

*OpenRTB Dynamic Native Ads API
Specification Version 1.2*

Draft for Public Comment April 2017

Introduction

The Native Ads sub-committee of the IAB OpenRTB Project assembled in May 2014 to develop a new supplementary API specification for companies interested in an open protocol for the automated trading of Native Ads enabled media across a broader range of platforms, devices, and advertising solutions. This document is the culmination of those efforts.

ABOUT THE IAB'S TECHNOLOGY LAB

The IAB Technology Laboratory is a nonprofit research and development consortium charged with producing and helping companies implement global industry technical standards and solutions. The goal of the Tech Lab is to reduce friction associated with the digital advertising and marketing supply chain while contributing to the safe growth of an industry.

The IAB Tech Lab spearheads the development of technical standards, creates and maintains a code library to assist in rapid, cost-effective implementation of IAB standards, and establishes a test platform for companies to evaluate the compatibility of their technology solutions with IAB standards, which for 18 years have been the foundation for interoperability and profitable growth in the digital advertising supply chain.

Further details about the IAB Technology Lab can be found at: <https://iabtechlab.com>. The OpenRTB Work Group is a working group within the IAB Technology Lab.

This document can be found at <https://iabtechlab.com/openrtb> and you can email openrtb@iabtechlab.com

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Change Log

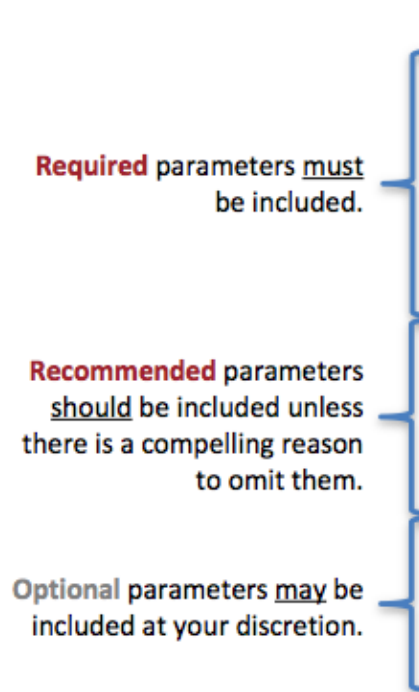
| Version | Date | Section Link | Change |
|---------|----------|---|---|
| 1.0 | Jan 2015 | | Original Version |
| 1.1 | Oct 2015 | | Various clerical fixes and clarifications, standardized creative element lengths/sizes/aspect ratios in the asset sub-objects, added new context and placement types to bid request, noted that direct-object representation is supported along with string-encoded. See 1.1 spec for further change log details. |
| 1.2 | Mar 2017 | Request | As previewed in 1.1, deprecating the AdUnit and LayoutID fields - they were replaced in 1.1 with Placement and Context. |
| 1.2 | Mar 2017 | Event Trackers Request, Response | Add new support for declared types of event tracking in the bid request and an array of responses for tracking in the response. Marking previous imptrackers and jstracker as to be deprecated. |
| 1.2 | Mar 2017 | Request, Response | Added support for supply source to indicate whether they support displaying a link to a custom privacy notice, and for transmitting said URL in the response. |
| 1.2 | Mar 2017 | Request, Response, Title, Data, Image | Added support for third-party ad serving / dynamic creative by establishing a way to respond with a URL to retrieve the assets rather than including all the assets inline. |
| 1.2 | Mar 2017 | Examples | Updated examples to reflect all above changes |

Before You Get Started

This specification contains a detailed explanation of a sub-protocol of the OpenRTB real-time bidding interface. Not all objects are required, and each object may contain a number of optional parameters. To assist a first-time reader of the specification, we have indicated which fields are essential to support a minimum viable real time bidding interface for various scenarios.

A minimal viable interface should include the **required** and **recommended** parameters, but the scope for these parameters may be limited to specific scenarios. In these cases, the scope will be qualified with the applicable scenarios (e.g., **required for native impressions** and **recommended for native impressions**). Conversely, if the scope is not qualified, it applies to all scenarios.

Optional parameters may be included to ensure maximum value is derived by the parties.



| Field | Scope | Type | Default | Description |
|----------------|------------------------------------|-------------------------|---------|--|
| <u>id</u> | <u>required</u> | <u>string</u> | - | Unique ID of the bid request, provided by the exchange. |
| <u>version</u> | <u>required</u> | <u>string</u> | - | Open RTB version |
| <u>imp</u> | <u>required</u> | <u>array of objects</u> | - | Array of impression objects. Multiple impression auctions may be specified in a single bid request. At least one impression is required for a valid bid request. |
| <u>site</u> | <u>recommended for websites</u> | <u>object</u> | - | See Site Object |
| <u>app</u> | <u>recommended for native apps</u> | <u>object</u> | - | See App Object |
| <u>device</u> | <u>recommended</u> | <u>object</u> | - | See Device Object |
| <u>user</u> | <u>recommended</u> | <u>object</u> | - | See User Object |
| <u>at</u> | <u>optional</u> | <u>string</u> | 2 | Auction Type. If "1", then first price auction. If "2", then second price auction. Additional auction types can be defined as per the exchange's business rules. |
| <u>tmax</u> | <u>optional</u> | <u>integer</u> | - | Maximum amount of time in milliseconds to submit a |

Required parameters must be included.

Recommended parameters should be included unless there is a compelling reason to omit them.

Optional parameters may be included at your discretion.

IMPORTANT: Since **recommended** parameters are not required, they may not be available from all supply sources. It is suggested that all parties to OpenRTB transaction complete the integration checklist (please refer to OpenRTB) to identify which parameters the supply side supports in the bid request, and which parameters the demand side requires for ad decisioning.

1 Introduction

1.1 Mission / Overview

The mission of the OpenRTB Native project is to spur standardization and greater growth in the Real-Time Bidding (RTB) marketplace for Native Ads by providing open industry standards for communication between buyers of advertising and sellers of publisher inventory.

This specification is a sub-protocol of OpenRTB to allow for the delivery of native advertising formats, as their specifics differ from publisher to publisher. In May 2013, a separate IAB

subcommittee was formed to define the request and response structures of native ad units; version 1.0 was published in early 2015. Version 1.1 is designed to fix errors, make clarifications, and promote further adoption through refined standardization of assets and classification fields. Version 1.2 adds support for third-party/dynamic creatives, more robust event-tracking support, privacy opt-out information sharing, and makes other minor enhancements as noted in the change log.

1.2 Credits / Project History

This document has been developed by the IAB Technology Lab's OpenRTB Native Subgroup. The OpenRTB Working Group mission and participation list can be reviewed at:

<http://www.iab.com/guidelines/real-time-bidding-rtb-project/>

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1.3 Resources

| Resource | Location |
|--|---|
| OpenRTB Website | https://iabtechlab.com/openrtb/ |
| OpenRTB Native Ads Project Page | http://github.com/openrtb/OpenRTB/NativeAds.html |
| Developer / Product Manager Mailing List | http://groups.google.com/group/openrtb-native |
| Making Sense of Programmatic Native ("OpenRTB for native for dummies") | http://www.sharethrough.com/guides/programmatic-native/ |
| IAB Deep-Dive on In-Feed Ads | http://www.iab.net/media/file/IAB_Deep_Dive_on_InFeed_Ad_Units.pdf |
| IAB Native Advertising Playbook | http://www.iab.net/media/file/IAB-Native-Advertising-Playbook2.pdf |
| Guide to Native 1.1 | http://nativeadvertising.com/openrtb-2-4-and-native-1-1-the-new-iab-standards-that-are-allowing-native-ads-to-scale/ |

1.4 Version History

Version 0.99.10.24 PUBLIC COMMENT DRAFT October 24, 2014

Version 0.99.10.27 PUBLIC COMMENT DRAFT October 27, 2014

Version 1.0.0.0 EXTERNAL DRAFT November 19, 2014

Version 1.0.0.1 EXTERNAL DRAFT December 14, 2014

Version 1.0.0.2 FINAL DRAFT January 23, 2015

Version 1.1 FINAL DRAFT March 22, 2015

Version 1.2 PUBLIC COMMENT DRAFT April, 2017

2 Native Ads Basics

Native advertising is an online advertising method in which the advertiser attempts to gain attention by providing content in the context of the user's experience. Native ad formats match both the form and function of the user experience in which it is placed. This is in contrast to traditional banner or interstitials ads, which are displayed in a separate space of predefined and universal size, without regard to their surroundings.




2.1 IAB Core Six

The [IAB Native Advertising Playbook](#) lists six types of native ad units:

- In Feed Units
- Paid Search Units
- Recommendation Widgets
- Promoted Listings
- IAB Standard with Native Elements
- Custom / “Can’t be contained”

2.2 Deep Dive on In-Feed Ad Units

To help further define and clarify the types and categories of native advertising, the IAB published a [Deep Dive on In-Feed Ad Units](#) in July 2015. Version 1.1 of the Native spec uses these concepts to refine the definitions of ad types, detailed below as Context and PlacementType, which are replacing the previous LayoutID and AdUnitID, which were defined in Native 1.0 and based on the original Native Advertising Playbook referenced above.

| | 1 | 2 | 3 |
|--------------------------------------|---|--|---|
| | Content Feeds | Social Feeds | Product Feeds |
| Where found | Publisher content sites and news aggregators such as CNN, Forbes, Yahoo | Social networking and messaging apps such as Facebook, Instagram, Tango | Retail sites and app listings such as Amazon, Etsy, eBay |
| Most common ad types/content objects | Story ad, video ad | Story ad, video ad, app install ad, product ad | Product ad, app install ad |
| Most common types of links | Articles, videos, stories, images, music | Social content, articles, videos, stories, images and music | Products and apps |
| Representative feed view |  |  |  |

2.3 Data Format

As this specification outlines an optional sub-protocol of the main OpenRTB protocol payload, the format must follow that of its parent. Please refer to the main OpenRTB specification for details of various formats that may be used

2.4 Versioning

The Native Object in the Bid Request (OpenRTB contains a “ver” field defining the version of the OpenRTB native extension.

2.5 Customization and Extensions

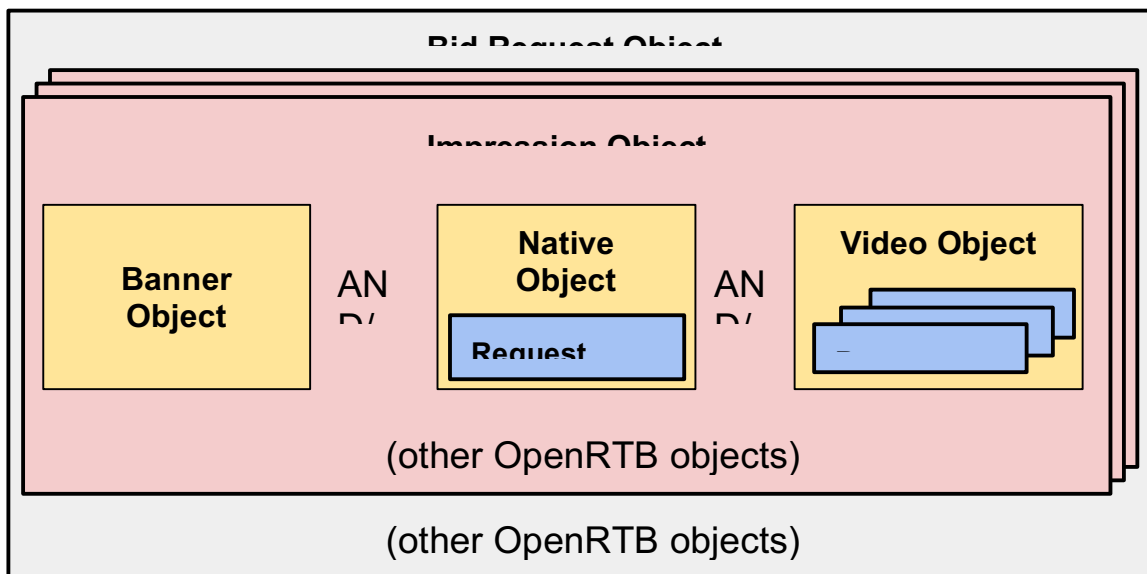
The OpenRTB Native Ads spec allows for exchange specific customization and extensions of the specification. Any object may contain extensions. In order to keep extension fields consistent across platforms, they should consistently be named “ext”.

3 Bid Request Details

RTB transactions are initiated when an exchange or other supply source sends a bid request to a bidder. The bid request consists of a bid request object, at least one impression object, and may optionally include additional objects providing impression context.

3.1 Native Object Hierarchy

Following is the object hierarchy for a bid request. The new Native Object is another optional element of the impression object, and can be specified as an alternative to or in conjunction with a banner object or video object.



4 Native Ad Request Markup Details

4.1 Native Markup Request Object

The Native Object defines the native advertising opportunity available for bid via this bid request. It will be included as a JSON-encoded string in the bid request's `imp.native` field or as a direct JSON object, depending on the choice of the exchange. *While OpenRTB 2.x officially supports only JSON-encoded strings, many exchanges have implemented a formal object. Check with your integration docs.*

The **Default** column dictates how optional parameters should be interpreted if explicit values are not provided.

| Field | Scope | Type | Default | Description |
|----------------|--------------------|------------------|---------|---|
| Ver | optional | string | 1.2 | Version of the Native Markup version in use. |
| context | recommended | integer | - | The context in which the ad appears. See Table of Context IDs below for a list of supported context types. |
| contextsubtype | optional | integer | - | A more detailed context in which the ad appears. See Table of Context SubType IDs below for a list of supported context subtypes. |
| plcmnttype | recommended | integer | - | The design/format/layout of the ad unit being offered. See Table of Placement Type IDs below for a list of supported placement types. |
| plcmcnt | optional | integer | 1 | The number of identical placements in this Layout. Refer Section 8.1 Multiplacement Bid Requests for further detail. |
| seq | optional | integer | 0 | 0 for the first ad, 1 for the second ad , and so on. Note this would generally NOT be used in combination with plcmcnt - either you are auctioning multiple identical placements (in which case plcmcnt>1, seq=0) or you are holding separate auctions for distinct items in the feed (in which case plcmcnt=1, seq=>=1) |
| assets | required | array of objects | - | An array of Asset Objects . Any bid response must comply with the array of elements expressed in the bid request. |
| urlsupport | optional | int | 0 | Whether the supply source / impression supports returning an asseturl instead of an asset object. 0 or the absence of the field indicates no such support. |

| | | | | |
|---------------|-------------|------------------|---|---|
| eventtrackers | optional | array of objects | - | Specifies what type of event tracking is supported – see Event Trackers Request Object |
| privacy | recommended | integer | 0 | Set to 1 when the native ad supports buyer-specific privacy notice (see http://youradchoices.com/ for example). Set to 0 (or field absent when the native ad doesn't support custom privacy links or if support is unknown). |
| ext | optional | object | - | This object is a placeholder that may contain custom JSON agreed to by the parties to support flexibility beyond the standard defined in this specification |

Note: Prior to VERSION 1.1, the specification could be interpreted as requiring the native request to have a root node with a single field “native” that would contain the object above as its value. The Native Markup Request Object specified above is now the root object.

4.2 Asset Request Object

The main container object for each asset requested or supported by Exchange on behalf of the rendering client. Any object that is required is to be flagged as such. Only one of the {title,img,video,data} objects should be present in each object. All others should be null/absent. The id is to be unique within the AssetObject array so that the response can be aligned.

To be more explicit, it is the ID of each asset object that maps the response to the request. So if a request for a title object is sent with id 1, then the response containing the title should have an id of 1.

New in version 1.1 of the spec, there are recommended sizes/lengths/etc with some of the asset types. The goal for asset requirements standardization is to facilitate adoption of native by DSPs by limiting the diverse types/sizes/requirements of assets they must have available to purchase a native ad impression. While great diversity may exist in publishers, advertisers/DSPs can not be expected to provide infinite headline lengths, thumbnail aspect ratios, etc. While we have not gone as far as creating a single standard, we've honed in on a few options that cover the most common cases. SSPs can deviate from these standards, but should understand they may limit applicable DSP demand by doing so. DSPs should feel confident that if they support these standards they'll be able to access most native inventory.

| Field | Scope | Type | Default | Description |
|-------|-------|------|---------|-------------|
|-------|-------|------|---------|-------------|

| | | | | |
|----------|-------------------------|--------|---|---|
| id | required | int | - | Unique asset ID, assigned by exchange. Typically a counter for the array. |
| required | optional | int | 0 | Set to 1 if asset is required (exchange will not accept a bid without it) |
| title | recommended 1 | object | - | Title object for title assets. See TitleObject definition. |
| img | recommended 1 | object | - | Image object for image assets. See ImageObject definition. |
| video | optional ¹ | object | - | Video object for video assets. See the Video request object definition. Note that in-stream (ie preroll, etc) video ads are not part of Native. Native ads may contain a video as the ad creative itself. |
| data | recommended 1 | object | - | Data object for brand name, description, ratings, prices etc. See DataObject definition. |
| ext | optional | object | - | This object is a placeholder that may contain custom JSON agreed to by the parties to support flexibility beyond the standard defined in this specification |

¹: each asset object may contain only one of title, img, data or video.

4.3 Title Request Object

The Title object is to be used for title element of the Native ad.

| Field | Scope | Type | Default | Description |
|-------|-----------------|---------|---------|--|
| len | required | integer | - | Maximum length of the text in the title element. Recommended to be 25, 90, or 140. |
| ext | optional | object | - | This object is a placeholder that may contain custom JSON agreed to by the parties to support flexibility beyond the |

standard defined in this specification

4.4 Image Request Object

The Image object to be used for all image elements of the Native ad such as Icons, Main Image, etc. **Recommended sizes and aspect ratios are included in the [Image Asset Types](#) section.**

| Field | Scope | Type | Default | Description |
|-------|--------------------|------------------|-------------------|--|
| type | optional | integer | - | Type ID of the image element supported by the publisher. The publisher can display this information in an appropriate format. See Table Image Asset Types . |
| w | optional | integer | - | Width of the image in pixels. |
| wmin | recommended | integer | - | The minimum requested width of the image in pixels. This option should be used for any rescaling of images by the client. Either w or wmin should be transmitted. If only w is included, it should be considered an exact requirement. |
| h | optional | integer | - | Height of the image in pixels. |
| hmin | recommended | integer | - | The minimum requested height of the image in pixels. This option should be used for any rescaling of images by the client. Either h or hmin should be transmitted. If only h is included, it should be considered an exact requirement. |
| mimes | optional | array of strings | All types allowed | Whitelist of content MIME types supported. Popular MIME types include, but are not limited to "image/jpg" "image/gif". Each implementing Exchange should have their own list of supported types in the integration docs. See Wikipedia's MIME page for more |

| | | | | |
|-----|----------|--------|---|---|
| | | | | information and links to all IETF RFCs. If blank, assume all types are allowed. |
| ext | optional | object | - | This object is a placeholder that may contain custom JSON agreed to by the parties to support flexibility beyond the standard defined in this specification |

4.5 Video Request Object

The video object to be used for all video elements supported in the Native Ad. This corresponds to the Video object of OpenRTB. Exchange implementers can impose their own specific restrictions. Here are the required attributes of the Video Object. For optional attributes please refer to OpenRTB.

| Field | Scope | Type | Default | Description |
|-------------|-----------------|-----------------------|---------|--|
| mimes | required | array of string | | Content MIME types supported. Popular MIME types include, but are not limited to “video/x-ms-wmv” for Windows Media, and “video/x-flv” for Flash Video, or “video/mp4”. Note that native frequently does not support flash. |
| minduration | required | integer | - | Minimum video ad duration in seconds. |
| maxduration | required | integer | - | Maximum video ad duration in seconds. |
| protocols | required | array of integers | - | An array of video protocols the publisher can accept in the bid response. See OpenRTB Table ‘Video Bid Response Protocols’ for a list of possible values. |
| ext | optional | object | - | This object is a placeholder that may contain custom JSON agreed to by the parties to support flexibility beyond the |

standard defined in this specification

4.6 Data Request Object

The Data Object is to be used for all non-core elements of the native unit such as Brand Name, Ratings, Review Count, Stars, Download count, descriptions etc. It is also generic for future native elements not contemplated at the time of the writing of this document. In some cases, additional recommendations are also included in the [Data Asset Types](#) table.

| Field | Scope | Type | Default | Description |
|-------|-----------------|---------|---------|--|
| type | required | integer | - | Type ID of the element supported by the publisher. The publisher can display this information in an appropriate format. See Data Asset Types table for commonly used examples. |
| Len | optional | integer | - | Maximum length of the text in the element's response. |
| Ext | optional | object | - | This object is a placeholder that may contain custom JSON agreed to by the parties to support flexibility beyond the standard defined in this specification |

4.7 Event Trackers Request Object

The event trackers object specifies the types of events the bidder can request to be tracked in the bid response, and which types of tracking are available for each event type, and is included as an array in the request.

| Field | Scope | Type | Default | Description |
|-------|-----------------|---------|---------|--|
| event | required | integer | - | Type of event available for tracking. See Event Types table. |

| | | | | |
|---------|-----------------|-------------------|---|---|
| methods | required | array of integers | - | Array of the types of tracking available for the given event. See Event Tracking Methods table. |
| ext | optional | object | - | This object is a placeholder that may contain custom JSON agreed to by the parties to support flexibility beyond the standard defined in this specification |

5 Native Ad Response Markup Details

The structure and contents of the Bid Response are the same as in the OpenRTB standard. The difference is in how the ad creative is returned. The native creative shall be returned as a JSON-encoded string in the adm field of the Bid Object. Note some implementers have chosen to use a direct object in a new field rather than JSON encoded string.

5.1 Native Markup Response Object

The native object is the top level JSON object which identifies a native response. The native object has following attributes:

| Field | Scope | Type | Default | Description |
|-----------------------|--------------------|------------------|---------|---|
| ver | optional | string | "1.2" | Version of the Native Markup version in use. |
| assets | recommended | array of objects | - | List of native ad's assets. Required if no asseturl. Recommended as fallback even if asseturl is provided. |
| asseturl ¹ | optional | string | - | URL of an alternate source for the assets object. The expected response is a JSON object mirroring the assets object in the |

^{1 1} The provided "asseturl" should be expected to provide a valid response when called in any context, including importantly the brand name and example thumbnails and headlines (to use for reporting, blacklisting, etc), but it is understood the final actual call should come from the client device from which the ad will be rendered to give the buyer the benefit of the cookies and header data available in that context.

| | | | | |
|---------------|-----------------|------------------|---|---|
| | | | | bid response, subject to certain requirements as specified in the individual objects. |
| link | required | object | - | Destination Link. This is default link object for the ad. Individual assets can also have a link object which applies if the asset is activated(clicked). If the asset doesn't have a link object, the parent link object applies. See LinkObject Definition. |
| imptrackers | optional | array of strings | - | Array of impression tracking URLs, expected to return a 1x1 image or 204 response - typically only passed when using 3rd party trackers. To be deprecated – replaced with eventtrackers. |
| jstracker | optional | string | - | Optional JavaScript impression tracker. This is a valid HTML, Javascript is already wrapped in <script> tags. It should be executed at impression time where it can be supported. To be deprecated – replaced with eventtrackers. |
| eventtrackers | optional | array of objects | - | Array of tracking objects to run with the ad, in response to the declared supported methods in the request. Replaces imptrackers and jstracker, to be deprecated. |
| eventtrackers | optional | array of objects | - | Array of tracking objects to run with the ad, in response to the declared supported methods in the request. Replaces imptrackers and jstracker, to be deprecated. |
| privacy | optional | string | - | If support was indicated in the request, URL of a page informing the user about the buyer's targeting activity. |
| Ext | optional | object | - | This object is a placeholder that may contain custom JSON agreed to by the parties to support flexibility beyond the |

standard defined in this
specification

Note: Prior to VERSION 1.1, the native response's root node was an object with a single field "native" that would contain the object above as its value. The Native Object specified above is now the root object.

Note regarding asseturl format responses: In the case of asseturl bidding, since the ultimate buyer/creative engine cannot alter the assets response based on the details inside the assets request (as it does not receive said request), it is critical that all required assets are provided, and such communications will need to be handled offline for recommended/optional elements.

In the normal embedded response, certain attributes of the response are assumed based on matching the ID of the asset object in the response to the ID of the asset object in the request. Since the asset response will not be reading the asset request directly in this implementation, that information is added as option in the below object definitions and marked for that use case.

It is also recommended that where the standard specifies multiple options for an element, that all options be provided. IE all 4 supported thumbnail aspect ratios and all 3 supported title lengths.

The ID component of the asset responses can be omitted.

Note that this change to provide the metadata description of the asset in the response, rather than using the asset ID to implicitly specify that, may be reflected into the inline version of responses in a future version to align the two methods of replying. Making that change now would break backwards compatibility of the inline response mechanism.

5.2 Asset Response Object

Corresponds to the Asset Object in the request. The main container object for each asset requested or supported by Exchange on behalf of the rendering client. Any object that is required is to be flagged as such. Only one of the {title,img,video,data} objects should be present in each object. All others should be null/absent. The id is to be unique within the AssetObject array so that the response can be aligned.

| Field | Scope | Type | Default | Description |
|----------|----------|------|---------|---|
| id | optional | int | - | Optional if asseturl is being used; required if embedded asset is being used. |
| required | optional | int | 0 | Set to 1 if asset is required. (bidder requires it to be displayed). |

| | | | | |
|------------------|-----------------------|--------|---|---|
| title | optional ¹ | object | - | Title object for title assets. See TitleObject definition. |
| img | optional ¹ | object | - | Image object for image assets. See ImageObject definition. |
| video | optional ¹ | object | - | Video object for video assets. See Video response object definition. Note that in-stream video ads are not part of Native. Native ads may contain a video as the ad creative itself. |
| data | optional ¹ | object | - | Data object for ratings, prices etc. |
| link | optional | object | - | Link object for call to actions. The link object applies if the asset item is activated (clicked). If there is no link object on the asset, the parent link object on the bid response applies. |
| ext ² | optional | object | - | This object is a placeholder that may contain custom JSON agreed to by the parties to support flexibility beyond the standard defined in this specification |

¹: asset object may contain only one of title, img, data or video.

²: Bidders are encouraged not to use asset.ext for exchanging text assets. Use data.ext with custom type instead.

5.3 Title Response Object

Corresponds to the Title Object in the request, with the value filled in.

If using asseturl response rather than embedded asset response, it is recommended that three title objects be provided, the length of each of which is less than or equal to the three recommended maximum title lengths (25,90,140).

| Field | Scope | Type | Default | Description |
|-------|-----------------|---------|---------|---|
| text | required | String | - | The text associated with the text element. |
| len | optional | integer | - | The length of the title being provided. Required if using |

| | | | | |
|-----|----------|--------|---|---|
| | | | | asseturl representation, optional if using embedded asset representation. |
| Ext | optional | object | - | This object is a placeholder that may contain custom JSON agreed to by the parties to support flexibility beyond the standard defined in this specification |

5.4 Image Response Object

Corresponds to the Image Object in the request. The Image object to be used for all image elements of the Native ad such as Icons, Main Image, etc.

It is recommended that if asseturl is being used rather than embedded assets, that an image of each recommended aspect ratio (per the Image Types table) be provided for image type 3.

| Field | Scope | Type | Default | Description |
|-------|--------------------|---------|---------|---|
| type | optional | integer | - | Required for asseturl responses, not required for embedded asset responses. The type of image element being submitted from the Image Asset Types table. |
| url | required | string | - | URL of the image asset. |
| W | recommended | integer | - | Width of the image in pixels. |
| H | recommended | integer | - | Height of the image in pixels. |
| Ext | optional | object | - | This object is a placeholder that may contain custom JSON agreed to by the parties to support flexibility beyond the standard defined in this specification |

5.5 Data Response Object

Corresponds to the Data Object in the request, with the value filled in. The Data Object is to be used for all miscellaneous elements of the native unit such as Brand Name, Ratings, Review Count, Stars, Downloads, Price count etc. It is also generic for future native elements not contemplated at the time of the writing of this document.

| Field | Scope | Type | Default | Description |
|-------|-----------------|---------|---------|--|
| type | optional | integer | - | Required for asseturl responses, not required for embedded asset |

| | | | | |
|-------|-----------------|---------|---|--|
| | | | | responses. The type of data element being submitted from the Data Asset Types table. |
| len | optional | integer | - | Required for asseturl responses, not required for embedded asset responses. The length of the data element being submitted. Where applicable, must comply with the recommended maximum lengths in the Data Asset Types table . |
| value | required | string | - | The formatted string of data to be displayed. Can contain a formatted value such as “5 stars” or “\$10” or “3.4 stars out of 5”. |
| ext | optional | object | - | This object is a placeholder that may contain custom JSON agreed to by the parties to support flexibility beyond the standard defined in this specification |

5.6 Video Response Object

Corresponds to the Video Object in the request, yet containing a value of a conforming VAST tag as a value.

| Field | Scope | Type | Default | Description |
|---------|-----------------|--------|---------|-------------|
| vasttag | required | string | - | vast xml. |

5.7 Link Response Object

Used for ‘call to action’ assets, or other links from the Native ad. This Object should be associated to its peer object in the parent Asset Object or as the master link in the top level Native Ad response object. When that peer object is activated (clicked) the action should take the user to the location of the link.

| Field | Scope | Type | Default | Description |
|-------|-----------------|--------|---------|------------------------------------|
| url | required | string | - | Landing URL of the clickable link. |

| | | | | |
|---------------|----------|------------------|---|---|
| clicktrackers | optional | array of strings | - | List of third-party tracker URLs to be fired on click of the URL. |
| fallback | optional | string (URL) | - | Fallback URL for deeplink. To be used if the URL given in url is not supported by the device. |
| Ext | optional | object | - | This object is a placeholder that may contain custom JSON agreed to by the parties to support flexibility beyond the standard defined in this specification |

5.8 Event Tracker Response Object

The event trackers response is an array of objects and specifies the types of events the bidder wishes to track and the URLs/information to track them. Bidder must only respond with methods indicated as available in the request. Note that most javascript trackers expect to be loaded at impression time, so it's not generally recommended for the buyer to respond with javascript trackers on other events, but the appropriateness of this is up to each buyer.

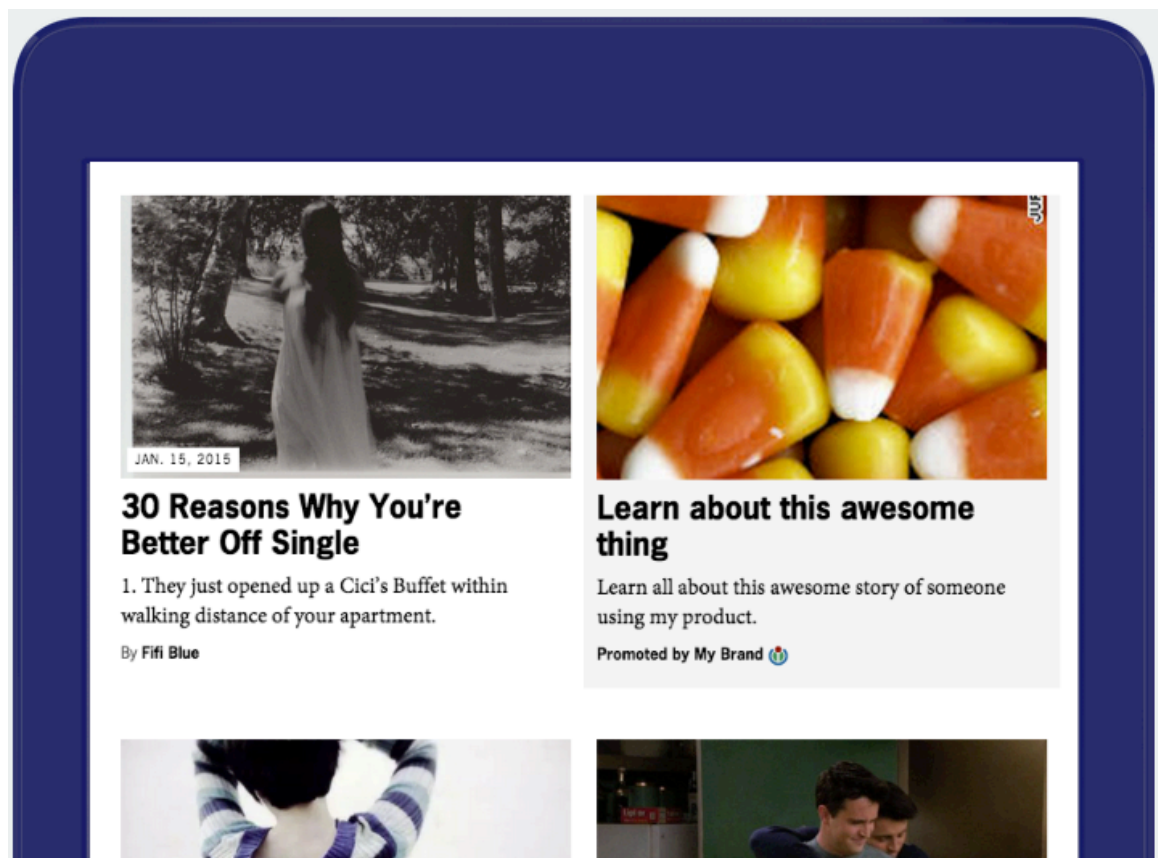
| Field | Scope | Type | Default | Description |
|------------|-----------------|-----------------------------------|---------|---|
| event | required | integer | - | Type of event to track. See Event Types table. |
| method | required | integer | - | Type of tracking requested. See Event Tracking Methods table. |
| url | optional | text | - | The URL of the impage or js. Required for image or js, optional for custom. |
| customdata | optional | Object containing key:value pairs | - | To be agreed individually with the exchange, an array of key:value objects for custom tracking, for example the account number of the DSP with a tracking company. IE {"accountnumber": "123"}. |
| Ext | optional | object | - | This object is a placeholder that may contain custom JSON agreed to by the parties to support flexibility beyond the standard defined in this specification |

6 Bid Request/Response Samples

Note: for purposes of readability, these examples are written as JSON objects directly and illegal strings are NOT encoded for readability, even though they may or may not be string-encoded in the actual message. Also note that only the native portion of the request/response is illustrated. For full examples, please see the OpenRTB 2.x parent document.

6.1 Social Context, Clickout Response

The ad might look like -



Bid Request

```
"native":{
  "ver": "1.2",
  "context": 2,
  "contextsubtype": 20,
```

```
"plcmtype":11,
"plcmcnt":1,
"urlsupport":0,
"privacy":1,
"eventtrackers": [
  {
    "event":1,
    "methods": [1,2]
  },
  {
    "event":2,
    "methods": [1]
  }
],
"assets":[
  {
    "id":123,
    "required":1,
    "title":{"
      "len":140
    }
  },
  {
    "id":128,
    "required":0,
    "img":{"
      "wmin":836,
      "hmin":627,
      "type":3
    }
  },
  {
    "id":124,
    "required":1,
    "img":{"
      "wmin":50,
      "hmin":50,
      "type":1
    }
  }
]
```

```

    },
    {
      "id":126,
      "required":1,
      "data":{
        "type":1,
        "len":25
      }
    },
    {
      "id":127,
      "required":1,
      "data":{
        "type":2,
        "len":140
      }
    }
  ]
}

```

Bid Response

```

  "native": {
    "link": {
      "url": "http: //i.am.a/URL"
    },
    "assets": [
      {
        "id": 123,
        "required": 1,
        "title": {
          "text": "Learn about this awesome thing"
        }
      },
      {
        "id": 124,
        "required": 1,
        "img": {
          "url": "http://www.myads.com/thumbnail1.png"
        }
      }
    ]
  }

```

```

        }
      },
      {
        "id": 128,
        "required": 1,
        "img": {
          "url": "http://www.myads.com/largethumb1.png"
        }
      },
      {
        "id": 126,
        "required": 1,
        "data": {
          "value": "My Brand"
        }
      },
      {
        "id": 127,
        "required": 1,
        "data": {
          "value": "Learn all about this awesome story of someone using
my product."
        }
      }
    ],
    "eventtrackers": [
      {
        "event": 1,
        "method": 2,
        "url": "http://www.mytracker.com/tracker.js"
      },
      {
        "event": 2,
        "method": 1,
        "url": "http://www.mytracker.com/tracker.php"
      }
    ]
  ],

```

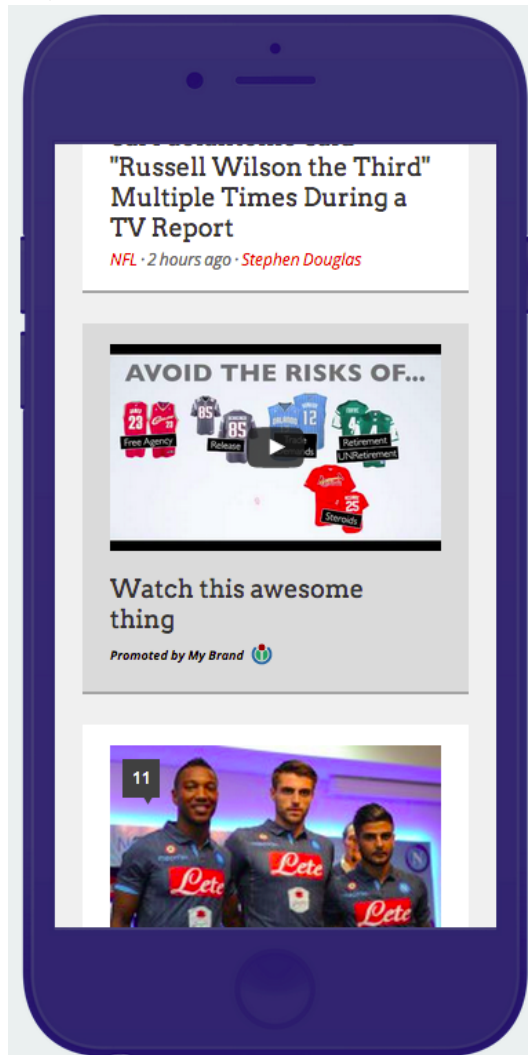
```

    "privacy": "http://www.myprivacyurl.com"
  }

```

6.2 Content Context, Video Response

The ad might look like -



Bid Request

```

"native":{
  "ver": "1.2",
  "context": 1,
  "contextsubtype": 10,
  "plcmtype": 11,

```

```

    "plcmcnt":1,
    "urlsupport":0,
    "privacy":1,
    "eventtrackers": [
      {
        "event":1,
        "methods": [1,2]
      },
      {
        "event":2,
        "methods": [1]
      }
    ],
    "assets":[
      {
        "id": 4,
        "video": {
          "linearity": 1,
          "minduration": 15,
          "maxduration": 30,
          "protocols": [
            2,3
          ],
          "mimes": [
            "video/mp4"
          ]
        }
      },
      {
        "id":123,
        "required":1,
        "title":{
          "len":140
        }
      },
      {
        "id":128,
        "required":0,
        "img":{
          "wmin":836,
          "hmin":627,
          "type":3
        }
      }
    ]
  }
}

```

```

        }
      },
      {
        "id":124,
        "required":1,
        "img":{
          "wmin":50,
          "hmin":50,
          "type":1
        }
      },
      {
        "id":126,
        "required":1,
        "data":{
          "type":1,
          "len":25
        }
      },
      {
        "id":127,
        "required":1,
        "data":{
          "type":2,
          "len":140
        }
      }
    ],
    "eventtrackers": [
      {
        "event":1,
        "method":2,
        "url":"http://www.mytracker.com/tracker.js"
      },
      {
        "event":2,
        "method":1,
        "url":"http://www.mytracker.com/tracker.php"
      }
    ]
  }
}

```

```

    ],
    "privacy": "http://www.myprivacyurl.com"
  }

```

Bid Response

```

    "native": {
      "link": {
        "url": "http: //i.am.a/URL"
      },
      "assets": [

        {
          "id": 4,
          "video": {
            "vasttag": "<VAST version='2.0'></VAST>"
          }
        },
        {
          "id": 123,
          "required": 1,
          "title": {
            "text": "Watch this awesome thing"
          }
        },
        {
          "id": 124,
          "required": 1,
          "img": {
            "url": "http://www.myads.com/thumbnail1.png"
          }
        },
        {
          "id": 128,
          "required": 1,
          "img": {
            "url": "http://www.myads.com/largethumb1.png"
          }
        },
        {

```



```

        "id": 126,
        "required": 1,
        "data": {
            "value": "My Brand"
        }
    },
    {
        "id": 127,
        "required": 1,
        "data": {
            "value": "Watch all about this awesome story of someone using
my product."
        }
    }
]
}

```

6.3 Third-Party Ad Serving Example

Bid Request

```

"native":{
    "ver": "1.2",
    "context": 2,
    "contextsubtype": 20,
    "plcmttype": 11,
    "plcmtcnt": 1,
    "urlsupport": 1,
    "assets": [
        {
            "id": 123,
            "required": 1,
            "title": {
                "len": 140
            }
        },
        {
            "id": 128,
            "required": 0,
            "img": {

```

```

        "wmin":836,
        "hmin":627,
        "type":3
    },
    {
        "id":124,
        "required":1,
        "img":{
            "wmin":50,
            "hmin":50,
            "type":1
        }
    },
    {
        "id":126,
        "required":1,
        "data":{
            "type":1,
            "len":25
        }
    },
    {
        "id":127,
        "required":1,
        "data":{
            "type":2,
            "len":140
        }
    }
]
}

```

Bid Response

```

"native": {
    "assetsurl": "http://www.myadserver.com/getad123nativejson.php",
    "link": {
        "url": "http: //i.am.a/URL"
    }
}

```

```

    },
    "assets": [
      {
        "id": 123,
        "required": 1,
        "title": {
          "text": "Learn about this awesome thing"
        }
      },
      {
        "id": 124,
        "required": 1,
        "img": {
          "url": "http://www.myads.com/thumbnail1.png"
        }
      },
      {
        "id": 128,
        "required": 1,
        "img": {
          "url": "http://www.myads.com/largethumb1.png"
        }
      },
      {
        "id": 126,
        "required": 1,
        "data": {
          "value": "My Brand"
        }
      },
      {
        "id": 127,
        "required": 1,
        "data": {
          "value": "Learn all about this awesome story of someone using
my product."
        }
      }
    ]
  ]

```

```
}
```

What Should be Returned by the Assets URL

Note: the assets object may still be included in the response as a fallback, but the supply source must call the assetsurl and use the provided response for the ad. The response must be a json assets object like in the response itself, with the changes as indicated in the spec. An example follows of what that URL would return.

```
{
  "assets": [
    {
      "required": 1,
      "title": {
        "text": "Learn about this awesome thing",
        "len": 30
      }
    },
    {
      "img": {
        "type": 1,
        "url": "http://www.myads.com/icon.png",
        "h": 50,
        "w": 50
      }
    },
    {
      "img": {
        "type": 3,
        "url": "http://www.myads.com/largethumb11.png",
        "h": 200,
        "w": 200
      }
    },
    {
      "img": {
        "type": 3,
        "url": "http://www.myads.com/largethumb43.png",
        "h": 200,
        "w": 267
      }
    }
  ]
}
```

```

    },
    {
      "img": {
        "type": 3,
        "url": "http://www.myads.com/largethumb1911.png",
        "h": 200,
        "w": 382
      }
    },
    {
      "required": 1,
      "data": {
        "type": 1,
        "len": 8,
        "value": "My Brand"
      }
    },
    {
      "required": 1,
      "data": {
        "type": 2,
        "len": 63,
        "value": "Learn all about this awesome story of someone using
my product."
      }
    }
  ]
}

```

7 Reference Lists/Enumerations

7.1 Native Layout IDs – Deprecated

7.2 Native Ad Unit IDs - Deprecated

7.3 Context Type IDs

The context in which the ad appears - what type of content is surrounding the ad on the page at a high level. This maps directly to the new [Deep Dive on In-Feed Ad Units](#). This denotes the primary context, but does not imply other content may not exist on the

page - for example it's expected that most content platforms have some social components, etc.

| Context Type ID | Description |
|-----------------|--|
| 1 | Content-centric context such as newsfeed, article, image gallery, video gallery, or similar. |
| 2 | Social-centric context such as social network feed, email, chat, or similar. |
| 3 | Product context such as product listings, details, recommendations, reviews, or similar. |
| 500+ | To be defined by the exchange. |

7.4 Context Sub Type IDs

Next-level context in which the ad appears. Again this reflects the primary context, and does not imply no presence of other elements. For example, an article is likely to contain images but is still first and foremost an article. SubType should only be combined with the primary context type as indicated (ie for a context type of 1, only context subtypes that start with 1 are valid).

| Context SubType ID | Description |
|--------------------|--|
| 10 | General or mixed content. |
| 11 | Primarily article content (which of course could include images, etc as part of the article) |
| 12 | Primarily video content |
| 13 | Primarily audio content |
| 14 | Primarily image content |
| 15 | User-generated content - forums, comments, etc |
| 20 | General social content such as a general social network |
| 21 | Primarily email content |
| 22 | Primarily chat/IM content |
| 30 | Content focused on selling products, whether digital or physical |

| | |
|------|---|
| 31 | Application store/marketplace |
| 32 | Product reviews site primarily (which may sell product secondarily) |
| 500+ | To be defined by the exchange |

7.5 Placement Type IDs

The FORMAT of the ad you are purchasing, separate from the surrounding context

| Placement Type ID | Description |
|-------------------|---|
| 1 | In the feed of content - for example as an item inside the organic feed/grid/listing/carousel. |
| 2 | In the atomic unit of the content - IE in the article page or single image page |
| 3 | Outside the core content - for example in the ads section on the right rail, as a banner-style placement near the content, etc. |
| 4 | Recommendation widget, most commonly presented below the article content. |
| 500+ | To be defined by the exchange |

7.6 Data Asset Types

Below is a list of common asset element types of native advertising at the time of writing this spec. This list is non-exhaustive and intended to be extended by the buyers and sellers as the format evolves.

An implementing exchange may not support all asset variants or introduce new ones unique to that system.

| Type ID | Name | Description | Format | Recommendations |
|---------|-----------|---|--------|-----------------------------|
| 1 | sponsored | Sponsored By message where response should contain the brand name of the sponsor. | text | Required. Max 25 or longer. |

| | | | | |
|----|------------|---|----------------------------|--|
| 2 | desc | Descriptive text associated with the product or service being advertised. Longer length of text in response may be truncated or ellipsed by the exchange. | text | Recommended. Max 140 or longer. |
| 3 | rating | Rating of the product being offered to the user. For example, an app's rating in an app store from 0-5. | number formatted as string | Optional. 0-5 integer formatted as string. |
| 4 | likes | Number of social ratings or "likes" of the product being offered to the user. | number formatted as string | |
| 5 | downloads | Number downloads/installs of this product | number formatted as string | |
| 6 | price | Price for product / app / in-app purchase. Value should include currency symbol in localised format. | number formatted as string | |
| 7 | saleprice | Sale price that can be used together with price to indicate a discounted price compared to a regular price. Value should include currency symbol in localised format. | number formatted as string | |
| 8 | phone | Phone number | formatted string | |
| 9 | address | Address | text | |
| 10 | desc2 | Additional descriptive text associated with the product or service being advertised | text | |
| 11 | displayurl | Display URL for the text ad. To be used when sponsoring entity doesn't own the content. IE sponsored by BRAND on SITE (where SITE is transmitted in this field). | text | |

| | | | | |
|------|---------|--|---------|-----------------------------|
| 12 | ctatext | CTA description - descriptive text describing a 'call to action' button for the destination URL. | text | Optional. Max 15 or longer. |
| 500+ | XXX | Reserved for Exchange specific usage numbered above 500 | Unknown | |

7.7 Image Asset Types

Below is a list of common image asset element types of native advertising at the time of writing this spec. This list is non-exhaustive and intended to be extended by the buyers and sellers as the format evolves.

An implementing exchange may not support all asset variants or may introduce new ones unique to that system.

In order to facilitate adoption, recommendations are made for both minimum sizes and aspect ratios. We speak here of 'minimum maximum height' or 'max height of at least', which means the SSP should support a max height of at least this value. They are free to support larger, but the DSP knows that if they have an image of this size it will be accepted. Note that SSPs will be responsible for sizing image to exact size if min-max-height framework is used; exact size may not be available at bid request time. Width is calculated from the 3 supported aspect ratios. Note we merged the prior overlapping type 1 and type 2 as just type 1 - to be used for app icon, brand logo, or similar.

| Type ID | Name | Description | Recommendations |
|---------|------|--------------------------------|--|
| 1 | Icon | Icon image | Optional. max height: at least 50 aspect ratio: 1:1 |
| 3 | Main | Large image preview for the ad | At least one of 2 size variants required: Small Variant: max height: at least 200 max width: at least 200, 267, or 382 aspect ratio: 1:1, 4:3, or 1.91:1 |

| | | | |
|--|-----|---|--------------------|
| <div> <div>Large Variant:</div> <div> max height: at least 627 max width: at least 627, 836, or 1198 aspect ratio: 1:1, 4:3, or 1.91:1 </div> </div> | | | |
| 500+ | XXX | Reserved for Exchange specific usage numbered above 500 | No recommendations |

7.8 Event Types Table

| Type ID | Name | Description |
|---------|-------------------|---|
| 1 | impression | Impression |
| 2 | viewable-mrc50 | Visible impression using MRC definition at 50% in view for 1 second. |
| 3 | viewable-mrc100 | 100% in view for 1 second (ie GroupM standard) |
| 4 | viewable-video50 | Visible impression for video using MRC definition at 50% in view for 2 seconds. |
| 500+ | Exchange-specific | |

7.9 Event Tracking Methods Table

| Type ID | Name | Description |
|---------|-------------------|--|
| 1 | img | Image-pixel tracking – URL provided will be inserted as a 1x1 pixel at the time of the event. |
| 2 | js | Javascript-based tracking – URL provided will be inserted as a js tag at the time of the event. |
| 500+ | Exchange-specific | Could include custom measurement companies such as Moat, DoubleVerify, IAS, etc – in this case additional elements will often be passed. |

8 Implementation Notes

8.1 Multi Placement Bid Requests

If the bid request has a placement count (“plcmcnt”) greater than 1, then the implication is that the bidder is submitting bids to a Generalized Second Price auction where multiple identical placements are being offered in the same content feed or stream.

Example If a bid request is for 5 ad placements within a feed based layout. The bidder can return 1-5 bids. The exchange runs a generalized second price auction across these bids. The bidder can potentially win between 0-5 placements in the auction.

An example bid response would look like

```
{
  "id": "1234567890",
  "seatbid": [{
    "bid": [{
```

```
        "id": "1",
        "impid": "1",
        "price": 10,
        "nurl": "http://adserver.com/WinNoticeUrlThatReturnsNative1",
        "adm": "<native response>"
    },
    "bid": [{
        "id": "2",
        "impid": "1",
        "price": 20,
        "nurl": "http://adserver.com/WinNoticeUrlThatReturnsNative2",
        "adm": "<native response>"
    }]
}]
}
```