



### **Overview**

In advertising, four distinct approaches quantify, gauge, or estimate attention, each providing unique insights into user engagement with content. These approaches are:

- Visual/Audio Tracking: This approach includes eye tracking, facial coding, presence monitoring, and audio signal analysis. Eye 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. Audio signal analysis interprets sounds like speech or environmental noise to understand user behavior. Together, these techniques measure engagement and interaction by using visual and auditory data.
- Physiological and/or Neurological Observations: This
  method tracks physiological and 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.
- Data Signals: This approach collects various data signals from devices, ad placements, and publisher metadata. These signals offer detailed insights into ad exposure and user interactions.
- Survey-Based Methods: This approach uses self-reported data from brand health studies, focus groups, and ad effectiveness surveys. It provides subjective insights into participants' attention.

## Purpose of This Document

This document aims to explain attention measurement comprehensively, focusing on data signal measurement approaches. It details how attention is quantified and assessed in digital advertising.

# **Out of Scope**

This document does not include scoring, rating, direct comparisons, or recommendations of specific attention solution providers. It focuses on educating readers about measuring attention using data signals to make informed decisions. This explainer does not endorse any particular measurement approach but provides comprehensive insights. It primarily addresses using attention to measure advertising impact. Examples of some emerging PETs which are showing promise in the digital advertising space including the following:

Separate explainers will cover other attention measurement approaches.

# **Description**

Attention measurement using data signals quantifies ad exposure and/or presentation, user engagement, and interaction with digital content. This involves analyzing signals from devices like smartphones, tablets, computers, and data from ad servers and platforms like website analytics and metadata.

Given the complexity of attention, it is often more useful and informative to analyze multiple data signals and their interaction effects to achieve a comprehensive measurement outcome. Individual signals offer only a partial view of engagement, so combining multiple signals provides a comprehensive measurement. This approach yields valuable insights into ad performance, aiding informed business decisions and optimizations.



### What's Measured vs. What's Not

Note: This document focuses on measuring ad effectiveness in capturing user attention on desktop, tablet, mobile, and advanced TV. It includes methodologies for display ads, streaming video, streaming audio, and podcasts but excludes digital out-of-home and non-digital advertising.

Several factors impact user attention beyond the ads themselves, such as page design, language, and content. Therefore,



attention measurement in digital advertising can be classified into two main dimensions: ad-related signals (ad exposure) and user-related signals (user engagement). Additionally, it's important to evaluate the domain/app media and content experience including fraud, viewability, brand safety, suitability, contextual relevance, and geographic targeting.

Ad exposure and user engagement are useful tools across the marketing funnel, indicating attentiveness to different campaigns and desired outcomes. Different signals may correlate more strongly with desired outcomes based on the advertiser's campaign objectives.

The deterministic signals collected by census measurement vendors to measure attention fall into two broad, key categories:

- Ad-related or exposure metrics assess an ad's presentation by quantifying its intensity and prominence using signals like
  viewable time, share of screen, video completion, and audibility. These metrics vary by format; for instance, viewable time
  is measured for display ads, while viewability, audibility, and quartile completion are measured for video ads. Creative
  impact is assessed by comparing attention levels across different creatives and placements.
- User-related or engagement metrics evaluate user-initiated events during ad display to measure user presence and interaction. Signals indicating presence include screen orientation changes, page scrolling, and video playback. Interaction signals include ad clicks, hovers, skips, playback events (e.g., play/pause), and volume changes.

The combination of ad-related and user-related signals plays a critical role in assessing and optimizing campaign performance. It is essential to recognize that each attention measurement provider offers a distinct set of metrics, which can complicate efforts to standardize measurement across campaigns. This diversity of signals necessitates an adaptable approach from marketers to ensure that the attention measurement output correlates effectively with the intended KPIs and strategic objectives of the campaign.

The two measures used in conjunction can be powerful, especially for advertisers looking to dive deeper into performance drivers and blockers. The specific way providers measure exposure and engagement may vary, but the signals captured should help advertisers understand and drive better outcomes.

Ultimately, the signals collected at both the ad and the environment level can be used as a proxy for the likelihood of attention once the criteria of valid and viewable/audible (as outlined by MRC Outcomes and Data Quality Standards) have been met. Data signal proxies for attention provide scale and can be mixed with other kinds of data to verify hypotheses or model various outcomes. More on that as we cover other forms of attention measurement in other future explainers.

Note: The MRC considers attention to be a measure of audience and as a result requires audience standards to be met. These include viewability, full sophisticated invalid traffic (SIVT) filtration and presence of a user. Audibility is optional (except in the case of audio ads and content) and audio status is encouraged to be reported as it cannot always be measured or may not apply (such as for static or display ads or content without audio).





# Requirements

#### **Hardware Requirements**

Data signal approaches are straightforward to implement, requiring no additional hardware. They leverage existing device signals and publisher data, eliminating the need for extra hardware on the provider's end.

#### **Software Requirements**

Data signal measurement is collected through various mechanisms, including tags, the Open Measurement Software Development Kit (OM SDK), and server-to-server (S2S) or API integrations. These methods capture the necessary signals for estimating, analyzing, and quantifying user attention across digital environments, received in real-time or via post-back.



#### Technologies Used

- 1. JavaScript Tags: Commonly used in web browsers, these tags are placed within ads to initiate data collection when an ad loads on a user's device. Tags can be manually implemented or automated via API integration, reducing human error. Primary signals gathered include:
- Viewability data
- Time stamps for various interactions
- User interactions (clicks, scrolls, etc.)

These tags capture exposure and engagement data in real time.

- **2. Open Measurement SDK (OM SDK):** Typically used in mobile app environments, the <u>OM SDK</u> standardizes data collection for:
- Geometric and visibility metrics: Measures the ad's physical visibility on the screen.
- Viewability metrics: Based on established industry standards, ensuring consistent exposure measurement.
- **Environmental data:** Captures operating system, browser type, and screen orientation to contextualize the ad viewing experience.
- Interaction/Engagement with ad content: Captures user interactions like clicks and touches.

Integrated into mobile apps, the OM SDK sends measurement signals to the Open Measurement Interface Definition or OMID API, allowing third-party providers to interpret the data. It can also support connected TV (CTV) measurement, requiring publisher permission.

**3. Server-to-Server Communication:** Typically used by platforms, this method involves direct connections between the attention measurement provider and a platform via API or custom partnerships. The specific signals captured vary based on the partnership.



## **How It Works**

Data signal providers analyze and score each unique impression using various data signals, often without relying on sample-based data projections (though some providers may complement the analysis with sample data).

#### **Building a Foundation of Media Quality**

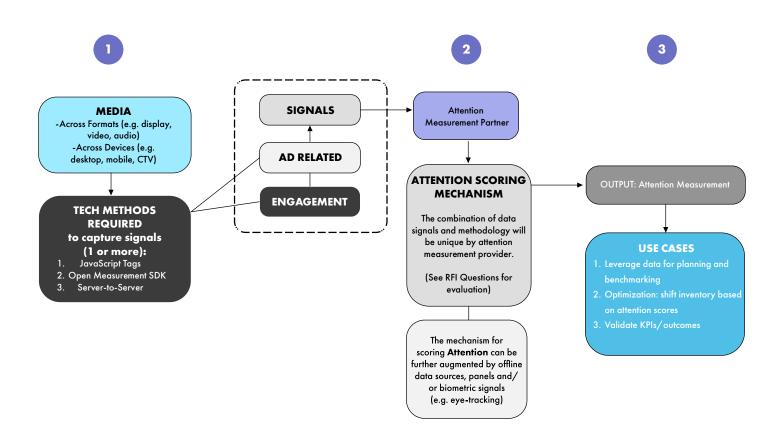
Establishing media quality is essential for driving campaign performance. MRC Outcomes and Data Quality Standards state that a foundation of media quality should be established by analyzing the environment of an ad. Attention measurement providers using data proxy signals play a crucial role by employing tag-based methodologies to ensure data integrity and accuracy across devices and platforms. This includes verifying that ads are served in suitable, safe environments, are fraud-free, are shown in the intended geography, and are viewable.

### Key Components of Attention Measurement: Exposure and Engagement

The Media Rating Council (MRC) highlights the importance of measuring ad duration, user presence, and interaction attributes as critical elements of attention measurement. This emphasizes the need to go beyond media quality and ad exposure to establish audience presence and engagement. Signal-based providers can capture both ad exposure and user engagement by building on a foundation of media quality using the tag-based approach described below.

#### The Data Collection Process in Detail

Workflow to enable Attention Measurement: Data Signals







#### **Data Collection**

Data signal attention measurement can be used across various media types, formats (video, display), and devices (desktop, in-app, mobile, CTV). Measurement is captured via three technologies: JavaScript Tags, Open Measurement SDKs, or Server-to-Server Integrations. These technologies collect and aggregate the data signals needed to calculate comprehensive attention metrics, reflecting the complexity of user attention. Collected signals provide insights into ad-related factors (e.g., environment, ad size, creative ID, viewability) and engagement with the ad (e.g., mouse movements, audio changes).

# 2

#### **Attention Scoring**

Once collected, data signals are compiled into a comprehensive attention metric by the measurement provider. This aggregation process varies by provider and may include additional data sources to enhance accuracy, such as eye tracking panels or survey-based data.

# 3

#### Reporting

Finally, the metrics are shared with the end user via a dashboard or other reporting formats. These metrics support various use cases, including in-flight optimization, media planning, and more.

#### Census-Based Measurement Can Be Complemented by Other Approaches and Technology

Census-based measurement can be enhanced with techniques such as panel-based visual/audio measurement and brand or

sales lift studies. Providers may also incorporate offline data sources, like demographic information or historical interaction data, to provide context for online engagement. Biometric signals, including eyetracking or facial recognition, add another layer of understanding by identifying which parts of an ad capture the most attention or elicit emotional responses. These insights offer a more comprehensive view of user engagement.

Together, these approaches expand attention measurement capabilities, covering additional environments or channels.

Data signal attention measurement data can also be used in programmatic optimization tools to help drive specific business outcomes, including pre-bid segments, dynamic Al activation, and more.







# **Outputs and Reporting**

Once data signals are collected, different providers use various methodologies to aggregate them into actionable metrics. These may include algorithms that weigh signals based on their relevance and impact on attention.

Finalized attention metrics are shared via dashboards and reports, typically including:

- Attention Index or Score: A holistic measure of overall user attention drawn by an ad, aggregated from several data signals.
- Exposure Index or Score: A detailed overview of how an ad is displayed on the screen, including visibility and viewability metrics.
- Engagement Index or Score: A detailed breakdown of user interactions with an ad, such as clicks, scrolls, hovers, and
  more.
- Additional Metrics: May include demographic/biometric insights, brand/sales lift data, cost metrics, and more.

Note: Benchmarking for similar ad types (format, environment, duration, etc.) is sometimes present and encouraged. The MRC generally requires reporting of component metrics/scores to understand the contributions to aggregated scores.

# **Strengths and Limitations**

#### Strengths of Using Data Signals

- Quantitative Ad Exposure and User Engagement Metrics: May include demographic/biometric insights, brand/sales lift data, cost metrics, and more.
- Media Quality Measurement and Detection: Identifies fraud, non-human traffic, viewability, brand unsafe environments, and out-of-geo placements, ensuring ads are viewed by real humans in a safe environment.
- Real-Time Data Analysis: Offers immediate feedback on ad performance for swift in-flight optimizations.
- Granularity: Enables impression-level measurement for maximum detail.
- Scalability: Suitable for large-scale campaigns and audience analysis.
- Performance Benchmarking: Allows comparison of ad performance across industries, verticals, platforms, campaigns, and timeframes.
- Cookieless: Does not rely on cookies or device IDs.
- Easy Implementation and Minimal Setup: Tags are easily added to ad campaigns, requiring no additional hardware and integrating seamlessly with existing platforms.

#### **Limitations of Using Data Signals**

- Minimal Insight Into User Motivations and Sentiments: Data signals may not reveal the full spectrum of human emotions, intent, and sentiments.
- Potential Error Based on User Interaction or Environment: Some data signals, such as clicks and hovers, may be
  made in error.
- **Viewability Limitations:** Data signals may struggle to capture attention accurately in certain environments where impressions may not meet viewable standards but still perform well.
- Data Access Limitations and/or Inconsistencies: Access to data signals may be inconsistent, limited, or restricted in certain environments, devices, or channels (e.g., podcasts, smart TVs, walled gardens).
- Potential Bias: Data signals such as interactions that may be perceived as negative (e.g., skipped, closed, fast forward, or mute) could diminish the calculation of attention, which may actually indicate a level of attention up until that point. This does not necessarily indicate a relationship with the action taken, a change in sentiment, or a negative correlation. This should be considered when constructing attention scores, and accounted for appropriately with score construction and weighting.



## **Other Considerations**

#### Creating a Baseline Threshold of Attention

Media buyers, ad tech companies, and attention measurement specialists can establish a baseline for "high" vs. "low" attention by leveraging industry benchmarks. Comparing attention levels within specific industries helps contextualize performance. Some providers offer performance quartiles, showing the advertiser's percentile based on their attention score. These methods help interpret different levels of attention across campaigns and other dimensions.

### **Correlating Outcomes and Attention**

Attention data signals, measurement practices, and KPIs can be used as a metric to predict outcomes. Advertisers should regularly assess and test the correlation of a provider's attention metrics with full-funnel outcomes through brand or sales lift studies.

Examples of Correlation with Full-Funnel KPIs:

-Upper Funnel Metrics: Awareness and consideration (post-exposure)

-Mid-to-Lower Funnel Conversion: Click-through rate (CTR) and installs

-Lower Funnel Metrics: Sales uplift and lifetime value (LTV) (post-exposure)

Advertisers can optimize for outcomes based on these proven correlations, using attention as a proxy for KPIs in the absence of other signals.



Most data signal attention measurement approaches are privacy-friendly and do not capture specific user information. However, segmentation information can be gathered if segment IDs are included in the metadata. Impression-level metadata is collected for various ad dimensions including placement, allowing for placement-level insights into attention levels across different target audience segments.

#### Creative

The creative content of an ad significantly influences attention levels, along with the environment it is served in. Data signal-based solutions measure attention across several dimensions of an ad including size, device type, media type, partner, and creative ID. While this methodology does not track specific elements of the creative (such as color or text), it does allow for performance comparisons at the creative ID level, helping to identify which creatives perform best.

#### **Environment**

Data signal attention measurement can be applied across various contexts:

- Media Types: Includes video, display, and audio, depending on available data signals.
- Devices: Includes desktop, mobile, and CTV/OTT, depending on available data signals.
- Contextual Content: Involves measuring attention within specific content types, such as news articles, entertainment, or educational material, to understand how different content contexts impact ad engagement.
- Channels/Environment: Includes social media, walled gardens, in-app, open web, etc., depending on available data signals.\*
- \* Note: Walled garden measurement depends on platform permission. Open web measurement can be collected without direct publisher permission.







Attention measurement should consider the device and channel through which the ad is displayed. For instance, in-app mobile advertising benefits from specific data signals (such as orientation, motion sensors, touch rates) that desktop web does not. Developing practices and benchmarks for each device and channel combination helps inform precise models and influences media buying decisions for optimizing attention across various omnichannel placements.

### Data Robustness and Scalability

Media buyers should take into account the scalability of measurement when evaluating an attention provider. It is important to ensure that data collected is representative of the measured campaign(s). Scalability is often enabled by impression-level measurement.

## The Role of Data Modeling/Artificial Intelligence/Synthetic Data

At the time of collection, standard data-signal-based attention measurement does not require the use of data modeling, projections, or AI, as the approach captures data for each ad impression that is served in a real-life environment. Data modeling, algorithms, and AI can be leveraged to augment the data that is collected, to expand coverage for example, or to enable advanced optimizations. It is highly recommended to regularly update the key assumptions and training data used to calculate attention.

Potential Implications (Current and/or Future)

- Privacy regulations impact how vendors develop products.
   Companies collect various data signals from devices, such as IP
   addresses, browsing behavior, and location data. These practices may raise
   privacy concerns and require additional efforts to ensure compliance with
   regulations like General Data Protection Regulation (GDPR), the California Consumer Privacy Act (CCPA), and emerging
   privacy laws. Consequently, companies may need to adapt their methods, strengthen consent processes, and potentially
   reduce data collection to align with evolving privacy standards.
- In environments like CTV and walled gardens, third-party data signal attention measurement alone is insufficient. This approach often requires enhancement with panel-based attention data for these specific channels or devices.

#### **DSP Optimizations With Attention Signals**

Attention signals can be leveraged to enhance programmatic optimization. Attention can be a valuable data input to inform optimization toward top performing inventory.

#### **Accreditation/Certification**

MRC accreditation offers transparency into attention data collection and measurement methodology and validation against industry standards and guidelines.

Attention signals can be leveraged to enhance programmatic optimization. Attention can be a valuable data input to inform optimization toward top performing inventory.





## **Use Cases**

Attention metrics can be leveraged throughout the campaign lifecycle and integrated into econometric models/media mix modeling (MMM) to uncover new insights and improve performance. Here are some common use cases:

**Always-on Measurement:** The real-time nature of data signal attention measurement supports an always-on approach, enabling advertisers to establish a performance baseline and respond to campaign fluctuations in-flight.

**In-Flight Campaign Adjustments and Optimizations:** Advertisers can use real-time data to identify top-performing partners, sites, devices, targeting tactics, and media buying types, making optimizations accordingly.

- Measure Inventory Performance: Evaluate inventory performance with attention metrics to uncover high- and lowperforming sites and apps.
- Inform Creative Flighting Strategy: External factors such as seasonality and different days of the week can affect ad performance. Trended attention data can help uncover patterns and inform advertisers of the optimal times to serve various ad creatives to maximize impact.
- Analyze Video Creative Performance: Assess attention levels, completion rates, audibility, and viewability by quartile for video ads to optimize key elements like brand logos and calls to action.
- Uncover Impact of Media Buying Strategy Impact:
   Compare buying strategies (open exchange vs. private marketplace vs. direct buys) to maximize campaign performance.



Drive Business KPIs (Upper and Lower Funnel): Attention metrics derived from data signal measurement can correlate
to business KPIs across the marketing funnel. Understanding these relationships helps optimize specific attention metrics to
achieve campaign goals.

#### **Activation:**

- Attention Segments: Programmatically optimize toward top-performing inventory with attention segments, easily activated in campaigns without manual work or additional private marketplaces.
- Al Optimization: Use dynamic Al optimization to enhance campaign performance and drive business outcomes at scale. Attention data, ingested by Al technology, informs the optimization process alongside other data sources.

Media/Strategy Campaign Planning: Leverage attention data and insights over time to refine future campaign strategies, such as partner selection and targeting. Integrate attention metrics into MMM solutions to inform media planning.





### **How To Get Started**

At the time this explainer was written, the Interactive Advertising Bureau (IAB) and the Media Rating Council (MRC) have not released official attention measurement guidelines. MRC has published high-level guidance in the MRC Outcomes and Data



Quality Standards, with plans for expansion alongside IAB. MRC can currently audit and accredit various attention measures, including data signals, surveys, and tracking-based approaches, but will apply expanded guidance once produced. Both organizations are working on standardized guidelines to ensure consistency, reliability, and transparency in attention measurement across the digital advertising industry.

Once IAB and MRC publish their guidelines, this document will be updated to reflect the latest best practices and recommendations. In the meantime, this explainer serves as a general guide to help advertisers, agencies, publishers, and platforms navigate the attention measurement landscape and make informed decisions based on their needs and objectives.

Check back regularly for updates on the official <u>IAB</u> and <u>MRC</u> websites for the latest information on attention measurement guidelines and standards.

#### Steps to Get Started

When considering implementing an attention measurement solution or selecting a provider, follow these key steps to understand your organization's unique needs. You can effectively navigate the process and find the right attention measurement partner by following these guidelines:

- Agency/Advertiser Checklist
- Publisher Checklist
- 1. Assess Your Current Capabilities: Identify gaps or limitations in your ability to capture and analyze attention metrics.
- 2. **Define Goals and Objectives:** Clearly outline what you aim to achieve with attention measurement, whether it's improving ad effectiveness, optimizing user engagement, or gaining deeper insights into audience behavior.
- 3. **Explore Providers:** Investigate the various attention measurement providers in the market. Evaluate their offerings based on factors such as data signal coverage, metric customization, cross-platform integration, and privacy compliance.
- **4.** Use Standardized Tools: To streamline the information-gathering process, consider using this Request for Information (RFI) Questions form to collect standardized data from potential providers.

By following these steps and leveraging the provided checklists and RFI form, you can make an informed decision and select the attention measurement solution that best aligns with your organization's needs and objectives.

### Other Resources

- 1. Attention Measurement: Agency/Advertiser Checklist
- 2. Attention Measurement: Publisher Checklist
- 3. Attention Measurement: Request for Information Questions





# **Background**

#### **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.

#### **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.

#### IAB Attention Task Force

3 Day Blinds Bayer Cox Automotive

Accenture Beeler.Tech DAX US
Activision Blizzard Media Best Buy DeepAR.ai
Adapex Bidstack dentsu
Adelaide BlackRock Digitas LBI

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Amplified IntelligenceCitigroupEmodoAnzuClaritasEpsilonApp ScienceClinchEquativ

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Athletic Greens Clue Digital Exponential
Attain Coalition for Innovative Media Firework
The Attention Council Measurement (CIMM) Frameplay

Audacy Colgate-Palmolive Forbes Media

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Microsoft Advertising

Mindshare MiQ Mirriad

Monster Energy Montauk Labs

National Public Media/NPR

Netflix

The New York Times Company

News Corporation Newsbreak Nexxen Night Market NumberEight

Ogury

Omnicom Media Group
Oracle Advertising

Outbrain Paramount Persuasion Art Pinterest

Ocean Media

Playground xyz
Populus Media
Procter & Gamble
Publicis Media
Quantcast
Ramp97
Raptive
Realeyes
Reddit

Sabio Holdings

Rembrand

Roku

Samsung Ads

Seedtag Advertising

Sharethrough
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SiriusXM Media
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Soundstack, Inc.

Sovereign Sovrn

SuperAwesome Spectrum Science

**TEGNA** 

The Trade Desk

TIME TJX Tobii Trigger TVision

Universal McCann

The Walt Disney Company

Vayner Media Verve Group

Viant

The Walt Disney Company Warner Bros. Discovery

Wavemaker Zynga





#### IAB Measurement, Addressability & Data Center

<u>IAB's Measurement, Addressability & Data Center</u> (MAD) 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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## **Additional Resources**

For more resources and the latest updates on attention measurement, including explainers, best practices, checklists, RFI questions, and etc, please visit <u>iab.com/attention</u>