Five Use Cases for Video Ad Serving

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Ad-ID and VAST 4.0: Five Use Cases for Video Ad Serving

Ad-ID is the industry standard registration authority in the U.S. for identifying advertising assets across all platforms. It provides a unique creative identifier at the creative asset level. VAST 4.0 now includes a Universal Ad ID element (called UniversalAdId) specifically for tracking creative across all platforms, and calls out Ad-ID as the registry in the U.S.

The *UniversalAdId* element is required in VAST 4.0 and contains two name/value pairs for tracking the ad creative: the registry URL and the registered ID. The registry URL (*idRegistry*) is a string used to identify the registry website where the unique creative ID is cataloged. The registered ID (*idValue*) is the unique creative ID within the *idRegistry* specified.

In addition to providing the ability to uniquely identify and track the creative asset, Ad-ID provides standardized metadata for both server-side ad insertion and client-side ad serving systems.

The Universal Ad ID element in VAST also supports registration authorities internationally, and enables countries to meet their specific requirements for ad-tracking programs. For example, ads served through VAST in the U.K. would use Clearcast as the authoritative registry and the Clock Number for the identifier.

Importance of Ad-ID and Standardization

As VAST provided a standard for ad systems to speak to each other by a common language, Ad-ID provides a standard for ad systems to have a single unique creative identifier and common metadata that can be used across all systems. Having a common identifier with the same information means all systems can now talk to each other with the same language. For example, a 30-second video ad for Footwear with Advertiser X is the same from System A to System B to System Z.

Ad-ID uses Nielsen data to provide users with Parent, Advertiser, Brand, and Product information for each Ad-ID code. This provides Ad-ID, customers, and vendors with more consistent metadata by encouraging users to select from a set list versus manually entering data. Ad-ID also uses the Nielsen Product Category Codes (PCC) to assign an Industry Group, Major Category, Sub Category, and Product Category to Ad-ID codes where the user has selected a Product. This provides additional details to describe what categories the advertisement falls under, such as FOODS & FOOD PRODUCTS (see Appendix C).

Using Ad-ID eliminates ambiguity and confusion as an ad moves from one system to another and provides tools for the industry to standardize across all systems. Standardizing advertising across the industry requires a universally unique identifier. Without Ad-ID, the industry will

continue to encounter the same issues that exist today, and possibly more, as video advertising continues to grow as a multi-platform combination of linear and on-demand consumption.

Key Benefits

- **Cross-Platform:** Provides a single unique creative identifier that is maintained across systems for tracking and obtaining advertising metadata.
- **Brand Safety:** The advertiser and product information embedded in the metadata are read by the ad server, and are used to keep assets from appearing in inappropriate locations or contexts.
- **Brand Separation:** The advertiser and product information may be helpful to media outlets when trying to separate the advertiser and product categories for commercial pod optimization.
- **Brand Collision:** The advertiser and information can be used to avoid back-to-back ads from the same advertiser.
- **Ad Matching:** The product information can be used to match ads against viewers' interests.
- **Language:** Ad-ID identifies the language for each ad and can be used to determine if it is the appropriate language for the media publisher's target ethnicity.
- **Standardized Lengths/Sizes:** Ad-ID provides standardized lengths and sizes that can be used to validate the asset as part of the workflow process.
- **Other Metadata:** Using Ad-ID's CEA service API, other important advertising metadata can be obtained by a valid Ad-ID code. This provides more visibility into the creative asset.

Ad Cloud

The concept of an Ad Cloud is the next level of the traditional concept of "ad distribution" that is based upon the premise of centralized management, hosting, and control of the various creative assets that are used to fulfill ad campaigns. It leverages the fundamental concept of the internet, whereby resources are not copied to many different locations. Instead, assets are hosted on a single authoritative source, and links to those resources are shared with the various users that wish to access them. A well-defined identification scheme allows the resources to be uniquely identified so that there is no ambiguity regarding the specific resource being requested. Users are able to request resources in the format that is best suited to their usage/requirements. Finally, the Ad Cloud supports temporary local caching of resources that are frequently used, or where low latency access is required. Much like Ad-ID supports and enforces a consistent, structured method for identification and classification of ads, the Ad Cloud supports consistent and structured access to the actual creative assets that constitute those ads.

The Ad Cloud leverages these same internet concepts by hosting ad creative assets in a central cloud repository, keyed on a globally unique identifier, such as Ad-ID. Those assets are available to be dynamically streamed via a URI link and/or delivered and locally cached for "offline use" (such as for broadcast TV systems). Various types of metadata associated with the assets may be also maintained by the Ad Cloud, such as production details and talent and rights information. Additionally, access controls that govern which users are allowed to access specific assets are built into the Ad Cloud to enforce proper authorization for access. Assets may be obtained from the Ad Cloud in a wide variety of formats, to allow each user (e.g., broadcast TV, VOD, OTT, mobile, desktop) to obtain the asset in the format that best matches the playback environment. The Ad Cloud supports greater supply chain automation in the advertising ecosystem by allowing the assets needed to fulfill media buys and placements to be easily and automatically obtained on-demand, in the correct format, with the proper authorization and rights compliance and in a manner that support both dynamic ad served/streamed and linear TV or server-side stitched playback of ads.

Use Cases

There are five use cases that present themselves as opportunities to help flesh out why using Ad-ID for the Universal Ad ID in VAST 4.0 is important for video advertising and why adoption of unique identifiers are a necessity moving forward.

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Server-Side Ad Insertion (Ad Stitching)

Problem Statement
A key component of VAST 4.0 has been to address server-side ad insertion (ad stitching) by the inclusion of the "mezzanine file" (high-quality master source file). With the mezzanine file, a stitching service can download the video (video source file) and transcode (the process of converting a video file from one format to another) multiple versions of the ad. The multiple versions of the video ad allow playback on multiple devices and optimum playback in environments with varying levels of bandwidth, screen sizes, and platform support.
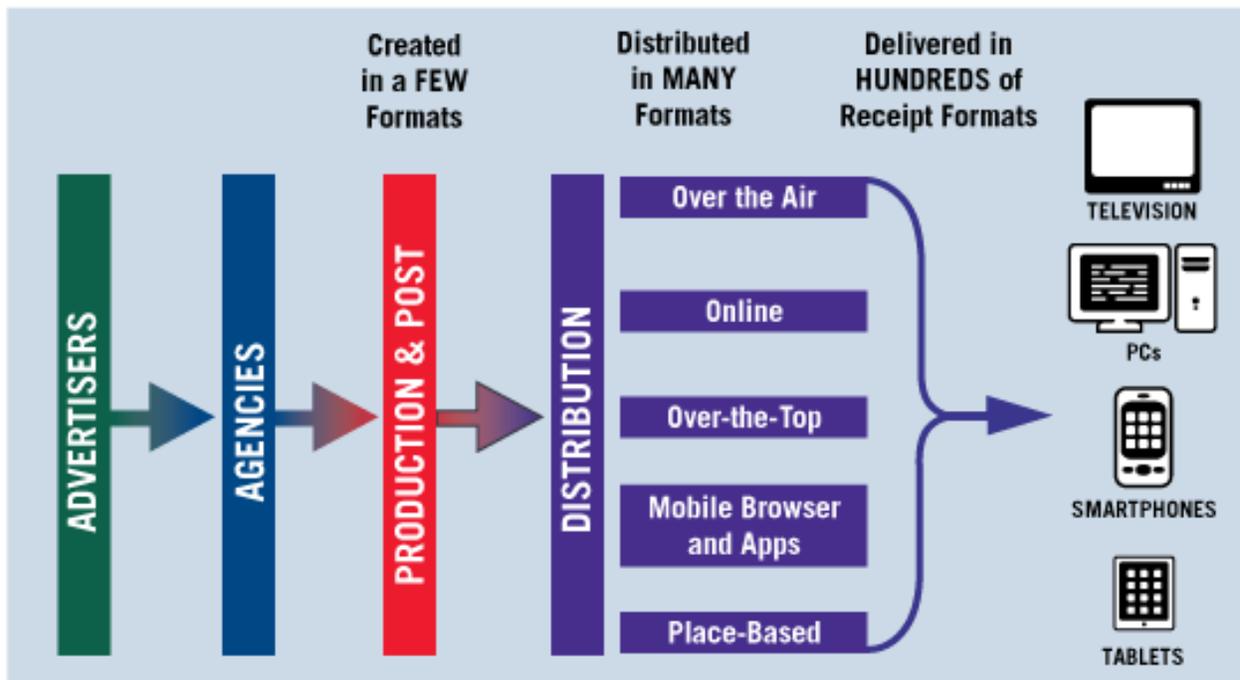
When a stitching service receives a file for the first time, the file is downloaded, transcoded, and stored in a digital library, which could be made available for future ad delivery. Once an ad is available and the ad server selects the ad for delivering to the user, the stitching service will then combine the video ads and video content into a single stream that can be played on any device. A single video stream eliminates buffering and enables publishers to maintain the same user video experience across all platforms. For these stitching services to operate efficiently and ensure the correct ad is displayed, there needs to be a way to uniquely identify each piece of creative content across all ad systems.

One of the challenges has been the lack of a consistent and standard identifier for creative assets. While VAST has supported a creative identifier in the past, it has been used inconsistently and did not guarantee uniqueness for the asset. Without standardization of the identifier, publishers often pass along identifiers that are only meaningful to their internal systems. It is not uncommon for identifiers to be made up of filenames or internal identifiers, or hand-coded. Having identifiers that are unstructured without any standards, and in many cases do not uniquely identify the creative, makes video operations extremely difficult to manage.

The following examples demonstrate how the lack of unique identification of the creative is problematic with ad stitching services.

Example 1: Different Identifiers Are Used for the Same Creative
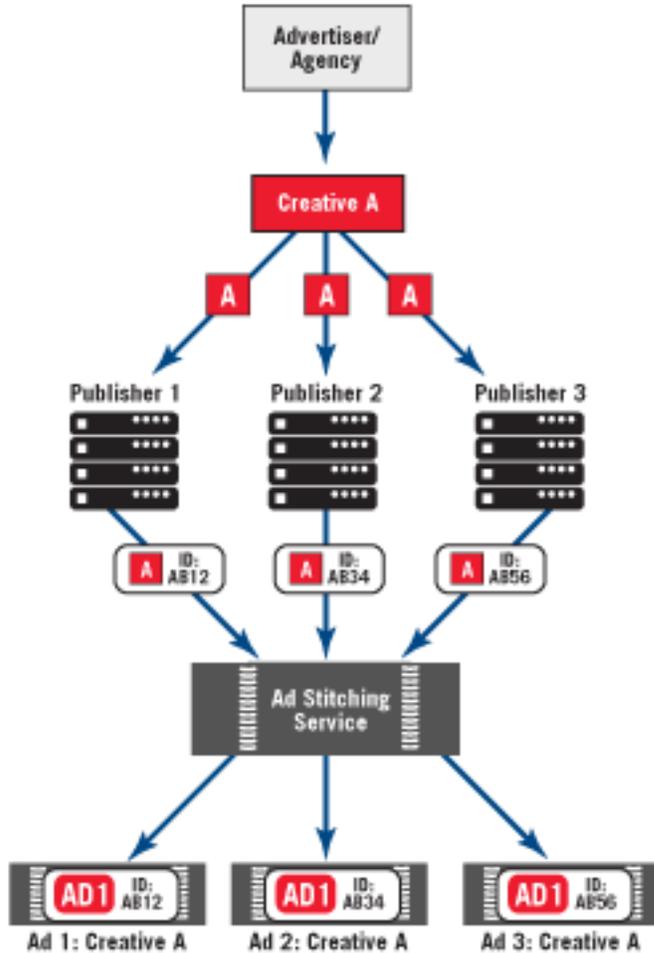
Ad stitching service receives Creative A with ID=AB12 from Publisher 1.

Ad stitching service receives Creative A with ID=AB34 from Publisher 2.

Ad stitching service receives Creative A with ID=AB56 from Publisher 3.

In this example, even though the creative is the same, a stitching service sees it as separate ads. So if the same ad comes from Publisher 2, the stitching service will think it's a new ad and download it again. For identifying and tracking the creative asset, this is problematic in that the stitching service will download the ads three times as separate ads, track them separately, and deliver them as three separate advertisements, when they are really identical. It is often in this scenario that the same ad appears repeatedly in a stream, because the stitching service could not

properly determine that the ads were identical. As ad stitching becomes more popular and these ads flow within the ecosystem from one buy/sell side to another, the issue escalates throughout the supply chain. A single ad that should have been displayed X number of times is now being displayed N number of times and using up valuable inventory for other ads to be delivered.

Example 2: Same Identifier Is Used for Multiple Creatives
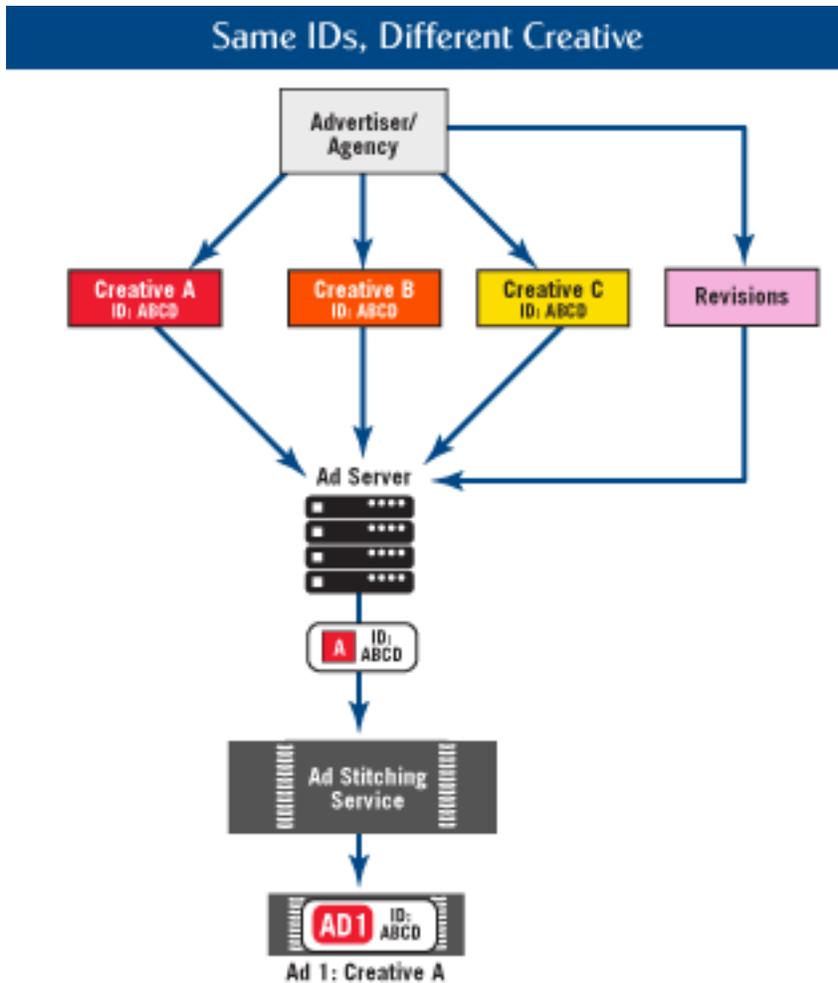
Ad stitching service receives Creative A with ID=ABCD from ad server.

Ad stitching service receives Revision 1/Creative B with ID=ABCD from ad server.

Ad stitching service receives Revision 2/Creative C with ID=ABCD from ad server.

In this example, the stitching service will download the first ad (Creative A, ID=ABCD). If revisions are made to the ad (e.g., the ad changes from 15 seconds to 30 seconds) and the ad has

the same identifier, the stitching service will not download the new creative since it thinks it has already been processed. Even though the asset is different, the stitching service sees the ad as a duplicate ad (already processed) and skips the download. What is needed to resolve this issue is a new identifier that identifies the new creative for the stitching service to download, process, and deliver the new 30-second ad.

Having a unique identifier provides the ad stitching services a way to know exactly what the creative is at all times, and in the scenario above, ensures that the correct ad is delivered.

Solution

As a solution to the above issue, including Ad-ID as the identifier for the Universal Ad ID in VAST 4.0 enables ad stitching services to have a unique creative identifier for tracking each individual creative asset. Ad stitching services can now function correctly by properly identifying if a creative ad has already been downloaded and pre-transcoded into multiple formats for cross-platform ad delivery. Beyond tracking, this also allows the stitching server to only download the transcoded creative once, which means it is immediately able to serve for subsequent publishers requesting it instead of having to wait for it to be transcoded and downloaded again

Being the trusted registration authority, Ad-ID provides a unique identifier that all systems can use as a standard and resolves the inconsistencies that have been issues in the past.

In the case where a creative asset is swapped out or there is a revision, a new Ad-ID code would be associated to the new creative asset so it is properly identified, instructions and orders can be revised, and the ad can be delivered correctly.

If Ad-ID is not adopted as a common identifier for the Universal Ad ID in VAST 4.0, the same inconsistencies and ad operations inefficiencies will continue to exist within the industry.

Use Case 1: Ad Stitching Process
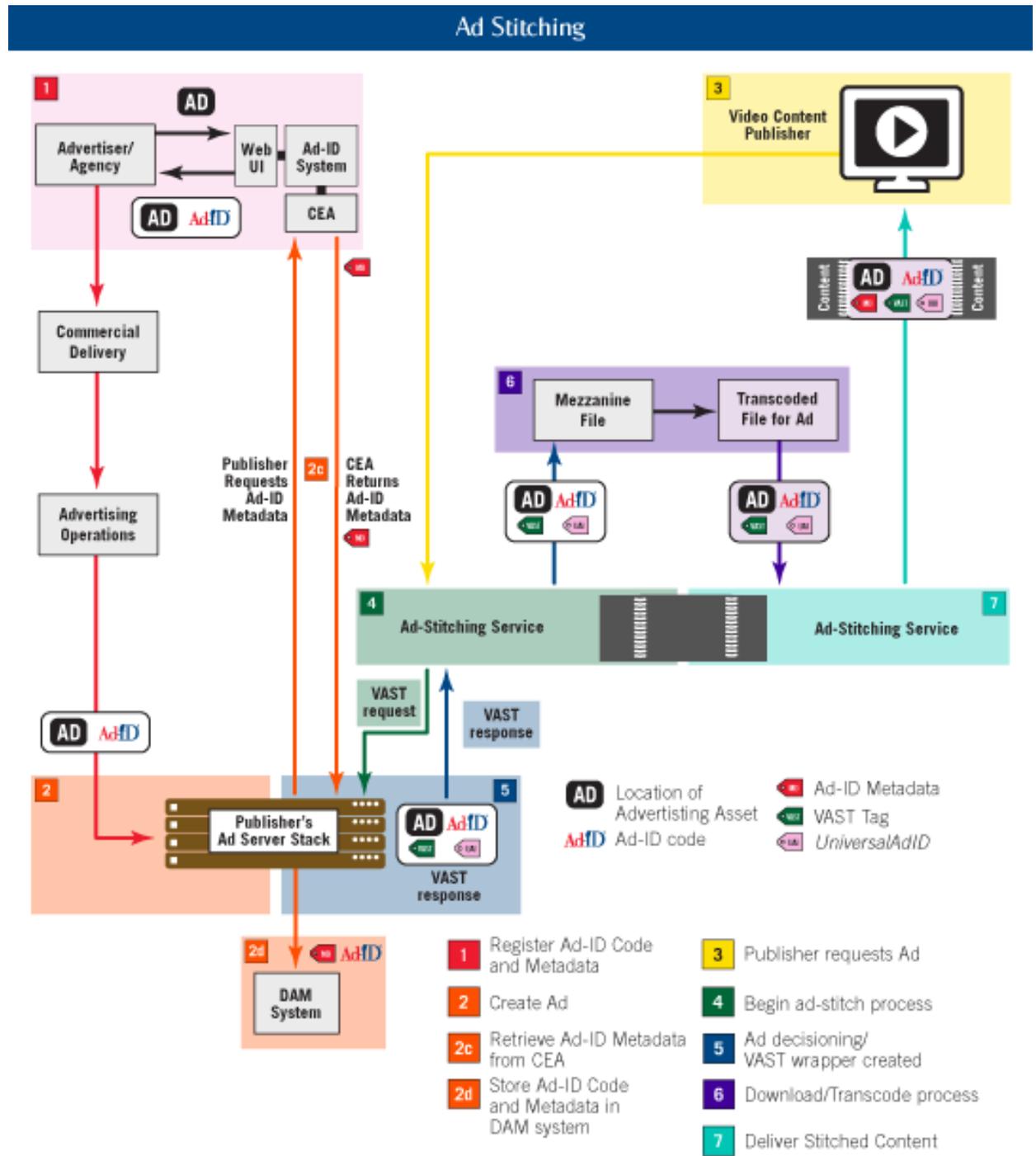
1. **Register Ad:** An Ad-ID code is created in the Ad-ID system with associated metadata by an advertiser or agency.
2. **Create Ad:** The ad is created in an ad server.
    a. The location of the mezzanine file to download is provided to the publisher's ad server.
    b. A valid Ad-ID is entered into the Publisher's ad server.
    c. Publisher's ad server queries the Ad-ID CEA service to verify that the Ad-ID is legitimate. The CEA service returns the metadata.
    d. The publisher's ad server stores the metadata in its DAM system.
3. **Request Ad:** Requests for ads are sent by the video publisher to the ad stitching service.
4. **Begin Ad Stitch Process:** Ad stitching service calls the publisher ad server for ad decisioning.
5. **Ad Decisioning/VAST Response:** The publisher ad server returns the VAST response to the stitching service. The response contains the location of mezzanine file and Ad-ID code as the identifier and registry for the Universal Ad ID, which was entered in step 2 above.
6. **Download/Transcode Process:** The ad-stitching service uses the mezzanine file to download, process, and transcode multiple video formats to deliver ads across all platforms. The Ad-ID code is used by the stitching service to identify each creative asset.
    a. If an Ad-ID code identifies that the file has not been previously downloaded, the file is downloaded, processed, and transcoded. It is ready for ad delivery in a future transaction.
    b. If an Ad-ID code is in the system, the ad will have already been transcoded and prepared for ad delivery, and multiple versions made available to correctly deliver the ad across all platforms.
    c. If there is a revision to the creative, a new Ad-ID code should be used. Assuming this is the first time the Ad-ID code comes through the system, it would be processed as a new ad. If the Ad-ID code is already in the system and fully processed, then it's available for ad delivery.
    d. The publisher or ad server can use the Ad-ID code to uniquely identify ads in a centralized database or digital asset management system (DAM).
    e. The Ad-ID code can then be used to query the Ad-ID system using the CEA service to retrieve metadata (see Appendix A) and cache/store the results in a back-end system. The metadata could also be retrieved from the VAST response if available (see Appendix B).
    f. Stored metadata from the Ad-ID code can be used for ad decisions, categorization of ads, and validation of data.
    g. If there is no Ad-ID code associated to the creative, Ad-ID's metadata will not be available.
7. **Deliver Stitched Content:** The stitching service combines video ads and video content into a single stitched stream that can be delivered to video players across multiple platforms.

Use Case 2: Ad Stitching Process with Ad Cloud

Ad Stitching with Ad Cloud

Legend:

AD	Location of Advertisting Asset
AD	Ad Cloud Ad Tag
AdID	Ad-ID code
	Ad-ID Metadata
VAST	VAST Tag
UniversalAdID	UniversalAdID

1	Register Ad-ID Code and Metadata		5	Begin ad-stitch process
2	Ad Cloud		6	Ad decisioning/ VAST wrapper created
3	Create Ad		7	Download/Transcode process
3c	Retrieve Ad-ID Metadata from CEA		7a	Request for Ad File from Ad Cloud
3d	Store Ad-ID Code and Metadata in DAM system		7b	Ad File Returned
4	Publisher requests Ad		8	Deliver Stitched Content

1. **Register Ad:** An Ad-ID code is created in the Ad-ID system with associated metadata by an advertiser or agency.
2. **Ad Cloud:** The master video asset is uploaded into a centrally managed Ad Cloud.
    a. The name of the asset will be the Ad-ID created in step 1 and keyed by the Ad-ID.
    b. The Ad Cloud encodes the master asset into multiple versions to serve ads cross-platform and the ad is hosted in a central cloud repository.
    c. The Ad Cloud will output an Ad Tag that returns a VAST response that contains the location of the asset.
3. **Create Ad:** The ad is created in an ad server.
    a. The Ad Tag created in step 2 is entered into the ad server.
    b. The Ad Tag provides a URI link to the asset.
    c. Publisher's ad server queries the Ad-ID CEA service to verify that the Ad-ID is legitimate. The CEA service returns the metadata.
    d. The publisher's ad server stores the metadata in its DAM system.
4. **Request Ad:** Requests for ads are sent by the video publisher to the ad stitching service.
5. **Begin Ad Stitching Process:** Ad stitching service calls the publisher ad server for ad decisioning.
6. **Ad Decisioning/VAST Response:** The publisher returns the VAST response to the stitching service. The response contains the Ad-ID code as the identifier and registry for the Universal Ad ID, which was entered in step 2 above. The response also contains a VAST wrapper, which contains the URI link to the video asset from the Ad Cloud server.
7. **Download/Transcode Process:** The ad-stitching service uses the video asset returned from the Ad Cloud and stored on a local cache. The Ad-ID code is used by the stitching service to identify each creative asset.
    a. If an Ad-ID code identifies that the file has not been previously cached, the file can be retrieved from the Ad Cloud and stitched into the stream.
    b. If an Ad-ID code is in the system, the ad can be served from local cache.
    c. If there is a revision to the creative, a new Ad-ID code should be used. Assuming this is the first time the Ad-ID code comes through the system, it would be processed as a new ad and retrieved from the Ad Cloud. If the Ad-ID code is already in the system and fully processed, then it is available from the local cache.
    d. The publisher or ad server can use the Ad-ID code to uniquely identify ads in a centralized database or digital asset management system (DAM) and match against assets from the Ad Cloud.
    e. The Ad-ID code can then be used to query the Ad-ID system using the CEA service to retrieve metadata (see Appendix A) and cache/store the results in a back-end system. The metadata could also be retrieved from the VAST response if available (see Appendix B).
    f. Stored metadata from the Ad-ID code can be used for ad decisions, categorization of ads, and validation of data.
    g. If there is no Ad-ID code associated to the creative, Ad-ID's metadata will not be available.

8. **Deliver Stitched Content:** The stitching service combines video ads and video content into a single stitched stream that can be delivered to video players across multiple platforms.

Client-Side Ad Serving

Problem Statement

Competitive Separation and Brand Safety

While publishers are expected to deliver high-quality and brand-safe video content across all platforms, the same expectations exist for video ad servers to deliver ads. Competitive separation (prevention of displaying back-to-back ads for two competing companies) and brand safety (only displaying ads that are suitable for the content) are critical components for delivering quality ads. While publishers often require ad categorization to match content categories to address competitive separation and brand safety issues, there is no standardization for categories in ad content. Verification of the creative and in-depth information at the creative level is essential to support the publisher's needs and requirements for quality control. Currently, there is limited metadata provided about the ad creative and no tracking at the "creative asset" level. One key element that has been lacking in the industry is support for ad categorization for the creative to help address these issues. Having this information at the creative asset level can help separate competing ads so there is no brand collision and ads are not delivered where they should not be. For brand safety, ad categorization enables more control of what types of ads will be displayed and can prevent inappropriate ads from appearing where they should not. As part of VAST 4.0, ad categories are now included to facilitate the categorization of ads.

The following examples demonstrate how having information about the ad (e.g., ad category) can be used to show proper ads based on the metadata from the actual creative.

Example 1: Competitive Separation

> Publisher X has content deal with Advertiser Y for Footwear. Publisher X does not want ads from Advertiser Z or competing companies appearing with Advertiser Y. Using the category, the ad server can make appropriate ad decisions to exclude ads from Advertiser Z since they are a competitor of Advertiser Y.

Example 2: Brand Safety

> Site A is a children's site and Advertiser Z has ads for Beer and Wine. Site A would not want advertisements from Advertiser Z on its site and could reject any ads from Advertiser Z, since they are not appropriate for children. Using the category, the ad server can make appropriate ad decisions to exclude ads from Advertiser Z.

For both these examples, having more in-depth information about the advertiser, type of advertisement, and product information readily available facilitates better decisions about whether the ad should be displayed on a publisher's site. For video ad serving, especially in programmatic buying, where there are multiple layers of third-party ad serving, having this information is no longer a mere request but is becoming essential for ad verification, ad governance, ad decisions, and separation of content. This benefits both the advertiser and the publisher for campaign optimization and monetization of inventory.

Third-Party Ad Server

Third-party ad serving is used when advertisers, through their agency, use a different third-party ad server to serve a third-party creative. That is, an advertiser wants to serve the creative from one ad server but wants impression reporting and tracking on a separate ad server. While this is a preferred method for many advertisers, there are several issues that arise on the demand side.

- **Reduced Visibility:** Reduced visibility into what ad is actually being served behind a VAST ad tag.
- **Rotating Creatives:** Ads are often rotated and may not serve correctly across platforms. For example, if an ad appears in rotation on device in an unsupported format, a bid for the ad is wasted and reduces monetization.
- **Acceptable Ads:** It is hard to determine what an acceptable ad is. For example, if only a 15-second video spot is allowed and ads are rotating, there is no guarantee the ad will always be 15 seconds.

Other Issues

While competitive separation, brand safety, and ad visibility are a few key issues for ad delivery, there are many other areas where standardized metadata is required for proper ad delivery. One example is the regulation of displaying ads in particular languages in other jurisdictions.

> Site A is a site in the Canadian province of Quebec, where only ads in French are allowed to show. By regulations, Site A cannot display ads in English. Using the language field in Ad-ID's metadata, the ad server can make appropriate ad decisions to exclude ads that are not in French.

Solution

Ad-ID provides a single unique identifier for tracking creative assets and facilitates methods to retrieve authoritative and trusted advertising metadata about the ad asset. Ad-ID provides a way to determine exactly what information about the ad was served, and the identifier can be used to measure how the ad performed at the creative level.

Using the Ad-ID code, ad servers and publishers can use Ad-ID's CEA service module to access and retrieve Ad-ID's rich set of metadata. As part of the metadata, Ad-ID uses Nielsen data, which is a trusted authority supported by publishers, to provide information about the advertiser, brand, product, and product categorization for the creative asset. The product categorization provides all four levels of Nielsen's product categorization and can be used in multiple combinations for ad categorization to separate advertiser categories for commercial optimization. Accessing Ad-ID metadata through the CEA service also provides access to additional metadata for further in-depth analysis, ad decisions, and other information about the creative. This information includes but is not limited to Ad Title, Ad Duration, Media Type, Ad Agency, and Language (see Appendix A). Once information is retrieved from the CEA service, this can be used to create an Ad-ID XML Extension in VAST (see Appendix B).

**Use Case 3: Single Ad Server End-to-End**
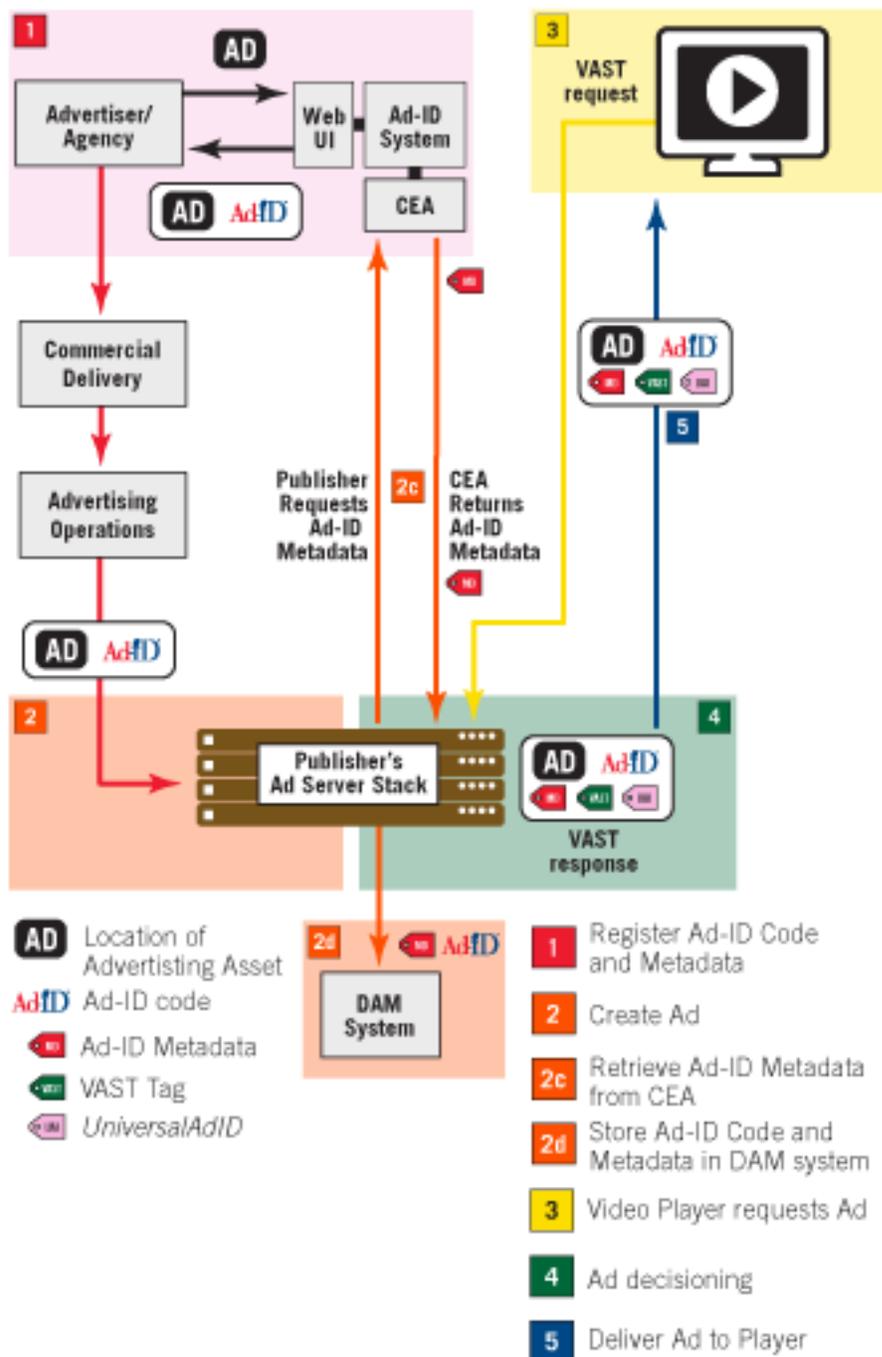
In an end-to-end solution, the video ad server is used to create a campaign and serve the creative directly to the player. The same video ad server sends the creative back to the video player.

1. **Register Ad:** An Ad-ID code is created in the Ad-ID system with associated metadata by an advertiser or agency.
2. **Create Ad:** The publisher creates an advertising campaign in publisher's ad server.
   a. A valid Ad-ID is entered into the ad server.
   b. The publisher manually uploads the video or a cloud URL to the video to the ad server.
   c. Publisher's ad server queries the Ad-ID CEA service to verify that the Ad-ID is legitimate. The CEA service returns the metadata.
   d. The publisher's ad server stores the metadata in its DAM system.
3. **Request Ad:** A request is sent by the video player to the publisher's ad server.
4. **Ad Decisioning:** The ad server will use Ad-ID and Ad-ID metadata to make the ad decisions.
   a. The ad server can use the Ad-ID code to uniquely identify ads in a centralized database or Digital Asset Management System (DAM).
   b. The ad server creates the initial VAST XML document, which contains information about the ad, including the Ad-ID code. Ad-ID metadata can also be retrieved from the CEA service (see Appendix A) and included as part of the "Extension" element in VAST (see Appendix B).
   c. The ad server can call the CEA service if it doesn't have enough details and make a decision based on Ad-ID metadata (see Appendix A).
   d. Subsequent responses can be retrieved from the ad server's cache.
5. **Deliver Ad to Player:** The ad response is returned to the player and displays the ad using the information from the VAST response.

Use Case 4: Single Ad Server End-to-End with Ad Cloud

1. **Register Ad:** An Ad-ID code is created in the Ad-ID system with associated metadata by an advertiser or agency.
2. **Ad Cloud:** The master video asset is uploaded into a centrally managed Ad Cloud.
   a. The name of the asset will be the Ad-ID created in step 1 and keyed by the Ad-ID.
   b. The Ad Cloud encodes the master asset into multiple versions to serve ads cross-platform and the ad is hosted in a central cloud repository.
   c. The Ad Cloud will output an Ad Tag that returns a VAST XML document that contains the location of the asset.
3. **Create Ad:** The ad is created in an ad server.
   a. The Ad Tag created in step 2 is entered into the ad server.
   b. The Ad Tag provides a URI link to the asset.
   c. Publisher's ad server queries the Ad-ID CEA service to verify that the Ad-ID is legitimate. The CEA service returns the metadata.
   d. The publisher's ad server stores the metadata in its DAM system.
4. **Request Ad:** A request is sent by the video player to the publisher's ad server.
5. **Ad Decisioning/VAST Response:** The ad server will use Ad-ID and Ad-ID metadata to make the ad decisions.
   a. The ad server can use the Ad-ID code to uniquely identify ads in a centralized database or Digital Asset Management System (DAM).
   b. The ad server creates the initial VAST XML document, which contains information about the ad, including the Ad-ID code. Ad-ID metadata can also be retrieved from the CEA service (see Appendix A) and included as part of the "Extension" element in VAST (see Appendix B).
   c. The ad server can call the CEA service if it doesn't have enough details and make a decision based on Ad-ID metadata (see Appendix A).
   d. Subsequent responses can be retrieved from the ad server's cache.
   e. The ad server will make a VAST request to the Ad Cloud.
   f. The Ad Cloud returns a VAST response containing the URI link to the video asset from the Ad Cloud server.
6. **Deliver Ad to Player:** The ad response is returned to the player and displays the ad using the information from the VAST response. The location of the video asset will be the URI link to the Ad Cloud server returned in the step above.

Third-Party Ad Server

When a third-party ad server is used, the video ad server call returns a VAST wrapper, which contains information about the third-party ad server. The ad server uses the wrapper and calls out to the third-party server for the campaign, which then sends the VAST tag back to the video player.

Use Case 5: Third-Party Ad Server — Advertiser/Agency Ad Server, SSP, or DSP
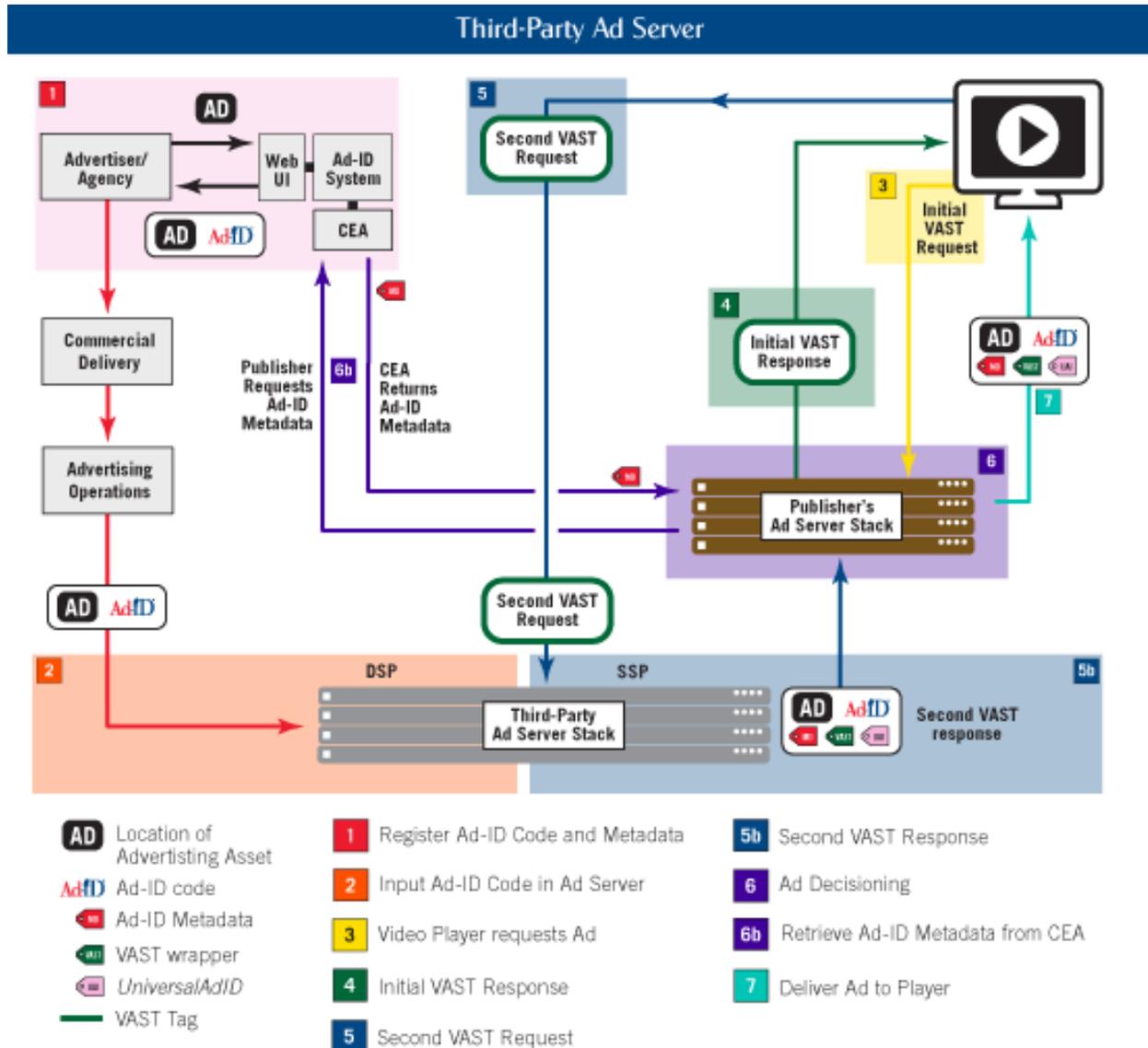
1. **Register Ad:** An Ad-ID code is created in the Ad-ID system with associated metadata by an advertiser or agency.
2. **Create Ad:** The agency creates an advertising campaign on a third-party DSP ad server.
   a. A valid Ad-ID is entered into the ad server.
   b. A valid Ad-ID code is entered into the third-party ad server (e.g. DSP ad server) or retrieved from the file name.
   c. The ad server creates the initial VAST XML document, which contains information about the ad, including the Ad-ID code.
   d. The ad is available through an SSP ad server.
3. **Request Ad:** A request is sent by the video player to the publisher's ad server.
4. **Initial VAST Response:** The publisher's ad server returns a wrapper response (VAST Wrapper) to the video player.
5. **Secondary Ad Request:** The video player makes a secondary request to a third-party ad server.
   a. Several wrapper responses may be returned and additional requests made to multiple third-party ad server (chain of wrappers). An example of this would be with programmatic advertising, which would involve several third-party ad servers on the supply and demand side (SSP/DSP).
   b. Once an ad is available, the standard VAST response is returned for ad delivery.
6. **Ad Decisioning:** The publisher's ad server will use Ad-ID and Ad-ID metadata to make ad decisions.
   a. The publisher's ad server can use the Ad-ID code to uniquely identify ads in a centralized database or Digital Asset Management System (DAM).
   b. The ad server can call the CEA service if it doesn't have enough details and make a decision based on Ad-ID metadata (see Appendix A).
   c. Subsequent responses can be retrieved from the ad server's cache.
7. **Deliver Ad to Player:** The ad response is returned to the player and displays the ad using the information from the VAST response. The location of the asset is returned based on the information from VAST response.

Best Practices

The following are best practices for the use of Ad-ID in conjunction with VAST 4.0 for proper ad delivery.

- For the U.S., the Ad-ID code should be used as the *idValue* attribute in the *UniversalAdID* Element in VAST 4.0.
- For the U.S., the domain ad-id.org should be used as the *idRegistry* attribute in the *UniversalAdID* Element in VAST 4.0.
- Outside the U.S., the registrant's code (e.g., Clock Number in the U.K.) should be used as the *idValue* attribute in the *UniversalAdID* Element in VAST 4.0.
- Outside the U.S., the registrant's domain (e.g., clearcast.co.uk in the U.K.) should be used as the *idRegistry* value in the *UniversalAdID* Element in VAST 4.0.
- All necessary Ad-ID metadata may be populated in the VAST 4.0 Extension as an Ad-ID XML Element on first creation of the VAST 4.0 document.
- As a good naming convention, the creative asset should be named the Ad-ID code (e.g., ADID0001000.mp4). To be consistent, multiple versions of the creative asset should be named the Ad-ID code (e.g., ADID0001000.wmv, ADID0001000.qt, ADID0001000.mov, and so on).
- Ad servers should parse the file name for the Ad-ID code as a first option. The second option would be an input field.
- All Ad-ID codes should be validated by the ad server.
- Any requests to retrieve Ad-ID metadata should be cached and stored in a DAM system or some internal storage mechanism.
- All subsequent requests should use the cached storage and not the Ad-ID database directly.
- The mezzanine file should be stored at a single location for common access across all parties.

Appendix A: Ad-ID Metadata

Ad-ID is a central source of information that provides standardized data for creative assets. Using Ad-ID as the Universal Ad ID in VAST 4.0 in conjunction with the CEA service XML API facilitates the exchange of standardized advertising for a variety of purposes, such as commercial clearance, competitive reporting, commercial verification, and digital asset management. The metadata retrieved from the CEA service includes the following key information about an advertisement:

Ad-ID code	The unique identifier for this advertising asset.
Media Type	The media category describing the type of advertising asset. *Example:* Video would be used for TV ads
Medium	Describes the distribution channels for this advertising asset. *Example:* Television: ALL; Cable TV: Spot; Internet Video
Definition	Only available for codes with media type Video. Refers to SD (standard definition), HD (high definition), and 3D (3-Dimensional).
Parent	The parent company of the advertiser featured in the advertising asset. *Example:* PEPSICO INC
Advertiser	The company or the agency's client that is advertising. *Example:* FRITO-LAY INC
Brand	The advertiser brand that is associated to this product. *Example:* DORITOS
Product	The product that is the extension of the brand. *Example:* COOL RANCH
Ad Title	Indicates the name of the advertising asset.
Length/Size	Indicates the duration or size of the advertising asset.
Agency Name	The agency working with the advertiser.
Agency Role	What type of service the agency provides.
Language	The language used in the advertising asset.
Code Record Type	Indicates whether the advertising asset is an original or a derivative of another advertising asset which it is related to. *Example:* A derivative may be a revision of the original asset.
Industry Group	Based on the Nielsen categorization data (PCC-Product Category Codes). Most generic grouping of like products and services.
Major Category	Based on the Nielsen categorization data (PCC-Product Category Codes). Further refines the industry category.
Sub Category	Based on the Nielsen categorization data (PCC-Product Category Codes). Most specific PCC category associated with brands.
Product Category	Based on the Nielsen categorization data (PCC-Product Category Codes). The most granular level used to identify the specific categories included in the PCC Sub Category.

The complete list of metadata fields can be found here:

http://bit.ly/adIDMetadataVAST4

Appendix B: Ad-ID Metadata VAST Extension

Ad-ID metadata from the CEA service can be included as an extension in VAST 4.0. This will provide all metadata related to the asset and can be used by ad decisioning systems.

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                <advertiser id="C10000161">AD EYE DEE STORES</advertiser>
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        </Brand_and_Product>
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Appendix C: Sample Product Categorization (PCC)

PCC	Industry Group	PCC	Major Group (PCC Group)	PCC	PCC Description (PCC Subgroup)	PCC	Product Category
F100	FOODS & FOOD PRODUCTS	F160	BAKERY GOODS (FRESH, FROZEN, REFRIGERATED, ETC)	F161	BREADS, ROLLS, WAFFLES & PANCAKES	F161	DOUGH
F100	FOODS & FOOD PRODUCTS	F160	BAKERY GOODS (FRESH, FROZEN, REFRIGERATED, ETC)	F161	BREADS, ROLLS, WAFFLES & PANCAKES	F161	ENGLISH MUFFINS
F100	FOODS & FOOD PRODUCTS	F160	BAKERY GOODS (FRESH, FROZEN, REFRIGERATED, ETC)	F161	BREADS, ROLLS, WAFFLES & PANCAKES	F161	FRENCH TOAST-FROZEN
F100	FOODS & FOOD PRODUCTS	F160	BAKERY GOODS (FRESH, FROZEN, REFRIGERATED, ETC)	F161	BREADS, ROLLS, WAFFLES & PANCAKES	F161	TORTILLAS
F100	FOODS & FOOD PRODUCTS	F160	BAKERY GOODS (FRESH, FROZEN, REFRIGERATED, ETC)	F162	CAKES, PIES, PASTRIES & DONUTS	F162	PASTRY
F100	FOODS & FOOD PRODUCTS	F160	BAKERY GOODS (FRESH, FROZEN, REFRIGERATED, ETC)	F163	COOKIES & CRACKERS	F163	COOKIES
F100	FOODS & FOOD PRODUCTS	F160	BAKERY GOODS (FRESH, FROZEN, REFRIGERATED, ETC)	F163	COOKIES & CRACKERS	F163	CRACKERS
F100	FOODS & FOOD PRODUCTS	F160	BAKERY GOODS (FRESH, FROZEN, REFRIGERATED, ETC)	F163	COOKIES & CRACKERS	F163	POPCORN CAKES
F100	FOODS & FOOD PRODUCTS	F160	BAKERY GOODS (FRESH, FROZEN, REFRIGERATED, ETC)	F163	COOKIES & CRACKERS	F163	RICE CAKES
F100	FOODS & FOOD PRODUCTS	F170	FOOD BEVERAGES	F171	COFFEE, TEA, COCOA & DERIVATIVES	F171	CHOCOLATE SYRUP
F100	FOODS & FOOD PRODUCTS	F170	FOOD BEVERAGES	F171	COFFEE, TEA, COCOA & DERIVATIVES	F171	COCOA
F100	FOODS & FOOD PRODUCTS	F170	FOOD BEVERAGES	F171	COFFEE, TEA, COCOA & DERIVATIVES	F171	WEBSITE-COFFEE-TEA
F100	FOODS & FOOD PRODUCTS	F170	FOOD BEVERAGES	F171	COFFEE, TEA, COCOA & DERIVATIVES	F171	WEBSITE-ICED TEA
F100	FOODS & FOOD PRODUCTS	F170	FOOD BEVERAGES	F172	FRUIT JUICES/DRINKS (INCL PWRD)	F172	WEBSITE-FRUIT JUICES
F100	FOODS & FOOD PRODUCTS	F170	FOOD BEVERAGES	F173	VEGETABLE JUICES	F173	VEGETABLE JUICE

Definitions

Complete External Access (CEA)

Complete External Access is the capability provided by Ad-ID through which approved companies can access all Ad-ID codes and metadata in the Ad-ID system via integrated web services.

DSP (Demand-Side Platform)

A platform or provider that allows advertisers to manage multiple ad exchange and data exchange accounts through one interface, often in real time.

Programmatic Buying

The buying and selling of ad inventory in an automated fashion.

SSP (Supply-Side Platform)

A platform or provider that allows publishers to manage and optimize revenue for their inventory from multiple sources, often in real time.

References

CIMM Lexicon. http://cimm-us.org/wp-content/uploads/2016/08/CIMM-LEXICON-3.0_July-2016.pdf

Clearcast: http://www.clearcast.co.uk/

MASB Marketing Dictionary. http://www.marketing-dictionary.org/

About Our Partners

The following companies provided input in their respective areas of expertise in video advertising and helped establish this use case report:

CBS Interactive: https://www.cbsinteractive.com/

Extreme Reach https://extremereach.com/

FreeWheel: freewheel.tv

Google: www.google.com

TubeMogul: www.tubemogul.com

About IAB Technology Laboratory

The IAB Technology Laboratory is an independent, international, nonprofit research and development consortium charged with producing and helping companies implement global industry technical standards. Comprised of digital publishers and ad technology firms, as well as marketers, agencies, and other companies with interests in the interactive marketing arena, the IAB Tech Lab's goal is to reduce friction associated with the digital advertising and marketing supply chain, while contributing to the safe and secure growth of the industry. The organization's governing member companies include AppNexus, Extreme Reach, Google, GroupM, Hearst Magazines Digital Media, Integral Ad Science, LinkedIn, Moat, Pandora, PubMatic, Sonobi, Tremor Video, and Yahoo! JAPAN. Established in 2014, the IAB Tech Lab is headquartered in New York City with an office in San Francisco.

About Ad-ID

Ad-ID is the industry standard for identifying advertising assets across all media platforms. The Web-based system is a central, secure source for the industry's asset identification information and ensures that all assets are delivered correctly to media and consumers. Ad-ID is a joint venture of the American Association of Advertising Agencies (4A's) and the Association of National Advertisers (ANA) and serves more than 3,000 advertisers of all sizes and most advertising agencies in the United States. For more information visit Ad-ID.org or follow Ad-ID on Twitter @Adidentify.