# RTB Project

# OpenRTB Payment ID Extension

***Concerning the addition of an additional attribute in the BidRequest Object***

## Introduction

The RTB Project, formerly known as the OpenRTB Consortium, assembled in November 2010 to develop a new API specification for companies interested in an open

protocol for the automated trading of digital media across a broader range of platforms, devices, and advertising solutions.

## About the IAB Tech 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: http://www.iabtechlab.com.** The OpenRTB Work Group is a working group within the IAB Technology Lab.

This document can be found at https://github.com/InteractiveAdvertisingBureau/openrtb

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Change Log

| Version | Date | Section Link | Change |
|---|---|---|---|
| 1.0 | August 2016 | | Original |

## 1. Introduction / Background

Transparent practices enable principled actors to differentiate themselves from sources that generate or trade in poor quality or fraudulent traffic. Principles that achieve this, in addition to other tools and resources available to the market, allow companies across the industry to take important strides towards fraud-detection and fraud-resolution.

The lack of transparency into the supply path of any individual ad impression also makes effective remedial action more difficult. If a media buyer makes a valid claim for a refund because illegitimate inventory has been supplied, then it is currently difficult to propagate this claim back to the party ultimately responsible for supplying the illegitimate inventory. It is also currently difficult to pass on recommendations of corrective action to the appropriate parties.

Further details can be found in the existing Payment ID Operational Policy document.

## 2. Ad Tech Supply Chain

The ad tech supply chain can have many nodes as it passes through systems. The following diagram is an attempt to simplify the various diagrams in the TAG document.

Entities vested in the workflow:

OpenRTB Payment ID Extension Guidance

0) Content: Some digital content such as a video (vimeo.com) website (cnn.com), app (CNN for iPhone) or embedded content inside of some other app or webpage (cnn's instant articles within Google News or Facebook)

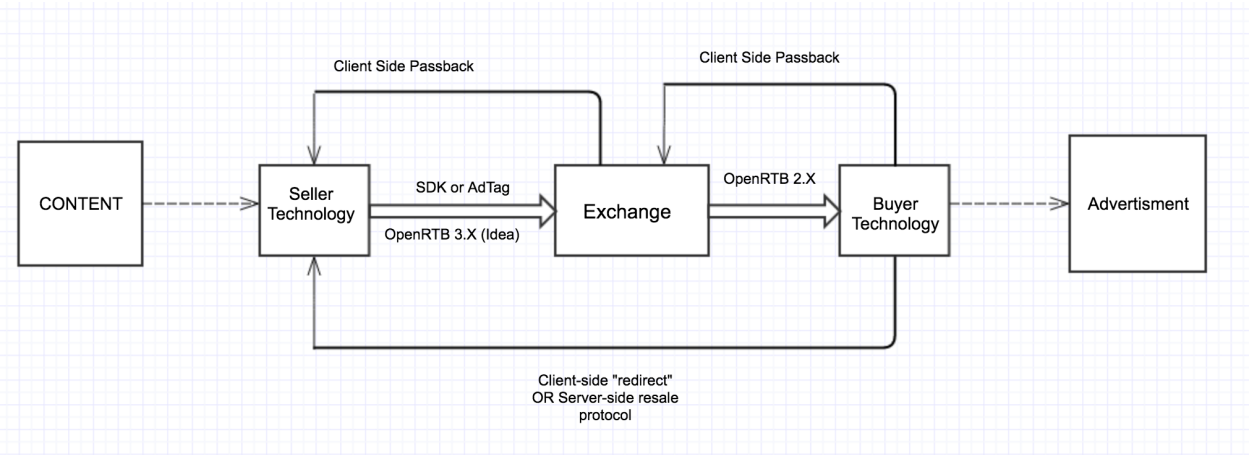
1) Seller Technology: Some SDK, content management system, adserver or header-bidding container that coordinates the advertising in real-time either via some completely server-side technology or hybrid server and client side tech.

2) Exchange: The technology that offers the impression for auction, generally via an ad tag or other HTTP GET request (for header bidding). There is an emerging class of server-side connections between the "Seller Tech" and the "Exchange" that may be one of:

- Ad Tag via HTTP
- HTTP GET or POST API (header bidding for instance)
- Server-side custom protocol (JSON in a few variants)

3) Buyer Technology: This could be a legacy ad network using ad tags, a DSP that serves a redirect to an agency/advertiser ad server, or a "native ads system"

4) Advertisement: Some technology that supplies the ad creative itself via some mechanism. Delivery maybe via redirect in a web view, or some server-side ad-content stitching. Generally, an ad server, but may vary in the case of video or native ads which function differently.



## 3. Payment ID Requirements

Individual companies are responsible for creating nodes, or ID pairings, that comprises two identifiers:

- The Intermediary ID, and,
- The Inventory Source ID,

Where the Intermediary ID is a representation of the intermediary appending to the chain. This optional ID, when included, is a method by which a company can effectively "sign" the Inventory Source ID. The Inventory Source ID must always be appended by typical intermediaries in order to identify the immediately preceding, *paid source of the inventory*.

With the goal of removing speed-bumps for companies in the process of adopting Payment ID, identifiers within a single segment of a chain must be:

- Alphanumeric (A-Z; 0-9); and contain only URL-friendly characters (with no special characters),
- **Case sensitive**, especially in the context of OpenRTB.

Companies may use identifiers that internally exist, granted they meet the above requirements, and must always pass along the preceding chain as they received it, without any modifications to the original nodes within the chain.

Further information on entity definitions and distinguishing identifier pairs within nodes where the Payment ID chain is a string with clear ordering can be found in the Payment ID Operational Policy document.

## 4. OpenRTB

We are recommending that OpenRTB represent the Payment ID chain as single string. Bidders will be able to create easy-to-define logic that blocks bidding on any bid request that contains an Inventory Source ID or Intermediary ID that is on their blacklist. Bidders can also record the chain for post-buy analysis.

### 4.1. Update to Bid Request

The below table demonstrates how Payment ID should be expressed in OpenRTB v2.5. The proposal is to add a “pchain” attribute at the top-level bid request object.

| Attribute | Type | Description |
|---|---|---|
| pchain | string; recommended | Logical Payment ID chain string containing embedded syntax described in the TAG Payment ID Protocol document version 1.0 |

To use it in the current v2.4 and prior v2.x versions and stay compliant, the “pchain” field would need to be added as an extension, “ext”, within the top-level bid request object rather than directly.

## 5. Examples

Illustrations with examples of a Payment ID chain growing can be found in the [TAG Payment ID Policy] document.

### 5.1. Example chain containing one node

"pchain": "XYZ01234:ABCD56789",

### 5.2. Example of a chain containing two nodes

"pchain": "XYZ01234:ABCD56789-STUV543:AA111",

### 5.3. Example of a chain containing two nodes with missing information

*Note the intermediary is not provided in the second node.*
"pchain": "XYZ01234:ABCD56789-:AA111",

## 6. Redirects

Unique scenarios in which publishers and other resellers employ programmatic techniques such as header bidding, client-side passbacks or waterfalling in order to optimize their yield can create further complexity in tracking payments made amongst participants in the supply chain.

In the context of a redirect, the chain behaves as a supply query chain which captures the full flow of an ad query, with all decisions, and flow control, providing transparency for the buyer on where the impression has been. Using pipes “ | ” denotes the presence of redirects within a supply query chain where the rightmost pipe marks the beginning of the true Payment ID chain.

Chains are to be sent in the form of a key-value pair and parties to these scenarios need only provide Intermediary ID information in order to maintain and pass the chain.

PAYID= <IntID>|<IntID>|<IntID>|<IntID>...
PAYID= XYZ01234|ABCD56789|STUV543|AA111...

Concerning client-side redirects where the ‘creative’ is a tag for another intermediary, the ‘creative’ must call for the addition of a node to the chain it is passing along. This of course means resolution involves altering client tags to contain the chain - which carries its own risks, for eg: character limits.

Additionally important to note is the differences in how the above described scenario may be executed across sell-side companies in the market. Redirects will exist as a key constant in how any payment ID chain is propagated throughout their platforms and how it enters the OpenRTB context, pending real-time observations.

In a header bidding context, the header tag script needs to request bids from one or many intermediaries. Intermediaries will need to receive a supply query chain containing two nodes (one for the publisher and one for the publisher’s ad server) so that when they put it up for bids they may append their own Intermediary ID, giving an advertisers sufficient information about the path of an impression before sending a bid response.