

IAB and MRC Attention Measurement Guidelines



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Introduction

Consistent and accurate measurement of attention in advertising is essential for the ongoing growth and acceptance of attention metrics as a valuable component in evaluating campaign performance. As attention becomes a more critical indicator of audience engagement and effectiveness, the ability to standardize measurement practices is a key factor in fostering trust and increasing investment in attention-driven media strategies. While attention in and of itself should not be considered or used as a measure of outcomes for purposes of evaluating campaign performance, it can be a very important data point to understand exposure and engagement beyond delivery metrics in conjunction with measures of outcomes.

This document establishes a comprehensive framework for the measurement of attention across media, including data signals, visual tracking, physiological and neurological observations, and panel or survey-based approaches. It provides a detailed guide to understanding the origins of key attention metrics, offering a roadmap for evaluating the quality and reliability of procedures applied by media companies, ad-serving organizations, and attention measurement vendors.

Additionally, this document is intended to provide information to users of attention measurements on the origin of key metrics, a roadmap for evaluating the quality of procedures applied by media companies and/or ad-serving organizations, and certain other definitions of attention measurement metrics.

These guidelines have been developed by the Interactive Advertising Bureau (IAB) and its members in collaboration with the Media Rating Council (MRC).

About IAB

The Interactive Advertising Bureau (IAB) empowers the media and marketing industries to thrive in the digital economy. Its membership comprises more than 700 leading media companies, brands, agencies, and the technology firms responsible for selling, delivering, and optimizing digital ad marketing campaigns. The trade group fields critical research on interactive advertising, while also educating brands, agencies, and the wider business community on the importance of digital marketing. In affiliation with the IAB Tech Lab, IAB develops technical standards and solutions. IAB is committed to professional development and elevating the knowledge, skills, expertise, and diversity of the workforce across the industry. Through the work of its public policy office in Washington, D.C., the trade association advocates for its members and promotes the value of the interactive advertising industry to legislators and policymakers. Founded in 1996, IAB is headquartered in New York City.

About the Media Rating Council

The Media Rating Council is a non-profit industry association established in 1963, comprised of leading television, radio, print, and digital media companies, as well as advertisers, advertising agencies, and trade associations, whose goal is to ensure measurement services that are valid, reliable and effective. Measurement services desiring MRC accreditation are required to disclose to their customers all methodological aspects of their service; comply with the *MRC Minimum Standards for Media Rating Research* as well as other applicable industry measurement guidelines; and submit to MRC-designed audits to authenticate and illuminate their procedures. In addition, the MRC membership actively pursues research issues they consider priorities in an effort to improve the quality of research in the marketplace. Additional information about MRC can be found at www.mediaratingcouncil.org.

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1. BACKGROUND

This document represents a comprehensive set of guidelines for measuring attention across various media channels and environments. These guidelines aim to encompass all known approaches to attention measurement, including data signal-based tracking, visual tracking, physiological and neurological observations, as well as panel and survey-based methodologies. The term “attention” is used throughout this document to refer to the exposure, engagement, focus, and cognitive impact measured through these methods, regardless of the specific media channel or device.

These guidelines are principally designed for media companies, advertising platforms, ad-serving organizations, and attention measurement vendors. However, they also serve as a valuable resource for planners, buyers, and agencies looking to evaluate the quality and effectiveness of attention measurement tools and methodologies. The primary purpose of these guidelines is to bring clarity, consistency, and reliability to attention measurement practices, ensuring that stakeholders in the advertising ecosystem can make informed decisions. This helps foster an environment that encourages innovation and discussion around the nuances of attention metrics.

By establishing these guidelines, we aim to provide the industry with a shared framework that improves efficiency in media planning, buying, and execution, while addressing the complexities of different attention measurement methodologies. This document also seeks to create an open dialogue around key challenges and areas for future development, ensuring that attention measurement aligns with broader goals of transparency, accuracy, and accountability in advertising.

2. SCOPE AND APPLICABILITY

The **Attention Measurement Guidelines** are intended to cover all ad activity across a range of media channels and environments where attention can be measured. These guidelines apply to environments where attention is tracked through multiple approaches, including data signals, visual/audio tracking, physiological and neurological observations, and panel or survey-based methods.

These guidelines take into consideration several key focus areas of attention measurement:

- **Content:** Attention measurement of where the ad is placed, considering the channel, property, site, domain, app, or surrounding content environment (individual or collective non-ad content near or around where an ad may be placed). This includes the quality, substance and relevance of the content adjacent to the ad, which can significantly impact viewer engagement. “Content” is used throughout these guidelines to reference discrete content and property or channel level (context) considerations.
- **Placement:** Attention measurement focused on the ad placement structure, including the specific location, size, and format of the ad or pod within a webpage, app, asset, or media player. This dimension covers how the placement of the ad within a given environment affects user attention.
- **Creative:** Attention measurement based on the creative itself—the ad's design, messaging, and interaction elements. This dimension looks at how the characteristics of the ad influence attention and user engagement.

Note: The above focus areas may have varying effects on attention and should be studied to determine their individual effect on attention as well their relationship and interactivity with each other. These guidelines encourage validated models to separate the effects of these focus areas when designing attention measurement approaches and determining the appropriate weight or value of each as inputs.

While the above focus areas represent the high-level areas attention measurement is designed to evaluate, necessarily each of these areas and the methods described below, must consider, include, and differentiate in reporting (where applicable) measurement of:

- **Environment** where ads or content is delivered (media environment)
- **Device** (where applicable; includes out-of-home or OOH screen/asset) used to consume the ads or content
- **Person** consuming the ads or content*

** Note: While MRC audience requirements must be met to qualify for attention measurement, this does not mean or require identification of an individual or assignment of any demographic or behavioral characteristics for attention measurement. Further details such as whether or not an ad was delivered to a target audience, demographics, and behavioral characteristics may be important to consider when building and supporting attention models, planning, reporting, and benchmarking attention, as well as understanding the value and use of attention as discussed throughout this document. **See section 4 for minimum Attention Requirements.***

These guidelines address a variety of attention measurement methods for digital advertising, which may include, but are not limited to:

- Impression-level data signals (e.g., time-in-view, scroll depth, media plays, and interaction-based triggers)
- Eye tracking and facial coding
- Audio-based signals without corresponding visual media (ads or content)
- Physiological and neurological response metrics (e.g., heart rate, brain activity)
- Panel and survey-based insights on user engagement
- Passive and active data collection through ad servers and measurement technologies
- Any combination of the above

Exclusions from these guidelines include:

- **Measurement methods not designed to assess attention.** These guidelines are limited to methodologies that seek to measure user exposure, engagement, focus, or cognitive/emotional impact. Techniques or tools focused solely on delivery verification (e.g., basic ad serving, counting impressions, viewability/audibility or user presence signals) are outside the scope.
- **Campaign outcome measurement in isolation.** While attention can support understanding of exposure and engagement, these guidelines do not define or replace methodologies for measuring campaign outcomes such as conversions, sales lift, or brand impact. Attention is not intended to serve as a standalone measure of ad effectiveness or business results.
- **Audience targeting, identity resolution, or demographic assignment.** These guidelines do not prescribe methods for identifying individuals, assigning demographic or behavioral characteristics, or creating user profiles. Although attention may be influenced by audience characteristics, identification of users is not required or expected for attention measurement under this framework.
- **Non-advertising media or non-measurable environments.** Measurement of attention to editorial content in isolation (without advertising context), or in media environments where attention signals cannot be captured due to technical or privacy constraints (e.g., platforms that block measurement access), is not covered by these guidelines.
- **Measurement practices that do not comply with privacy requirements.** Attention measurement approaches that do not adhere to relevant privacy regulations (such as GDPR, CCPA) or fail to ensure user consent and transparency are explicitly excluded.
- **Unvalidated predictive model without empirical support.** Models used to infer or project attention outcomes must be grounded in empirical evidence and validation. Techniques or models lacking sufficient transparency, documentation, or validation fall outside the boundaries of this guidance.

This document is principally applicable to organizations involved in attention measurement, including media companies, advertising platforms, ad-serving organizations, and vendors offering attention-based metrics. In addition, planners and buyers of media can use these guidelines to assist in evaluating the quality, consistency, and validity of attention measurement methods for their campaigns.

3. GUIDANCE FOR USE

These guidelines are principally designed for media companies, advertising platforms, ad-serving organizations, and attention measurement vendors. However, they also serve as a valuable resource for planners, buyers, and agencies looking to evaluate the quality and effectiveness of attention measurement tools and methodologies. The primary purpose of these guidelines is to bring clarity, consistency, and reliability to attention measurement practices, ensuring that stakeholders in the advertising ecosystem can make informed decisions. This helps foster an environment that encourages innovation and discussion around the nuances of attention metrics.

This document also seeks to create an open dialogue around key challenges and areas for future development, ensuring that attention measurement aligns with broader goals of transparency, accuracy, and accountability in advertising.

For definitions of key terms and acronyms used throughout this document, see **Glossary/ Definitions** at the end of this document.

Beyond this, this document suggests the following consideration for use of attention measures.

Outcomes

While attention in and of itself should not be considered or used as a measure of outcomes for purposes of evaluating campaign performance, it can be a very important data point to understand exposure and engagement beyond delivery metrics in conjunction with measures of outcomes.

Attention delineated ad impressions may be used to further qualify delivered ads, viewable impressions, or exposure for connection to outcomes for more efficient evaluation of ad delivery. It's also useful to better understand the impact of and correlation between attention/inattention and outcomes (if any) as well as whether there is a diminishing, nonlinear and even negative effect of attention on outcomes related to certain ads. **These guidelines strongly require validation for models and measurement approaches as discussed later in this document (see sections 9-11). Likewise, it is strongly encouraged that attention's potential impact on and correlation with outcomes is subject to rigorous empirical support, validation, and independent audit. Attention is complex and differing levels of cognition, emotional response and sentiment have bearing on whether attention correlates with outcomes.**

Content Consideration

The placement of the ad in relation to content is crucial, as it can affect how users engage with both. It is important to evaluate attention of ads in the context of attention to content to further understand the interplay between the two. Evaluating content, properties, or inventory sources solely on ad attention without consideration of the underlying content attention should be avoided as this not only ignores the role of creative, but also contextual and targeting aspects. MRC requires attention to content to be measured and considered in addition to and in the context of creative or placement attention measurement when using such measures to evaluate properties or channels. Inattention to both ads and content is likely a powerful indicator, but imbalances between the two may require further analysis and study to be conclusive.

Use in Planning and Delivery

Placement measurement of attention is often used for planning purposes to understand how a particular placement may historically perform (draw attention) in a given environment or platform, agnostic to the exact creative. When assessing attention performance for a specific creative placement, the delivered creative itself should be measured for attention in order to properly evaluate the effect of the creative dimension. Comparing historical placement attention performance to specific creative performance may help isolate the attention effect of the creative. Attention measurement of placement vs. creative should be distinguished in reporting.

There is great value in evaluating placement when considering creative design, messaging, and branding as historical performance may aid advertisers in generating attention to the most important aspects of the creative message.

While attention measurement of creative for delivered ads is important in determining the achieved attention of a given creative and may be used to make in-flight adjustments to it, it can also be applied in planning and in analyzing the potential attention of a creative for design changes prior to delivery.

Planning and creative adjustment to account for potential delivered attention should consider and account for potential diminishing effects of attention over time as well as the user experience that may be affected by attempts to optimize for attention.

Benchmarking

Attention may be expected to vary and be influenced by format, media, and environment. For example, static or display creative or content may drive less attentive duration than video content as part of Attention Score, environments less prone to interaction such as out-of-home or TV/CTV may be expected to contribute less to Interaction Rate and device may influence share of screen and attention metrics. Media, device, environment, and format/placement (including forced or unskippable placements) should be considered and benchmarked when evaluating attention expectations and performance. **Benchmarking and performance evaluations should be done across multiple relevant dimensions with documented considerations of what performance criteria should be, established in advance of benchmarking studies.**

Audience characteristics such as whether or not an ad was delivered to a target audience, demographics, and behavioral characteristics may be important to consider when building and supporting attention models, planning, reporting, and benchmarking attention, as well as understanding the value and use of attention as discussed throughout this document.

4. MEASUREMENT MINIMUM REQUIREMENTS, DIMENSIONS, AND METRICS

Attention measurement encompasses various approaches to capturing user exposure, engagement, and interaction with ads across multiple dimensions, including content, placement, and creative. These guidelines define the key metrics used to quantify attention across different channels, platforms, and devices, considering the environment in which the ad is placed (content), the placement and format of the ad itself, and the design and messaging of the ad (creative). Metrics may vary depending on the specific method of measurement—whether it's through data signals, visual tracking, physiological and neurological observations, survey-based insights, or any combination of these methods. The goal of this section is to standardize the definitions of attention-related metrics across these dimensions to ensure consistency in measurement and reporting throughout the advertising ecosystem.

Viewability is the measurement of an ad condition, considering whether sufficient pixels of an ad are visible for a certain amount of time, representing the opportunity to see the ad (or hear the ad for

audibility) regardless of whether or not the ad was seen, viewed or heard by a person, whereas attention is the measure of whether the ad was seen or heard by a person and to what depth.

Minimum Requirements for All Attention Methods and Measures

The MRC considers attention to be a measure of audience (a measure of persons, not devices, as persons generate attention) and as a result requires [MRC/IAB Digital Audience-Based Standards](#) to be met as codified in [MRC's Outcomes and Data Quality Standards](#). These include viewability/audibility, full sophisticated invalid traffic (SIVT) filtration and indication or confirmation of presence of a user. This does not mean or require identification of an individual or assignment of any demographic or behavioral characteristics is required for attention measurement. Audibility is optional (except in the case of audio ads and content) and audio status (non-mute, non-zero volume vs. muted or zero volume, as well as volume levels) is encouraged to be reported where measurable and applicable as it cannot always be measured or may not apply (such as for static or display ads or content without audio). Consideration of closed captions is encouraged. Base measurement inputs into attention approaches must be audited in addition to the underlying attention measurement methodology for MRC accreditation consideration.

Viewability and Audibility Minimum Requirements

Regarding MRC viewability and audibility requirements for audience as applied to attention measurement, while a base of compliant viewable or audible (per [MRC's Digital Audio Measurement Standards](#)) impressions is required for attention measures (digital viewability and audibility requirements for digital and cross-media viewability and audibility requirements for non-digital and cross-media measurement), it is permissible to also measure and report attention without consideration of viewability/audibility or prior to the viewable condition having been met under the following conditions:

1. Standard compliant attention measurement including viewability/audibility requirements is reported and attention measurement is accrued after the viewable/audible condition is met;
2. Attention measurement without or before viewability/audibility is also separately presented and distinguished in reporting as non-standard and diagnostic in some manner (such as impressions or viewable rate inputs); both presentations (with or without viewability) and aggregate attention measures (a combination of viewable and non-viewable inputs) are eligible for accreditation consideration with proper disclosure;
3. Attention measurement without or before viewability/audibility is it at least based on ads that are visible, meaning any portion of the ad is on screen or in the viewport for any non-zero time or have non-zero/non-mute audible conditions; and
4. Ads qualifying for attention measurement without or before viewability/audibility are based on compliant begin-to-render or audio IAB/MRC impressions including video and audio that has initiated playback (playhead movement), post-buffer.

Please note that use of viewability as a base for attention measurement enforces a minimum time threshold (one second for display and two continuous seconds for video), whereas attention measurement without viewability includes no such minimum time threshold. Further, while minimum viewability time requirements must be continuous, once these thresholds are met, viewable and attentive time can be accumulated for the same ad/content session on a non-continuous basis. Finally, these guidelines strongly encourage reporting of attentive time relative to viewable time across all attention measurement approaches as a valuable measure of attention performance.

Presence of Users Minimum Requirements

Regarding MRC audience requirements for confirmation of a presence of a user as applied to attention measurement, there are several IAB/MRC digital requirements that signal the likelihood that a user is

actively present during associated measured activity including, but not limited to, inactivity rules, session cut off rules, auto-play requirements, continuous play requirements and TV Off controls. MRC requirements for presence in an exposure zone for OOH measurement should also be applied. All of these considerations are required for inclusion in audience measurement and confirmation of active presence of a user (or the absence of non-presence or inactive indicators).

In addition, certain deterministic measurement controls such as people meters and other factors such as user initiated sessions along with longitudinal measurement of data signals (such as interaction, etc.) and the personal nature of mobile devices may also create reasonable assurance a user is present as does eye tracking, gaze tracking, facial coding, presence monitoring, physiological and neurological observation, and panels or surveys which all measure directly or require the participation of a person. It is not required that all measurement contributions to attention include direct deterministic presence of a user considerations, but any models or projections of attention must include a sufficiently robust deterministic dataset that includes consideration of active presence of a user (or the absence of non-presence or inactive indicators) with empirical support and validation and meet the requirements delineated below regarding data quality, modeling, sampling/projection, and reporting/disclosure. Additional controls that provide assurance of presence of user are encouraged and should be disclosed.

While MRC audience requirements must be met to qualify for attention measurement, this does not mean or require identification of an individual or assignment of any demographic or behavioral characteristics is required for attention measurement. Further audience characteristics such as whether or not an ad was delivered to a target audience, demographics, and behavioral characteristics may be important to consider when building and supporting attention models, planning, reporting, and benchmarking attention, as well as understanding the value and use of attention as discussed throughout this document.

Attention measurement providers may use and rely on first-party inputs (such as in publisher or platform integrations) for active presence of user (or absence of non-presence of inactive indicators) determination that can not be directly measured or validated by the attention measurement provider themselves. As discussed in section 9 below (Data Quality), MRC audits will generally require certain verification of upstream processes maintained or relied upon by vendors. This does not necessarily mean direct audit of upstream processes or data sources (although MRC audit and accreditation would obviate many audit requirements as part of vendor measurer audits), but means that attention measurers are responsible for developing data qualification criteria as well as quality control processes over ingestion and use of external datasets that would be exposed to audit as part of the MRC accreditation process.

4.1. Measurement Methods

Attention measurement techniques employ a variety of methods, each offering unique insights into user engagement and interaction. Below is an overview of the primary approaches used to capture attention, including visual, auditory, physiological, and self-reported data. These methods provide advertisers and media platforms with a comprehensive view of how users engage with ads across multiple dimensions.

- **Data Signals:** This approach collects various data signals from devices, ad placements, and publisher metadata. These signals offer detailed insights into ad and content exposure and user interactions and are often used to measure digital video, display, and audio attention.
- **Visual Tracking:** This approach includes eye tracking, gaze tracking, facial coding, presence monitoring, and audio signal analysis. Eye tracking, gaze tracking, and facial coding help visualize where and how users focus their attention. Presence monitoring detects the number and location of people in a space. Together, these techniques measure engagement and interaction by using visual and auditory data.

- **Physiological and Neurological Observations:** This method tracks physiological and/or neurological responses, such as heart rate, blood pressure, and brain waves. These measurements provide insights into the cognitive and emotional aspects of attention, revealing user reactions.
- **Panel and Survey-Based Methods:** This approach may use self-reported data from brand health studies, focus groups, and ad effectiveness surveys or also may directly measure ad media usage, exposure, attention, and behaviors. It provides insights into participants' attention.
- **Predictive Models:** These methods combine visual tracking, physiological/neurological observations and/or panel and survey-based methods with data signals to produce models that predict expected visual attention for large scale campaign measurement.

Data Signals

The data signal approach collects a variety of signals from devices, ad placements, and publisher metadata to create a detailed picture of ad and content exposure and user interaction.

- **Device and Ad Interaction Signals:** This method gathers exposure data such as time-in-view and audible time (as well as time at volume levels and with captions enabled), as well as interaction data such as scroll depth, click-through rates, and interaction patterns (e.g., hovers, pauses) to quantify user exposure to and engagement with the ad or content. These signals offer objective and granular insights into user behavior. While any one signal may not be a direct measure of attention, they can be used in tandem to construct probability or likelihood of attention.
- **Publisher Metadata:** Information about the context of the ad placement, such as the site, app, video, or OOH screen/asset on which the ad appears and surrounding content, is also collected. This data helps advertisers understand how the surrounding environment influences user attention to the ad and compare attention to the content. It is critical to understand and compare ad attention in the context of content attention and to evaluate the relationship of ad and content attention.

Visual Tracking

This approach uses a combination of eye tracking, gaze tracking, and facial coding analysis to capture how users focus their attention visually and aurally.

- **Eye Tracking and Facial Coding:** Eye-tracking technology helps identify where users are looking, how long they focus on specific elements, and how their gaze moves across the screen. Facial coding captures micro-expressions and emotional responses, providing insights into user engagement and emotional reactions to the ad or content. Together, these methods help visualize attention by showing how users interact with ads and content in real time.
- **Presence Monitoring:** This technique detects the number of people in a space and tracks their movements, allowing for more accurate measurement of attention in shared or group environments. Presence monitoring is especially useful in video or Connected TV (CTV) environments, where multiple people may be present.

Physiological and Neurological Observations

Physiological and neurological observations track bodily and brain responses to measure the cognitive and emotional aspects of attention. These methods capture deep insights into user reactions that go beyond visual or behavioral metrics.

- **Physiological Data:** Metrics such as heart rate, blood pressure, and skin conductance are tracked to gauge emotional responses to ads or content. Changes in these metrics indicate levels of arousal, excitement, or stress during ad exposure, providing an understanding of how the body reacts to an ad or content.
- **Neurological Data:** Brain wave activity, captured via technologies like an EEG (electroencephalography) device, is used to measure cognitive load, emotional engagement,

and memory retention. This data reveals how deeply the user processes the ad or content and can offer insights into the effectiveness of the messaging in capturing sustained attention.

Panel and Survey-Based Methods

Panel and survey-based approaches gather actively or passively measured and self-reported data from a sample of users to directly measure ad or media usage, exposure, attention and behaviors as well as to gain insights into their attention, brand recall, and emotional responses to ads or content.

- **Measurement Panels:** Panels are recruited with the intent of actively or passively measuring media or ad usage, exposure, attention and behaviors on an ongoing basis to be projected to a universe of the measured population or to calibrate/validate other data sets.
- **Brand Health Studies:** Panels of users are surveyed to assess brand recognition, sentiment, and overall recall of ads. These surveys help advertisers understand how well their ad messaging resonated with the audience.
- **Focus Groups:** Small groups of participants are exposed to ads or content in a controlled environment, where their reactions and feedback are recorded. This method offers qualitative insights into how users engage with ads or content, providing a more nuanced view of attention and effectiveness.
- **Ad Effectiveness Surveys:** Participants report on their experience with ads through surveys conducted after exposure. These surveys offer subjective data on ad recall, attention, and the overall impact of the ad on brand perception.

Predictive Models

Predictive models allow a connection between the data signals method and the insights of visual tracking, physiological/neurological observations as well as panel and survey-based methods. The goal of the models is to predict the expected or potential value of a visual attention outcome using only the data signals available from standard logging.

The value of the predictive models depends on three core criteria which need to be evaluated.

- The quality of the **data signals** (including the ability to measure such signals)
- The quality of **visual tracking**, physiological/neurological observations as well as panel and survey-based methods
- The quality of the predictive model

Comparison of Attention Measurement Approaches

This table provides a comparison of the different attention measurement approaches, highlighting the techniques used and the types of data collected by each method. Each approach uses different techniques to capture various types of data, offering unique insights into user engagement and interaction. By understanding the strengths and limitations of each method, advertisers and media platforms can choose the best approach for their needs.

These guidelines do not stipulate which measurement approach is best for attention measurement in general nor do they provide recommendations for which approach to use for specific use cases. Various approaches may be best suited for specific attention measurement use cases and campaign objectives. Rigorous testing and validation is recommended for specific use cases in consideration of the requirements herein. Different approaches and methods within each approach may lead to different conclusions. Attention measurement users should reference industry efforts to study different approaches and methods such as the Advertising Research Foundation's (ARF) Attention Initiative and at minimum, encourage measurement providers to be independently audited and validated for compliance against these guidelines.

Measurement Approach	Key Techniques	Type of Data	Hardware	Software
Data Signals	Time-in-view, scroll depth, clicks, interaction patterns, publisher metadata, audio, and caption signal analysis, share of screen/viewport	Quantitative device and interaction data	User devices (phones, PCs, tablets), ad servers, OOH screen/asset	Ad servers, analytics platforms, DSPs, web tracking tools
Visual Tracking	Eye tracking, gaze tracking, facial coding, presence monitoring	Real-time, behavioral, and sensory data (visual/auditory)	Eye-tracking glasses/cameras, microphones, motion sensors	Facial recognition and eye-tracking software, audio analysis tools
Physiological and Neurological Observations	Heart rate, blood pressure, brain wave activity (EEG), skin conductance	Biometric and neurological responses (physiological)	EEG measuring bands or devices, heart rate monitors, skin conductance sensors	EEG data processing software, biofeedback tools, heart-rate monitoring apps
Panel and Survey-Based Methods	Brand health studies, focus groups, ad effectiveness surveys, and measurement panels	Self-reported, qualitative, and passively/actively measured data	Laptops/tablets for survey responses, recording equipment for focus groups and metering devices	Survey software (e.g., Qualtrics), focus group moderation tools, compliance, and ongoing cooperation
Predictive Modeling	Machine learning, statistics, feature engineering, out-of-sample testing	Combination of data signals, visual tracking, and/or other methods listed above	Server-deployed models running over log data	Machine learning libraries and packages, data engineering pipeline tools

4.2. Measurement Dimensions

Attention measurement in advertising can be viewed through three key dimensions: content, placement, and creative. These dimensions help to contextualize how and where attention is measured, allowing for more precise and actionable insights.

- Content:** This dimension evaluates the environment in which the ad is placed, taking into account the substance, quality, relevance, and trustworthiness of the surrounding content. It considers how the editorial environment influences user attention and engagement, but also allows the user to better understand the role of creative vs. content in capturing attention. Attention measurement of content is encouraged and is highly relevant to consideration of ad performance. Further, contextual relevance between ads and content is also an important consideration.
- Placement:** The ad's physical structure of the placement within a location, property, publication, channel, webpage, app, OOH screen/asset, or media player is key to understanding attention. This includes where the ad is located (e.g., above the fold, in-content for web) and its size or format. The placement dimension and its size relative to surrounding content or device impacts how visible and prominent the ad is to the user.

- **Creative:** The design and content of the ad itself is critical to capturing and maintaining attention. The creative dimension assesses the visual appeal, messaging, and interactivity of the ad, determining how well it resonates with users and encourages engagement. Intended or target audience may also impact creative appeal and this should be considered as discussed throughout these guidelines.

Content

This dimension refers to the substance of the environment in which the ad is placed, considering factors like the channel, property, site or domain, surrounding editorial, video or audio content, and the overall context in which the ad appears as well as attention to the content itself. The placement of the ad in relation to content is crucial, as it may impact user engagement and attention and attention to content should be considered (with empirical support) relative to attention to an ad.

- **Content Relevance:** How aligned the ad is with the surrounding content or editorial environment.
- **Contextual Quality:** The value and trustworthiness of the content adjacent to the ad.
- **Engagement with and Attention to Surrounding Content:** How much the user interacts with or pays attention to the content around the ad, which can influence their attention to the ad itself and should be considered when evaluating ad attention.

Placement

The placement dimension focuses on the structure of the ad's placement within a given physical asset, commercial ad pod, page, app, or media player. This includes the location of the ad or pod (such as at the top of a page, mid-roll in a video, or sidebar within an app) and the size or format of the ad placement.

- **Ad Location:** Placement within the webpage, app, or media player (e.g., above the fold, in-content, pre-roll, mid-roll).
- **Ad Size and Format:** The size, format and environment of the ad placement.
- **Ad Density:** The number of ads that are present in the same environment
- **Share of Screen:** The proportion of the screen or device that the ad occupies relative to other content; how much of the screen is dedicated to the ad versus the surrounding content.

Placement measurement of attention is often used for planning purposes to understand how a particular placement may historically perform (draw attention) in a given environment or platform, agnostic to the exact creative. When assessing attention performance for a specific creative placement, the delivered creative itself should be measured for attention in order to properly evaluate the effect of the creative dimension. Comparing historical placement attention performance to specific creative performance may help isolate the attention effect of the creative. Attention measurement of placement vs. creative should be distinguished in reporting.

Creative

The creative dimension refers to the ad itself, including its design, format, messaging, and interactive elements. The effectiveness of the creative in capturing and holding attention may be linked to how engaging and relevant it is to the user.

- **Ad Design:** The layout, visual appeal, and structure of the ad.
- **Message Relevance:** How well the ad's message resonates with the intended audience.
- **Interaction Elements:** Features such as video play buttons, clickable elements, or interactive formats that encourage user engagement.
- **Creativity and Innovation:** How novel or engaging the ad format is, which can directly influence attention retention.
- **Creative Purpose:** Some creatives may be built for specific media, channels, platforms, or experiences and these purposes should be considered in attention measurement.

While attention measurement of creative for delivered ads is important in determining the achieved attention of a given creative and may be used to make in-flight adjustments to it, it can also be applied in planning to analyze the potential attention of a creative for design changes prior to delivery.

Note: The above dimensions may have varying effects on attention and should be studied to determine their individual effect on attention as well their relationship and interactivity with each other. These guidelines encourage validated models to separate the effects of these focus areas when designing attention measurement approaches and determining the appropriate weight or value of each as inputs.

4.3. Key Attention Measurement

The following are three key measurement categories that provide comprehensive insights into potential user attention during ad or content exposure. Each metric captures a different aspect of how users may engage with ads or content, combining various inputs to give a clear understanding of potential attention, emotional response, interaction, and cognitive load.

- **Exposure:** Reflects the potential level of visual and/or audio focus on an ad or content, based on metrics like viewability, time-in-view, audibility, audible time, and closed captions consideration to determine the extent to which an ad or content captures user attention.
 - **Attentive Response:** Measures gaze tracking and peripheral focus.
- **Cognitive Load:** Assesses the mental effort required to process the ad or content, indicating how complex or easy the ad or content is for users to understand.
 - **Emotional Response:** Measures the emotional reactions or sentiments users have while viewing and/or hearing an ad or content, providing insights into the intensity of their positive or negative feelings. Cognitive load is required to generate an emotional response, but not all cognition will generate emotional response and as a result, determination or measurement of emotional response is not required for attention measurement.
- **User Interaction and Behavior:** Captures how frequently users engage with the ad or content, including actions like clicking, swiping, and interacting with multimedia content. Also includes scroll behavior: speed, changes in direction and the number and length of pauses in scrolling.

These metrics may vary and be influenced by format, media and environment. For example, static or display creative or content may drive less attentive duration than video content as part of attention score, environments less prone to interaction such as OOH or TV/CTV may be expected to contribute less to interaction rate and device may influence share of screen and resultant attention metrics. Media, device, environment, and format/format (including forced or unskippable placements) should be considered and benchmarked when evaluating attention expectations and performance.

Further, the above metric categories and the below metrics within them may be threshold-based in terms of their bearing on attention. Where applicable, thresholds utilized should be supported by research, periodically validated and weighted appropriately as well as generally disclosed to measurement users (proprietary or discrete thresholds are not required to be disclosed).

These guidelines recommend use of commonly available industry data collection mechanisms such as IAB Tech Lab's Open Measurement (OM) protocol for consistent collection of signals and measurement data where applicable for consistency and coverage.

Exposure

Exposure is a composite measure that captures the potential overall level of ad or content exposure. It provides insights into how long, how intensely, and under what conditions users may be exposed to an ad or content. These insights are derived from a range of observable metrics and measurable signals that provides an aggregate view of the potential of the ad or content to capture user focus.

Exposure – Key Measures

[†] Note: Gaze tracking and peripheral focus apply only to measurement providers with visual-tracking capabilities (e.g., those using calibrated eye-tracking systems). These are not universally required across all measurement companies.

Key Measure	Unit(s) of Measurement	How It's Measured	Examples of Outputs & Derivatives
Ad Position	Categorical (e.g., top, mid, bottom)	Rendered document object model (DOM) position or timeline placement (for video and audio). Indicates prominence on screen or within content.	Top Position Count: 82,150, Avg. Time by Position: Top = 42,150, Bottom = 42,000
Audibility	Binary (yes/no), Volume Level	Determined via media player mute status, system volume settings, and API integration.	Audibility Rate: 80% Audible Impressions: 8,000 Avg Volume: –18 LUFS
Audible Time	Time (seconds or ms)	Time audio plays above mute or zero volume threshold or at specific volume levels. Synchronized with ad rendering or session start.	Total Audible Time: 380,000s Audible Time Rate: 65% of ad duration Avg Audibility Time: 4.8s Avg Audible Time by Device: Mobile = 2.8s, Desktop = 4.5s
Closed Caption	Binary (yes/no)	Determined via media player closed caption status.	Closed Caption Count: 2,000 Closed Caption Rate: 2%
Contextual Relevance	Score (0–1), Content Category Tag	Derived from metadata analysis or natural language processing of page/app content near ad.	Relevance Score: 0.84
Device Type	Categorical (e.g., mobile, desktop)	Captured via user-agent string or SDK metadata.	Impressions by Device: Mobile = 61,300, Desktop = 38,700 % of Impressions by Device: Mobile = 61.3%, Desktop = 38.7^
dB SPL	Decibels	System-level or recorded sound pressure level during ad playback. Device audio output may be measured in levels and steps that can be mapped to dB SPL. <i>Evaluate audio clarity, compliance, and accessibility across environments</i>	Avg. Sound Level: 68.4 dB SPL (moderate) or discrete level/steps

Key Measure	Unit(s) of Measurement	How It's Measured	Examples of Outputs & Derivatives
Environment Metadata	Categorical Descriptors/Tags	Supplied by publisher, app, or platform (e.g., domain, genre, app section).	Exposure by Content: <i>news = 4.2s, gaming = 5.3s</i> % of Network Type: <i>wifi=50%, 5G=40%, offline=10%</i>
Gaze Tracking[†]	Time (sec), Fixation Duration, Deviation	Collected from calibrated eye-tracking systems or devices. Fixations must be mapped to ad bounding boxes.	Avg. Fixation Time: 610ms, Gaze Match Rate: 72% Fixation Duration: 1.4s Dwell Time: 2.1s Gaze Path Deviation Index: 0.87
Peripheral Focus[†]	Time (ms), Detection Probability	Modeled through gaze heatmaps or periphery angle relative to ad location.	Peripheral Engagement Time: 980ms Peripheral Focus Count: 33,400 Fixation Probability in Periphery: 42%
Presence of User	Binary (yes/no), Detection Score	Determined by eye tracking, session input, webcam/sensor, OOH exposure zone, or inactivity timeout logic.	Present User Count: 92,350 Presence Detection Score: 0.91
Screen Orientation	Portrait/Landscape	Detected via accelerometer data or CSS orientation API during ad rendering.	Portrait Orientation Impressions: 55,100 Orientation Change Rate: 12.3%
Screen Size	Pixels or Inches (or feet where applicable for OOH)	Collected via browser/device APIs or publisher SDKs.	Screen Size Buckets: <6" = 47,300, 6–13" = 42,700 >13" = 10,000
Scroll Depth	% of Page Height	Calculated as the deepest vertical scroll relative to total document height.	Avg. Scroll Depth: 83% Deep Scrolls (>90%): 60,250
Session Duration	Time (sec/min)	Measured from session start to timeout or explicit end. Refers to ad/content session and not user session.	Avg. Session Time: 8.2 min Long Sessions (>10 min): 39,000
Share of	Percentage (%)	% of viewport or screen occupied	Avg. Share of Screen: 36%

Key Measure	Unit(s) of Measurement	How It's Measured	Examples of Outputs & Derivatives
Screen		by the ad. Can fluctuate over session.	Dominant Share (>50%): 41,800
Time-in-View	Time (sec/ms)	Tracks total time ad was in-view per MRC standards. May be segmented for creative, placement, or content location.	Avg. Time-in-View: Creative 5.8s, Placement 6.3s, Content 7.1s Time-in-View Rate: 65% of ad duration
User Count	Integer (people)	Estimated from smart TVs, sensors, or declared logins for co-viewing environments.	Avg. Users per Impression: 1.6, multi-viewer Exposures: 28,400
Viewability	Binary (yes/no), % Pixels, Duration	Per MRC standards: 50% pixels in view for 1 sec (display) or 2 sec (video). 100% pixels for Cross-Media as well as specific OOH Viewability requirements.	Viewability Rate: 81.9% Viewable Impressions: 81,900 Avg. Time-in-View: 6.7s
Visibility	Binary (yes/no)	Detected if <i>any</i> portion of ad enters the viewport, regardless of viewability thresholds.	Visible Impressions: 92,100 Visibility Rate: 92.1% Visibility-to-Viewability Rate: 78.44%
Visible Time	Time (sec/ms)	Total time ad was visible, including both viewable and non-viewable segments.	Avg. Visible Time: 5.2s Total Visible Time: 520,000s Visible Time Rate: 65.4%

Cognitive Load

Cognitive Load reflects the mental effort required by users when interacting with an ad or content. It shows how complex or simple the messaging is for users to process and whether it demands significant attention.

Key Measures of Cognitive Load

Key Measure	Unit(s) of Measurement	How It's Measured	Derivatives & Example Outputs
Beta Wave Activity	Microvolts (μ V)	Measures beta brainwave activity during exposure; linked to alertness and processing.	Difference from Baseline: +20 μ V Beta Activity: 65 μ V
Baseline Resting Beta/Gamma	Microvolts (μ V)	Captures pre-exposure EEG levels to serve as normalization anchors.	Baseline Beta: 45 μ V Baseline Gamma: 50 μ V
Blinks	Blinks per second or count	Tracks eye blinking frequency; fewer blinks often signal higher concentration or processing effort.	Blink Rate: 0.8 blinks/sec Total Count: 18,000 Δ vs. Baseline: -22%
Gamma Wave Activity	Microvolts (μ V)	Measures high-frequency brainwave activity associated with information processing and memory load.	Gamma Amplitude: 78 μ V Baseline Comparison: +12 μ V
Gaze Path Complexity	Index score or pattern trace	Analyzes the sequence and variability in gaze movement. Erratic or inefficient paths may indicate mental load.	Gaze Complexity Index: 0.78 high deviation across creative elements
Heart Rate Variability (HRV)	Milliseconds (ms)	Tracks variation in time between heartbeats. Lower HRV is often linked to cognitive and emotional stress.	HRV: 32ms ($\downarrow$ from baseline) Normalized HRV Score: 0.61
Pupil Dilation	Millimeters (mm) or % change	Measures changes in pupil size during exposure. Larger dilation may indicate higher cognitive effort.	Avg Dilation: +0.5 mm from baseline Peak Dilation: +12%
Response Time	Seconds (s), Milliseconds (ms)	Time it takes for a user to respond to a prompt, task, or interaction (e.g., quiz, click).	Avg Response Time: 1.2s Standard Deviation: $\pm$ 0.4s
Task Performance Accuracy	Percentage (%)	Assesses whether users correctly understood or interacted with ad-related tasks.	Accuracy Rate: 89% Error Rate: 11%
Self-Reported Cognitive Load	Likert scale (1–7), score (0–10)	User-submitted score or ranking indicating perceived mental effort. Often collected via surveys or panel tools.	Avg Score: 6.1 (out of 7) Survey Agreement: “ad required intense focus”

Emotional Response

Emotional response provides insights into the emotional reaction of users to ads or content, capturing both the intensity and valence (positive or negative) of these reactions. By leveraging facial coding, physiological or neurological data, or panel-based methods, that reflects what users see and feel about a particular ad or content. Cognitive load is required to generate an emotional response, but not all cognition will generate emotional response and as a result, determination or measurement of emotional response is not required for attention measurement. As emotional response is a subset of cognitive load, many key metrics are similar between these categories, with varying descriptions.

Key Measures of Emotional Response

Key Measure	Unit(s) of Measurement	How It's Measured	Derivatives & Example Outputs
EEG Activity	Score (0–100)	Composite score combining beta and gamma wave activity to infer emotional arousal.	EEG Activity Score: 72 (High) Interpretation: strong emotional engagement
Emotion Variability	Index Score (0–1)	Captures fluctuations in emotion across ad duration; can indicate resonance or inconsistency.	Emotion Variability: 0.68 Interpretation: high variability in affective journey
Facial Sentiment	Emotion Class (e.g., Joy, Surprise)	Uses AI or trained analysts to identify micro-expressions and facial muscle movements.	Detected Emotion: joy (65%), surprise (22%)
Facial Valence Score	Scale (–1 to +1)	Measures emotional polarity: –1 = negative, 0 = neutral, +1 = positive.	Valence Score: +0.43 Emotion: mildly positive
Gamma Wave Activity	Microvolts (μV)	High gamma wave activity is associated with emotional intensity and memory encoding.	Gamma Activity: 72 μV Δ vs Baseline: +15 μV
Gamma Wave Amplitude	Microvolts (μV)	Strength of gamma wave signals during exposure; reflects emotion-driven neural activation.	Amplitude: 72 μV
Heart Rate Variability (HRV)	Milliseconds (ms)	Decreased HRV often signals emotional arousal or stress.	HRV: 32ms low variability = elevated emotional response
Self-Reported Emotion	Likert (1–7), Valence/Intensity	Collected via survey or panel; users rate how they felt about the ad or its impact.	Avg Score: 5.8/7 Top 2 Box: 81% selected “felt strong emotion”

User Interaction and Behavior

User interaction and behavior focuses on user engagement with the ad or content, capturing how frequently and in what manner users interact with the ad or content. It reflects active participation, including clicks, swipes, and audio and video interactions. It also includes scroll behavior: speed, changes in direction, and the number and length of pauses in scrolling. Lack of engagement or interaction does not necessarily indicate that no attention was present.

Key Measures of User Interaction and Behavior

Key Measure	Unit(s) of Measurement	How It's Measured	Derivatives & Example Outputs
Body Movement	Count (#)	Webcams, motion sensors, or device accelerometers to detect and classify movements like head turns, posture shifts, or gestures to infer engagement or distraction.	Total Body Movements: 4,200 Movement Type Distribution: 50% posture shifts, 30% head turns, 15% hand gestures, 5% fidgeting Avg Movement Frequency: 7.5/min
Clicks	Count (#)	Tracks user-initiated clicks or taps on ads, CTAs, images, or in-ad elements. Must meet IAB/MRC click measurement requirements.	Click Rate: 0.42% Resolved Click Rate: 0.38% CTA Clicks: 2,100 Image/Product Clicks: 1,300
Cursor Movement	Distance (px), Patterns	Measures mouse movement velocity, direction changes, and proximity to ad or CTA zones.	Avg Movement Distance: 1,200 px CTA Hover Proximity: 85% Idle Time: 2.3s
Exits	Count (#)	Measures exits or bounces shortly after ad exposure begins.	Exit Rate: 8.5% Exit Count: 5,100
Fast Forwards	Count (#)	Measures user-initiated fast forwards (counted once).	Fast Forward Rate: 0.1% Fast Forward Count: 110
Gestures	Count (#), Type	Tracks touch gestures like tap, pinch, long press, zoom, and drag across mobile/tablet devices.	Total Gestures: 4,800 Gesture Type Distribution: 60% taps, 20% pinch, 12% zoom, 8% hold
Hovers	Count (#)	Measures pointer hover frequency over an ad (desktop or mobile-compatible elements).	Hover Rate: 12.4% avg Hover Duration: 1.6s Total Hovers: 8,750

Key Measure	Unit(s) of Measurement	How It's Measured	Derivatives & Example Outputs
Interactions	Count (#)	Total count of ad interactions — compliant clicks as well as swipes, scrolls, pauses, rewinds, fast forwards.	Interaction Rate: 16.2% Top Interaction Type: hover Total Count: 19,870
Pauses	Count (#)	Number of times a video or audio ad was paused by the user.	Pause Rate: 4.3% total Pauses: 1,250
Replays	Count (#)	Measures user-initiated replays or scrub-backs (counted once).	Rewind Rate: 0.7% Rewind Count: 210
Scrolls	Count (#), Pixels	Logs vertical or horizontal scroll actions and the depth achieved.	Avg Scroll Depth: 74% Max Scroll Depth: 92% Scroll Event Count: 2,680
Skips	Count (#)	Number of users who skipped the ad (e.g., after 5 seconds in skippable formats).	Skip Rate: 37% Median Skip Time: 5.2s Skip Count: 6,320
Swipes	Count (#)	Captures finger swipe ad interactions on touch-enabled devices.	Swipe Rate: 7.2% Total Swipes: 3,450
Multimedia & In-Ad Engagement	Count (#), Completion Rate (%)	Measures engagement with interactive creative components like polls, quizzes, games, or audio toggles.	Quiz Completion Rate: 41% Opt-in Game Interactions: 2,100 Audio Toggled: 850
Social Reactions	Count (#), Type	Captures likes, shares, emoji reactions, comments, and star ratings on social platforms or UGC environments.	Like Count: 1,250 Comments: 620 Share Rate: 3.2%
Screen Orientation Change	Count (#), Orientation State	Captures changes in device orientation (portrait ↔ landscape) during ad exposure or interaction (especially on tablet or mobile).	Orientation Change Count: 1,250 Landscape Entry Rate: 38% Portrait Exit Rate: 71%
Screen Resizing	Count (#), Pixel Dimensions	Detects changes to browser window, screen resolution, or app layout size (especially on desktop, tablet or mobile).	Resize Count: 540 Viewport Change: 1024×768 → 1280×720 Avg % Change in Viewport: 18%

Not all interactions represent the same sentiment and contribution to attention such as pausing or rewinding compared to skipping or closing. While it is difficult to measure sentiment and user intent of interactions, the attention model can account for this by properly incorporating and reflecting various signals such as duration and depth (which may decrease with “negative” interaction and increase with “positive” interaction). Further, clicks measured as part of interaction rate should be measured in a manner compliant with IAB/MRC click measurement guidelines including only counting clicks after video initiation (not including click-to-play before an impression may be counted).

In some cases, interaction may reduce attention scores, but drive greater value to advertisers such as a click that ceases further contribution to interaction rate and attention score, but results in the user navigating away from the initial property and landing on an advertiser’s site or product page as intended. [The MRC Outcomes and Data Quality Standards](#) encourage consideration and weight be given to received or resolved clicks (as defined by [IAB/MRC Click Measurement Guidelines](#)) and attention measurers should consider distinguishing and reporting this distinctly where known as well as reflecting this in attention models.

5. MEASUREMENT GUIDELINES FOR DATA SIGNALS

The data signals approach leverages quantitative signals derived from devices, ad-serving systems, and publisher metadata to measure exposure, engagement, and interactions with ads or content. While individual signals alone may not fully measure attention, combining them enables robust models to estimate the probability and depth of attention.

5.1. Data Signals: Minimum Requirements

For compliance in measuring attention using data signals, the following requirements must be met:

1. **Viewability:** Ads must meet MRC viewability standards (e.g., 50% pixels for digital and 100% pixels for cross-media in view for at least 1 continuous second for display and 2 continuous seconds for video) as well as specific OOH viewability or audibility requirements where applicable. Attention metrics reported that do not meet minimum viewability or audibility requirements must be separately identified as diagnostic in some manner (such as impressions or viewable/audible rate inputs); both presentations (with or without viewability/audibility) and aggregate attention measures (a combination of viewable/audible and non-viewable/audible inputs) are eligible for accreditation consideration with proper disclosure.
2. **Presence of User:** Reasonable assurance that a human user is actively present (or absence of indicators of non-presence or inactivity) during ad exposure where applicable, either based on direct measurement or inference based on signals and device type. Includes exposure zone signal capture for OOH. For digital environments, OM SDK/OMID is recommended as a standardized data collection framework to support presence detection and validation. See section 4 above for further guidance.
3. **Valid Impressions:** Metrics must be based on MRC sophisticated invalid traffic (SIVT)-filtered impressions.
4. **Audibility (Where Applicable):** For video and audio formats, non-muted audio and volume status and audibility duration (average or rate) should be tracked and reported. Audibility does not apply to static display ads or non-audio content.

5.2. Data Signals: Key Metrics and Dimensions

While the signals above serve as foundational inputs for attention modeling, their role and interpretation may vary depending on the dimension (content, placement, or creative) and metric category (exposure, cognitive load, emotional response, or user interaction and behavior). Measurement providers should document how each signal is collected, modeled, and interpreted in context, and provide transparency around sampling, device coverage, and resolution. Combining multiple high-quality signals across these dimensions enhances the robustness and explanatory power of attention models.

Required: *Must be tracked and/or reported for meaningful measurement.*

Considered: *Must be tracked and considered where meaningful.*

Optional: *Provides added value but is not mandatory.*

Note: Measurement services must empirically support their decision to exclude required measures that are not reflected in measurement on a recurring basis and generally disclose this to users.

Key Measure	Required	Considered	Optional
Exposure			
Ad Position	Placement		
Audibility	Creative or Content (video/audio)		Placement
Audible Time	Creative or Content (video/audio)		
Audible Quartiles/Completion	Creative or Content (video/audio)		Placement
Audio Connection (Headphones or Speaker) and Time		Creative or Content (video/audio)	
Closed Caption	Creative (video)	Creative (audio, if available)	
Contextual Relevance	Content or Placement (OOH)	Placement	Creative
Device Type	Creative		
dB SPL (or Levels/Steps)		Creative	
Environmental Metadata	Content or Placement (OOH)		
Presence of User	Creative	Placement	Content
Screen Orientation		Creative or Placement	Content
Screen Size	Content		
Scroll Depth		Content	
Session Duration	Creative or Placement	Content	
Share of Screen	Creative or Placement		
Time-in-View	Creative	Placement	Content
User Count	Creative or Placement		Content
Viewability	Creative	Placement	Content
Visibility	Creative	Placement	
Visibility Time	Creative	Placement	

Key Measure	Required	Considered	Optional
User Interaction and Behavior			
Audio Specific Interactions (Add to Playlist, Lyrics, About Artist, etc.)*	Creative (if applicable)		
Clicks*	Creative		
Audio Specific Interactions (Add to Playlist, Lyrics, About Artist, etc.)*	Creative (if applicable)		
Cursor Movement		Creative or Placement, and Content	
Exits	Creative (if applicable)		
Fast Forwards	Creative (if applicable)		
Gestures		Placement	Content
Hovers	Creative or Placement		
Interactions*	Creatives		
Multimedia & In-Ad Engagement*	Creative (if applicable)		
Pauses	Creative (if applicable)		
Replays	Creative (if applicable)		
Skips/Fast Forwards	Creative (if applicable)		
Swipes	Creative (if applicable)		
Scrolls	Creative (if applicable)		
Social Reactions*			Creative or Placement
Screen Orientation Change	Creative or Placement		
Screen Resizing	Creative or Placement		

**Note: Some interaction attributes may be considered outcomes (mid-funnel engagement outcomes, but not sales outcomes) depending on campaign objectives and should be considered when measuring attention.*

5.3. Data Signals: Key Considerations

1. **Signal Granularity:** Data signals must include timestamps fit for the unit of analysis.
2. **Combining Signals:** Exposure and engagement signals should be combined to reflect the different ways attention presents itself through indicators of focus and cognitive processing.
3. **Device-Specific Insights:** Device or digital OOH screen context should be considered as user behavior and ad experiences differ across devices and formats.
4. **Environmental Context:** Capture publisher metadata to contextualize attention metrics (e.g., high-relevance environments increase attention likelihood).
5. **Interaction Intent:** The inferred sentiment associated with interactions and therefore their contribution to attention should be considered.

5.4. Data Signals: Data Considerations and Transparency

To ensure clarity, the following data must be reported:

- **Source of Data:** Tools and platforms used (e.g., ad servers, SDKs, signal capture in OOH exposure zone).
- **Signal Granularity:** Precision of measurement (e.g., millisecond-level timestamps).
- **Viewability Status:** Filtering and grouping based on viewability.
- **Audibility Status:** Disclose how audibility and audible duration factor into estimates of attention and enable audible and volume duration reporting
- **Modeling Techniques:** Disclose use of modelling and any assumptions or signal combinations used to estimate attention. Also disclose quantifiable error margins and develop standardized accuracy benchmarks.

5.5. Data Signals: Media Channels Where Data Signal May Not Be Relevant

While data signals are highly effective for digital channels, there are environments where this approach may be less applicable or less accurate for measuring attention:

<u>Channel</u>	<u>Challenges</u>	<u>Alternative Methods</u>
Out-of-Home (OOH)	No device-level data; static formats lack viewability signals. While OOH intrinsically doesn't have signal data, mobile ad networks may be used as a proxy through exposure zone curation and geofencing.	Visual tracking (e.g., cameras), surveys.
Linear TV	Lacks real-time viewability or interaction data.	Panel-based data or big-data sources/approaches.
Radio/Audio-Only	Audio ads lack visual metrics like viewability and share of screen.	Audibility tracking, panel-based recall.
Shared Screens (CTV)	Shared environments complicate user-specific data (e.g., multiple viewers).	Presence monitoring, visual tracking tools.
Print Media	No device signals or interactivity data available.	Surveys, recall studies.

6. MEASUREMENT GUIDELINES FOR VISUAL TRACKING

The visual tracking approach leverages technologies such as eye tracking, gaze tracking, and facial coding to capture user focus, visual engagement, and emotional responses during ad or content exposure. By analyzing gaze patterns, fixation points, and facial expressions, this method provides precise insights into where, how long, and how intensely users visually engage with content.

Visual attention vendors may create predictive models of attention from ground truth data; using deterministic data to inform probabilistic models. Such models should consider different media and channels when designing models and deterministic data collection. Deterministic data collection is designed to reflect real-world scenarios for use and consumption within media or channels as closely as feasible and that biases that may be introduced by simulated or forced collection scenarios (such as simulated feeds or auto-scrolling) be properly studied and accounted for in resulting models.

Visual tracking generally involves establishment of a vision angle range considered to contribute to attention based on the eye fixation point relative to the distance between the participant's eyes and the screen and a predefined angular range used to define visual attention. Attention measurement providers using visual tracking must develop and empirically support (periodically) ranges or thresholds in these areas and disclose them generally (proprietary or discrete thresholds are not required to be disclosed) to measurement users.

6.1. Visual Tracking: Minimum Requirements

For compliance with attention measurement using visual tracking:

1. **Viewability:** Ads must meet MRC viewability standards (e.g., 50% pixels for digital and 100% pixels for cross-media in view for at least one continuous second for display and two continuous seconds for video as well as OOH viewability requirements where applicable) as well as audibility requirements where applicable. Attention metrics reported that do not meet minimum viewability or audibility requirements must be separately identified as diagnostic in some manner (such as impressions or viewable/audible rate inputs); both presentations (with or without viewability/audibility) and aggregate attention measures (a combination of viewable/audible and non-viewable/audible inputs) are eligible for accreditation consideration with proper disclosure
2. **Presence of User:** Validate user presence via visual tracking tools (e.g., gaze tracking, facial detection, OOH exposure zone signals).
3. **Audibility (Where Applicable):** For ads with audio components, audibility conditions (non-muted audio and volume level) must be tracked. Audibility does not apply to static content.
4. **Measurement Precision:** Eye tracking and facial coding tools must be calibrated for accuracy across measured devices, screen sizes, and environments (as some techniques are for specific device types). Also disclose quantifiable error margins and develop standardized accuracy benchmarks as well as any thresholds or ranges employed.
5. **Human-Centric Measurement:** Apply MRC sophisticated invalid traffic (SIVT) filtration to exclude invalid impressions or bots.
6. **Gaze Accuracy:** Gaze tracking must achieve sufficient precision to capture fixations, gaze duration, and gaze path complexity.

6.2. Visual Tracking: Key Metrics and Dimensions

The following metrics are foundational for attention measurement using visual tracking:

Required: *Must be tracked and/or reported for meaningful measurement.*

Considered: *Must be tracked and considered where meaningful.*

Optional: *Provides added value but is not mandatory.*

Note: Measurement services must empirically support their decision to exclude required measures that are not reflected in measurement on a recurring basis and generally disclose this to users.

Key Measure	Required	Considered	Optional
Exposure			
Ad Position	Creative or Placement		
Audibility			Creative
Audible Time			Creative
Closed Caption			Creative
Contextual Relevance	Content or Placement (OOH Screen)		
Device Type	Creative or Placement		
dB SPL			Creative
Environmental Metadata	Content or Placement (OOH Screen)		
Gaze Tracking	Creative or Placement		
Peripheral Focus			Creative or Placement
Presence of User	Creative or Placement		Content
Screen Orientation		Creative or Placement	Content
Screen Size	Content		
Session Duration	Creative or Placement	Content	
Share of Screen	Creative or Placement		
Time-in-View	Creative	Placement	Content
User Count	Creative or Placement		Content
Viewability	Creative	Placement	Content
Visibility	Creative	Placement	
Visibility Time	Creative	Placement	

Key Measure	Required	Considered	Optional
Cognitive Load			
Blinks	Creative	Placement	
Gaze Path Complexity	Creative	Placement	
Pupil Dilation	Creative	Placement	
Emotional Response			
Facial Sentiment	Creative		Content
Facial Valence Score	Creative		Content
User Interaction and Behavior			
Body Movement	Creative	Placement	Content
Clicks			Creative
Cursor Movement			Creative or Placement, and Content
Exits			Creative
Fast Forwards			Creative
Gestures			Content or Placement
Hovers			Creative or Placement
Interactions			Creatives
Multimedia & In-Ad Engagement			Creative (if applicable)
Pauses			Creative (if applicable)
Replays			Creative (if applicable)
Skips/Fast Forwards			Creative (if applicable)
Swipes			Creative (if applicable)
Scrolls			Creative (if applicable)
Social Reactions			Creative or Placement
Screen Orientation Change			Creative or Placement
Screen Resizing			Creative or Placement

6.3. Visual Tracking: Key Considerations

1. **Privacy and Consent:** Ensure user consent and comply with privacy laws (e.g., GDPR, CCPA) due to sensitive nature of gaze and facial data.
2. **Calibration and Accuracy:** Tools must be calibrated for screen size, device type, and viewing conditions to ensure precision. Tools include both the hardware and the software/models and these (machine learning models and other algorithms) need to be accurate and validated. Also disclose quantifiable error margins and develop standardized accuracy benchmarks.
3. **Environmental Factors:** Account for external factors like lighting, glare, and device angles that may affect accuracy.
4. **User Variability:** Allow the user to normalize data for user characteristics (e.g., age, emotional baselines) to account for variability.
5. **Dual-Modality Focus:** Combine gaze tracking with audibility for video ads to measure audio-visual engagement.
6. **Peripheral Vision:** Include peripheral focus to account for attention outside the primary focal area.
7. **Reporting Transparency:** Clearly document:
 - Tools used (e.g., cameras, software, wearables)
 - Calibration methods
 - Differentiation or discussion of focal attention vs. peripheral recognition
 - Size of data sets

6.4. Visual Tracking: Data Requirements and Transparency

To ensure clarity, the following data must be reported:

- **Clarification:** Tools must be calibrated to align gaze data with ad/content on-screen.
- **Latency and Granularity:** Data must include timestamps fit for the unit of analysis.
- **Environmental Control:** Account for lighting, glare, and device placement to ensure accuracy.
- **Presence Confirmation:** Validate user presence before measuring gaze or facial data.
- **Data Privacy:** Collect explicit user consent and comply with GDPR/CCPA requirements.
- **Contextual Integration:** Combine gaze data with content/context metrics (e.g., share of screen).
- **Viewability and Audibility:** Integrate visual tracking with viewability and audibility signals.

6.5. Visual Tracking: Media Channels Where Data Signals May Not Be Relevant

While data signals are highly effective for digital channels and increasingly so for TV, there are environments where this approach may be less applicable or less accurate for measuring attention:

<u>Channel</u>	<u>Challenges</u>	<u>Alternative Methods</u>
Out-of-Home (OOH)	Difficult to deploy individual eye-tracking hardware in public spaces, but present through wearables and visual recognition software as well as filmed driving scenarios (proxy).	Presence monitoring, panel-based surveys.
Radio/Audio-Only	No visual focus to measure; may rely on audio exposure and engagement or modelling from other media observations.	Audibility tracking, recall and panel-based surveys.
Print Media	Static print ads lack eye-tracking capabilities although readership models may be applied.	Sample and panel-based recall studies.
Linear TV	Limitation of device-level gaze tracking in non-digital broadcast environments; such deterministic data may be collected/measured and used to inform attention adjustments or models at a campaign level.	Panel-based data or big data sources/approaches.

7. PHYSIOLOGICAL AND NEUROLOGICAL OBSERVATIONS MEASUREMENT GUIDELINES

The physiological and neurological observations approach tracks users' physical and neurological responses to measure the cognitive and emotional aspects of attention. By monitoring metrics such as heart rate, brainwave activity, and skin conductance, this method provides insights into the user's physiological state and the mental effort required to process an ad or content. These metrics go beyond behavioral signals to reveal the depth and nature of attention, including emotional arousal, cognitive engagement, and focus intensity.

7.1. Physiological and Neurological Observations: Minimum Requirements

For compliance with attention measurement using physiological and neurological observations:

1. **Viewability:** Ads must meet MRC viewability standards (e.g., 50% pixels for digital and 100% pixels for cross-media in view for at least one continuous second for display and two continuous seconds for video as well as OOH viewability requirements where applicable) as well as audibility requirements where applicable. Attention metrics reported that do not meet minimum viewability or audibility requirements must be separately identified as diagnostic in some manner (such as impressions or viewable/audible rate inputs); both presentations (with or without viewability/audibility) and aggregate attention measures (a combination of viewable/audible and non-viewable/audible inputs) are eligible for accreditation consideration with proper disclosure
2. **Presence of User:** Direct confirmation of a human user's active presence (or absence of indicators of non-presence or inactivity) is required using deterministic physiological or neurological data.
3. **Valid Data Collection and Calibration:** Devices such as EEG sensors and heart rate monitors must be validated and calibrated for accuracy across studies. Also disclose quantifiable error margins and develop standardized accuracy benchmarks.
4. **Controlled Environment:** Data collection should occur in controlled or semi-controlled environments to minimize noise, lighting, and temperature variability.
5. **Human-Centric Measurement:** Apply MRC sophisticated invalid traffic (SIVT) detection to exclude non-human data.
6. **Audibility (Where Applicable):** For audio or video ads, audibility metrics must be collected and reported where applicable.

7.2. Physiological and Neurological Observations: Key Metrics and Dimensions

The following metrics are foundational for attention measurement using data signals:

Required: *Must be tracked and/or reported for meaningful measurement.*

Considered: *Must be tracked and considered where meaningful.*

Optional: *Provides added value but is not mandatory.*

Note: Measurement services must empirically support their decision to exclude required measures that are not reflected in measurement on a recurring basis and generally disclose this to users.

Key Measure	Required	Considered	Optional
Exposure			
Ad Position	Creative or Placement		
Audibility		Creative	
Audible Time		Creative	

Key Measure	Required	Considered	Optional
Closed Caption		Creative	
Contextual Relevance	Content or Placement (OOH Screen)		
Device Type	Creative or Placement		
dB SPL		Creative	
Environmental Metadata	Content or Placement (OOH Screen)		
Presence of User	Creative or Placement		Content
Screen Orientation		Creative or Placement	Content
Screen Size	Content		
Session Duration	Creative or Placement	Content	
Share of Screen	Creative or Placement		
Time-in-View	Creative	Placement	Content
User Count	Creative or Placement		Content
Viewability	Creative	Placement	Content
Visibility	Creative	Placement	
Visibility Time	Creative	Placement	
Cognitive Load			
Beta Wave Activity	Creative	Placement	
Baseline Resting Beta/Gamma	Content		
Gamma Wave Activity	Creative		
Heart Rate Variability (HRV)	Creative (if applicable)	Content (if applicable)	
Response Time			Creative, Placement or Content
Task Performance Accuracy			Creative, Placement or Content
Self-Reported Cognitive Load			Creative, Placement or Content

Key Measure	Required	Considered	Optional
Emotional Response			
EEG Activity	Creative	Content	
Emotion Variability	Creative	Content	
Gamma Wave Activity	Creative	Content	
Heart Rate Variability (HRV)	Creative	Content	
Self-Reported Emotion	Creative	Content	
User Interaction and Behavior			
Clicks			Creative
Cursor Movement			Creative or Placement, and Content
Exits			Creative
Fast Forwards			Creative
Gestures			Content or Placement
Hovers			Creative or Placement
Interactions			Creatives
Multimedia & In-Ad Engagement			Creative (if applicable)
Pauses			Creative (if applicable)
Replays			Creative (if applicable)
Skips/Fast Forwards			Creative (if applicable)
Swipes			Creative (if applicable)
Scrolls			Creative (if applicable)
Social Reactions			Creative or Placement

7.3. Physiological and Neurological Observations: Key Considerations

1. **Controlled Environments:** Minimize noise, temperature, and lighting disruptions for accurate biometric data collection.
2. **Signal Latency:** Account for delays in responses like heart-rate variability (HRV) or Galvanic skin response (GSR) after exposure to stimuli.
3. **Individual Variability:** Normalize data to account for differences in baseline emotional states and physiological reactions.
4. **Integration of Signals:** Combine metrics (e.g., HRV + EEG) to provide a more comprehensive view of attention.
5. **Privacy and Consent:** Collect explicit user consent and ensure compliance with GDPR and CCPA.
6. **Calibration and Validation:** Regularly calibrate devices to maintain accuracy across environments and participants.
7. **Reporting Transparency:** Include documentation of tools, metrics, and calibration methods, clearly indicating cognitive vs. emotional findings.
8. **Legal Limitations:** In some countries, some psychological, neurological monitoring, or other methods are prohibited for marketing purposes; these limitations should be adhered to where applicable and considered.

7.4. Physiological and Neurological Observations: Data Requirements and Transparency

To ensure clarity, the following data must be reported:

- **Viewability Integration:** Ensure biometric data collection aligns with MRC-compliant viewability standards.
- **Audibility Integration:** Track audibility conditions where applicable (e.g., audio + biometric signals).
- **Calibration:** Tools like EEG caps and heart-rate monitors must be regularly calibrated.
- **Granularity:** Include millisecond-level timestamps for signal alignment with ad exposure.
- **Controlled Environments:** Collect data in consistent, controlled settings to reduce external interference.
- **Signal Integration:** Combine multiple signals (e.g., HRV + GSR) to provide holistic insights.
- **Privacy Compliance:** Obtain explicit user consent and ensure data processing complies with privacy laws.

8. PANEL AND SURVEY-BASED MEASUREMENT GUIDELINES

The panel and survey-based approach relies on actively or passively tracked and self-reported data (such as claimed attention) from participants to measure attention, engagement, emotional response, brand recall, and perception of ads or content. These methods may also use media measurement panels, surveys, focus groups, and brand health studies to gather qualitative and quantitative insights into user attention and ad effectiveness. These methods provide essential perspectives on sentiment, recall, and brand impact and also can serve as a strong validation and calibration asset for other data sources or measurement approaches.

8.1. Panel and Survey-based: Minimum Requirements

For compliance with attention measurement using panel and survey-based methods in addition to base attention requirements discussed above:

1. **Sampling Quality and Representation:**
 - Panels must be representative of the target audience (e.g., geography, age, gender, socio-economic status).
 - Sample size must be statistically reliable and aligned with campaign goals.
2. **Survey and Panel Design:**
 - Use standardized scales (e.g., Likert, semantic differential) for quantitative responses.
 - Include open-ended questions for qualitative insights.
 - Ensure unbiased, non-leading language.
3. **Timely Data Collection:** Recall surveys should occur immediately or within a reasonably short time post-exposure to minimize recall bias. Follow-up surveys to measure delayed recall and long-term brand impact are permissible.
4. **Participant Privacy and Consent:** Obtain explicit participant consent, ensuring compliance with privacy laws like GDPR and CCPA.

For sample-based measurement of any kind, the measurement organization shall be diligent about ensuring valid projections are made and that the sample is representative of the population targeted for measurement for probabilistic samples or that non-probabilistic samples properly account (via weighting or data adjustment) for inherent biases and are subject to robust quality control. Methods for weighting or adjusting data to ensure projectability shall be supported by empirical study, and these empirical studies shall be updated periodically. Standard errors around sample-based projections shall be disclosed along with the impact of known non-systematic error and bias.

Limitations in measurement of the intended universe (further defined below in section 11) due to technical limitations of measurement or intentional measurement exclusions, including any that result in systematic biases (for example, non- or under-sampled geographic areas, or non-sampled/measured respondent types especially any race or ethnicity), shall be fully disclosed and quantified, where known and quantifiable. As part of this requirement, measurement organizations shall also consider environments where measurement is not permitted such as platforms, publishers, hardware or other environments where measurement assets are either actively restricted, due to privacy concerns (discussed at length later in these guidelines) or other reasons, or are not accessible by a specific measurement technique. Measurement estimates shall not be projected to adjusted coverage, but instead to the universe intended for measurement.

Measurement organizations must periodically assess any measurement limitations and resulting biases including whether they can either be mitigated further or corresponding disclosures shall be updated. Campaign windows must also be considered when assessing coverage of Attention measurement and the requirements for assessing limitations discussed above. Measurement organizations are encouraged to consider additional industry guidelines in this area. Additionally, measurement organizations seeking MRC accreditation are required to adhere to relevant MRC minimum standards

and the *MRC Digital Audience-Based, Cross-Media and Outcomes and Data Quality Measurement Standards* in this area, where applicable.

First-party collected data via panels or surveys whereby respondents directly affirm exposure to ads can mitigate the need to measure viewability, audibility, IVT, or presence of a user; however these collection methodologies must be subject to rigorous quality control and other survey research standards to reduce biases, false positives/negatives and other errors. Strong empirical support that is defensible and auditable is required to demonstrate that such methodologies or studies do not require direct IVT filtration.

8.2. Panel and Survey-based: Key Metrics and Dimensions

The following metrics are foundational for measuring attention through panel and survey-based methods, helping to provide a multi-dimensional view of how participants respond to advertising exposure. Each metric plays a role in assessing attention, emotional response, cognitive processing, and brand impact.

- **Ad Recall:** Ad recall specifically gauges if participants remember seeing the particular ad creative itself and may be aided or unaided. This is generally assessed with direct questions post-exposure, such as, "Do you recall seeing this ad?" It gives insight into whether the execution, not just the brand, made an impression.
- **Ad Liking:** Ad liking measures participants' affinity toward the ad itself, independent of how they feel about the brand. Typically, this is captured using rating scales to assess whether the ad was liked or disliked. A well-liked ad can enhance attention and increase sharing behaviors. Sample question: "How much did you like this ad?"
- **Ad Relevance Perception:** Ad relevance perception captures whether the ad felt personally relevant or meaningful to the participant. Ads perceived as highly relevant often garner higher levels of attention and emotional engagement. Sample question: "How relevant was this ad to you personally?"
- **Attention Residual (Long-Term Recall or Persuasion Lift):** Attention residual measures whether participants retain memory of the ad or demonstrate shifts in attitude or intent days or even weeks after exposure (accounting for repeat exposure). It's essential for understanding whether an ad leaves a lasting impact beyond immediate impressions. Sample question: "Do you remember seeing this ad within the past few weeks?"
- **Behavioral Intent Beyond Purchase:** Behavioral intent beyond purchase measures the participant's likelihood of taking non-purchase actions after seeing the ad, such as seeking more information, visiting a website, or sharing the ad. Not every success story ends in a sale—and these behaviors can be powerful indicators of future engagement. Sample question: "How likely are you to visit the brand's website after seeing this ad?"
- **Brand Favorability:** Brand favorability assesses shifts in how positively participants view the brand after ad exposure. It provides insight into how well the ad enhances brand perception and affinity. Sample question: "After seeing this ad, how favorable is your opinion of the brand?"
- **Brand Preference:** Brand preference measures participants' stated choice or favorability between competing brands after ad exposure. It goes a step beyond brand favorability by capturing whether the ad shifted a participant's preference (based on baseline pre-exposure preference) toward the advertised brand when compared directly to others in the same category. It's an important metric for understanding competitive positioning and brand loyalty intent. Sample question: "Which brand would you prefer to purchase from after seeing this ad?"
- **Brand Recall:** Brand recall measures whether participants can remember the brand associated with the ad. This can be captured unaided ("Which brands do you remember seeing?") or aided ("Do you recall seeing [Brand X]?"). It helps assess spontaneous versus prompted memory of brand presence.
- **Brand Recognition:** Brand recognition evaluates participants' ability to correctly identify the brand when shown visual, audio, or other brand-related cues. Recognition taps into memory retrieval and brand familiarity, helping to assess how well the branding cues were integrated.

- **Brand Sentiment:** Brand sentiment measures participants' emotional perceptions of the brand—whether positive, neutral, or negative—after ad exposure. It highlights any shifts in brand image, whether subtle or significant. Sample question: "After seeing this ad, how would you describe your feelings toward the brand?"
- **Cognitive Load Perception:** Cognitive load perception measures how difficult or easy participants found it to understand and process the ad content. Ads that are too complex may dampen attention and recall. Sample question: "How easy or difficult was it to understand the message of this ad?"
- **Emotional Intensity:** Emotional intensity captures the *strength* of emotions—not just the type—triggered by the ad. High emotional intensity, whether positive or negative, tends to amplify memory and attention effects. Sample question: "How strongly did you feel emotions while watching this ad?"
- **Message Association:** Message association assesses whether participants associate the intended message or key themes of the ad with the correct brand. It measures successful integration of brand and messaging. Sample question: "Which brand do you associate with the message you saw in the ad?"
- **Message Recall:** Message recall measures whether the participant retained the core ad message or takeaway after exposure. This focuses purely on content retention, even if brand linkage isn't perfect. Sample question: "What was the main message of the ad you saw?"
- **Purchase Intent:** Purchase intent evaluates how likely participants are to consider purchasing the product or service after exposure to the ad. It's often treated as a proxy for lower-funnel impact and future sales lift. Sample question: "How likely are you to purchase this product after seeing the ad?"
- **Second-by-Second Attention Mapping:** Second-by-second attention mapping is used when passive panels or biometric proxies are employed, allowing researchers to track changes in attention, emotion, or engagement moment-to-moment throughout the ad. It identifies the high and low points that otherwise get lost in aggregate scoring.
- **Self-Reported Attention:** Self-reported attention captures the participant's perceived level of focus on the ad during exposure. While subjective, it is an important measure of engaged viewing. Sample question: "How much attention did you pay to this ad?"
- **Self-Reported Emotional Response:** Self-reported emotional response captures the emotional states felt during or after ad exposure, providing a window into how the content resonated at a human level. Sample question: "How did this ad make you feel?"
- **Task Performance Accuracy:** Task performance accuracy measures comprehension of the ad's content through quiz-style tasks after exposure. It provides a more objective signal of cognitive processing and understanding. Sample prompt: "Answer these questions based on what you saw in the ad."

8.3. Panel and Survey-Based: Key Considerations

1. **Bias Mitigation:** Panels should seek to minimize bias by ensuring coverage of meaningful aspects of the universe being measured or projected to by variables that may exhibit different attention behavior. Surveys should use immediate post-exposure to minimize memory decay. Surveys should be anonymous surveys with randomized questions. Non-response bias and other factors should be considered.
2. **Sampling Quality:** Ensure audience diversity (e.g., age, gender, geography, device type, etc.) for accurate representation. Weight responses to align with target audience profiles.
3. **Combining Signals:** Pair panel or survey data with quantitative methods like visual tracking or data signals for validation. For example, compare self-reported emotional responses with facial coding outputs.
4. **Fatigue:** Limit surveys to concise and focused questions to ensure response quality and create panel tenure limits.
5. **Delayed Recall:** Include follow-up surveys (24 to 72 hours post-exposure) to measure long-term recall and brand impact.

6. **Transparency in Reporting:** Disclose sampling methods, survey timing, and demographic representation. Report metrics separately for viewable and audible exposures.

8.4. Panel and Survey-based: Data Requirements and Transparency

To ensure clarity, the following data must be reported:

- **Sampling Methodology:** Specify recruitment methods, sample size, demographics, and representation.
- **Exposure Validation:** Confirm participants were exposed to viewable and/or audible content.
- **Survey Timing:** Report whether surveys were conducted immediately or delayed post-exposure.
- **Fraud Controls:** Include attention-check questions, deduplication, and invalid response removal.
- **Questionnaire Design:** Use standardized, non-leading scales, and randomized question structures.
- **Viewability and Audibility:** Verify and disclose where valid viewable/audible impressions contribute to results.
- **Data Privacy:** Obtain explicit participant consent and ensure GDPR/CCPA compliance.
- **Transparency in Reporting:** Disclose demographic data, sample size, timing, and methodological limits as well as bias and error where known and quantifiable.

9. DATA QUALITY

This section heavily references the MRC *Multi-Channel Digital Video Data Capture, Accumulation and Processing Guidelines*, the MRC *Digital Audience-Based Measurement Standards*, the MRC *Outcomes and Data Quality Standards* and the MRC *Guidelines Concerning Data Integration* documents.

Attention measurement providers are expected to comply with guidance contained in these documents where applicable, specifically considering the following areas:

Data Sources and Attributes

- Data Source Selection and Qualification
- Understanding Data Fields, Definitions
- Data Quality Assessments – Source and Field Levels
 - Age of Information
 - Accuracy Expectations
 - Frequency of Updating
 - Frequency of Change
- Determination of Data Relevant for Linkages and/or Reporting
 - Empirical Support
 - Validation

Ingestion and Maintenance of Relevant Data

- Gathering of Trending and Monitoring Statistics by Source
- Completeness and Accuracy of Changes Applied by Source
 - Scheduled Frequency, etc.
- Maintenance of Data Quality Conclusions

Data Resolution, Assignment/Linkage, and Appending Processes

- Establishing and Adjusting Resolution and Linkage Processes
 - Empirical Support for Processes and Algorithms
 - Statistical Assessment of Probabilistic Structures and Associations
 - Outcome Testing
- Data Mapping, Transfer Coding
- Match, Merge, Entity Resolution
 - Reference Data Sources and Accuracy
 - Priority of Data Sources
 - Validation
 - Application of Procedures
 - Internal Quality Controls

Linkage and Underlying Data Adjustment and Correction Processes

- Sources of Actionable Information
- Ongoing Maintenance Procedures
 - Current, Historical
- Internal Quality Controls

Data Accumulation and Reporting

- Variable Selection and Reporting Granularity
 - Consistency With Privacy Guidelines
- Presence of Methods Disclosures and Boilerplate
- Pre-Issuance Inspection
 - Data Trending
 - Exception Handling
- Customer Feedback, Considerations, Adjustments

Disclosure Requirements

- General
- Accompanying Reported Data
- Error Correction and Reporting

Information Technology Controls

- Data Access Controls
- Systems Development Life-Cycle
- Business Continuity

9.1. Data Rules

Data adjustment and data rules are a highly critical aspect of a measurement service. Often the underlying measurement transactional data or other data sources for assignment or integration can have underlying problems/situations where individual data elements are suspect, incomplete, corrupt, missing, or otherwise outside the boundaries of quality expectations. In these cases, data editing processes and data rules are generally used to eliminate, clean or possibly modify these problematic conditions within the data records. Data editing and data rules themselves are considered quality control.

Additionally, data rules include routine processing rules that are applied to raw collected data in the process of converting that data to usable records for measurement reporting. For example, closing gaps in collected data, bridging between data records or crediting broader levels of estimates from more discrete data.

The measurement organization shall monitor the extent of data rules applied within reported results. Significant types of data rules shall be disclosed with accompanying volumes in reports to customers or accompanying methodological reference materials.

It may be common to have data rules which arbitrarily exclude outliers, since that is a standard practice in engineering, however it can be a source of bias which can exclude large numbers of real consumers that differ from the mean or general population. Empirical support therefore is needed to justify such broad exclusionary policies.

There are many known cases of more harm than good being done by excluding large amounts of census-type data for lack of a specific demographic identifier or lack of compliance with some other data rule. Where the loss of sample is material from such practices, the measurer must comprehensively study this practice to support these data rules.

9.2. Empirical Support

A measurement service shall have appropriate empirical support of data rules and decision processes and this support shall be periodically challenged and updated to reflect changing conditions. The measurement organizations shall have a dedicated data quality function, a key responsibility of which is to determine and monitor the application of data rules within general measurement, data assignment, or data integrations processes. Empirical evidence gathered by the measurement service to support data rules as required above shall at minimum establish that the data rules do not lead to systematic over- or under-statements of audience or biases in terms of media or publisher source, device or browser types, placements or formats, product categories, brands, channels, programs, or segments.

Data rules must be initially and periodically validated based on some first-party observations either by the measurement organization or partner third-party. Measurement organizations shall perform, document and periodically update empirical analyses to support their data adjustment methodologies and determine whether modifications to data adjustment procedures should be made. Measurement organizations shall give specific consideration regarding the appropriateness of the current variables and whether minimum/maximum cap values shall be established. It is expected that such empirical analyses are performed at least annually or within reasonable proximity of an annual cadence based on production cycles. Such empirical analyses may be supplemented with auditable support that demonstrate that the data editing or collection environment is not expected to have changed since the last analysis.

Randomized control trials (RCTs), A/B testing, or non-experimental methods (see k-fold cross-validation in the Modeling section below) may be used as a form of validation of attention methodologies that include direct exposure measurement and such use is strongly encouraged by these guidelines. Such validation methods rely on comparing attention between equivalent groups. Equivalence of treatment and control groups across all other aspects other than the treatment being analyzed (variable or date rule) distinguishes the effects on attention from baseline conversion behaviors. Given this, at a high level, validation must (1) clearly identify and define treatment, (2) show that there was no contamination between group membership, and (3) provide evidence that treatment and control groups are equivalent and that any sampling biases are accounted for. There are a variety of approaches that can be used for validation depending on the methodology implemented. Validation may include some or all of:

- Documentation of how the method implements randomization and holds out users;
- Comparing averages of demographics and other features to confirm they are the same between test and control;
- Confirming randomization produced the intended split between test and control;
- “Truth sets” such as directly observed first-party data—including surveys, studies, panel measurements, and other analytics sources; and
- Specifically for non-experimental methods:
 - Quantifying sensitivity of results to different design choices (such as included confounders, hyperparameter values, etc.)
 - Placebo analysis

Validation processes should use historical data for predictive accuracy tests and measure bias across demographic segments.

Such validation should be conducted on a periodic and ongoing basis and should involve a subset of the experiment groups, selected and stratified to represent the same variables used to construct the experiment. Documentation of these validation processes and these results must be retained for audit purposes and errors observed as part of the validation process must both be disclosed to measurement reporting end users and utilized to adjust future experiments.

9.3. Documentation and Consistent Application

A measurement organization shall have edits documented including an assessment of their impact so that an independent party can determine the purpose and specific operational parameters of the edit being applied. Data edits shall be consistently applied between measurement periods and significant changes to editing processes shall be disclosed with estimated impacts on reported results.

9.4. Quality Control Over Data Sources

Measurement organizations shall work with vendors and data providers to understand the processes to append data to records, including procedures in situations where the vendor or provider is unable to append specific information to a person, household or record when no direct source information is available. This may be accomplished through routine data qualification, vetting and onboarding processes as well as ongoing quality control and logic checks. **At minimum, measurement organizations should subject external or third-party inputs into all attention measurement approaches to auditable ongoing quality control processes, or these inputs should be externally audited.**

Appropriate transaction records should be maintained for attention measurements. If changes are made to this information through the information processing of the measurement organization, these changes should be documented and care should be exercised to not bias or distort the measurement process.

Measurers should apply robust validation and quality control techniques continuously to collected and reported data including cleaning and editing functionality. Such techniques should be periodically

monitored and assessed. Measurers should consider whether other data validation processes should be included as part of routine and ongoing data inspection, validation, and editing.

The measurement organizations should maintain processes to identify, assess, and potentially act-upon for disclosure purposes, situations where underlying transactional measurement data, or the data used in attention measurement processes, have significant gaps or missing intervals for a reporting period. This includes non-reporting or suspect data transfer conditions, data interruptions, natural disasters that may cause data gaps, system failures, or other conditions that may suppress normal data acquisition levels. These gaps should be assessed for significance using judgment as to the use and significance of the information from the standpoint of measurement service customers (i.e., which data is important for commerce or other forms of decision making).

Data gaps should be considered in disclosures on the “projection validity” of the research as compared to the population being measured for the reporting period. If a measurement service decides that data gaps are significant enough to curtail measurement reporting for a period or for a geographic area (or if such gaps are assessed and a measurement service decides to report), this decision should be supported by appropriate empirical (preferably statistical) analysis and retained for auditors and later customer review. Specific non-reporting situations should be reported to customers with the underlying empirical support summarized.

Strategies for mitigating data gaps such as statistical interpolation or sensitivity analyses are recommended.

MRC audits will generally require certain verification of upstream processes maintained or relied upon by vendors. This does not necessarily mean direct audit of upstream processes or data sources (although MRC audit and accreditation would obviate many audit requirements as part of vendor measurer audits), but means that attention measurers are responsible for developing data qualification criteria as well as quality control processes over ingestion and use of third-party datasets that would be exposed to audit as part of the MRC accreditation process.

9.5. Data Aggregation Controls

A measurement service should maintain appropriate data aggregation controls to ensure that material information is not lost in the collection process and that no changes to the collected data are made, unless through organizationally authorized editing or data adjustment procedures. These aggregation controls can be real-time run-stream or batch oriented—but they should be periodically tested and monitored by the measurement services. Underlying data aggregation controls and completeness checking statistics should be retained for auditor review for a period of at least 12 months (considering data retention restrictions).

9.6. Quality Control Integrity Checks

Individual data collection functions should include data completeness checks that are appropriately structured to minimize data loss, and flag situations where data gaps exist. These controls should be periodically tested and monitored by the measurement service.

The measurement service should apply appropriate, preferably statistically-based testing to missing data conditions or data gaps to determine the impact of these situations on reported measurement results.

Missing data or data gaps can be caused by systematic problems (generally recurring issues within the data that persist over time or between similar data records) or they can be one-time data outages or natural disasters. Measurement service processes may vary based on the type of issue encountered. By their nature, systematic data issues are recurring and they are generally caused by specific conditions within data capture mechanisms or the technical environment at the time of data collection/creation. In general, these are error conditions or failures and most are attributable to

mistakes within the software or technical structure of data capture. Systematic data issues should be assessed for materiality based on the nature and extent of their occurrences and the impact of each occurrence.

10. MODELING

Deterministic or observed measurement approaches to attention or data elements should be distinguished from probabilistic or modelled approaches and data elements. Models, where utilized and appropriate, selected for attention measurement must have empirical support that they are fit for their intended purpose (such as linked to validated attention where attention is modelled, as well as campaign objectives and outcomes where used to predict such outcomes) regardless of the measurement method used. This includes empirical support for the model selection process. This can be achieved, for example, by performing k-fold cross-validation on modeled data and selecting the model that produces results on a repeated basis. Such empirical support must consider the attention measurement method utilized and available deterministic data as well as include policies to periodically validate and improve selected models. Whether the models employed are existing solutions for similar use cases or internally developed, documentation must be maintained related to how the models achieve stated objectives and regarding methodological decisions.

Further, robust documentation must be maintained related to data and application infrastructure including details on data sources, recency and time to live policies, as well as analytical platforms used. Also, measurement organizations utilizing models for attention must subject these models to documented oversight and governance procedures including decision routing, role designation, and responsibilities. Models should be subject to validation, benchmarking and independent audit of underlying data, and model performance for compliance with these guidelines.

Training and test data is critical to model functionality. Measurement organizations must develop and support training and test data source qualification requirements including standards for inclusion and exclusion metrics, data granularity, level of detail and data completeness, variability, and reliability as well as applicable bias tests and analyses. Use of synthetic data may be useful for logical and system tests, but presents challenges and potential bias when used for training data. Training data should be based on deterministically collected and validated data. Synthetic data is defined as artificially generated data that does not originate from real world observations or events. The following are not considered synthetic data: feature engineering based on real world data, probabilistic attributes generated using real data as inputs, transformed or aggregated data based on actual observations, and augmented data that preserves the fundamental properties of real data.

A process for algorithm training and test design must also be developed and documented, including algorithms and techniques considered for evaluation, and the evaluation standards used to select an algorithm, as well as performance analyses related to the efficacy of the algorithms including, but not limited to:

- Classification Accuracy
- Recall (True Positive Rate)
- Precision
- False Positives and Negatives
- F1 scores
- R-Squared and Adjusted R-Squared
- Root Mean Squared, Mean Absolute, Mean Absolute (#, %), and Symmetric Mean
- Absolute Error
- Akaike and Bayesian Information Criterion
- Heteroscedasticity and Durbin Watson Tests for Autocorrelation
- P-Value with Bonferroni Correction
- Variable Inflation Factors for Multicollinearity

Algorithmic biases including any systematic exclusion or differential performance of any relevant cohort, group, or demographic must be considered, disclosed, and an attempt must be made to address. In this sense, algorithmic bias means any structured missingness in training or ground truth data underlying an

algorithm or tendency of the algorithm itself to introduce differential bias such as under- or over-statement of results for a particular group, data type or cohort.

Model validation should be performed at least annually and utilize fresh deterministic datasets, with results retained (including previous results and versions) and audited for transparency.

Finally, measurement organizations must provide disclosures to measurement reporting end users that describe any sampling procedures as well as tests performed to assess set dimensionality (time, size, etc.), bias controls, and representativeness as well as cross-validation and empirical analysis and the cadence for performance actualization. The following additional requirements related to universe and coverage as well as the requirements for weighting and data adjustment in section 11 should also be applied to modeling where applicable.

10.1. Establishing Universe

Generally, a demographic/geographic/media/device universe or coverage definition stated on the basis of population size is required for audience measurement, including attention. These may be customized (or limited) based on the specific attributes of the measured audience. The source used for such universe definitions must be referenced and shall be from generally accepted independent industry, governmental, or non-governmental (NGO) third-party sources, as well as derived by measurement vendors directly as part of high quality observation or surveys. These figures are critical for the projection of audiences and attention. This data shall be updated at regular periodic intervals and preferably be stated on a basis that corresponds to the audience targets and weighting variables being employed by the measurement organization.

Adjustments to universe estimates such as surveys conducted to update them or obtain more granular estimates than available from generally accepted sources shall be disclosed, supported by empirical evidence that the collection methodology and collected data is representative of the universe being measured, and subject to robust quality control.

Universes used for attention measurement and projection shall utilize units appropriate to the underlying metrics, including whether those are on the basis of persons or households. Methods to convert or translate persons or household level universe estimates shall be empirically supported. See the MRC *Digital Audience-Based Measurement Standards* and MRC *Cross-Media Audience Measurement Standards (Phase I Video)* for further guidance regarding universe definitions.

10.2. Coverage

Attention may be measured through samples of persons and/or devices and projecting the activities of these samples to the population of users and/or devices. This is traditionally known as panel-based or sample-based measurement. For sample-based measurement of any kind, the measurement organization shall be diligent about ensuring valid projections are made and that the sample is representative of the population targeted for measurement for probabilistic samples, or that non-probabilistic samples properly account (via weighting or data adjustment) for inherent biases and are subject to robust quality control. Methods for weighting or adjusting data to ensure projectability shall be supported by empirical study, and these empirical studies shall be updated periodically. Standard errors and related variability around sample-based projections shall be disclosed along with the impact of known non-systematic error and bias.

Measurement can also be done through census-like counting techniques, essentially tracking instances of consumption through tracking assets for all measurable accesses or by using comprehensive, large-scale data sets. Despite the inference of “census” there are likely to be certain limitations of coverage (harder to reach or measure demographic cohorts, incompatible types of players or browsers, excluded technology types, functionality limitations in certain mobile devices, lack of digital or cable access, less available or robust measurement of media such as offline or non-addressable, privacy restrictions, and opt-out, etc.); therefore, it is important for the measurement reporting end users to fully

understand the true coverage of the reported estimates and what may be excluded from the measurement organization's ability to measure. The coverage of, and material limits or exclusions to, coverage of audience measurement are required to be described by the reporting entity.

Limitations in measurement of the intended universe due to technical limitations of measurement or intentional measurement exclusions, including any that result in systematic biases (for example, non- or under-sampled geographic areas, or non-sampled/measured users or device types), shall be fully disclosed and quantified, where known and quantifiable. As part of this requirement, measurement organizations shall also consider environments where measurement is not permitted such as platforms, publishers, hardware, or other environments where measurement assets are either actively restricted due to privacy concerns (discussed at length later in this document) or other reasons, or are not accessible by a specific measurement technique. Measurement estimates shall not be projected to adjusted coverage, but instead to the universe intended for measurement.

Measurement organizations must periodically assess any measurement limitations and resulting biases including whether they can either be mitigated further or corresponding disclosures shall be updated. Campaign windows must also be considered when assessing coverage of outcomes measurement and the requirements for assessing limitations discussed above. Measurement organizations are encouraged to consider additional industry guidelines in this area. Additionally, measurement organizations seeking MRC accreditation are required to adhere to relevant MRC minimum standards and the *MRC Digital Audience-Based Measurement Standards* in this area.

11. WEIGHTING AND DATA ADJUSTMENT

Measurement organizations shall give consideration to the level of granularity applied for weighting and data adjustment processes, dependent on how those adjustments impact reported metrics. Data adjustment and weighting processes shall be appropriately disclosed to users of the data including variables used and weighting applied.

Measurement organizations shall enumerate known types of missing data and any limitations shall be carefully studied. Efforts must be taken for any biases that are missing data or it may introduce coverage gaps. Measurement organizations shall quantify the effects of known limitations and disclose the potential impact to measurement reporting end users.

Weighting, data adjustment, and modeling procedures must be initially and periodically empirically supported and disclosed to users of data with quantification of impact. It is expected that such empirical analyses are performed at least annually or within reasonable proximity of an annual cadence based on production cycles. Such empirical analyses may be supplemented with auditable support that demonstrate that the data editing or collection environment is not expected to have changed since the last analysis.

Measurement providers must provide full disclosures to end users of attention data including data adjustment, ascription, and editing as well as weighting, base calculations, and the full spectrum of underlying research. It's particularly important to describe methods, gaps, or known limitations applicable in each measurement aspect with underlying assumptions clearly stated.

12. PRIVACY CONSIDERATIONS

Privacy regulations are not a barrier to be engineered around, but hard and fast requirements that must be adhered to and that must be considered when designing attention measurement methodologies. These guidelines are not intended to, and do not provide measurers with reasons or permission to deviate from privacy requirements. While measurement requirements and related auditing is not intended to directly assess privacy compliance, along with the general principles discussed in this document, data collection, processing, and transmission processes are encouraged to adhere to applicable privacy regulations and requirements. Attention measurers should consider whether proper permissions and access rights are present including whether they clearly state in their privacy policies why they are collecting information and how it may be used and shared. A general practice of data minimization or collecting, storing, and utilizing only data required for measurement with permissible use is strongly encouraged. IAB and MRC acknowledge that privacy requirements may prevent inclusion or otherwise require anonymization of some data fields, particularly those related to user identifying or targeting data.

Additionally, best practices such as the use of strong encryption standards for data storage and transmission, implementation of robust anonymization or pseudonymization techniques where applicable, and strict adherence to global privacy regulations such as GDPR, CCPA, and other emerging frameworks are encouraged to enhance data security and privacy protections in attention measurement processes.

Measurement organizations are encouraged to consider and comply with additional industry and regulatory guidelines and requirements in this area where applicable. Localized privacy regulations must also be considered. Privacy regulations as they emerge should be monitored and evaluated by the measurement organization as soon as known to the extent they impact attention measurement. Additionally, measurement organizations seeking MRC accreditation are required to adhere to relevant MRC minimum standards in this area. Future browser and identification restrictions are likely to continue to evolve during and after these guidelines are produced and IAB and MRC will make efforts to stay abreast of and consider these throughout, as well as to update these guidelines as warranted. While restrictions and data limitations in attention measurement may not be able to be directly addressed without running afoul of permissions or privacy regulations, that does not mean they should not be considered for disclosure to users of attention measurement and that attempts to further research their impact on reported results and address them indirectly should not be made. Specifically, to the extent that there is “structured missingness” or biases related to privacy restrictions for specific device or browser types, audience segments, media properties or any other meaningful aspect of the population to be measured, these must be disclosed and quantified (where possible) in conjunction with MRC minimum standards. To that end, attention measurers must consider privacy restrictions and permissions in their methodology and be prepared to demonstrate via audit how these are managed to the extent they impact reported results.

As discussed above, to the extent attention measurement is reliant on matching disparate datasets, the match rate must be disclosed along with other statistical KPIs related to this process and consider the requirements above related to coverage. This includes data that may be differentially missing or less accurate due to privacy and permissions.

In addition to these disclosure and quantification requirements, attention measurement vendors must periodically research the impact of privacy and permissions on their methodology and consider whether these can be addressed or mitigated indirectly through weighting, data adjustment, data enrichment, or other efforts. Measurement organizations are also encouraged to evaluate and where appropriate incorporate the use of privacy-enhancing technologies (PETs) to support compliant data processing and privacy preservation in attention measurement. PETs such as differential privacy, secure multiparty computation, federated learning, and secure clean room environments may allow for greater privacy protections while still enabling useful measurement outputs. The use of PETs must be accompanied by

appropriate validation to ensure that measurement accuracy is maintained, and any impacts to reported results, including loss of granularity or introduction of statistical noise, must be disclosed in accordance with MRC minimum standards. Measurement organizations should monitor evolving industry standards for PETs and update their methodologies and disclosures accordingly. Of course, such efforts must be well documented and empirically supported as well as generally disclosed considering any error that is introduced as a result of them.

Finally, efforts to enhance privacy in reported attention datasets must be generally disclosed and the impact on reported results must be quantified. Specifically, restrictions to report requests or data granularity related to differential privacy should be disclosed to measurement reporting end users upfront along with general guidance related to these parameters. Such parameters should be supported and periodically revisited. To the extent “noise” or synthetic/artificial records are injected into reported results to enhance privacy, this must also be disclosed. Such noise should be based on statistical techniques that seek to reduce bias and error, and the effects of such noise must be quantified as part of error disclosures related to reported results. Again, such disclosures should be made in conjunction with MRC minimum standards.

13. AUDITING GUIDELINES

Third-party independent auditing is strongly encouraged for all attention measurement methodologies used in the buying and selling process within digital advertising.

Auditing attention measurement is recommended to cover both the counting methods and the processes/controls employed. The audit should include the following elements:

- **Counting Methods:** Independent verification of attention metrics and data for a defined period. This involves reviewing and validating the methods used to measure attention, conducting a risk analysis of the processes, and verifying transaction-level data. Key elements of the audit include understanding how attention is measured, conducting analytical reviews, authenticating transactions and data, validating any filtering techniques applied to remove invalid or fraudulent signals, and recalculating metrics to confirm accuracy. Audits can be performed at the campaign level, ensuring that the attention data associated with specific ad creatives is accurately captured and reported for performance measurement purposes.
- **Processes/Controls:** Examination of the internal controls around the attention measurement process, including ad delivery, recording, and metric reporting. This also involves assessing the adequacy of any applied filtering techniques, such as viewability and fraud detection, to ensure they meet industry standards for attention measurement.

Although audit reports can be issued as infrequently as once per year, audit testing should extend across multiple periods throughout the year to ensure that internal controls and procedures are consistently upheld. Audit reports should clearly specify the periods during which testing occurred and the period covered by the resulting certification, offering transparency into the scope and frequency of the audit process.

14. GENERAL REPORTING PARAMETERS

General reporting parameters (dayparts, weekparts, time zones, etc.) provide for consistency and comparability. These should be based on the logical application of information about the usage patterns of the medium.

In order to provide for more standardization in internet measurement reporting, the following general reporting parameters are recommended (although not explicitly required). Note that these are only several of the possible reporting parameters that may be used. If parameters in addition to these are reported, similar rules should be defined and applied

Day: 12:00 midnight to 12:00 midnight

Time Zone: Full and prominent disclosure of the time zone used to produce the measurement report is required. In addition, all reported data should be made available to users based on GMT using UCT, in addition to any others that measurement organizations may deem appropriate, to allow users to make comparisons across websites and properties from a common standard of time reference.

Week: Monday through Sunday week parts: Monday-Friday, Monday-Sunday, Saturday, Sunday, Saturday-Sunday

Month: Three reporting methods are acceptable: 1) TV broadcast month begins on the Monday of the week containing the first full weekend of the month; 2) four-week periods (13 per year), consistent with media planning for other media; or 3) a calendar month. For financial reporting purposes, a month is defined as a calendar month.

15. DISCLOSURE GUIDANCE

An organization's methodology for accumulating measurements should be fully described and accessible to users of the data. Specifically, the nature of measurements, the methods of sampling used (if applicable), data collection methods employed, data editing procedures or other types of data adjustment or projection, calculation explanations, reporting standards (if applicable), reliability of results (if applicable), and limitations of the data should be included in the disclosure.

Nature of Measurements

- Name of Property, Domain, Site, Application (if applicable) Included in the Measurement
- Name of Measurement Report
- Type of Measurements Reported
 - Time Periods Included
 - Days Included
 - Basis for Measurement
 - Geographic Areas
 - Significant Sub-Groupings of Data
- Formats of Reported Data
- Special Promotions Impacting Measurements (where applicable)
- Nature of Auditing Applied and Directions for Audit Report (if permissible to share)
- Sampling/Projections Used (if applicable)
 - Explanation of Projections Methods

Data Collections Methods Employed

- Method of Data Collection
 - Logging Method
 - Logging Frequency
 - Logging Capture Point
- Types of Data Collected
 - Contents of Log Files
- Contacts With Users (if applicable)
- Research on Accuracy of Basic Data
 - Latency Estimates
- Rate of Response (if applicable)
- Editing or Data Adjustment Procedures
 - Checking Records for Completeness
 - Consistency Checks
 - Accuracy Checks
 - Rules for Handling Inconsistencies
 - Handling of Partial Data Records
 - Ascription Procedures
 - Computation of Reported Results
 - Description of How Estimates Are Calculated
 - Illustrations Are desirable
 - Weighting Techniques (if applicable)
 - Verification or Quality Control Checks in Data Processing Operations
 - Pre-Release Quality Controls
 - Reprocessing of Error Correction Rules

Reporting Standards

- Requirements for Inclusion in Reports, Based on Minimum Activity Levels

Reliability of Results

- Sampling Error (if applicable)

Limitations on Data Use

- Non Sampling Error
- Errors or Unusual Conditions Noted in Reporting Period
- Limitations of Measurement

16. GLOSSARY/DEFINITIONS (General)

Ad Liking: Participant's expressed level of affinity or liking toward an advertisement itself, independent of the brand being advertised.

Ad Position: The location of an ad within a physical asset, webpage, app, OOH screen or media environment (e.g., top of page, mid-roll, sidebar).

Ad Recall: Measurement of whether participants remember seeing a specific ad creative after exposure.

Ad Relevance Perception: Participant's perception of how personally relevant or meaningful an advertisement was to them.

Ad Size and Format: The physical dimensions, type, or creative format of an advertisement, influencing its visibility and attention capture.

Ad Visibility: Whether any portion of an ad enters the visible screen area or viewport, regardless of viewability thresholds.

Ad Viewability: Measurement of whether an ad meets minimum display criteria (e.g., 50% of pixels in view for digital and 100% of pixels for cross-media and at least one continuous second for display and two continuous seconds for video) as defined by MRC viewability standards. OOH specific viewability criteria also apply where applicable.

Attention Residual (Long-Term Recall or Persuasion Lift): The measurement of whether ad exposure results in memory retention, attitude shifts, or behavior change days or weeks after initial exposure.

Audibility: Measurement of whether an ad's audio was played at an audible level (non-muted) during exposure as defined by MRC audibility standards.

Audible Time: The amount of time during which an ad's audio plays at an audible (non-muted) level and by volume level, including both completed and partial views.

Baseline Resting Beta/Gamma: Pre-exposure measurements of beta and gamma brainwave activity used as a baseline for comparison against exposure-related cognitive load.

Behavioral Intent Beyond Purchase: Measurement of participant intent to perform non-purchase behaviors post-ad exposure, such as visiting a website or seeking information.

Beta Wave Activity: High-frequency brainwave patterns associated with alertness, focus, and cognitive processing.

Blinks: The frequency or number of eye blinks recorded during ad exposure, often used as a proxy for cognitive load.

Body Movement: The detection of physical movements—such as head turns, posture shifts, or fidgeting—used to infer user attention or engagement. Captured via sensors or cameras, these movements help indicate focus or distraction when interacting with media or ads.

Brand Favorability: Participant's expressed positive, neutral, or negative perception of a brand after ad exposure.

Brand Preference: Participant's stated preference for one brand over others following exposure to advertisements.

Brand Recall: Measurement of a participant's memory of the brand associated with an ad, measured either unaided or aided.

Brand Recognition: Participant's ability to correctly identify a brand when shown visual, audio, or contextual cues.

Brand Sentiment: Overall emotional perception (positive, neutral, negative) of the brand post-ad exposure.

Clicks: Instances where a user clicks or taps (in mobile environments) on an ad, a call-to-action, or an embedded element.

Closed Captions: Text representations of audio dialogue displayed alongside media to enhance accessibility and understanding.

Cognitive Load: The amount of mental effort required to process information presented in an ad or content.

Cognitive Load Perception: Participant's self-reported difficulty or ease in processing and understanding ad content.

Content: The editorial, video, or audio environment in which an advertisement is placed, excluding the advertisement itself.

Content Relevance: The degree to which the ad aligns contextually with the surrounding editorial or media content (or environment for OOH where applicable).

Contextual Quality: The overall quality, trustworthiness, and relevance of the surrounding content environment where the ad appears.

Cursor Movement: The tracking of mouse or pointer movement across a webpage, app, or content area.

dB SPL (Sound Pressure Level): The measurement of the loudness of an ad's audio output, expressed in decibels (dB). Device audio output may be measured in levels and steps that can be mapped to dB SPL.

Device Type: The type of device used to access ads or content (e.g., mobile, desktop, tablet, OOH asset).

Differential Privacy: A privacy-enhancing technique that introduces controlled random noise to data outputs to protect individual privacy while allowing useful aggregate analysis.

Emotion Variability: The degree of change or fluctuation in a participant's emotional response throughout the ad exposure.

EEG Activity: Electrical activity in the brain measured via electroencephalography (EEG) to assess emotional engagement and cognitive load.

Emotional Intensity: The strength or depth of emotions experienced by participants during or after ad exposure.

Environmental Metadata: Descriptive data about the surrounding content, media property, domain, or app associated with ad placement.

Exits: User-initiated departures from an ad or content experience shortly after exposure begins.

Facial Sentiment: The interpretation of emotional expressions based on facial micro-movements using AI or trained human coders.

Facial Valence Score: The polarity (positive, neutral, negative) of emotional response derived from facial sentiment analysis.

Fast Forwards: User-initiated actions to fast-forward through video or audio ads.

Gaze Path Complexity: The complexity or irregularity of gaze movements across an ad, reflecting cognitive load and attention dispersion.

Gaze Tracking: The use of eye-tracking technology to determine where and for how long a participant looks during ad exposure.

Gestures: Physical touch interactions (e.g., swipes, taps, pinches) made on touch-enabled devices during ad or content exposure.

Heart Rate Variability (HRV): The variation in time between heartbeats, often used as an indicator of cognitive and emotional engagement or stress.

Hovers: Instances where a user's pointer remains over an ad or interactive element without clicking.

Interactions: Cumulative actions taken by a user in response to ad or content exposure, including clicks, swipes, scrolls, hovers, and more.

Multimedia and In-Ad Engagement: User interactions with embedded elements within an ad, such as quizzes, games, polls, or audio toggles.

Message Association: Measurement of whether participants correctly associate an advertisement's message with the appropriate brand.

Message Recall: Measurement of a participant's ability to recall the key message or theme of an ad after exposure.

Panel: A group of individuals recruited to provide ongoing or periodic feedback, attention measurement, or exposure data, typically representative of a target population.

Pauses: Instances where users manually pause video or audio ad playback.

Peripheral Focus: Measurement of visual engagement in the peripheral field of vision relative to ad placement.

Placement: The specific location of an ad within a content environment, app, webpage, or media player.

Presence Monitoring: The detection and confirmation of user presence in a media consumption environment, often through sensors, eye tracking, or declared user data.

Presence of User: Confirmation that a human user is actively present during ad exposure (e.g., panel-based inputs, user interactions), or the absence of signals indicating user non-presence or

inactivity during ad exposure (e.g., inactivity patterns, are you still watching prompts), determined via direct (deterministic) or inferred (probabilistic) measurement.

Privacy-Enhancing Technologies (PETs): Tools and methods such as differential privacy, secure multiparty computation, and federated learning that protect individual user data while allowing measurement and analysis.

Predictive Models: Statistical or machine learning models used to infer or estimate attention or engagement outcomes based on observed signals.

Purchase Intent: Participant's self-reported likelihood of purchasing a product or service after exposure to an ad.

Pupil Dilation: Physiological measurement of changes in pupil size during ad exposure, often correlated with cognitive or emotional engagement.

Response Time: The duration it takes for a user to react to a stimulus, prompt, or interaction related to ad exposure.

Scroll Depth: The maximum vertical distance a user scrolls on a webpage relative to total page height, often used as a proxy for engagement.

Screen Orientation: The position of a device's screen (portrait or landscape) during ad or content exposure.

Screen Size: The physical or pixel dimensions of a device screen during ad rendering and exposure.

Screen Orientation Change: Instances where the device orientation shifts between portrait and landscape modes during user interaction.

Screen Resizing: The act of changing a browser window or device display size during an active media session.

Scrolls: Instances of user-initiated vertical or horizontal scrolling through a webpage or content.

Second-by-Second Attention Mapping: Measurement of changes in attention levels throughout ad exposure, collected on a moment-to-moment basis.

Self-Reported Attention: Participant's subjective reporting of the degree of attention paid to an advertisement.

Self-Reported Cognitive Load: Participant's subjective assessment of the mental effort required to process ad content.

Self-Reported Emotional Response: Participant's subjective expression of emotional feelings elicited during ad exposure.

Share of Screen: The proportion of a device's visible screen area occupied by an advertisement during exposure.

Sophisticated Invalid Traffic (SIVT): Non-human or fraudulent traffic that is intentionally created to deceive measurement systems, requiring filtration to ensure accurate data.

Skips: Instances where users actively skip ads when given the option (e.g., "Skip Ad" button after five seconds).

Structured Missingness: Systematic absence of measurement data due to privacy restrictions, technical limitations, or unmeasurable environments.

Surveys: Self-reported questionnaires administered to users or panelists post-exposure to gather data on recall, perception, and intent.

Swipes: Horizontal or vertical finger movements across touch-enabled devices.

Task Performance Accuracy: Measurement of a participant's ability to correctly complete a post-exposure task, indicating comprehension and cognitive processing.

Time-in-View: The total duration an ad remains visible within a user's viewport during a session.

Timestamp: A recorded marker of the exact time an event occurs, typically formatted as hh:mm:ss, milliseconds, or in Unix EPOCH time (seconds since January 1, 1970 UTC) to enable consistent alignment across platforms, channels, and systems.

User Count: The estimated number of individuals present during a single ad exposure session.

User Interaction and Behavior: The collective actions users take when engaging with ads or content, including clicks, hovers, scrolls, gestures, and more.

Viewability: A compliance measure indicating whether an ad met minimum visibility thresholds to be considered eligible for measurement.

Visibility: The binary condition of an ad appearing on a user's screen, regardless of viewability standards.

Visible Time: Total time an ad remains visible on screen, including periods when it is not meeting official viewability thresholds.

17. REFERENCES

Minimum Standards for Media Rating Research

The MRC *Minimum Standards for Media Rating Research* provide the base set of assessment criteria and establish the foundation for all audits conducted of services engaged in the MRC accreditation process. The standards relate to:

- Ethical and operational standards that govern the quality and integrity of the entire process by which ratings are produced.
- Disclosure standards that specify the information about a rating service's methodology including each specific survey that must be made available to users, the MRC, and its certified public accountant (CPA).
- Electronic delivery standards designed to ensure that the service maintains appropriate system controls and meets certain minimum reporting standards.

All references to measurement standards and guidelines in this document are available at the [Media Rating Council site](#).

18. CONTACT INFORMATION

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19. ACKNOWLEDGEMENTS

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IAB Measurement, Addressability & Data Center

[IAB's Measurement, Addressability & Data Center](#) aims to provide essential industry guidance and education on solutions and changes in underlying technology and privacy regulations. The MAD Center specializes in measurement and attribution, addressability, advances in retail media, and privacy changes, providing a comprehensive approach to digital media challenges. Board members set the agenda and direction for IAB and the industry, approve and prioritize key initiatives, influence industry best practices, receive priority access to IAB experts, research, and tools, and participate in exclusive events and meetings.

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dentsu	Mars United Commerce	TikTok
Dotdash Meredith	Meta	TransUnion
DoubleVerify	Monster Energy	Visit Orlando
GlassView	Nielsen	Yahoo

IAB Attention Task Force

The Attention Task Force is focused on enhancing how attention is measured and understood within advertising and marketing. It aims to create a standardized framework, develop metrics for broad use, and establish a common industry language. Importantly, the task force is collaborating with the Media Rating Council (MRC) to set guidelines for accrediting attention measurement solutions. A significant addition to their work is the creation of explainer resources for various attention measurement approaches. These resources aim to clarify different methodologies, aiding in the comprehension and application of attention metrics.

Company Participants

3 Day Blinds	American Urban Radio	Celtra
AARP	Networks	Citigroup
Acast	Amplified Intelligence	Claritas
Activision Blizzard Media	Anzu	Clinch
Adapex	App Science	Coalition for Innovative
Adelaide	AppsFlyer	Media
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Adloox	Barilla	Cox Automotive
Adludio	Bayer	CubeAI
Albertson Media Collective	BBC	dentsu
Alliance for Audited Media	Beeler.Tech	Digitas LBI
Altice Media Solutions	Best Buy	DIRECTV Advertising
Amazon Ads	Bloomberg Media	DISH
	Butler/Till	Dotdash Meredith

DoubleVerify	Kroger Precision Marketing	Samsung Ads
Dow Jones & Company	84.51°	Seedtag Advertising
Dragonfly AI	LinkedIn Corporation	Sharethrough
The E.W. Scripps Company	Loop Media	SiriusXM Media
Eden Collective	Lumen Research	Snap
Emodo	MadHive	Snopes
Epsilon	Magnite	Soundstack
EssenceMediacom	Marriott International	Sovrn
Exponential	Mediahub	Spectrum Science
Forbes Media	Meta	Spotter
Ford	Microsoft Advertising	StackAdapt
GlassView	Mindshare	Taboola
Google	Mobian	Teads
GroupM US	MoviePass	TikTok
GSTV	National Public Media/NPR	The Trade Desk
The Guardian	Netflix	TripleLift
GumGum	Newsbreak	TVision
Havas Media Group USA	Nexxen	Uber Advertising
Hearst Magazines	Nielsen	Ubisoft
Horizon Media	Night Market	Universal McCann
IAB Canada	Nudge	Uplevel
IAB UK	Ogury	Veritonic
ICON International	Omnicom Media Group	Viant
Infillion	Oracle Advertising	The Vitamin Shoppe
InMobi	Outbrain	Volta Media
Instacart	The Ozone Project	Walmart
InsurAds	Paramount	The Walt Disney Company
Integral Ad Science	PHD	Warner Bros. Discovery
Intuit	Pfizer	Wavemaker
Involved Media	Pinterest	The Weather Company
IPG Mediabrands	Pixalate	Weigel Broadcasting
IRIS.TV	Procter & Gamble	Westwood One
Jellyfish	Publicis Media	Wharton
Jun Group	Quantcast	xpln.ai
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