Out of Home Data Exchange API Guidelines

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Introduction

These specs mirror the Interactive Advertising Bureau (IAB) OpenDirect API Specification 1.0 standards. This document serves as a starting place for discussions related to developing a standard OAAA API. The actual API may deviate from these specs.

Organization and Layout

This specification defines a proposed API that an OOH publisher should implement to support programmatic buying of their inventory. Implementation of the proposed API would allow buyers to write a single client that can access inventory from multiple publishers without the need to write separate clients for each publisher.

Resources

Resources are organized into the following objects:

- Account
- Creative
- Engagement
- (Order) Line Item
- Order
- Organization
- Product

Resource objects in this working draft do not include any property constraints. The API will support JSON. The following sections define the JSON resource objects used by the API. The properties must be supported while other properties may or should be supported.

Account

An account associates an advertiser with a buyer. A buyer is typically an agency but may also be the advertiser. A buyer may be associated with one or more advertisers and an advertiser may be associated with one or more buyers.

Both buyers (agencies) and advertisers must gain permissions (AdvertiserID and BuyerID) from the publisher. A publisher can organize their accounts by their own methods.

Property	Type	Add	Update	Required	Description
AccountType	AccountType	Optional	Optional	May Support	Publisher defined account type.
AdvertiserID	String	Required	Read-only	Must Support	An ID that identifies an organization that is as acting as the advertiser
BuyerID	String	Required	Read-Only	Must Support	An ID that identifies the organization that is acting as the buyer.

					If an advertiser is acting as their own buyer, the BuyID must match the AdvertiserID.
ID	String	Read-Only	Read-Only	Must Support	System generated unique ID
Name	String	Required	Optional	Must Support	Name of the account.
ProviderData	String	Optional	Optional	May Support	A blob of provider-defined data.

Creative

This resource defines the creative information of an ad.

Property	Type	Add	Update	Required	Description
AccountID	String	Required	Read-Only	Must Support	ID of the account that owns the creative.
AdQualityRejection Reason	String	Read-Only	Read-Only	Must Support	Reason why creative audit did not approve the creative.
AdQualityStatus	String	Read-Only	Read-Only	Must Support	A status value of where the creative is in the audit process. Status values must include: • Pending • Approved • Rejected
CreativeAsset	String	Required	Required	Must Support	URL to creative asset location (cloud storage location).
CreativeAsset ThumbNail	String	Optional	Optional	Should-Support	Thumb-nail of the creative.
Geometry	Size	Required	Required	Must Support	Size of the creative (height and width, pixel ratio, aspect)
GeometryType	String	Required	Required	Must Support	Defines the geometry size

					type. See [SizeType](#)
ID	String	Read-Only	Read-Only	Must Support	System generated unique ID
MediaType	String	Required	Read-Only	Must Support	Media type description. See [MediaType](#)
MediaFormatType	String	Required	Read-Only	Must Support	Media format type description. See [MediaFormatType](#)
Name	String	Required	Optional	Must Support	Display name of the creative
ProviderData	String	Optional	Optional	May Support	A blob of provider-defined data.

Engagement

An engagement associates a creative with a (order) line item. A creative may be assigned to one or more lines items and a line item may be assigned to one or more creatives.

Property	Type	Add	Update	Required	Description
CreativeID	String	Required	Read-Only	Must Support	ID of the creative to display on OOH product
ID	String	Read-Only	Read-Only	Must Support	System generated unique ID
LineID	String	Required	Read-Only	Must Support	ID of the line that describes the creative, and product type.
ProviderData	String	Optional	Optional	May Support	A blob of provider-defined data.
Status	String	Read-Only	Read-Only	Must Support	Status of whether a creative is used. - Active - Inactive To update the status, see the [Engagement](#) URI resource for details on

					how to change this status. The state can only change from 'active' to 'inactive'.

(Order) Line Item

Defines the media format to book, the quantity, and when the line item is to be printed/posted.

Property	Type	Add	Update	Required	Description
BookingStatus	String	Read-Only	Read-Only	Must Support	Value that determines whether the line item is booked and is capable of being printed/posted. Possible booking status values: • Draft • PendingReservation • Reserved • PendingBooking • Booked • Printed/posted • Finished • Stopped • Canceled • Expired • Declined
BuyerData	String	Optional	Optional	Should Support	A blob of buyer-defined data. Values may include agency contract data used for billing such as: • Publisher Code (PUB Code) • Client Code • Brand Code (Product Code) • Estimate Number • Market Code
Comment	String	Optional	Optional	May Support	User notes related to the line.
Cost	Decimal	Read-Only	Read-Only	Must Support	Projected cost of the line item.
EndDate	String	Required	Optional	Must Support	The data and time that the line item board placement will end.
ID	String	Read-Only	Read-Only	Must Support	System generated unique ID

Name	String	Required	Optional	Must Support	The line item's display name
OrderID	String	Read-Only	Read-Only	Must Support	The ID of the order that the line item belongs to
ProductID	String	Read-Only	Read-Only	Must Support	The ID of the product that the line item belongs to
ProviderData	String	Optional	Optional	May Support	A blob of provider-defined data.
Rate	Decimal	Read-Only	Read-Only	Must Support	The price per board. The rate is determined whenever the line item is saved (added, updated, booked, or reserved).
RateType	String	Required	Read-Only	Must Support	The unit of measure that BasePrice is expressed in. Possible values: • Fixed • Variable
ReservedExpiry Date	String	Read-Only	Read-Only	Should Support	The date and time that the reserved inventory will expire.
StartDate	String	Required	Optional	Must Support	The date and time the line item board placement will start.
StateChange Reason	String	Read-Only	Read-Only	Must Support	Reason why the state was changed by the publisher. • Publisher declined the booking or reservation • Publisher or user canceled the board placement
Targeting	Segment	Optional	Optional	Should Support	The segments used to target users and determine product availability.

The "Rate" is determined by the publisher. The "Rate" may differ from buyer to buyer. The"Rate" may differ from the "BasePrice" in the Product resource.

Order
The order specifies the plan's start and end dates, estimated budget, currency, and preferred billing method.

Property	Type	Add	Update	Required	Description
AccountID	String	Read-Only	Read-Only	Must Support	ID of the account that identifies the advertiser and buyer that own the ad.

Brand	String	Optional	Optional	May Support	The brand being advertised
Budget	Decimal	Optional	Optional	Should Support	The order's estimated budget.
BuyerData	String	Optional	Optional	Should Support	A blob of buyer-defined data.
Client	Contact	Required	Optional	Must Support	Client of Order
Contacts	Contact	Optional	Optional	Should Support	The list of contacts, in addition to advertiser and buyer, to use for this order.
ContractNumber	String	Required	Read-Only	Must Support	Contract Number is generated by Publisher's system.
Currency	String	Required	Optional	Must Support	The currency that the order, lines, billing, and reporting are specified in.
EndDate	String	Optional	Optional	Should Support	The date and time that the order will end.
ID	String	Read-Only	Read-Only	Must Support	System generated unique ID
Industry	String	Optional	Optional	Should Support	The industry associated with the order. May differ from advertiser/buyer. See Industry reference data.
Name	String	Required	Optional	Must Support	The order's display name.
PreferredBilling Method	String	Optional	Optional	Should Support	The preferred billing method for an order. • Electronic • Postal
ProviderData	String	Optional	Optional	May Support	A blob of provider-defined data.
StartDate	String	Optional	Optional	Should Support	The date and time that the order will start.

Organization

The organization may represent an advertiser or agency (buyer). The account determines the role that the organization plays.

Property	Type	Add	Update	Required	Description
Address	Address	Optional	Optional	Should Support	The organization's corporate address
Contacts	Contact	Required	Optional	Must Support	A list of one or more contacts within the organization
Disapproval Reason	String	Read-Only	Read-Only	Must Support	The reason why the organization was not registered
Fax	String	Optional	Optional	May Support	Fax number
ID	String	Read-Only	Read-Only	Must Support	System generated unique ID
Industry	String	Optional	Optional	Should Support	The industry that the organization belongs to.
Name	String	Required	Optional	Must Support	The organization's display name
Phone	String	Optional	Optional	Should Support	The organization's phone number.
ProviderData	String	Optional	Optional	May Support	A blob of provider-defined data.
Status	String	Read-Only	Read-Only	Must Support	A value that states the current state of the approval process. The approval process confirms the organization's identity. • Pending • Approved • Disapproved • Limited
URL	String	Optional	Optional	Should Support	URL of the organization

Product

The product identifies anything from a digital board to a bulletin.

Property	Type	Publisher Requirement	Description
ActiveDate	String	Should Support	The date and time that the product may become part of the bookable inventory.
BasePrice	Decimal	Must Support	The product's base retail price; this is not the rate card price. The actual rate card price is contained in the order line item "Rate".
Currency	String	Must Support	The currency that the BasePrice and MinSpend properties are in.
Description	String	May Support	The product's description
Digital	Byte	Must Support	Whether the board is digital (1) or not digital (0)
Facing	String	Must Support	Direct that the board is facing. N, S, E, W, etc.
GeoLocation	GeoLocation	Must Support	Lat/Long of board in SRID:4326.
Geometry	Size	Must Support	A list of ad format sizes that the product supports
GeometryType	String	Must Support	Defines the geometry size type. See SizeType
ID	String	Must Support	System generated unique ID
Illumination	Short	Must Support	Number of hours that the board is illuminated
InventoryType	String	May Support	Publisher specific type of inventory. Open Category for Publisher specific information.
LeadTime	Integer	May Support	The number of (n) days from today that a line that references this product can be printed on placed.
LocationDescription	String	Should Support	Description of the board location
Name	String	Must Support	The product's display name, unique.
MaxDuration	Integer	Should Support	The maximum number of days that the product may be booked for.
MediaFormatTypeID	MediaFormatType	Must Support	Media Format Type. See MediaFormatTypecommon object.

MinDuration	Integer	Should Support	The minimum number of days that the product may be booked for.
PlantName	String	Must Support	Publisher Name
PlantNumber	Long	Must Support	Publisher Number
PlantUnitID	Long	Must Support	Publisher Unit ID
ProductTags	String	May Support	List of tags used for searching the product catalog.
RateType	String	Must Support	The unit of measure that BasePrice is expressed in.
Read	String	Must Support	Side of the road board is read. • LeftOf Road • RightOfRoad
RetirementDate	String	Should Support	The date and time that the product may be removed from the bookable inventory.
RotationLength	Short	Must Support	The number of seconds a slot is displayed on a digital board
Quantity	Integer	Must Support	The product quantity.
SlotsPerPannel	Short	Must Support	The number of slots of a digital board
StructureID	Long	Must Support	Structure ID
GeopathPannelID	Long	Must Support	Geopath Pannel ID, if existing. If none, a reserved unique code should be used.
TargetTypes	String	Should Support	A list of IDs that identify the types of targeting that the product supports. For example, DMA or postal code. See TargetTypes
Tri-Vision	Byte	Must Support	Whether the board is Trivision (1), or not (0)
URL	String	Should Support	A URL to the specification that describes the creative requirements.
WeeklyImpressions	Long	Should Support	Average weekly impressions

Common Objects

Objects that are used by one or more resources.

Address

A postal address.

Property	Type	Add	Update	Required	Description

Address1	String	Required	Optional	Must Support	The first line of the address
Address2	String	Required	Optional	Must Support	The second line of the address
City	String	Required	Optional	Must Support	The City
Country	String	Required	Optional	Must Support	The Country
PostalCode	String	Required	Optional	Must Support	The postal code
State	String	Required	Optional	Must Support	The state

Contact

An agency or advertiser contact.

Property	Type	Add	Update	Required	Description
Address	Address	Optional	Optional	May Support	The contact's address
Company	String	Required	Optional	Must Support	The contract's company name
Email	String	Optional	Optional	Must Support	The contact's email address
Title	String	Optional	Optional	May Support	The contact's title; Mr., Mrs., etc
Fax	String	Optional	Optional	May Support	The contact's fax number
FirstName	String	Required	Optional	Must Support	The contact's first name
LastName	String	Required	Optional	Must Support	The contact's last name
Phone	String	Optional	Optional	Must Support	The contact's phone number
JobTitle	String	Optional	Optional	Must Support	The contact's job title
Type	ContactType	Required	Read-Only	Must Support	The type of contact that this resource represents.

GeoLocation

The geo-location of a board and the direction it faces.

Property	Type	Required	Description
County	String	Must Support	County, by FIPS code
Facing	String	Must Support	Direct that the board is facing. N, S, E, W, etc.
Latitude	Decimal	Must Support	Latitude
Longitude	Decimal	Must Support	Longitude

State	String	Must Support	State by FIPS code

All geo-location data (lat/long) must be in SRID 4326, WGS84 (EPSG:4326) spatial coordinate system.

ProductAvails

Defines the availability and pricing information that a product availability search request returns.

Property	Type	Required	Description
Availability	Integer	Must Support	The quantity of boards that is available to book
Currency	String	Must Support	The currency that the price is in
ProductID	String	Must Support	System generated unique ID. The publisher's ProductID
Price	Decimal	Must Support	The product's rate card price
GeopathPannelID	String	Should Support	Geopath Pannel ID, if available

ProductAvailsSearch

Defines the search criteria used to search for product availability and pricing information.

Property	Type	Required	Description
AccountID	String	Should Support	The ID of account that identifies the agency or advertiser. If not specified, the pricing information is based on the product's base rate.
EndDate	String	Must Support	The end date of the delivery window.
Quantity	Integer	Must Support	The quantity requested for the specific date range. This would the number of impressions.
ProductID	String	Must Support	A list of IDs that identify the products to get availability and pricing information for.
StartDate	String	Must Support	The start date of the delivery window.
Targeting	Segment	Should Support	The segments to target. For example, DMA, zip code. See the TargetValues

ProductSearch

The search criteria used to search the product catalog.

Property	Type	Required	Description
Currency	String	Must Support	The currency that the product supports.
MediaFormatType	String	Must Support	One or more ad media format
ProductTags	String	May Support	One or more tags. Publisher defined tag used for searching (e.g. 'Inbound commute', etc.)

Size

Defines the geometry of a creative.

Property	Type	Add	Update	Required	Description

Height	Decimal	Required	Optional	Must Support	The height of the creative in inches
Width	Decimal	Required	Optional	Must Support	The width of the creative in inches

Segment

The target and target values used to search for product availability and to specify targeting for a line item (board).

Property	Type	Add	Update	Required	Description
Target	String	Required	Optional	Must Support	The target category
TargetValues	String	Required	Optional	Must Support	A list of target values

These values come from the Target and TargetValues resources below.

Reference Data

The following are reference data objects that the API must support.

AccountType

Property	Type	Description
ID	String	System generated unique ID
Name	String	The account type display name.

Publisher defined account type(s).

AdQualityRejectionReason

Property	Type	Description
ID	String	System generated unique ID
Name	String	Ad Quality Rejection Reason.

Publisher defined ad quality rejection reason(s).

ContactType

Property	Type	Description
ID	String	System generated unique ID
Name	String	The contact type display name.

The API must have the following contact types which are used in the Contact object:

- Billing
- Buyer
- Creative

Other contact types maybe include by publisher.

Country

Property	Type	Description
IsoCode	String	The country's two-character ISO code.

Currency

Property	Type	Description
IsoCode		The currency's three-character ISO code.

Industry

Property	Type	Description
ID	String	System generated unique ID
Name	String	The name of the industry's display name
ParentID	String	The ID of the sub-industry's parent. Is NULL for the top-level parent.
SubIndustries	Industry	A list of sub-industries. The list is empty if the industry has no sub-industries.

InventoryType

Property	Type	Description
ID	String	System generated unique ID
Name	String	The name of the inventory type.

Additional Inventory Type for Publisher. The API may support this resource.

Language

Property	Type	Description
IsoCode	String	The language's two-character ISO code.

MediaFormatType

Possible media ad formats

Property	Type	Description
ID	String	System generated unique ID
Description	String	Description of OOH Media Format Type
Name	String	The Media Format Type

The API may support all or a subset of the following values:

- Airborne
- Airport
- Arena & Stadium Advertising
- Bicycles and Bicycle Racks
- Bulletins
- Bus Shelters
- Bus Interior
- Cinema
- Digital Billboards
- Fully Wrapped Buses
- Headlight Displays
- In Store Advertising
- In-Flight Advertising
- Jr Posters

- King-Size Bus Posters
- Kiosks
- Mobile Billboards
- Newsstands and Newsracks
- Place Based Advertising
- Place Based Digital Networks
- Posters
- Projections
- Queen-Size Bus Posters
- Rail Systems & Subways
- Shopping Malls
- Spectaculars
- Super King-Size Bus Posters
- Traillight Displays
- Taxicabs
- Truckeside& Fleet Displays
- Wall Murals
- Wrapped Posters

MediaType

Possible media ad formats

Property	Type	Description
ID	String	System generated unique ID
Description	String	Description of OOH Media Format Type
Name	String	The Media Type

The API may support all or a subset of the following values:

- Digital Static
- Digital with Limited Animation/Transition
- Digital with Full-motion Video
- Digital with Full-Motion Video and Audio
- Digital with Interactive (Touch Screen)
- Digital with Mobile Activation (Triggers)
- Print

SizeType

Property	Type	Description
ID	String	System generated unique ID
Name	String	The size type

The API must support the following categories:

- Pixel Ratio
- Aspect
- Size (length x width)

Target

Property	Type	Description

ID	String	System generated unique ID
Name	String	The target category

The API must support the following categories but may also support additional categories such as demographic targets similar to Geopath audience data.

- DMA
- Postal code
- Buffer area around a Lat/Long point
- State
- County
- Polygon

TargetValue

Property	Type	Description
ID	String	System generated unique ID
Value	String	The target value
TargetID	Target	System generated ID that identifies the target category that this value belongs to

The API must support the following values per target category:

- DMA
    - o   All Nielsen DMAs
- Postal code
    - o   All USPS postal codes. Source TBD.
- Buffer area around a Lat/Long point
    - o   Buyer provided
- State
    - o   FIPS state codes. Source United States Census Bureau.
- County
    - o   FIPS County codes. Source United States Census Bureau.
- Polygon
    - o   Buyer provided polygon in SRID 4326, WGS84 (EPSG:4326).

Collection Objects

The response from GET calls to specific resources.

Call	Property	Resource
/organizations /organizations?$filter	Organizations	Organization
/accounts /accounts?$filter	Accounts	Account
/accounts/{id}/creatives /accounts/{id}/creatives?$filter	Creatives	Creative
/accounts/{id}/engagements /accounts/{id}/engagements?$filter	Engagements	Engagement
/accounts/{id}/orders /accounts/{id}/orders?$filter	Orders	Order
/accounts/{id}/orders/{id}/lineitems /accounts/{id}/orders/lineitems?$filter	Lines	(Order) Line Item

/products (POST) /products/search (POST)	Products	[Product]
/products/avails (POST)	Avails	[ProductAvails]

Authentication

Publisher must use OAuth 2.0 for user authentication.

HTTP Error Codes

Status Code	Required	Description
200 OK	Must Support	Successful return for GET, POST, PUT, PATCH
302 Found	May Support	Return if resource has moved, with new URI
304 Not Modified	May Support	Return of If-None-Match
400 Bad Request	Must Support	Request contains invalid data
401 Unauthorized	Must Support	Returned if user is not authorized to access the resource
404 Not Found	Must Support	Requested resource is not found
500 Internal Server Error	Must Support	Internal server error

Error Handling

Property	Type	Required	Description
ErrorCode	String	Required	Symbolic string that identifies the error
Context	Dictionary	Optional	A list of Publisher key: value pairs that provide additional context about the error
Link	String	Optional	URL to additional help text
ErrorMessage	String	Required	String that describes the error

URIs

Description of possible URIs for each resource.

Account

Resource	URI	Verb	Required	Description
[Account]	/account	GET	Yes	Gets a list of current accounts
		POST	Yes	Add an account
	/accounts/{id}	GET	Yes	Gets the specified account
	/accounts?$filter=	GET	Yes	Gets a list of accounts that match the specified filter

					criteria. The user may use OData expressions with the following Account properties. • AdvertiserId • BuyerId May support getting a list of IDs.

Creative

Resource	URI	Verb	Required	Description
Creative	/accounts/{id}/creatives	GET	Yes	Gets a list of all creatives that belong to an account
		POST	Yes	Adds a creative to the account
	/accounts/{id}/creatives/{id}	GET	Yes	Gets the specified creative
		PUT or PATCH	Yes	Updates the properties of the creative object; however, the user may not update the following properties. • ClickURL • CreativeAsset • BackupFlashAsset
		DELETE	Yes	Deletes the specified creative. May delete a creative only if it has no engagements.
	/accounts/{id}/creatives?$filter=	GET	No	Gets a list of creatives that match the specified filter criteria. The user may use OData expressions with the following Creative properties. • AdQualityStatus May support getting a list by IDs.

Engagement

Resource	URI	Verb	Required	Description
Engagement	/accounts/{id}/engagements	GET	Yes	Gets a list of all engagements

					that belong to the account
			POST	Yes	Adds an engagements to the specified account. To add an engagement, the creative must be approved. An engagement may be added at any time prior to the order finishing its flight.
	/accounts/{id}/engagements/{id}		GET	Yes	Gets the specified engagement.
			PUT or PATCH	Yes	Updates the specified engagement.
			DELETE	Yes	Deletes the specified engagement. May delete an engagement only if it has never delivered impressions.
	/accounts/{id}/engagements/{id}?disable		PUT or PATCH	Yes	Changes the status to Inactive.
	/accounts/{id}/engagements?$filter=		GET	No	Gets a list of engagements that match the specified filter criteria. The user may use OData expressions with the following: Engagement properties. • CreativeId • LineId • StartDate • EndDate May support getting a list by IDs.

(Order) Line Item

Resource	URI	Verb	Required	Description
Line	/accounts/{id}/orders/{id}/lineitems	GET	Yes	Gets a list of line items for that order
		POST	Yes	Adds a new line item to that order
	/accounts/{id}/orders/{id}/lineitems/{id}	GET	Yes	Gets the specified line item from the order
		PUT or PATCH	Yes	Updates the specified line item. To update a line item, the line itemmust be in the Draft state.
		DELETE	Yes	Deletes the specified line. May delete a line item only if it's in the Draft state. Must also delete any engagements that reference the line item.
	/accounts/{id}/orders/{id}/lineitems?$filter=	GET	Yes	Gets a list of line items that match the specified filter criteria. The user may use OData expressions and method calls with the following line item properties. • Name • BookingStatus • StartDate • EndDate May support getting a list by IDs.
	/accounts/{id}/orders/{id}/lineitems /{id}?book	PUT or PATCH	Yes	Begins the booking process for the line item. To book a line item, the line item must: • Be in the Draft or

				Reserved state. • Have available impressions. If successfully booked, the line item [BookingStatus] moves to the Booked state; otherwise, it moves to Declined.
	/accounts/{id}/orders/{id}/lineitems /{id}?reserve	PUT or PATCH	Yes	Reserves the line item. The reserve process may be asynchronous. To reserve a line item, the line item must be in the Draft state. If successfully reserved, the line item [BookingStatus] moves to the Reserved state; otherwise, it moves to Declined. • A status of reserved is time sensitive. Booking Status may roll back to 'draft' if the order line item is not 'booked' within a publisher defined timeframe.
	/accounts/{id}/orders/{id}/lineitems /{id}?cancel	PUT or PATCH	Yes	Cancels the line item. To cancel a line item, the line item BookingStatus

Resource	URI	Verb	Required	Description
				must be in the Reserved, Booked, or InFlight state. If successfully canceled, the line item moves to the Canceled state.
	/accounts/{id}/orders/{id}/lineitems /{id}?reset	PUT or PATCH	Yes	Resets a line itemBookingStatus back to the Draft state. To reset a line itemitem, the line item must be in the Reserved or Declined state.

Order

Resource	URI	Verb	Required	Description
Order	/accounts/{id}/orders	GET	Yes	Gets the list of orders that belong to that account
		POST	Yes	Adds an order to the specified account
	/accounts/{id}/orders/{id}	GET	Yes	Gets the specified order
		PUT or PATCH	Yes	Updates the specified order
		DELETE	Yes	Deletes the specified order. May delete the order only if all line items in the order are in the Draft state.
	/accounts/{id}/orders?$filter=	GET	No	Gets a list of orders that match the specified filter criteria. The user may makeadditional filter calls with the following order parameters: • Name • StartDate • EndDate May support getting a list by IDs.

Organization

Resource	URI	Verb	Required	Description

Organization	/organizations		GET	Yes	Gets a list of all organizations that the user has access to. The list may contain both advertiser and agency organizations depending on the caller's access. For example, if the caller is an advertiser, the list will contain only the advertiser's organization objects; however, if the caller is an agency, the list will contain the agency's organization objects and the organization objects of the advertisers whose accounts that they manage.
			POST	Yes	Adds an organization. **Note that POST is not supported in the public API**; it is included here for completeness. The process of adding advertiser and agency organizations and providing credentials is publisher defined.
	/organizations/{id}		GET	Yes	Gets the specified organization
			PUT or PATCH	Yes	Updates the specified organization. The caller must have permissions to update the organization. For example, an advertiser and agency may update

Resource	URI	Verb	Required	Description
				their organization object but an agency may not update an advertiser's Organization object.
		DELETE		The process of deleting an organization is publisher defined; however, deleting an organization via the API is not supported.
	/organizations?$filter=	GET	No	Gets a list of organizations that match the specified filter criteria. The user may use filter expressions and method calls with the following Organization properties. • Name • Status With one or more organization IDs

Product

Resource	URI	Verb	Required	Description
Product	/products	GET	Yes	Gets a list of all products from the publisher's product catalog.
	/products/{id}	GET	Yes	Gets the specified product from the publisher's product catalog.
	/products/search	POST	Yes	Gets a list of products from the publisher's product catalog based on the criteria specified in the body of the request. For a list of the filter criteria that a caller may specify, see ProductSearch.

					The body of the response contains a collection of Product objects that match the filter criteria.

ProductAvails

Resource	URI	Verb	Required	Description
ProductAvails	/products/avails	POST	Yes	Gets the availability and pricing information for a specified list of products based on flight dates and targeting. The body of the request contains the list of products and flight details (See ProductAvailsSearch). The body of the response contains a collection of ProductAvails objects (one for each product specified in the request).

Reporting

The publisher may support the following GET calls to generate an impression report.

URI	Description
/accounts/{id}/orders/{id}/lineitems/stats	Aggregates the impressions from lines in the order.
/accounts/{id}/orders/{id}/lineitems/{id}/stats	Aggregates the impressions for thespecified line.

The follows field should be included:

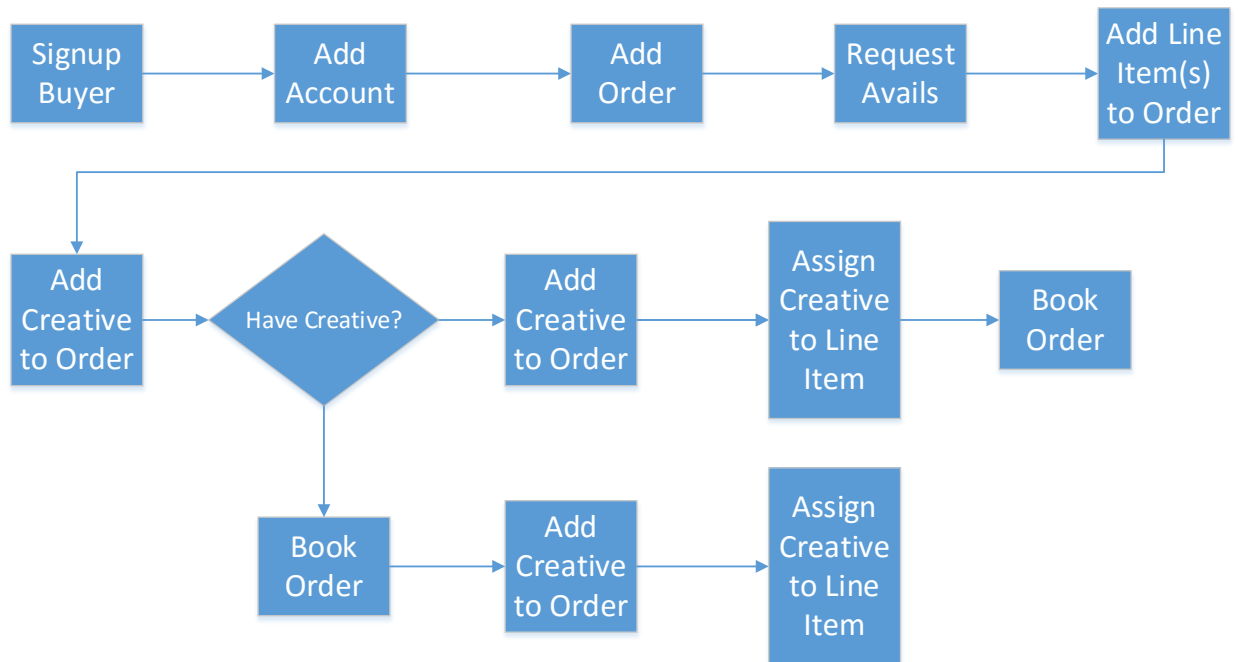| Property	Type	Required	Description
Impressions	Long	Required	The estimated number of impressions to date.
ReportDate	String	Required	The data and time of the report. The date and time is reported in the order's time zone.
Spend	Decimal	Required	The amount spent to

			date.

Work Flow

The following describes the calls that a client would make to get product avails, create an order and add line items to it, associate a creative with a line item.
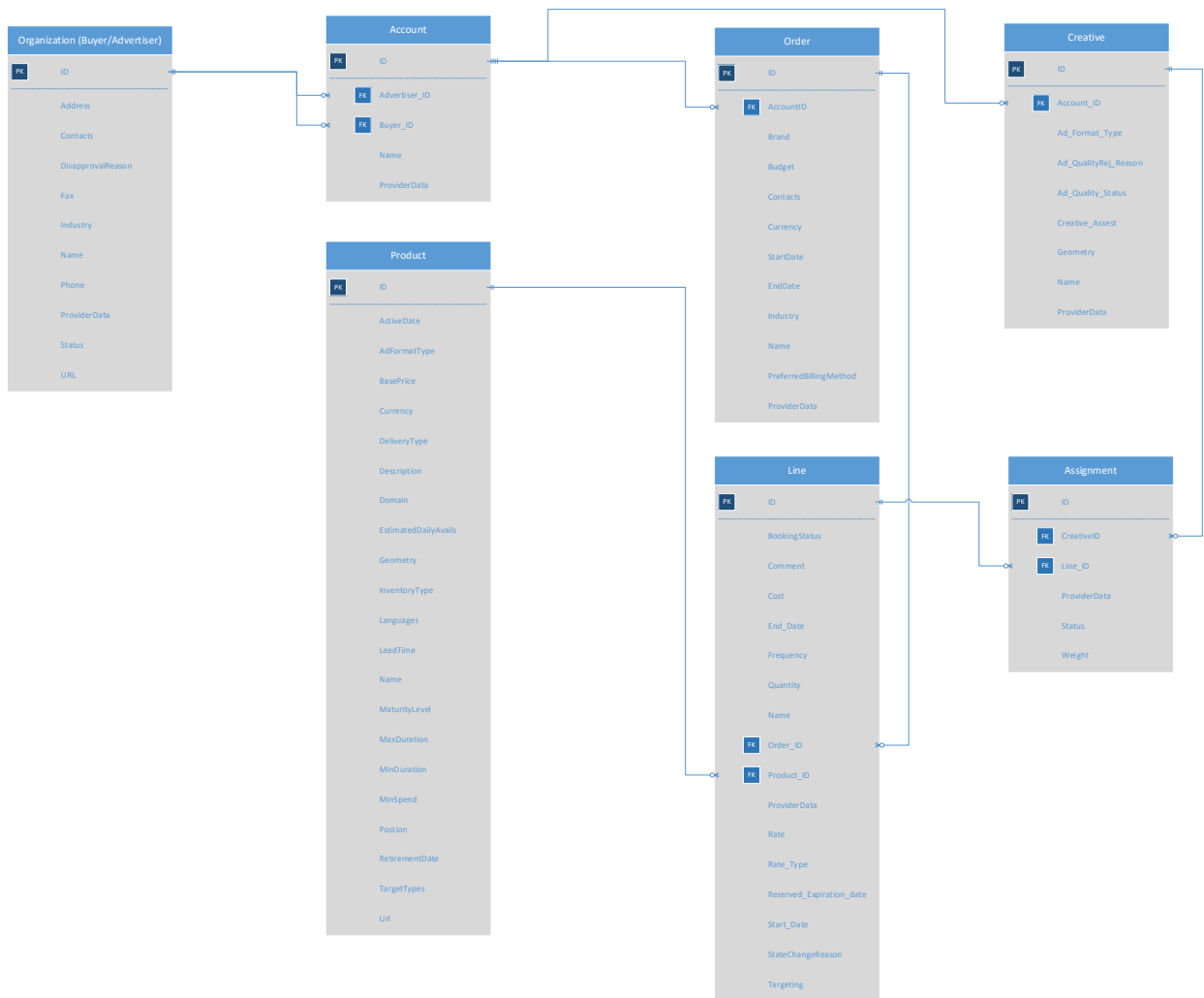
1. Add an Agency and/or Advertiser
   a. Agencies must sign up directly with the publisher. An agency may have multiple accounts.
   b. Advertisers must sign up directly with the publisher. An advertiser may have multiple accounts.
2. Adding an Account
   a. Advertisers can make their own buys. If the advertiser makes their own buys, the account would identify them as advertiser and buyer. If an advertiser grants an agency permission to perform buys on their behalf, then the account wound indicate the agency as the buyer.
   b. To create an account, POST a request to /accounts. The body of the request is the account resource object. The response includes the URI to the new account.
3. Get Product Inventory, Availability and Pricing
   a. To get product inventory
      i. Send a GET request to /products. The response will contains collection object that contains an array of Product objects.
   b. To get information on a specific product
      i. Send a GET request to /products/{id}. The response will be a Product object.
   c. To search for products
      i. Send a POST request to /products/search. The body of the request is a ProductSearch object that contains the search criteria. The response will be a collection object which contains an array of Product objects.
   d. To request availability and pricing for specific products
      i. Send a POST request to /products/avails. The body of the request contains the ProductAvailsSearch object. The response will be a collection object which contains an array of ProductAvails objects.
4. Creating an Order
   a. An order is the parent container for (order) line items.
   b. To add an order
      i. Send a POST request to /accounts/{id}/orders. The body of the request is an Order object. The response includes the URI to the new order.
5. Adding (order) lines items to an order
   a. To add an (order) line item
      i. Send a POST request to /accounts/{id}/orders/{id}/lineitems. The body of the request is (Order) Line Item resource object. The response includes the URI to the new (order) line item. That of the BookingStatus field is Draft. The (order) line item may only be updated when the BookingStatus field is Draft. To update the (order) line item, send a PATCH or PUT request to /accounts/{id}/orders/{id}/lineitem/{id}. The body of the request if either a full or partial (Order) Line Item resource object depending on whether the publisher supports PUT or PATCH.

6. Assigning a Creative to an (order) line item
   a. The following methods assume that the creative can be accessed the "CreativeAsset" property in the Creative resource object. Note: Creative can also be assigned to an (order) line item after it is booked.
   b. To upload a creative
      i. Send a POST request to /accounts/{id}/creatives. The body of the request of a Creative resource object. The response includes the "CreativeAsset" URL to the new creative.
         1. The creative must pass review on the publisher side before it can be associated with an (order) line item. To determine whether a creative has passed the publisher review process, send a GET request to /accounts/{id}/creative/{id}. The response contains a Creative resource object.
   c. Assign a Creative to an (order) line item
      i. Send a POST request to /accounts/{id}/engagements. The body of the request is an Engagement resource object. The response includes the URI to the new engagement.
7. Reserving, Booking, and Canceling an (order) line item
   a. To reserve an (order) line item
      i. Send of PATCH or PUT request to /accounts/{id}/orders/{id}/lineitems/{id}?reserve.
   b. To book an (order) line item
      i. Send of PATCH or PUT request to /accounts/{id}/orders/{id}/lineitems/{id}?book.
   c. To cancel an (order) line item
      i. Send of PATCH or PUT request to /accounts/{id}/orders/{id}/lineitems/{id}?cancel
   d. To determine if any of the three above requests succeeded, send a GET request to /accounts/{id}/order/{id}/lineitems/{id} to get (order) line item resource object for a given line item. The BookingStatus field can be used to verify the change correctly took place.

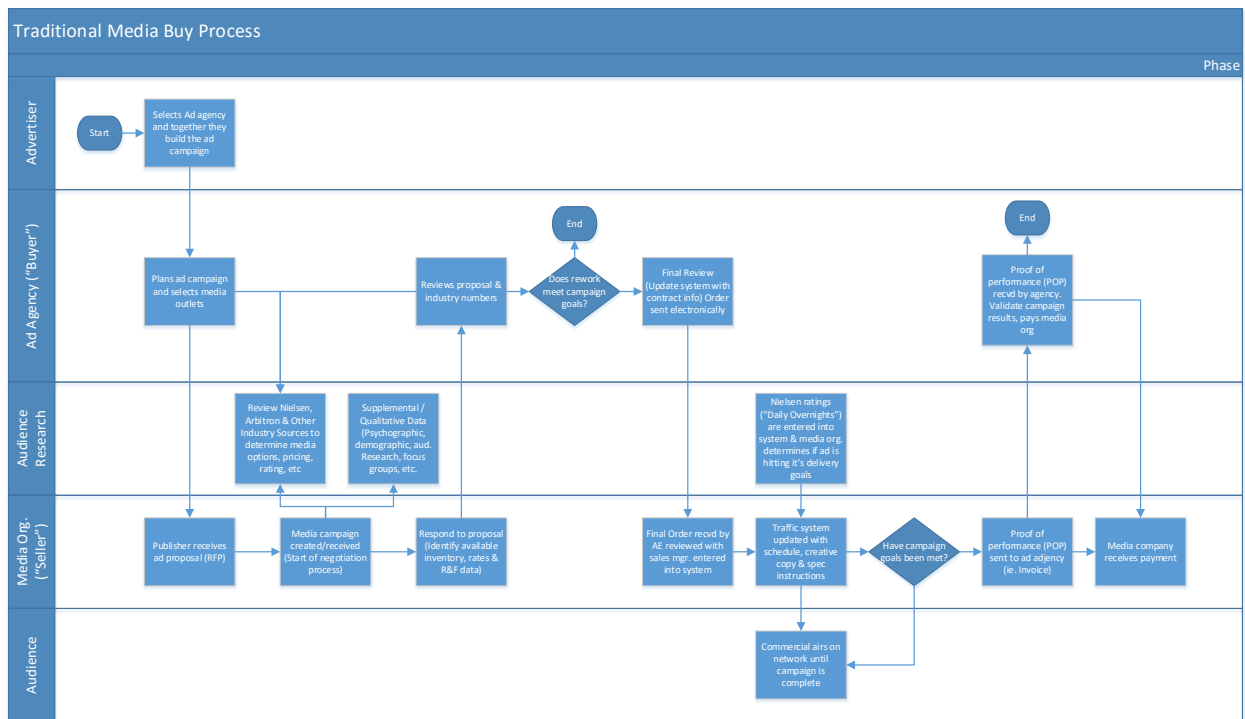## Work Flow Diagram

Signup Buyer → Add Account → Add Order → Request Avails → Add Line Item(s) to Order → Add Creative to Order → Have Creative?

If yes: Add Creative to Order → Assign Creative to Line Item → Book Order

If no: Book Order → Add Creative to Order → Assign Creative to Line Item

Resource Model

BPMN

Versioning

Version	Notes
V1.2	- Removed'Quantity' as a required property to both the Order and (Order) Line Item resources. - Changed 'RateType' (Order) Line Item resource property to accept two values: - Fixed - Variable - Changed 'ContractNumber' Order resource property description to read: "Contract Number is generated by Publisher's system." - Changed "CreativeAsset" Order (Line) Item description to read: " - The property "DwellTimeInSeconds" was changed to "RotationLength" in the Product resource
V1.1	- Added 'ReservedExpiryDate' field to (Order) Line Item resource - Field formatting changes - Added 'Client' as a required property to order resource - Added 'RateType' as a required property to the (Order) Line Item resource - Added 'BuyerData' as a 'should support' property to the (Order) Line Item resource
V1	Initial draft proposal