In-Tab.

One Percent (1%) In-Tab Criterion (Diary)**:** A radio station meets the 1% In-Tab criterion if the station was mentioned in at least 1% of the In-Tab diaries returned from a given county during the previous available survey year. If two or more stations are eligible for credit of the same diary entry, and only one of the eligible stations meets the 1% In-Tab criterion, that station receives credit for the entry. If two or more stations meet the 1% In-Tab criterion, credit for the entry is determined via ascription.

Online Status (PPM)**:** Status indicating that a Panelist is eligible to have his or her listening data included in the In-Tab sample (subject to applicable minimum compliance standard).

Outlier (PPM): A single panelist or household that contributes more than half of a station's total audience in the Metro but that exhibits no discernable compliance or security risk.

Outlier Mitigation (PPM): Methodology used to trim an Outlier's listening. With Outlier Mitigation, panelists identified as Outliers remain in the panel, but tuning that exceeds the specified threshold is trimmed to the level of the next heaviest listener to the station from another household. The Outlier's trimmed listening remains in PUMM.

Panel: A research methodology in which similar measurements are made on the same sample at different points in time. "Panel" may also be used as a singular noun to refer to the group of all panelists.

Panelist (PPM)**:** An individual who is participating in the PPM Panel.

Panel Management (PPM)**:** The processes by which installed panelists are encouraged to wear or carry their meters and panelist compliance with this instruction is monitored.

Persons-Per-Diary Value (PPDV): Numeric value assigned to each In-Tab diary for the purpose of projecting audience estimates to the population. The PPDV reflects the number of persons in the geographic, sex, age, and (if applicable) ethnic and/or language usage (English/Spanish) group represented by each In-Tab diary after sample balancing has been performed.

Persons Using Measured Media (PUMM): (See "Metro Totals.")

Persons Using Measured Media Percent (PUMM %): Persons Using Measured Media expressed as a percentage of the appropriate estimated population.

Persons Using Radio (PUR): (See "Metro Totals/DMA Region Totals.")

Portable People Meter (PPM®): Nielsen's proprietary electronic measurement device that detects and stores CBET codes as it is exposed to encoded audio.

Pre-Alerted Survey: A survey in which survey respondents are notified of their selection to participate in the survey before the survey takes place. This pre-notification to the sampled person or household is usually made by telephone or mail contact. It has been shown to increase both response and data quality relative to similar surveys having no pre-notification of respondents.

Premium: An incentive intended to encourage participation in the survey or panel, or offered as a "thank you" for participation.

Proactive Monitoring: Nielsen's monitoring service that actively monitors data from a station's Multi-Channel Encoding Monitor (MCEM).

Qualification Edit (PPM)**:** Process that screens data collected from PPM equipment to evaluate motion detection, equipment functionality, and data collection results. Qualification Edits identify potential equipment faults, data issues, and panelist compliance.

Quarter-Hour, Diary: The basic unit of listening credit. Generally, a station receives credit for a quarter-hour of listening if the Diarykeeper reported five or more minutes of continuous listening to the station during a quarter-hour.

Quarter-Hour, PPM: The basic unit of listening credit. Generally, a station receives credit for a quarter-hour of credit if the panelist is exposed to the station for five or more minutes during a quarter-hour. (Note: The minutes of exposure need not be continuous.)

Radio Video Stream: Streaming media that synchronizes an on-air radio station's audio to visual images related to the station (such as the view from an in-studio camera).

Rating: See "Average Quarter-Hour Rating" and "Cume Rating."

Ratings Reliability Estimator (RRE): A web-based application that a client may use to determine standard error and confidence intervals for the Cume and AQH estimates reported in our local and national syndicated radio services.

Respondents: Sampled persons who provide information in response to survey questions.

Response Rate (Diary)**:** The ratio of In-Tab diaries to the Estimated Persons in Usable Households, generally expressed as a percentage.

Return Rate, Diary: The proportion of In-Tab diaries compared to the number of diaries we mailed to consenting households.

Sample Target: The In-Tab sample size objective for a particular survey area.

Sampling Unit: A geographic area consisting of a county or county equivalent, for which sample is separately selected and monitored.

Second Chance Diary: A sampling methodology in which households that did not return any diaries are re-contacted and asked to participate in the survey a second time.

Second Chance Diary Household: A household that has been sampled via second chance diary procedures.

Share: (See "Average Quarter-Hour Share.")

Split County: A portion of a county, consisting of one or more zip codes, that is recognized as a separate sampling unit for purposes of survey area definition or more discrete sample control.

Station Name: A station's most frequently used on-air identifier other than call letters or lone exact frequencies.

Streaming Program Loop (SPL): An Internet stream that broadcasts one of a radio station's programs live each day, then replays that program from beginning to end during the remaining hours of the day. In the PPM service, an SPL that replays all of the program's content and commercials is eligible to have its audience included in the estimates reported for the originating station.

Technical Difficulty (TD): Period when a station notified us that it was broadcasting at reduced or intermittent power, experiencing signal interference, or was off-air during the station's authorized broadcast day.

Time Spent Listening (TSL) PPM: An estimate of the average amount of time the average panelist was exposed to an encoded station (or all encoded media) during a particular daypart.

Time Spent Listening (TSL) Diary: An estimate of the average amount of time the average listener reported listening to a station (or total radio) during a particular daypart.

Total Line Reporting (TLR): A reporting option available to Nielsen-subscribing stations and streams that simulcast.

Total Survey Area (TSA): A geographic area that includes the Metro Survey Area and may include additional counties (or county equivalents).

Turnover Rate (PPM)**:** The proportion of panelists that left the panel during the report period. We determine turnover rate by dividing the number of panelists installed on the first day of the report period but not on the last day of the report period by the number of panelists installed on the first day of the report period.

Unencoded Interval (PPM)**:** A period of at least five minutes within a quarter-hour during which the station was on-air but not encoded that has been confirmed as having occurred by the station.

Unidentified Listening (Diary)**:** Listening that is included in Persons Using Radio that could not be credited to a specific station.

Unified Response Rate, Diary: One of the appropriate metrics with which to measure a Diary survey's sample performance. We determine unified response rate with the following equation: (Percent of In-Tab from RDD Frame x [RDD Frame In-Tab diaries / RDD Frame Estimated Persons in Usable Households]) + (Percent of In-Tab from the address frame x (Address frame In-Tab diaries / Address Frame Estimated Persons in Usable Households]).

Unified Sample Performance Indicator/ "USPI," PPM: One of the appropriate metrics with which to measure a panel's sample performance. We determine USPI with the following equation:
(RDD Persons SPI X RDD Installed Sample Percentage) + (Matched AB Persons SPI x Matched AB Installed Sample Percentage) + (Unmatched AB Persons SPI x Unmatched AB Installed Sample Percentage).

Universe Estimate (or Population): The estimated total number of persons in a particular sex/age group and geographic area.

Unlisted Sample (Diary)**:** Sample landline telephone numbers for which names and mail able addresses are not published in telephone directories and may or may not be known prior to placement calling.

Unusable Diaries: Diaries returned that we cannot include in the In-Tab sample. Generally, unusable diaries do not pass established quality criteria.

Weekly Weight: (PPM) Numeric value assigned to an In-Tab panelist for the given week for the purpose of projecting audience estimates to the population. The weekly weight reflects the number of persons in the panelist's geographic, sex, and age group, and (if applicable) other groups including dominant language (Spanish/English in Metros where Spanish-dominant language usage universe estimates are available), employment status, and the presence of children in the household.

Frequently used abbreviations

AQH	Average Quarter-Hour
COO	Country of Origin
DOM	Description of Methodology
DMA®	Designated Market Area
DST	Differential Survey Treatment
ESB	Effective Sample Base
eSIP	Electronic Station Information Form
HDBA	High-Density Black Area
HDHA	High-Density Hispanic Area
MRC	Media Rating Council
MRS	Minimum Reporting Standard
MSA	Metropolitan Statistical Area
NAB	National Association of Broadcasters
OMB	Office of Management and Budget
PPDV	Persons-Per-Diary Value
PPM	Portable People Meter
PSB	Pre-survey Bulletin
PUMM	Persons Using Measured Media
PUR	Persons Using Radio
RDD	Random-Digit Dialing
RRE	Ratings Reliability Estimator
SIP	Station Information Packet
SSA	Special Station Activities
TD	Technical Difficulty
TLR	Total Line Reporting
TSA	Total Survey Area
TSL	Time Spent Listening
UI	Unencoded Interval

Sourcing