

Header Bidding and OpenRTB:

Strategy and Technical Overview

What is Header Bidding?

Header bidding is a programmatic method where publishers offer their ad inventory to multiple demand partners simultaneously, *before* calling their primary ad server. This parallel auction creates more competition, typically improving fill rates and yield.

Header bidding supports:

- Display ads (web and app)
- Video (instream and outstream)
- Streaming / connected TV (CTV) via SSAI and DAI
- Video on Demand (VOD) platforms

The backbone protocol that enables this real-time auction between buyers and sellers is OpenRTB, created and maintained by the IAB Tech Lab.

What is OpenRTB?

OpenRTB is an open, standardized protocol defining:

- The bid request (from seller/SSP to buyers/DSPs)
- The bid response (from buyers/DSPs back to SSPs)

It standardizes data about:

- Impression opportunities (ad size, placement, format)
- Content and context (keywords, genre, semantic data)
- User (ID, privacy consent)
- Device (type, OS, geo)
- Regulations (GDPR, CCPA compliance)

The current version, **OpenRTB 2.6**, adds stronger support for streaming, ad pods, and contextual data.

Use Cases and OpenRTB Examples

Below are real examples of how OpenRTB applies in four header bidding scenarios, including JSON request and response samples.

1. Display Header Bidding (Web and App)

Flow:

1. Page/app loads
2. Header bidding wrapper (e.g., Prebid.js) sends OpenRTB bid requests
3. SSPs forward to DSPs
4. DSPs return bid responses
5. The highest bid is passed to the ad server (e.g., GAM)

Sample Bid Request (Display):

```
{
  "id": "req-123",
  "imp": [{
    "id": "1",
    "banner": {"w": 300, "h": 250},
    "bidfloor": 0.5
  }],
  "site": {"domain": "example.com", "page": "https://example.com/article"},
  "device": {"ua": "Mozilla/5.0", "ip": "192.0.2.1"},
  "user": {"id": "buyer-123"}
}
```

Sample Bid Response (Display):

```
{
  "id": "req-123",
  "seatbid": [{
    "bid": [{
      "id": "bid-456",
      "impid": "1",
      "price": 1.25,
      "adm": "<div>Ad markup</div>",
      "crid": "creative-789"
    }]
  }]
}
```

2. Contextual Header Bidding

Uses page-level data instead of user IDs.

Sample Bid Request (Contextual):

```
{
  "id": "ctx-001",
  "imp": [{"id": "1", "banner": {"w": 728, "h": 90}}],
  "site": {"domain": "foodsite.com", "page": "https://foodsite.com/vegan-desserts"},
}
```

```
"content": {  
  "cat": ["IAB17-6"],  
  "keywords": "vegan, dessert, chocolate"  
}  
}
```

Sample Bid Response (Contextual):

```
{  
  "id": "ctx-001",  
  "seatbid": [{  
    "bid": [{  
      "id": "ctx-bid-01",  
      "impid": "1",  
      "price": 0.85,  
      "adm": "<div>Contextual ad</div>",  
      "crid": "ctx-cr-22"  
    }]  
  }]  
}
```

3. Streaming (SSAI/DAI)

Supports live streaming or linear video where ads are stitched server-side.

Sample Bid Request (Streaming):

```
{  
  "id": "stream-100",  
  "imp": [{  
    "id": "pod-1",  
    "video": {  
      "mimes": ["video/mp4"],  
      "minduration": 15,  
      "maxduration": 30,  
      "placement": 5,  
      "pod": [{ "podid": "1", "podduration": 120 }]  
    }  
  }],  
  "content": { "title": "Championship Game", "genre": "Sports" },  
  "device": { "ifa": "1234-5678" }  
}
```

Sample Bid Response (Streaming):

```

{
  "id": "stream-100",
  "seatbid": [{
    "bid": [{
      "id": "stream-bid-01",
      "impid": "pod-1",
      "price": 10.00,
      "adm": "<VAST version='4.0'>...</VAST>",
      "crid": "stream-cr-77"
    }]
  }]
}

```

4. Video on Demand (VOD)

Ads inserted before/during/after on-demand content.

Sample Bid Request (VOD):

```

{
  "id": "vod-300",
  "imp": [{
    "id": "1",
    "video": {
      "placement": 5,
      "minduration": 15,
      "maxduration": 30
    }
  }],
  "content": {
    "title": "Easy Vegan Meals", "genre": "Food", "season": "2"
  },
  "user": {"ext": {"subscription": "free"}}
}

```

Sample Bid Response (VOD):

```
{  
  
  "id": "vod-300",  
  
  "seatbid": [{  
  
    "bid": [{  
  
      "id": "vod-bid-99",  
  
      "impid": "1",  
  
      "price": 5.50,  
  
      "adm": "<VAST version='4.0'>...</VAST>",  
  
      "crid": "vod-cr-88"  
  
    }]  
  
  }]  
  
}
```

References and IAB Docs

- [OpenRTB 2.6](#)
- [VAST](#)
- [Content Taxonomy](#)
- [Seller-Defined Audiences](#)
- [GPP](#) (Global Privacy Platform)

Why OpenRTB is Core to Header Bidding

Advantage	How OpenRTB helps
Standardization	One language across SSPs, DSPs, and ad servers
Flexibility	Supports display, video, native, streaming, and contextual
Privacy-first	GPP, GDPR, and CCPA consent support
Streaming support	Pods, live, SSAI, VOD
Rich metadata	Content, context, user segments, device info