

[EXTERNAL EXPORT] MRAID Test Ads

Support of MRAID is not so convenient process. IAB provides a lot of requirements but does not provide a lot of test examples to verify the correctness of all features. Moreover the **mraid.js** should be developed and supported by the host application as well. The release of MRAID 3 added more problems to this process since the standard includes several new features but didn't provide any relevant test examples. So we had to develop our own test ads.

SDK supports MRAID 3 and MRAID 2 ads.

In this document, you will find which creatives are used in the internal test app to test and verify the support of MRAID.

- [General List](#)
- [MRAID 2.0](#)
 - [Expand - 1 Part](#)
 - [Expand - 2 Part](#)
 - [Resize](#)
 - [Resize With Errors](#)
 - [Fullscreen](#)
 - [Video Interstitial](#)
- [MRAID 3.0](#)
 - [Viewability Compliance Ad](#)
 - [Resize negative](#)
 - [Test cases](#)
 - [Load and Events](#)
- [MRAID 3.0 Custom ads](#)
 - [MRAID OX: Test Properties 3.0](#)
 - [MRAID OX: Test Methods 3.0](#)
- [Known Issues](#)

General List

Name	Ad Server	Mock Server	Internal Application
MRAID 2.0: Expand - 1 Part			
MRAID 2.0: Expand - 2 Part			
MRAID 2.0: Resize			
MRAID 2.0: Resize With Errors			
MRAID 2.0: Fullscreen			
MRAID 2.0: Video Interstitial			
MRAID 3.0: Viewability Compliance Ad			
MRAID 3.0: Resize Negative Test			
MRAID 3.0: Load And Events			
MRAID OX: Test Properties 3.0			
MRAID OX: Test Methods 3.0			

A more detailed description you could find below.

MRAID 2.0

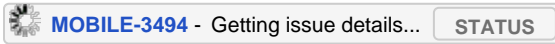
The source: <https://www.iab.com/guidelines/mobile-rich-media-ad-interface-definitions-mraid/>

Expand - 1 Part

Single-Part Expandable Ad

Peculiarities:

- Save for the rotation lock which we have chosen not to implement due to it being potentially disruptive to the user experience:



Description

This ad was designed to go through the life-cycle of a typical MRAID expandable ad with orientation support.

- The initial state of the ad is a banner 320x50 with the "Expand!" button.
- Clicking "Expand" will cause mraid.expand() to be executed.
- Expanded ad will contain:
 - close button - to close the ad;
 - lock button - to lock ad in portrait or landscape (depending on the initial orientation);
 - log window - shows: orientation properties, last event, etc.;
- Ad rotates freely and sizeChange event will trigger and update to reflow the ad.
- Lock is released when ad is closed.

Expand - 2 Part

Two-Part Expandable Ad

Peculiarities:

Description

This ad was designed to show a two part expandable ad with the second part expecting MRAID support to be included.

- The initial state of the ad is a banner 320x50 with "Two Part Expand" button.
- Clicking "Two Part Expand" will cause mraid.expand() to be executed.
- The expanded part will contain:
 - "Click here to close" button - to close the ad;
 - "Open IAB.net" - to open a webview or browser with the provided url;
 - "Play video" - to open a video player and play the provided url;
 - "Expand again" - will do nothing;

NOTE: This ad is deprecated as of MRAID 3.0

Resize

Resize Ad

Peculiarities:

- Per the MRAID spec, this should close on orientation change

Description

This ad will test that the MRAID v2 container is properly supporting basic resize ads. This particular creative sets allowOffscreen to false so that the creative should always remain onscreen and expand from the relative banner position. Unless the screen size is smaller than 300x250 it should not error out on resize.

- The initial state of the ad is banner 320x50 with "Click to Resize" button.
- Clicking "Click to Resize" will cause mraid.resize() to be executed.
- The resized part will contain the next actions:
 - Open URL – This uses the MRAID open method to launch the IAB MRAID website.
 - Click to Map – This uses the MRAID open method to launch a link to IAB NY office in Google maps.

- Click to App – This uses the MRAID open method. For iOS this should launch the app store for the IAB app. For Android this should take you to the market for the IAB app. For other OS it should print a message saying there is no supported app link available.
- Play Video – This should play an IAB video using the MRAID playVideo method.
- SMS – This first uses the MRAID supports method to check if sms is supported. If not it logs a message saying it isn't supported. If so then it uses the MRAID open method to launch a sms link.
- Store Picture – This first uses the MRAID supports method to check if storePicture is supported. If not it logs a message saying it isn't supported. If so then it uses the MRAID storePicture method to store a IAB logo. The ad also uses the error event listener to log a message if the user cancels the request.
- Create Calendar Event – This first uses the MRAID supports method to check if createCalendarEvent is supported. If not it logs a message saying it isn't supported. If so then it uses the MRAID createCalendarEvent method to store a sample calendar entry as shown in MRAID spec. The ad also uses the error event listener to log a message if the user cancels the request.
- Click to Call – This first uses the MRAID supports method to check if tel is supported. If not it logs a message saying it isn't supported. If so then it uses the MRAID open method to launch a tel link.
- Close - right top corner contains a "close" button. Returns ad to the initial state.

Resize With Errors

Resize Ad Designed to Cause MRAID Errors

Peculiarities:

Description

This ad will test that the container triggers appropriate error handling when resize-related methods and properties are used incorrectly. All expected errors are caught by the creative and reported to the console.

- The initial state of the ad is banner 300x100 with "error" and "arrow" buttons.
- There are no initial or automatic ad behaviors beyond registering for the ready event.
- Tapping on the "error" buttons generates error conditions.
- Tapping on the "arrow" buttons attempt to resize the container (when "Test offscreen is FALSE").

Fullscreen

Full-Page Ad

Peculiarities:

- iOS - Unknown - This ad is poorly named. The name "full page" could be taken as "interstitial", but it really means "this ad will fill whatever space is given to it". However, it doesn't test interstitials, it tests whether **isVisible** is functioning by **scrolling the ad off the screen and then back**. The test needs to be updated to have a scrollview of some sort to check whether the OXMAdView is aware of when it is visible or not, and the OXMAdView needs to be updated such that it is aware of whether it is visible or not so that it can pass that info to MRAID.

Description

This ad was designed to test that a creative built using responsive design methods will fill the container and that the container correctly triggers the viewable states and methods. The example is scrollable to test the behavior change.

- The initial state of the ad is any size. It will fit the entire default container.
- The ad contains 2 timers:
 - Off screen timer - counts the number of seconds the ad is display with isVisible false;
 - On screen timer - counts the number of seconds the ad is displayed with isVisible true;
- Ad is placed in a scrollable container.

Video Interstitial

Video Interstitial Ad

Peculiarities:

- Per the MRAID spec, needs a close button on the top right

Description

This ad is representing a full screen video interstitial ad.

- Initial state of the ad is interstitial.
- Video is only played when ad becomes viewable.
- The ad contains:
 - video controls;
 - close button - to close interstitial ad;

MRAID 3.0

The source: <https://github.com/InteractiveAdvertisingBureau/MRAID-3.0-Compliance-Ads>

Integration date: 3/26/2020

Viewability Compliance Ad

<https://github.com/InteractiveAdvertisingBureau/MRAID-3.0-Compliance-Ads/tree/master/viewability>

Description

This ad allows a user to track the exposed percentage values that an MRAID 3.0 SDK returns over time.

- The initial state of the ad is presented as a histogram with the vertical axis representing the exposedPercentage value.
- Each node on the horizontal axis represents a single exposureChange event.
- Button "% In view" is clickable and can turn on / off histogram.

If the ad detects one of the following scenarios, it will display a message describing the problem:

- No object named mraid is defined after loading mraid.js.
- The global variable MRAID_ENV is undefined.
- The function mraid.getVersion returns a version that is not either a numeric or string representation of the number 3.
- When handling an exposureChange event, the exposedPercentage parameter does not match the MRAID 3.0 specification for that object.
- When handling an exposureChange event, the visibleRectangle object (if not null) does not match the MRAID 3.0 specification for that object.
- When handling an exposureChange event, the occlusionRectangles array (if not null) does not match the MRAID 3.0 specification for that array.

Resize negative

<https://github.com/InteractiveAdvertisingBureau/MRAID-3.0-Compliance-Ads/tree/master/resize-negative>

Description

This ad includes tests which check that 'error' event is generated by MRAID SDK when calling `resize()` or `setResizeProperties()` should lead to an error event according to MRAID spec.

- The initial state of the ad is a blank screen, which afterwards prints logs in the provided "div" element
- Failed tests will display red text in "div", which will describe the reason of failure.
- Passed tests will be displayed as blue text with appropriate description.

Test cases

- Call `resize()` without calling `setResizeProperties()` before that
- Change state to `expanded`. Call `resize`. `Resize` is not supported in `expanded` state
- Set wrong resize properties:
 - pass `undefined` / no object to `setResizeProperties`

- pass an empty object to `setResizeProperties`
- pass wrong values of resize properties to `setResizeProperties`
- Set resize properties so that an ad is off screen, but `allowOffscreen` is `false` or not set
- Set resize properties that make the ad too small (should be at least 50x50 on screen)
- Set resize properties that shift close button region off screen
 - `offsetX`
 - `offsetY`
 - `offsetX` and `offsetY`
 - `width`

IMPORTANT

This IAB ad example was modified due to an error that the initial ad contained.

1. The event in `EventTester` was not defined (there was no `this.event = event`). Because of this - attempt to execute the event was failed, since `this.event` was not defined.
2. `test.test(this.mraid)` was changed to `setTimeout(() => test.test(this.mraid));` because in another case one test was executed multiple times and crashed eventually.
3. `if (_mraid.getState() === 'loading') {`
`_mraid.addEventListener('ready', startTests);`
`}`

was changed to:

```
if (_mraid.getState() === 'loading') {
  _mraid.addEventListener('ready', startTests(_mraid, () => {
    console.log('[ALL NEGATIVE RESIZE TESTS FINISHED]');
  }, 2000, logInfoOnUi, logErrorOnUi));
}
```

Without this change the `startTests` method was executed without parameters, which resulted in no tests running at all.

This only happened on Android since we have different ways to inject `mraid.js` compared to iOS. iOS first injects `mraid.js`, then notifies that the `mraid` is ready (state becomes "default") and after that - injects ad html.

Commit with implemented changes: <https://github.com/openx/mobile-mock-server/commit/e7cbdead6e20d07cfb2da352c7a7ecd2a69df791>

Load and Events

<https://github.com/InteractiveAdvertisingBureau/MRAID-3.0-Compliance-Ads/tree/master/loadandevents>

This example does not have a README.

Description.

This ad was designed to test various MRAID events and proper event handling by the container. Ad initial state is a 320x50 banner with "Tap for Expand/stateChange Check" button.

The ad example represents the following behaviour chains:

- Clicking "Tap For Expand/stateChange Check" should result in an expanded ad with SDK close button. Ad should contain:
 - Log section.
 - SDK close button.
 - Ad text "Tap SDK Close Button".
- Clicking SDK close button should collapse the ad in 320x50 with "Tap For Expand/sizeChange Check" button.
- Clicking "Tap For Expand/sizeChange Check" again should expand the ad and expanded ad should contain:
 - Log section.
 - "Tap To Close Expand" button in ad.
 - SDK close button.
- Clicking the "Tap To Close Expand" should collapse the ad to 320x50 and "Tap To Check Logs" should appear.
- Clicking the "Tap To Check Logs" expand the ad and expanded ad should contain:
 - Log section.

- "Tap To Unload" button.
- SDK close button.
- Clicking "Tap To Unload" should result in no ad displaying (final step).

NOTE: Tapping "SDK close" when it is not explicitly requested (as in first step) may result in incorrect ad behaviour.

MRAID 3.0 Custom ads

MRAID OX: Test Properties 3.0

This ad is dedicated to testing the values returned by MRAID 3 functions and variables:

- MRAID_ENV
- getLocation()
- audioVolumeChange()
- getCurrentAppOrientation

Description

This example is based on MRAID 2 expandable ad, where the expanded part contains: MRAID_ENV, location, audioVolumeChange, currentAppOrientation. All of these values are returned from mraid.js methods.

Audio is playable and volume updates will be printed in the log section at the bottom.

See the example below:



MRAID OX: Test Methods 3.0

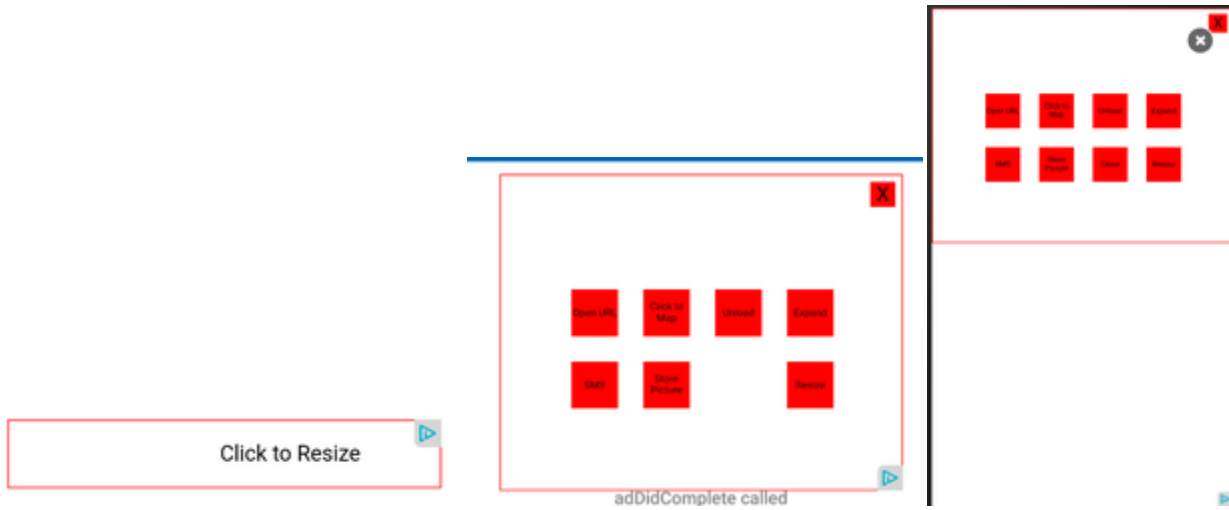
This ad is dedicated to testing the behavior of the ads due to particular ad events. For example expand resize, resize expand, resize unload etc.

Description

This ad is based on MRAID 2 Resize ad with some modified event execution buttons, such as: Expand, Unload, Resize, Close. All of these buttons call corresponding mraid.js methods.

We can test various behaviour chains:

- resize expand resize
- resize resize
- resize expand expand
- close (in 'expanded' ad state)
- unload (in any ad state)



Known Issues

Ad	Platform	Description
MRAID Resize with errors	Android	MRAID Resize with Errors: Clicking on test properties is not generating logs in the ad console view Bug in javascript event listener initialization.
MRAID 1 part expand	Android	The "Rotate To Portrait" is not a clickable button in a horizontal position. Issue is because there are no events set for OnClick when a device is in horizontal position and the button has "Rotate to Portrait" text.