

# ARENA API OUTBOUND EVENT INTEGRATIONS

*Fast-Track*

Doug Johnston  
Director, Technical Solution Delivery  
Arena, a PTC Business

November 2022



# API OUTBOUND EVENT INTEGRATIONS



## TARGET AUDIENCE AND HISTORY

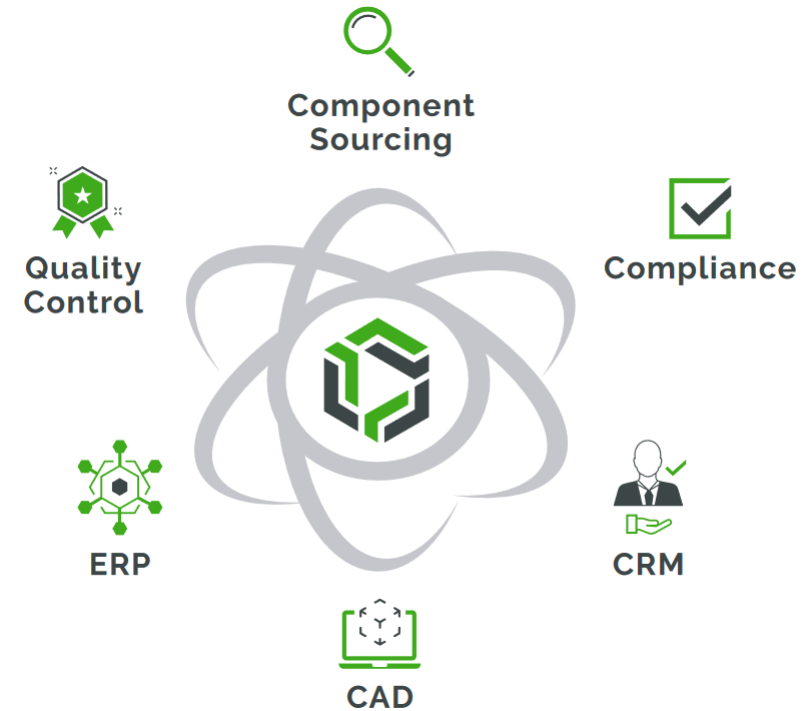
- **Target Audience:** This document is intended for Customers and Integration Partners familiar with Arena data and a REST API
- **History:** When our API was first introduced, the only method available for polling for recent workspace activity was to use endpoints that use a ***From/To Effective Release Date*** search. Although this worked, it was necessary to store and calculate the date range for the next polling period. Developers also needed to develop logic or external methods to allow data to be filtered as necessary e.g. by Item Category, Lifecycle Phase etc
- More recently, the **Outbound Event Integration (Events Engine)** was released. Since it comes with a built-in queue, it eliminated the need to use ***From/To Effective Release Date*** searches. It also introduced the concept of triggers which allow the Customer to apply several layers of data filtering. Triggers can be created and updated by the Customer from within their workspace at any time

# API OUTBOUND EVENT INTEGRATIONS

## CHOOSING THE EVENTS ENGINE INTEGRATION

- The Arena REST API lets you link your Arena workspace to other systems and exchange data using a RESTful framework
- A complete set of API endpoints are available to POST, PUT, GET and DELETE data
- The Events Engine integration is ideally suited to monitor and queue events in real-time for incremental data syncs from Arena to external systems

**Let's now see how easy it is to provision an integration then see it in action!**



# API OUTBOUND EVENT INTEGRATIONS

## PROVISIONING THE INTEGRATION

- Provisioning an Events Engine integration is simple and straight-forward. It requires the purchase of one Integration User license which comes with a dedicated Integration User Account
- Assign a Full License and applicable Access Policies to that User Account and also flag the user as an **Integration Administrator**
- Once the Integration is created, query its **Integration Guid** using the call shown below

### GET Integration Guid

API Call: GET /outboundevents

Response: "guid": "Q8SBG49GXZA8RATCVG91"

EXAMPLE

# API OUTBOUND EVENT INTEGRATIONS

## APPLYING FILTERS

- With the integration in place, you can then create triggers for filtering. Triggers support **Items**, **Changes** and **Quality** resources. Here, we'll focus on **Items**
- To create a trigger, you must be a **Workspace Administrator**. In this example we see an **Items** based trigger that fires on the **Workflow** action meaning, when an item is released. Other actions include **Create** and **Edit**
- In addition, we can apply **Item Category** and **Item Lifecycle Phase** filtering to further manage which items are added to the queue. Conditional filtering is also available
- **OR** logic can be achieved by creating additional triggers
- At least one trigger must be associated to the integration for it to be operational

**Trigger Information**

*Name	Items - Workflow
Description	Captures filtered item data upon release of item (Change management or Revision Control) 88 / 4000
Resource	Items
Action	Workflow
Creator	Doug Johnston (Arena)
Created on	11/03/2021 07:16 AM:18
Last Modified By	Doug Johnston (Arena)
Last Modified On	10/11/2022 01:48 PM:38

**Filter**

*Category	Selected (84) ▾
*From Lifecycle Phase	Selected (10) ▾
*To Lifecycle Phase	Selected (9) ▾
*Conditions	Unconditional ▾

# API OUTBOUND EVENT INTEGRATIONS

## FILTERED ITEMS ARE AUTOMATICALLY ADDED TO THE QUEUE

- Here, a single item was released using *Revision Control*. Seconds later, *trigger filtering* automatically added one **Outbound Event** (the release of that item) to the integration's **To Be Reconciled** view
- If for example, a *Change Order* had been used to release multiple items, we'd still see one **Outbound Event** (representing the release of the Change Order) but this time, we'd see all items on that Change Order that passed the trigger filtering
- The following API call will return all events currently in the queue. Each event has an **Event Guid** and date/time created (**creationDateTime**). **Events should be processed in chronological order**

Integration

Events Engine Integration

To Be Reconciled

Reconciled

1 updates to reconcile in Events Engine Integration

<input type="checkbox"/>	#	NAME	NAME/TITLE
<input type="checkbox"/>		<b>Outbound Event: GYI16UZ6NP00J2L4NYM1</b>	Trigger Item Workflow
<input type="checkbox"/>	1	451-00003	RES .10 OHM 1/8W 5% 0805

### GET Integration Event Guides

API Call: GET /outboundevents/<Integration Guid>/events

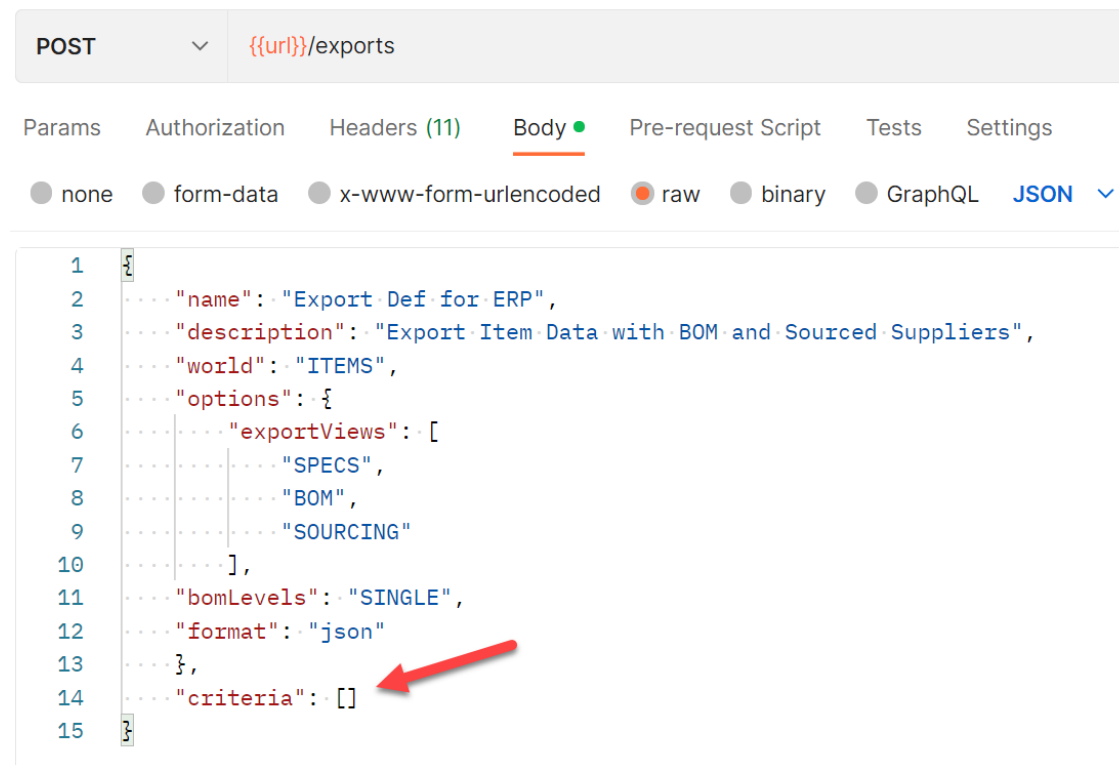
Response: "guid": "GYI16UZ6NP00J2L4NYM1"

EXAMPLE

# API OUTBOUND EVENT INTEGRATIONS

## CREATE AN EXPORT DEFINITION

- **Export Definitions** are optional however, they simplify and reduce the number of API calls needed to retrieve data from your Arena workspace
- You can create 1:n export definitions for different purposes. They are stored permanently in your workspace and can be referenced any time you need them
- To the right is an example of an export definition designed to retrieve *Item Specification*, *Bill-of-Material* and *Source Relationships*. File attachments can also be retrieved if required
- The output format selected here is **json** (**csv** is also supported)
- Executing this call will return an **Export Definition Guid**
- ❖ **Note** by leaving **criteria** blank **[]**, the export definition can be used to export data for any item. If criteria is specified in the definition, it can only be used to export data for that “fixed” criteria



# API OUTBOUND EVENT INTEGRATIONS



## GET ITEMS FOR CURRENT EVENT

- The API call shown below will return all items associated to the event being processed
- For each response, enumerate all **Item Guids (item.guid)** as we'll need to refer to them later
- Each item in the event will also have a unique **Item Event Guid (guid)**, in this case [R9TCH5AHY0BATCV1EB2X](#). We'll want this value later to be able to reconcile that specific item after it has been successfully processed

Integration

Events Engine Integration

To Be Reconciled

Reconciled

1 updates to reconcile in Events Engine Integration

<input type="checkbox"/>	#	NAME	NAME/TITLE
<input type="checkbox"/>		<b>Outbound Event: GYI16UZ6NP00J2L4NYM1</b>	Trigger Item Workflow
<input type="checkbox"/>	1	<a href="#">451-00003</a>	RES .10 OHM 1/8W 5% 0805

### GET Integration Event Item Guids

API Call: GET /outboundevents/<Integration Guid>/events/<Event Guid>/items

Response: "item.guid": "XFZINBGN46PXGUMNTN50" and "guid": "R9TCH5AHY0BATCV1EB2X"



# API OUTBOUND EVENT INTEGRATIONS

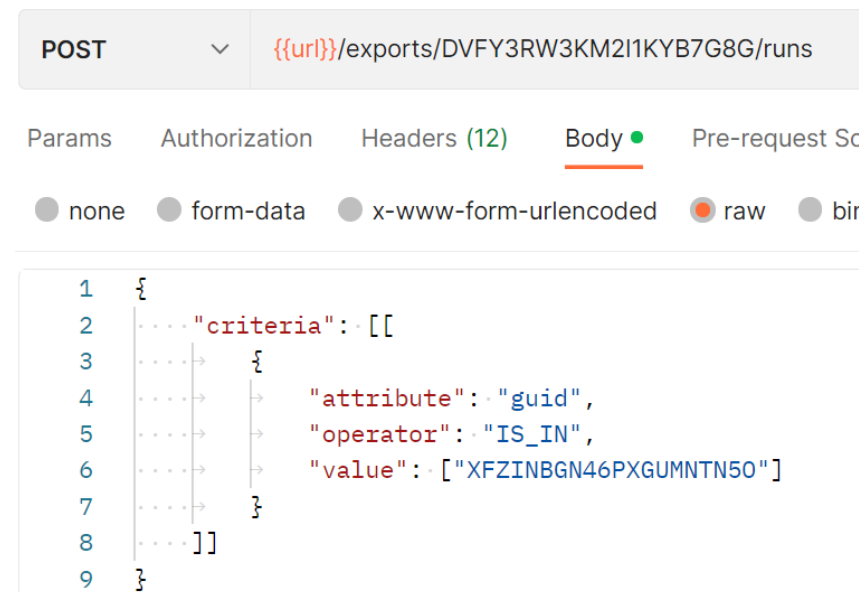


## INITIATE AN EXPORT RUN BASED ON ITEMS FROM THE CURRENT EVENT

- This API call refers to the **Export Definition Guid** and the **Item Guid(s)** associated with the event currently being processed
- For more than one item within an event, the syntax is **"value": ["<Item Guid 1>", "<Item Guid 2>"...]**. In doing so, a single call can be used for all items in that event
- **Export Run Limits:** 20,000 items or 5,000 items when BOM and FILES views are included
- Execution of this call will return two GUIDs required to retrieve the **content** associated with that run. In this example, the following values were returned in the response:

Run GUID: **"guid": "O6Q9E27EVXDSBULL2G5E"**

File GUID: **"files.guid": "WEYHMAFM35O4N6VR94WH"**



# API OUTBOUND EVENT INTEGRATIONS

## GET CONTENT FROM EXPORT DEFINITION RUN

- This API call will return the content for the specified run
- In our case, we specified **json** in our **Export Definition** for the **SPECS**, **BOM** and **SOURCING** views. As such, this call will return a single json response which includes those views for all items specified in the prior call

### GET Export Definition Run Content

API Call: GET /exports/<Export Definition Guid>/runs/<Run Guid>/files/<File Guid>/content

# API OUTBOUND EVENT INTEGRATIONS

## RECONCILING THE ITEM EVENT

- As each item in the event is successfully processed, use this call to remove it from the queue (lower left)
- Once reconciled (lower right), notice that the event is moved from the **To Be Reconciled** to the **Reconciled** view (*Note the reconciled view retains the last three months of reconciled events*)

**PUT /outboundevents/<Integration Guid>/events/<Event Guid>/items/<Item Event Guid>**

PUT

{{url}}/outboundevents/Q8SBG49GXZA8RATCVG91/events/GYI16UZ6NP00J2L4NYM1/items/R9TCH5AHY0BATCV1EB2X

Params

Authorization

Headers (11)

Body

Pre-request Script

Tests

Settings

● none

● form-data

● x-www-form-urlencoded

● raw

● binary

● GraphQL

JSON

1

2

3

```
"reconciled": true
```

Integration

Events Engine Integration

To Be Reconciled

Reconciled

0 updates to reconcile in Events Engine Integration

	#	NAME
There are no updates that need to be reconciled.		

Integration

Events Engine Integration

To Be Reconciled

Reconciled

7 updates recently reconciled in Events Engine Integration

	#	NAME	NAME/TITLE
		Reconciled 10/17/2022 08:23 AM:20 By Doug Johnston (Arena)	
	1	451-00003	RES .10 OHM 1/8W 5% 0805