Open Measurement SDK

Integration Validation Compliance Guide

Version 3.0 | December 2019

Table of Contents

Executive Summary

The Open Measurement Software Development Kit (OM SDK) is designed to facilitate third party viewability and verification measurement for ads served to mobile app environments without requiring multiple Ad Verification Service Provider (Measurement Provider) SDKs.

The OM SDK consists of a native library for iOS & Android as well as a JavaScript API, named Open Measurement Interface Definition (OMID), that Integration Partners develop into their mobile apps or ad SDKs . The native library collects various signals, such as ad container geometry and playback events in the case of video, using direct communication with the mobile device's native operating system (OS) and media players, and publishes these signals via the OMID JavaScript API.

The collection, processing, analysis, and reporting of information surfaced by the OM SDK is the responsibility of the Measurement Provider using their respective JavaScript tag that is served with the ad creative.

Completing the SDK integration alone does not guarantee that it will be compatible with Measurement Provider tags or be accepted as valid for the purposes of measurement; implementation errors or other issues may interfere with compatibility. To ensure that the Measurement Provider is collecting data from a reliable implementation of the integration partner's OM SDK implementation, IAB Tech Lab has developed a certification program for validating the integration. The certification program outlined in this document is voluntary and serves to ensure that your integration is compatible with Measurement Provider measurement tags.

This guide describes the requirements and process of the OM SDK Integration Validation Compliance (OM IVC).

OM SDK is developed and managed by the [Open Measurement Working Group](#)

Change Log

Revision	Description	Author	Date
Version 1.0	Document created, First draft for Om SDK GA Release	Shailley Singh / Yashica Wilson (shailley@iabtechlab.com)	4/10/2018
Version 1.1	Modified Certification testing for ad types, session types Added Maintaining Compliance, New Ad types certification Modified recertification, continued certification	Shailley Singh (shailley@iabtechlab.com)	8/27/2018
Version 1.2	Added custom native rendering, transparent overlays or friendly obstructions	Shailley Singh (shailley@iabtechlab.com)	10/2/2018
Version 2.0	Modified Validation test cases	Shailley Singh (shailley@iabtechlab.com)	12/10/2018
Version 3.0	Updated for OM SDK 1.3	Jarrett Wold (jarrett@iabtechlab.com)	11/25/2019

Certification Process

The OM SDK Integration Validation Compliance (OM IVC) is voluntary and certifies an Integration Partner's implementation of OM SDK against a set of well defined test cases and results based on the output of the OMID API. The OM IVC is designed to ensure the compatibility of Integration Partner's implementation of OM SDK with Measurement Provider measurement tags.

The certification is performed at the app and operating system level. For example a publisher may have two versions of its app: one for iOS and one for Android. In this case the publisher will need to get both implementations certified.

All test cases are executed by IAB Tech Lab for purposes of the compliance process.

Application

To apply for the OM IVC certification, the Integration Partner must have integrated the OM SDK in their app or Ad SDK. OM SDK can be downloaded from IAB Tech Lab tools portal by sending an email request to omsdksupport@iabtechlab.com .

The Integration Partner must provide the information requested in Appendix A as part of the application for certification.

Certification Fees

An annual fee for certification program covers initial setup and multiple annual certifications. Please email compliance@iabtechlab.com for questions about certification pricing.

Qualification

Any company that is an OM SDK integration partner i.e. an app publisher or an Ad SDK provider that has integrated the OM SDK for Ad verification purposes is eligible to apply for IVC compliance. Membership with IAB Tech Lab is not required to become an integration partner.

Geographic Applicability of Certification

The OM IVC certification is a global program and applies to all geographic regions. Since the certification is for an app on a specific operating system, it applies to any installation app on a device using that operating system.

Certification Testing Overview and Process

IAB Tech Lab applies validation test cases (see Appendix B) based on the OMID API outputs to certify the OM SDK integration.

The scope of validation testing covers the following:

1. **Basic setup:** The OM SDK is providing the basic app and partner name (i.e. the namespace) data, OS platform and versions information on device, app/ SDK correctly via the API
2. **Initialization:** All OMID initialization parameters and events are captured
3. **Ad Format Types:** Comprehensive test cases are applied for each ad format type to test for viewability data and required OMID outputs. Following ad format types are covered at present:
   a. HTML Display
   b. Native Display
   c. Video
   d. Audio (Release 1.3 and up)
4. **Ad Session Type:** In addition to ad format types, the testing also verifies the ad session type as one of the following, based on how the creative is rendered :
   a. HTML
   b. Native
   c. Javascript (Release 1.3 and up)

5. **Validate Impressions:** (Release 1.3 and up)
   a. Loaded event for all creatives
   b. Impression Events - validate the type of impression
      i. beginToRender
      ii. onePixel
      iii. viewable
      iv. audible
      v. other
      vi. unspecified

6. **Friendly Obstruction:** (Release 1.3 and up) nform of friendly obstructions and how they impact viewability
   a. declaredFriendlyObstruction - Number of obstructions
   b. friendlyObstructions - metadata about the obstruction
      i. Geometry
      ii. Obstruction purpose
      iii. Detailed reason

Certification testing involves the following process:

1. Integration partner implements the OM SDK in their app.
2. Integration partner includes the Verification JS tag provided with OM SDK in their ad creatives.
3. Integration partner schedules ad creatives to be served in their app.
4. Integration partner provides the test app to IAB Tech Lab compliance team and walks through the navigation and placement of ads.
5. Tech Lab Compliance team executes the validation test cases and compiles the results.
6. Tech Lab Compliance team will report any issues to integration partner and rerun the tests once issues are resolved.
7. Once all required tests are executed successfully, Tech Lab will compile the results and review to ensure all expected results are as expected.

8. After review, the Integration Partner is issued compliance certificate of OM IVC outlining the following information:
    a. Partner name
    b. Partner App/ SDK version
    c. OM SDK version
    d. Ad format type and ad session type tested
    e. Operating System

Testing custom native rendering

Publishers making use of ad serving products may sometimes decide to create their own custom ad templates for their inventory. These templates define a look-and-feel for a kind of ad that is specific to an individual publisher, such as Google Custom Native Ad Templates. In these cases, the ad server a publisher uses is not directly involved in defining the user experience for these ads. The ad is rendered in a publisher specific environment and the ad server or Ad SDK is not in control of ensuring the required measurement.

For apps that perform custom rendering of the ad creatives but use an Ads SDK for ad request and/or delivery of creative assets should adhere to the following process:

1. The app performing the rendering must obtain a partner name (namespace) by signing up at the IAB Tech Lab portal with their company domain name.
2. The partner name obtained in #1 must be used in the OMID API.
3. The app must ensure that the partner name is properly communicated, either through the Ads SDK or their own implementation of OM SDK.
    a. If they use Ads SDK for executing native OM SDK capabilities (OM SDK iOS or Android libraries) then the Ads SDK must be certified.
    b. For custom rendering with multiple Ads SDKs, the publisher must implement their own OM SDK to work with multiple Ads SDKs.
    c. If they do not use Ads SDK for native OM SDK capabilities then they must implement their own OM SDK and initiate the session using their implementation.
4. The app is responsible for ensuring that their handshake with the Ads SDK works properly and correct partner name is passed to the OMID API.

5. The partner is responsible for ensuring that compliance is maintained across their versions and releases. Compliance status is always tracked at partner name level.

6. In case there is breaking change resulting in defective OMID event data or signals introduced in any version released by the partner, it is entirely the partner's responsibility to correct the fault and coordinate with their Ads SDK partners.

Use of overlapping transparent layers over ad creative

In many ad executions the publisher or the Ad SDK may overlay the creative with transparent layers to include interactive elements. This results in 0% percentage in view values. OM SDK Release 1.3 addresses this by introducing declaration of "Friendly Obstructions". We highly recommend upgrading to release 1.3 to properly account for such obstructions.

Publication of Certification Status

Upon successful completion of the certification testing process and approval of OM IVC certification, the Integration Partner is issued the OM IVC certificate and IAB Tech Lab compliance seal. They can use the seal to publicly communicate their OM IVC certification. In addition IAB Tech Lab will also list the Integration partners who have been issued IVC certification on our website here: https://iabtechlab.com/technology-compliant-companies/

IAB Tech Lab will also publish a machine readable list of all certification data for use by measurement providers and buyers on programmatic buying systems to validate the partner certifications in real time based on bid request information.

MRC guidance

The following guidance pertains to Media Rating Council (MRC) accreditation of data sourced from OM SDK implementations that are certified by IAB Tech Lab for Integration Validation Compliance:

- MRC fully supports OM SDK and suggested an industry initiative in mobile viewability guidelines as outlined in the following communication issued June 2016. http://mediaratingcouncil.org/062816%20Mobile%20Viewable%20Guidelines%20Final.pdf)

- Mobile Viewability guidelines stipulate required Quality Control (QC) and testing for APIs and SDKs. IAB Tech Lab IVC is sufficient acceptance of required QC and testing.

- Currently unaccredited vendors should undergo successful accreditation audit of use of OM SDK.

- Currently accredited vendors must disclaim use as unaccredited until successfully audited by MRC at least once (as part of the next recurring audit or an accelerated one-off) for use of OM SDK. Subsequent changes of versions of either OM SDK or interrogations should not require such disclosure.

- Since use cases vary, MRC may need to discuss specific use cases with vendor to determine the level of testing.

- IVC certification will also apply to third party publishers and developers. For example, an Ads SDK provider obtains IVC certification and this SDK is used by third party publishers and developers. In this case, the third party publishers will not require additional certification except as outlined in the guidance under the section for Testing custom native rendering in this document.

- MRC processes will need to ensure data collection, processing, editing (IVT), and reporting consistently used audited systems.

- MRC will need to determine appropriate measured rate/coverage.
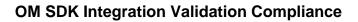
Continued Certification

Integration Partners who have achieved the OM IVC certification must maintain the certification continuously. This does not require that recertification is required every time they change the OM SDK version or their software version. To properly maintain compliance of integration partners, IAB Tech Lab will maintain the results each time certification is performed by: Partner Name, Operating System, Partner SDK/ App, and OM SDK version for each integration partner under one of the following statuses:

- **Active**: Upon successful certification.
- **Expired**: If 12 months have passed since the last certification and the partner has not been recertified.
- **Suspended**: If a partner version does not successfully pass the certification test and the integration partner has not been able to correct the issues. Please read 'Maintaining Compliance" section for more details.

Recertification

To maintain continuous OM IVC certification, the Integration partner must submit their latest version of OM SDK implementation for recertification when:

1. A change of ad placements for existing ad types is made or a new ad placement has been added. Example: changing a banner placement from a top of the page position to an inline position between page content, or introducing an in-article video ad placement.
2. New ad format types have been added. Example: video has been added or a native display ad type has been added.
3. A significant change has been made to the way they serve or render ads. Example: a major change in the SDK or underlying technology for serving or rendering ads.
4. One or more significant new capabilities of OM SDK as identified and recommended by IAB Tech Lab has been adopted. Example: upgrade to a new version of OM SDK containing new capabilities.
   a. _Upgrade to OM SDK Release 1.3 requires recertification_
5. Twelve (12) months have passed since the last certification test, even if the integration partner has not made any changes to the integration. IAB Tech Lab will make all efforts

to notify the integration partner in advance of the 12 month deadline to submit their App/SDK for recertification.

   a. If the integration partner cannot be certified within 12 months, then the status will be changed to 'expired' for all certification data with the given partner name. Example: Partner name A certified on 1/1/2017 with version 1.1, then again on 6/1/2017 with version 1.2. On 6/2/2018 both the certifications will be changed to 'expired' status for Partner name A.

   b. Once the recertification is completed, the status will be changed to 'active' for all certification data with the given partner name.

   c. During the expired status, measurement providers may define their own policy on whether to treat the data received from the expired partner name as certified or not and for how long, up to a period of 90 days from the expiration date. In example (a) above, for a campaign running from 5/25/2018 to 6/25/2018, the measurement provider can decide whether the data from the campaign is valid.

Adding new ad types

An integration partner may introduce a new ad type after they have been certified. To continue certification after adding the new ad type, they need to submit the new version of their app or SDK for certification testing.

Adding new ad types involves the following process:

   1. All ad types including new ad types will be subjected to certification testing.
   2. Upon successful completion of compliance testing, the new version of the SDK or app will be certified for compliance.
   3. The new version of the app or SDK will be listed as certified. The old version will continue to be listed as certified for old ad types.
   4. Future certification tests will be performed on versions that have all the ad types.

For example, an SDK v1.0 is certified for Display HTML ad type on June 1, 2017. The SDK later adds video ads on October 1, 2017 to their SDK v2.0. They must submit SDK v 2.0 for certification and all ad types. Display HTML and video ad types will be tested for certification in October. Once certified, SDK v2.0 will be listed as certified for display HTML and video ad types. Both SDK v1.0 and v2.0 are then listed as certified with respective ad types. The next certification is required in

12 months or when another change occurs as listed above under the Recertification heading in this document.

Maintaining Compliance

The integration partner is responsible for maintaining the accuracy and validity of OM SDK integration along with the data signals from new versions between certification cycles. This responsibility ensures reliable data and trust with advertisers and measurement providers.

Remedying a breaking change

If an integration partner's OM SDK implementation is updated in a manner that does not warrant recertification review, but a breaking change is identified that affects OMID signals sent by the implementation, the integration partner must provide a resolution for the breakage. In this context, a "breaking change" should be considered any scenario in which the accuracy or validity of one or more signals sent to the OMID API are demonstrably and materially incorrect in one or more version(s) of the app or SDK.

Continued certification compliance when a breaking change is identified requires adherence to the following process:

1. Breaking changes are observed and reported to IAB Tech Lab with the integration partner SDK or app version(s).
2. IAB Tech Lab will contact the integration partner to obtain the required app or SDK builds to test and reproduce the issue.
3. The integration partner must provide the app or SDK builds within 5 business days for certification testing.
4. Upon confirmation of the issue, the integration partner will be notified of the issue(s) observed.

5. The integration partner may resolve the issue(s) in a manner that does not involve reissuance of the integration partner's SDK. Examples may include:
   a. a patch issued using non-SDK code changes that corrects the affected OMID signals.
   b. a version-based SDK killswitch that disables implementation of and measurement of data sent from the affected version(s) of the OM SDK. Kill switch guidance is included in the developer integration guides for iOS and Android.

6. If the integration partner is not able to provide a resolution within 20 business days of the notification of breakage, IAB Tech Lab will list the Partner Name, OS, App/SDK, OM SDK partner version, and all subsequent released partner versions as 'suspended'.

7. The integration partner must provide all version numbers released subsequent to defective version.

8. Measurement providers must disclose using or reporting the data from the suspended partner.

9. The integration partner in suspended state must develop a new version of their app or SDK after fixing the integration defects and submit for certification testing.

10. Upon successful testing and certification of the new version that corrects the defects:
    a. If the integration partner implementation is an SDK, it must fix the issue and release an upgrade for all its developers using the defective version along with a notice informing them of the consequences for using the defective version.
    b. If the integration partner implementation is an app, they must release an upgrade to all their users that contains the fix

11. IAB Tech Lab will continue listing the suspended versions as well as active versions with the certified date. This will allow companies using that data to make a determination on how to interpret and use the certification status of integration partners.

Appendix A: Application Information

Please click OMSDK Intake Form to fill out the live form for the questionnaire below.

General	Please answer all questions. If not applicable, type (N/A).
What is your expected date for integrating OMSDK?	
Please describe your development timeline deadlines that impact app(s) release(s)?	
When will you be ready to begin the certification process?	
Do you deploy frameworks that support multiple apps? Or Do you plan to implement OMSDK in a framework that support multiple apps?	
Display	Please answer all questions. If not applicable, type (N/A).
Are you creating and managing your own custom ad containers or are you using an ad serving framework or SSP?	
If you are creating and managing custom ad containers, are display ads served natively or via a WebView?	
If you are using an ad serving framework, what ad types are you using from that ad serving framework?	

Video	Please answer all questions. If not applicable, type (N/A).
What ad serving or player framework are you using for video ads?	
Are your video ads being served natively or via a WebView container, if WebView, please confirm the video player?	
Are you utilizing a third party for ad stitching?	
Native	Please answer all questions. If not applicable, type (N/A).
Are you creating and managing your own custom ad containers or are you using an ad serving framework or SSP?	
If you are using an ad serving framework, what ad types are you using from that ad serving framework?	
Are you using native video ads?	

Appendix B: Release 1.3 Validation Test Cases

S.No.	Ad Type	Test Case	Scenario	Event/ Signal	Expected Result/ value/ comment
1	All	Set-up testing	Confirm that the app can be installed and from what source Should testing be targeted to specific devices? Device types?	App installation	App installed without error, and can be opened
2	All	Set-up testing	Did the integration partner provide any specific credentials for testing?	Log-in screen	Log-in successful
3	All	Set-up testing	Does the app re-use the same code for multiple placements, so that they can be checked as a group rather than individually?	Confirmation from Integrator	Confirmation from Integrator
4	All	Set-up testing	Is the generic verification script trafficked with the ad?	Check ad / impression events	Signals from generic verification script

S.No.	Ad Type	Test Case	Scenario	Event/ Signal	Expected Result/ value/ comment
5	All	Set-up testing	Only ads to be tested are being served with tracking	Confirmation from Integrator	Confirmation from Integrator
6	All	Check OMID compatibility and whether active	Load the app page with the ad	OmidSupported[true]	OmidSupported[true]
7	All	Ad session is correctly instantiated	Load the page with the ad or reload the page with the ad	ad session id	return new ad session- unique ad session id, timestamp unique ad session value like: 2196C74D-6A27-4807-A3D3-B08E4F6E0ABA and timestamp aue like 1531749570462
8	All	Ad session is correctly instantiated	Ad session context is established properly	environment	app e.f "environment":"app", timestamp":"1531749570462"
9	All	Ad session is correctly instantiated		adSessionType	native or html or javascript
10	All	Ad session is correctly instantiated		supports	clid for all ad types except vlid for video

S.No.	Ad Type	Test Case	Scenario	Event/ Signal	Expected Result/ value/ comment
11	All	Ad session is correctly instantiated		omidNativeInfo	partnerName (this is same as namespace assigned at the time of OM SDK download) and partnerVersion {"partnerName":"someSDK","partnerVersion":"x.y"}, timestamp":"1531749570462"
12	All	Ad session is correctly instantiated		omidJsInfo	serviceVersion, sessionClientVersion, partnerName,partnerVersion E.g. "omidJsInfo":{"serviceVersion":"1.1.2-iab443","omidimplementer":"omsdk"}, timestamp":"1531749570462"
13	All	Ad session is correctly instantiated		app	libraryVersion and appId (com.example.appname) "app":{"appId":"com.example.ent","libraryVersion":"1.1.2-partnername"}, timestamp":"1531749570462"
14	All	Ad session is correctly instantiated		Device Info	mobile device details e.g. "deviceInfo":{"deviceType":"iPhone7,2","os":"iOS","osVersion":"11.4.1"}, timestamp":"1531749570462"
15	All	Ad session is correctly instantiated	Impression Type for what OMID impression event you are declaring	impressionType	"loaded", "beginToRender", "onePixel", "viewable", "audible", "other", "unspecified", "definedByJavaScript" e.g. "impressionType": "viewable",

S.No.	Ad Type	Test Case	Scenario	Event/ Signal	Expected Result/ value/ comment
16	All	Ad session is correctly instantiated	Value will be true for all video sessions and for display sessions where integration uses new API. Value will be false for display sessions where integration uses old API. For 1.3 certification, integrations are required to use 1.3 API. "supportsLoadedEvent" must be true for all 1.3 certifiable integrations.	supportsLoadedEvent	"supportsLoadedEvent": true "supportsLoadedEvent": false,
17	All	Ad session is correctly instantiated	URL of top-level web page, as determined by OM SDK JS service. Null when JS service is cross-domain or running in a mobile app.	pageUrl	"pageUrl": www.domain.com
18	All	Ad session is correctly instantiated	URL of top-level web page, as provided by OM integration. Null when integration does not pass contentUrl parameter on Context constructor.	contentUrl	"contentUrl": www.domain.com

S.No.	Ad Type	Test Case	Scenario	Event/ Signal	Expected Result/ value/ comment
19	All	Ad session is correctly instantiated		verificationParameters	verification parameter provided by the measurement provider undefined for display ads e.g. verificationParameters":"undefined" Also displays access mode. Always limited when using OM SDK "accessmode":"limited" For native and video ads verificationParameters":"iabtech lab or some text", "accessmode":limited
20	All	Ad session is correctly instantiated		customReferenceData (not required)	any string value
21	All	Ad session has error instantiating		errorType	Generic or Video when video ads
22	All	Ad session has error instantiating		message	string value describing the error
23	All	Ad session slow to instantiate	Ad is slow to load, eg from throttling	ad loaded	Impression events fire only once the ad has loaded. The "loaded" event should also fire only after the ad has loaded. """timestamp"":""1531376049725"", ""type"":""impression"", ""data"":{""creativeType"":""display"",""viewport"":undefined, ""adView"":undefined,"
24	All	Ad session has finished	End of ad session by closing the ad or starting a new page in app that will dismiss the current ad	sessionFInish	Finish

S.No.	Ad Type	Test Case	Scenario	Event/ Signal	Expected Result/ value/ comment
25	All	Ad session start and loaded	Load the page with the ad	loaded	Ad is loaded and impression occurs "timestamp":1571415828196,"type":"loaded","data":{"mediaType":"display","creativeType":"nativeDisplay", "impressionType":"onePixel"}}
26	All	Impression has Occurred	Part of loaded event - check as part of loaded event	mediaType	display or video {"adSessionId":"fb54e94d-5f26-443e-ba9a-6b54f44af9bf","timestamp":1571954146094,"type":"loaded","data":{"mediaType":"display","creativeType":"htmlDisplay", "impressionType":"onePixel"}}

S.No.	Ad Type	Test Case	Scenario	Event/ Signal	Expected Result/ value/ comment
27	All	Impression has Occurred	Part of loaded event - check as part of loaded event	creativeType	htmlDisplay, nativeDisplay, video or audio definedByJavaScript for special cases e.g. "creativeType": "nativeDisplay", 10/25/2019, 3:25:46 AM::{"adSessionId":"fb54e94d-5f26-443e-ba9a-6b54f44af9bf","timestamp":1571954146094,"type":"loaded","data":{"mediaType":"display","creativeType":"htmlDisplay", "impressionType":"onePixel"}}
28	All	Impression has Occurred	Impression Type for what OMID impression event you are declaring. Part of loaded event - check as part of loaded event	impressionType	"loaded", "beginToRender", "onePixel", "viewable", "audible", "other", "unspecified", "definedByJavaScript" e.g. "impressionType": "viewable", "timestamp":1571415828196,"type":"loaded","data":{"mediaType":"display","creativeType":"nativeDisplay", "impressionType":"onePixel"}}
29	Video	Impression has occurred		videoEventAdaptor Type	jcustom or nativecustom if the media type is video
30	Video	Impression has occurred		videoEventAdaptor Version (not required)	version number is media type is video
31	All	Impression has occurred		viewport	viewport size of the device in height and width

S.No.	Ad Type	Test Case	Scenario	Event/ Signal	Expected Result/ value/ comment
32	All	Impression has occurred		adView	This is geometry change data. E.g. """adView""":{""percentageInView"":100,""reasons"":[], ""timestamp"":""1531376050520"", ""geometry"":{""width"":351,""height"":351,""x"":12,""y"":80}, ""onScreenGeometry"":{""width"":351,""height"":351,""x"":12,""y"":80}"
33	All	Ad session has finished	End of ad session by closing the ad or starting a new page in app that will dismiss the current ad	sessionFInish	Finish
34	All	Geometry Change data	All the geometry events are to be displayed for all ads	percentageInView	value between 0-100
35	All	Geometry Change data		geometry	value like this: { x: 0, y: 0, width: 320, } height: 50
36	All	Geometry Change data		onScreenGeometry	{ } x: 0, y: 0, width: 320, height: 50, obstructions:[
37	All	Geometry Change data	If using creative measurement	containerGeometry	{ } x: 0, y: 0, width: 320, height: 50, obstructions:[

S.No.	Ad Type	Test Case	Scenario	Event/ Signal	Expected Result/ value/ comment
38	All	Geometry Change data	If using creative measurement	onScreenContainer Geometry	In addition to existing fields "x", "y", "width", "height", add: "pixels": integer Count of pixels in ad (equal to width*height)
39	All	Geometry Change data	Obstruction is present in onScreen geometry	Obstruction data	In addition to existing fields "x", "y", "width", "height", add: "pixels": integer Count of visible pixels in ad. This considers obstructions, just like the "percentageInView" field.
40	All	Geometry Change data	Reason for obstruction	reason	one or more of: notfound, hidden, backgrounded, viewport,obstructed, clipped
41	All	Geometry Change data	the number of friendly obstructions declared by the integrator for this ad session.	declaredFriendlyOb structions	"declaredFriendlyObstructions" : 1
42	All	Geometry Change data	the name of the native view class that is obstructing the ad	obstructionClass	"friendlyObstructions":[{"x":339. 4285583496094,"y":200,"width": 56,"height":28,"obstructionClass ":"android.support.design.widge t.FloatingActionButton","obstruc tionPurpose":"OTHER"}
43	All	Geometry Change data	Classification for the friendly obstruction.	obstructionPurpose	"friendlyObstructions":[{"x":339. 4285583496094,"y":200,"width": 56,"height":28,"obstructionClass ":"android.support.design.widge t.FloatingActionButton","obstruc tionPurpose":"OTHER"}
44	All	Geometry Change data	Reason for obstruction	detailedReason	"friendlyObstructions":[{"x":339. 4285583496094,"y":200,"width": 56,"height":28,"obstructionClass ":"android.support.design.widge t.FloatingActionButton","detailed Reason":"some reason"}

S.No.	Ad Type	Test Case	Scenario	Event/ Signal	Expected Result/ value/ comment
45	Video	Video player interaction and events	Events for video ads	loaded	{ skippable: <boolean>, skipOffset: <float>, autoPlay: <boolean>, position: <string> } position values are - preroll,midroll, postroll, standalone (when it is not in video content)
46	Video	Video player interaction and events	Start playing the video	start	{ duration: <float>, videoPlayerVolume: <float>, deviceVolume: <float> } The videoPlayerVolume range is between 0 and 1. The deviceVolume range is between 0 and 1.
47	Video	Video player interaction and events	Play at least 1/4 of video length	firstquartile	firstquartile
48	Video	Video player interaction and events	Play at least half of video length	midpoint	midpoint
49	Video	Video player interaction and events	Play at least 3/4 of video length	thirdquartile	thirdquartile
50	Video	Video player interaction and events	Play full video	complete	complete
51	Video	Video player interaction and events	Pause the video	pause	pause

S.No.	Ad Type	Test Case	Scenario	Event/ Signal	Expected Result/ value/ comment
52	Video	Video player interaction and events	Resume after the pause	resume	resume
53	Video	Video player interaction and events	Start playing video	bufferstart	bufferstart
54	Video	Video player interaction and events		bufferfinish	bufferfinish
55	Video	Video player interaction and events	Use skip video is skip is available	skipped	Only for skippable videos
56	Video	Video player interaction and events	Change player volume or device volume	volumeChange	values are between 0 and 1- { videoPlayerVolume: <float>, deviceVolume: <float> }
57	Video	Video player interaction and events	Change player volume or device volume	mediaPlayerVolume	values are between 0 and 1- { mediaPlayerVolume: <float>, deviceVolume: <float> }
58	Video	Video player interaction and events	Hide Video by scrolling or expanding another page component so the video is hidden	playerStateChange	minimized
59	Video	Video player interaction and events	Change player volume	volumeChange	playerVolume should change, but deviceVolume should not
60	Video	Change device volume	volumeChange	deviceVolume should change, but playerVolume should not	

S.No.	Ad Type	Test Case	Scenario	Event/ Signal	Expected Result/ value/ comment

61	Video	Video player interaction and events	Mute player volume	volumeChange	{
					  videoPlayerVolume: 0,
					deviceVolume: <float>
					  }

62	Video	Video player interaction and events	Mute device volume	volumeChange	{
					  videoPlayerVolume: <float>,
					deviceVolume: 0
					  }

63	Video	Video player interaction and events	Minimize the video or reduce in size if ap allows that action	playerStateChange	collapsed
64	Video	Video player interaction and events	Play video in player default size	playerStateChange	normal
65	Video	Video player interaction and events	Expand the player if app allows or the app expands the video when it plays the video	playerStateChange	expanded
66	Video	Video player interaction and events	Tap on video to go full screen	playerStateChange	fullscreen

67	Video	Video player interaction and events		geometry	value like this: {
					  x: 0,
					  y: 0,
					  width: 320, } height: 50

68	Video	Video player interaction and events	CLick on video to open advertiser landing page-execute clickthrough	adUserInteraction	{ interactionType: <click> }
69	Video	Video player interaction and events	Tap on video to engage with another ad experience	adUserInteraction	{ interactionType: <invitaitonAccept> }

S.No.	Ad Type	Test Case	Scenario	Event/ Signal	Expected Result/ value/ comment
70	Display	Banner ad session basic check	Load the banner ad	Check all ad session and impression events have occured	see above for ad session and impression event
71	Display	Banner ad session basic check	Reload the banner ad	Check all ad session and impression events have occured	see above for ad session and impression event
72	Display	Banner ad session basic check	On Android rotate the banner- this should start a new ad session	Check all ad session and impression events have occured	see above for ad session and impression event
73	Display	Banner ad viewability geometry	Ad fully in view	percentageInView	this should be 100- also check other geometry values- they should reflect device size in view port and ad size in X,Y parameters
74	Display	Banner ad viewability geometry	Scroll ad partially out of view < 50% in view	percentageInView	value should be < 50
75	Display	Banner ad viewability geometry	Scroll ad partially back in view > 50% but < 100% in view	percentageInView	value should be >50 and < 100
76	Display	Banner ad viewability geometry	Scroll ad fully out of view	percentageInView	0
77	Display	Banner ad viewability geometry		reason	hidden and / or viewport
78	Display	Banner ad obstructions	Background the application (go to another app or start camera or lock the screen)	percentageInView	between 0 and 100

S.No.	Ad Type	Test Case	Scenario	Event/ Signal	Expected Result/ value/ comment
79	Display	Banner ad obstructions		obstruction data	as described above
80	Display	Banner ad obstructions		reason	backgrounded
81	Display	Banner ad obstructions	Hide with another view by opening or expanding another component on the page in the app. e.g open a link that opens another web view	reason	obstructed and/ or hidden
82	Display	Banner ad interactions	Click to advertiser landing page	adUserInteraction	{ interactionType: <click> }
83	Display	Banner ad interactions	Tap to engage with ad component like expand the ad	adUserInteraction	{ interactionType: <invitaitonAccept> }
84	Display	Ending the ad session	Tap on close button if there is e.g. anchored banners or refresh the app page to get a fresh ad session	session Finish	Finish
85	Interstitial	Pre load scenario (confirm with app if this applies)	Load the app	Check all ad session and impression events have occured	see above for ad session events
86	Interstitial	Ad shown in pre load scenario	Go to the interstitial page in the app (navigate from one page to another until interstitial is shown)	Check all impression occurred events	see above for impression events

S.No.	Ad Type	Test Case	Scenario	Event/ Signal	Expected Result/ value/ comment
87	Interstitial	Ad load and shown at the same time	GO ot the interstitial page in the app (please confirm navigation with app owner)	Check all ad session and impression events have occured	see above for ad session and impression event
88	Interstitial	Interstitial ad viewability geometry	Ad fully in view	percentageInView	90% or greater
89	Interstitial	Interstitial ad obstructions	Background the application (go to another app or start camera or lock the screen)	percentageInView	between 0 and 100
90	Interstitial	Interstitial ad obstructions		obstruction data	as described above
91	Interstitial	Interstitial ad obstructions		reason	backgrounded
92	Interstitial	Interstitial ad interactions	Click to advertiser landing page	adUserInteraction	{ interactionType: <click> }
93	Interstitial	Interstitial ad interactions	Tap to engage with ad component like expand the ad	adUserInteraction	{ interactionType: <invitaitonAccept> }
94	Interstitial	Ending the ad session	Tap on close button if there is or use app navigation to move out of the interstitial ad experience	session Finish	Finish

S.No.	Ad Type	Test Case	Scenario	Event/ Signal	Expected Result/ value/ comment
95	Video	Ad session start and impression for ads in video content	Play video content until pre roll or mid roll or post roll	Check all ad session and impression events have occured	see above for ad session events

96	Video		When video ad appears additional video events need to be verified	loaded	{
					   skippable: <boolean>, skipOffset: <float>,
					   autoPlay: <boolean>,
					   position: <string>
					}
					position values are - preroll,midroll, postroll, standalone (when it is not in video content)

97	Video	Ad session start and impression for standalone ads- autoplay native or outstream ads	Load the page with the video ad	loaded	{
					   skippable: <boolean>, skipOffset: <float>,
					   autoPlay: <boolean>,
					   position: <string>
					}
					position values are - preroll,midroll, postroll, standalone (when it is not in video content)

98	Video	Video ad viewability geometry for videos inline of the view	Ad fully in view	percentageInView	this should be 100- also check other geometry values- they should reflect device size in view port and ad size in X,Y parameters
99	Video	Video ad viewability geometry for videos inline of the view	Scroll ad partially out of view < 50% in view	percentageInView	value should be < 50

S.No.	Ad Type	Test Case	Scenario	Event/ Signal	Expected Result/ value/ comment
100	Video	Video ad viewability geometry for videos inline of the view	Scroll ad partially back in view > 50% but < 100% in view	percentageInView	value should be >50 and < 100
101	Video	Video ad viewability geometry for videos inline of the view	Scroll ad fully out of view	percentageInView	0
102	Video	Video ad viewability geometry for videos inline of the view		reason	hidden and / or viewport
103	Video	Video ad viewability geometry for videos inline of the view	Background the application (go to another app or start camera or lock the screen)	percentageInView	between 0 and 100, video events available
104	Video	Video ad viewability geometry for videos inline of the view		obstruction data	as described above
105	Video	Video ad viewability geometry for videos inline of the view		reason	backgrounded
106	Video	Video ad viewability geometry for videos inline of the view	Hide with another view by opening or expanding another component on the page in the app. e.g open a link that opens another web view	reason	obstructed and/ or hidden

S.No.	Ad Type	Test Case	Scenario	Event/ Signal	Expected Result/ value/ comment
107	Video	Video playback events	Refer above test case for Video player interaction and events and execute all scenarios	see Video player interaction and events scenarios	see Video player interaction and events scenarios.
108	Video	End session	Click on close to close the video, stop the video or move to another page creating a new app page session	Session Finish	Finish
109	Native	Native ad viewability	Same as banner ads		Ensure ad session type is native and OMIDnative event has the right parameters
110	Audio	Audio player interaction and events	Play at least 1/4 of audio length	firstquartile	firstquartile
111	Audio	Audio player interaction and events	Play at least half of audio length	midpoint	midpoint
112	Audio	Audio player interaction and events	Play at least 3/4 of audio length	thirdquartile	thirdquartile
113	Audio	Audio player interaction and events	Play full audio	complete	complete
114	Audio	Audio player interaction and events	Pause the audio	pause	pause
115	Audio	Audio player interaction and events	Resume after the pause	resume	resume
116	Audio	Audio player interaction and events	Change player volume	volumeChange	mediaPlayerVolume should change, but deviceVolume should not
117	Audio	Change device volume	volumeChange	deviceVolume should change, but mediaPlayerVolume should not	

S.No.	Ad Type	Test Case	Scenario	Event/ Signal	Expected Result/ value/ comment
118	Audio	Audio player interaction and events	Mute player volume	volumeChange	{ mediaPlayerVolume : 0, deviceVolume: <float> }
119	Audio	Audio player interaction and events	Mute device volume	volumeChange	{ mediaPlayerVolume : <float>, deviceVolume: 0 }
120	Audio	Audio player interaction and events	Audio is backgrounded and still playing. when an app is backgrounded we still get OMID events (such as quartiles and device volume changes). audio can be 100% audible in the background	All Audio Events need to be checked	quartiles and volume
121	Audio	End session	Click on close to close the audio, stop the audio or move to another page creating a new app page session	Session Finish	Finish

Appendix C: Release 1.2 Validation Test Cases

S.No.	Ad Type	Test Case	Scenario	Event/ Signal	Expected Result/ value/ comment
1	All	Set-up testing	Confirm that the app can be installed and from what source Should testing be targeted to specific devices? Device types?	App installation	App installed without error, and can be opened
2	All	Set-up testing	Did the integration partner provide any specific credentials for testing?	Log-in screen	Log-in successful
3	All	Set-up testing	Does the app re-use the same code for multiple placements, so that they can be checked as a group rather than individually?	Confirmation from Integrator	Confirmation from Integrator
4	All	Set-up testing	Is the generic verification script trafficked with the ad?	Check ad / impression events	Signals from generic verification script
5	All	Set-up testing	Only ads to be tested are being served with tracking	Confirmation from Integrator	Confirmation from Integrator
6	All				
7	All	Check OMID compatibility and whether active	Load the app page with the ad	isCompatibleWithOmidApiVersion	version number of OMID library and application context. supported = 'yes'
8	All	Ad session is correctly instantiated	Load the page with the ad or reload the page with the ad	ad session id	return new ad session- unique ad session id, timestamp unique ad session value like: 2196C74D-6A27-4807-A3D3-B08E4F6E0ABA and timestamp aue like 1531749570462
9	All	Ad session is correctly instantiated	Ad session context is established properly	environment	app e.f "environment":"app", timestamp":"1531749570462"
10	All	Ad session is correctly instantiated		adSessionType	native or html
11	All	Ad session is correctly instantiated		supports	clid for all ad types except vlid for video

12	All	Ad session is correctly instantiated		omidNativeInfo	partnerName (this is same as namespace assigned at the time of OM SDK download) and partnerVersion {"partnerName":"someSDK"," partnerVersion":"x.y"}, timestamp":"1531749570462"
13	All	Ad session is correctly instantiated		omidJsInfo	serviceVersion, sessionClientVersion, partnerName,partnerVersion E.g. "omidJsInfo":{"serviceVersion ":"1.1.2-iab443","omidimplementer":"o msdk"}, timestamp":"1531749570462"
14	All	Ad session is correctly instantiated		app	libraryVersion and appId (com.example.appname) "app":{"appId":"com.example. ent","libraryVersion":"1.1.2-partnername"}, timestamp":"1531749570462"
15	All	Ad session is correctly instantiated		Device Info	mobile device details e.g. "deviceInfo":{"deviceType":"iP hone7,2","os":"iOS","osVersio n":"11.4.1"}, timestamp":"1531749570462"
16	All	Ad session is correctly instantiated		verificationParameter s	verification parameter provided by the measurement provider undefined for display ads e.g. verificationParameters":"unde fined" Also displays access mode. Always limited when using OM SDK "accessmode":"limited" For native and video ads verificationParameters":"iabte chlab or some text", "accessmode":limited
17	All	Ad session is correctly instantiated		customReferenceDat a (not required)	any string value

18	All	Ad session has error instantiating		errorType	Generic or Video when video ads
19	All	Ad session has error instantiating		message	string value describing the error
20	All	Ad session slow to instantiate	Ad is slow to load, eg from throttling	ad loaded	Impression events fire only once the ad has loaded """timestamp"":""1531376049 725"", ""type"":""impression"", ""data"":{""mediaType"":""display"",""viewport"":undefined, ""adView"":undefined,"
21	All	Ad session has finished	End of ad session by closing the ad or starting a new page in app that will dismiss the current ad	sessionFInish	Finish
22	All	Impression has occurred	As soon as the ad is displayed on the page	mediaType	display or video
23	Video	Impression has occurred		videoEventAdaptorType	jcustom or nativecustom if the media type is video
24	Video	Impression has occurred		videoEventAdaptorVersion (not required)	version number is media type is video
25	All	Impression has occurred		viewport	viewport size of the device in height and width
26	All	Impression has occurred		adView	This is geometry change data. E.g. """adView"":{""percentageInView"":100,""reasons"":[], ""timestamp"":""15313760505 20"", ""geometry"":{""width"":351,""height"":351,""x"":12,""y"":80}, ""onScreenGeometry"":{""width"":351,""height"":351,""x"":12,""y"":80}"
27	All	Geometry Change data	All the geometry events are to be displayed for all ads	percentageInView	value between 0-100
28	All	Geometry Change data		geometry	value like this: { x: 0, y: 0, width: 320, } height: 50
29	All	Geometry Change data		onScreenGeometry	{ } x: 0, y: 0, width: 320, height: 50, obstructions:[
30	All	Geometry Change data	Obstruction is present in onScreen geometry	Obstruction data	{ x: 0, y: 0, width: 320, } height: 50

31	All	Geometry Change data	Reason for obstruction	reason	one or more of: notfound, hidden, backgrounded, viewport,obstructed, clipped
32	Video	Video player interaction and events	Events for video ads	loaded	{ skippable: <boolean>, skipOffset: <float>, autoPlay: <boolean>, position: <string> } position values are - preroll,midroll, postroll, standalone (when it is not in video content)
33	Video	Video player interaction and events	Start playing the video	start	{ duration: <float>, videoPlayerVolume: <float>, deviceVolume: <float> } The videoPlayerVolume range is between 0 and 1. The deviceVolume range is between 0 and 1.
34	Video	Video player interaction and events	Play at least 1/4 of video length	firstquartile	firstquartile
35	Video	Video player interaction and events	Play at least half of video length	midpoint	midpoint
36	Video	Video player interaction and events	Play at least 3/4 of video length	thirdquartile	thirdquartile
37	Video	Video player interaction and events	Play full video	complete	complete
38	Video	Video player interaction and events	Pause the video	pause	pause
39	Video	Video player interaction and events	Resume after the pause	resume	resume
40	Video	Video player interaction and events	Start playing video	bufferstart	bufferstart
41	Video	Video player interaction and events		bufferfinish	bufferfinish
42	Video	Video player interaction and events	Use skip video is skip is available	skipped	Only for skippable videos

43	Video	Video player interaction and events	Change player volume or device volume	volumeChange	values are between 0 and 1- { videoPlayerVolume: <float>, deviceVolume: <float> }
44	Video	Video player interaction and events	Hide Video by scrolling or expanding another page component so the video is hidden	playerStateChange	minimized
45	Video	Video player interaction and events	Change player volume	volumeChange	playerVolume should change, but deviceVolume should not
46	Video	Change device volume	volumeChange	deviceVolume should change, but playerVolume should not	
47	Video	Video player interaction and events	Mute player volume	volumeChange	{ videoPlayerVolume: 0, deviceVolume: <float> }
48	Video	Video player interaction and events	Mute device volume	volumeChange	{ videoPlayerVolume: <float>, deviceVolume: 0 }
49	Video	Video player interaction and events	Minimize the video or reduce in size if ap allows that action	playerStateChange	collapsed
50	Video	Video player interaction and events	Play video in player default size	playerStateChange	normal
51	Video	Video player interaction and events	Expand the player if app allows or the app expands the video when it plays the video	playerStateChange	expanded
52	Video	Video player interaction and events	Tap on video to go full screen	playerStateChange	fullscreen
53	Video	Video player interaction and events		geometry	value like this: { x: 0, y: 0, width: 320, } height: 50
54	Video	Video player interaction and events	CLick on video to open advertiser landing page- execute click through	adUserInteraction	{ interactionType: <click> }
55	Video	Video player interaction and events	Tap on video to engage with another ad experience	adUserInteraction	{ interactionType: <invitaiton Accept> }

56	Display	Banner ad session basic check	Load the banner ad	Check all ad session and impression events have occured	see above for ad session and impression event
57	Display	Banner ad session basic check	Reload the banner ad	Check all ad session and impression events have occured	see above for ad session and impression event
58	Display	Banner ad session basic check	On Android rotate the banner- this should start a new ad session	Check all ad session and impression events have occured	see above for ad session and impression event
59	Display	Banner ad viewability geometry	Ad fully in view	percentageInView	this should be 100- also check other geometry values- they should reflect device size in view port and ad size in X,Y parameters
60	Display	Banner ad viewability geometry	Scroll ad partially out of view < 50% in view	percentageInView	value should be < 50
61	Display	Banner ad viewability geometry	Scroll ad partially back in view > 50% but < 100% in view	percentageInView	value should be >50 and < 100
62	Display	Banner ad viewability geometry	Scroll ad fully out of view	percentageInView	0
63	Display	Banner ad viewability geometry		reason	hidden and / or viewport
64	Display	Banner ad obstructions	Background the application (go to another app or start camera or lock the screen)	percentageInView	between 0 and 100
65	Display	Banner ad obstructions		obstruction data	as described above
66	Display	Banner ad obstructions		reason	backgrounded
67	Display	Banner ad obstructions	Hide with another view by opening or expanding another component on the page in the app. e.g open a link that opens another web view	reason	obstructed and/ or hidden
68	Display	Banner ad interactions	Click to advertiser landing page	adUserInteraction	{ interactionType: <click> }
69	Display	Banner ad interactions	Tap to engage with ad component like expand the ad	adUserInteraction	{ interactionType: <invitaitonAccept> }

70	Display	Ending the ad session	Tap on close button if there is e.g. anchored banners or refresh the app page to get a fresh ad session	session Finish	Finish
71	Interstitial	Pre load scenario (confirm with app if this applies)	Load the app	Check all ad session and impression events have occured	see above for ad session events
72	Interstitial	Ad shown in pre load scenario	Go to the interstitial page in the app (navigate from one page to another until interstitial is shown)	Check all impression occurred events	see above for impression events
73	Interstitial	Ad load and shown at the same time	GO ot the interstitial page in the app (please confirm navigation with app owner)	Check all ad session and impression events have occured	see above for ad session and impression event
74	Interstitial	Interstitial ad viewability geometry	Ad fully in view	percentageInView	90% or greater
75	Interstitial	Interstitial ad obstructions	Background the application (go to another app or start camera or lock the screen)	percentageInView	between 0 and 100
76	Interstitial	Interstitial ad obstructions		obstruction data	as described above
77	Interstitial	Interstitial ad obstructions		reason	backgrounded
78	Interstitial	Interstitial ad interactions	Click to advertiser landing page	adUserInteraction	{ interactionType: <click> }
79	Interstitial	Interstitial ad interactions	Tap to engage with ad component like expand the ad	adUserInteraction	{ interactionType: <invitaitonAccept> }
80	Interstitial	Ending the ad session	Tap on close button if there is or use app navigation to move out of the interstitial ad experience	session Finish	Finish
81	Video	Ad session start and impression for ads in video content	Play video content until pre roll or mid roll or post roll	Check all ad session and impression events have occured	see above for ad session events
82	Video		When video ad appears additional video events need to be verified	loaded	{ skippable: <boolean>, skipOffset: <float>, autoPlay: <boolean>, position: <string> } position values are - preroll,midroll, postroll, standalone (when it is not in video content)

83	Video	Ad session start and impression for standa lone ads- autoplay native or outstream ads	Load the page with the video ad	loaded	{ skippable: <boolean>, skipOffset: <float>, autoPlay: <boolean>, position: <string> } position values are - preroll,midroll, postroll, standalone (when it is not in video content)
84	Video	Video ad viewability geometry for videos inline of the view	Ad fully in view	percentageInView	this should be 100- also check other geometry values- they should reflect device size in view port and ad size in X,Y parameters
85	Video	Video ad viewability geometry for videos inline of the view	Scroll ad partially out of view < 50% in view	percentageInView	value should be < 50
86	Video	Video ad viewability geometry for videos inline of the view	Scroll ad partially back in view > 50% but < 100% in view	percentageInView	value should be >50 and < 100
87	Video	Video ad viewability geometry for videos inline of the view	Scroll ad fully out of view	percentageInView	0
88	Video	Video ad viewability geometry for videos inline of the view		reason	hidden and / or viewport
89	Video	Video ad viewability geometry for videos inline of the view	Background the application (go to another app or start camera or lock the screen)	percentageInView	between 0 and 100, video events available
90	Video	Video ad viewability geometry for videos inline of the view		obstruction data	as described above
91	Video	Video ad viewability geometry for videos inline of the view		reason	backgrounded

92	Video	Video ad viewability geometry for videos inline of the view	Hide with another view by opening or expanding another component on the page in the app. e.g open a link that opens another web view	reason	obstructed and/ or hidden
93	Video	Video playback events	Refer above test case for Video player interaction and events and execute all scenarios	see Video player interaction and events scenarios	see Video player interaction and events scenarios.
94	Video	End session	Click on close to close the video, stop the video or move to another page creating a new app page session	Session Finish	Finish
95	Native	Native ad viewability	Same as banner ads		Ensure ad session type is native and OMIDnative event has the right parameters