

Actualización de BIM 360 API's y más allá

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Developer, Advocacy & Support
Autodesk

Dynamic, accomplished Sr. Developer Advocate with Autodesk, highly regarded for 8+ years of progressive experience in Software Development, Customer Engagement, and Relationship Building for industry leaders. He's part of the team that helps partners/customers create new products and transition to the cloud with the use of Autodesk's new Platform - Forge. He has been recently involved in the development of AWS Quick Start to support Forge Applications.

Safe Harbor

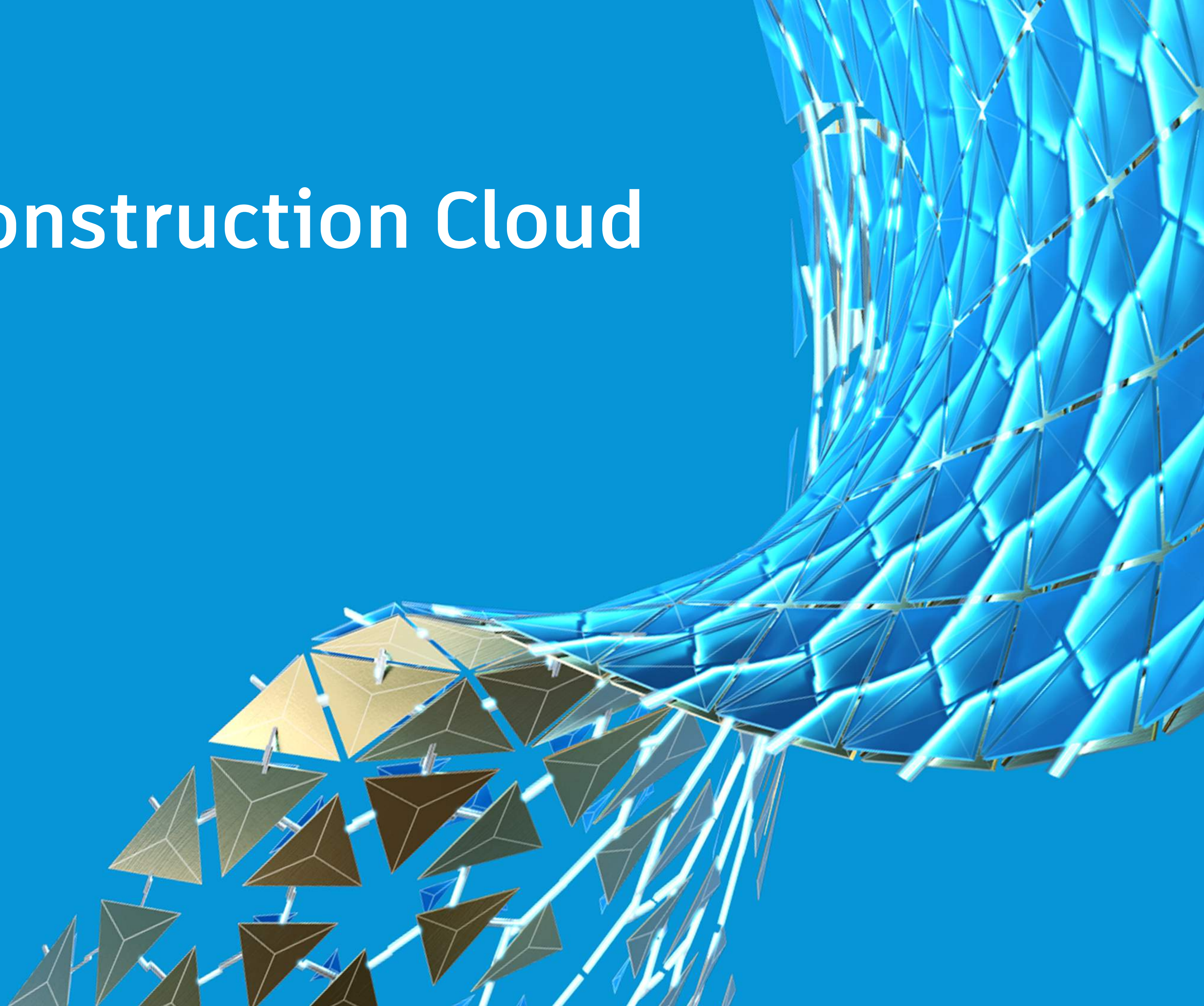
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October 6, 2020

Agenda

- Autodesk Construction Cloud Overview
- BIM 360 & API Status and Updates
- Assets API
- Relationship API
- In Pipeline

Autodesk Construction Cloud





AUTODESK CONSTRUCTION CLOUD™



Assemble



BIM 360



BuildingConnected



PlanGrid



AUTODESK CONSTRUCTION CLOUD™

AUTODESK
BIM COLLABORATE

AUTODESK
QUANTIFY

AUTODESK
COORDINATE

AUTODESK
BUILD

AUTODESK **DOCS**

Models · Drawings · Issues · Specifications · RFIs · Cost · Assets · As-Builts · Photos · Videos

INSIGHTS

Dashboards · Reports · Construction IQ · Data Connector

ADMINISTRATION

User Management · Autodesk ID · Project Administration





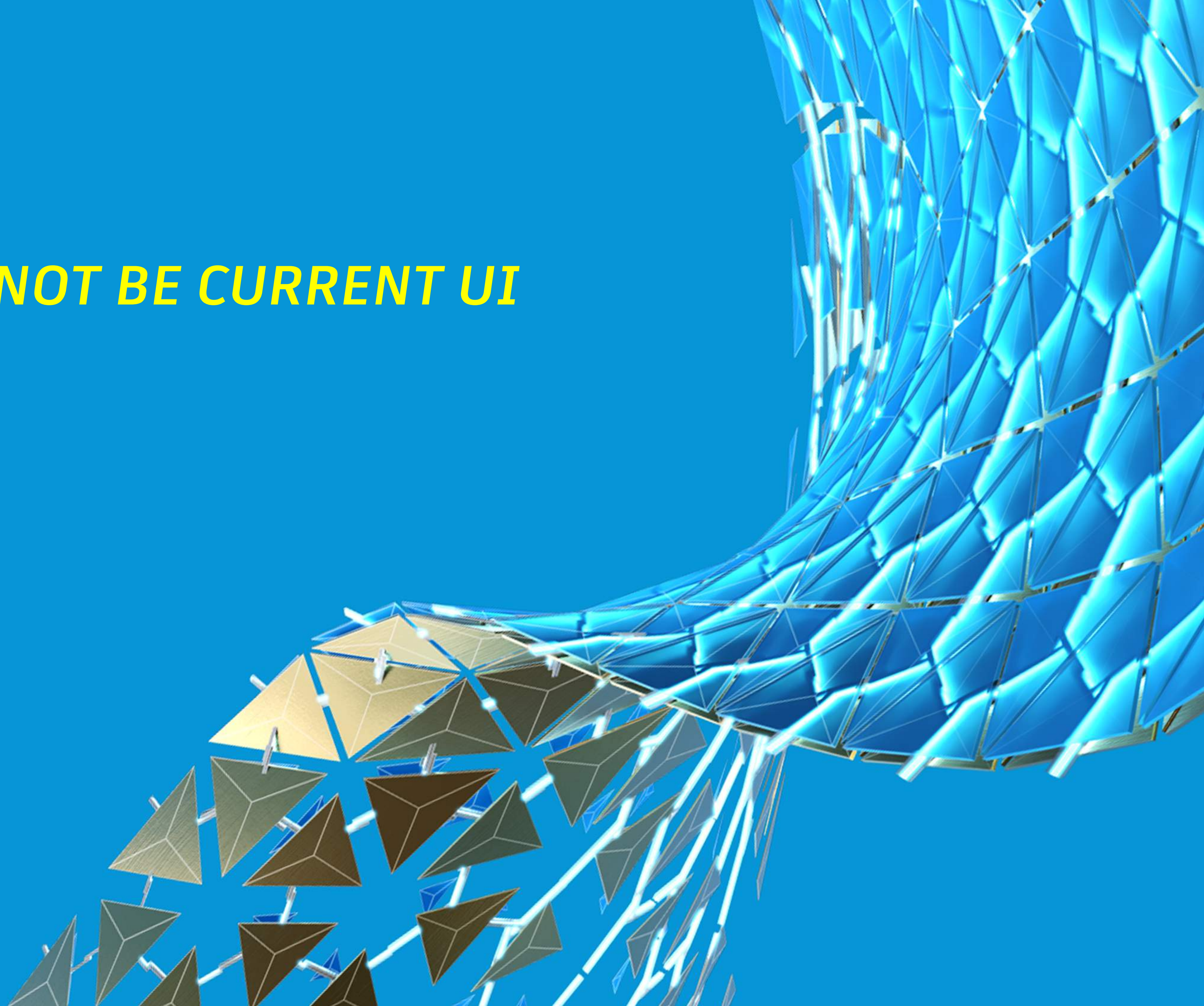
AUTODESK CONSTRUCTION CLOUD™

	AUTODESK BIM COLLABORATE	AUTODESK COORDINATE	AUTODESK QUANTIFY	AUTODESK BUILD				
Capabilities	Design Collaboration	Coordination	Quantification	Project Management	Cost Management	Quality	Safety	Project Closeout
Workflows	<ul style="list-style-type: none">• Constructability Review• Change Visualization• Revit Collaboration	<ul style="list-style-type: none">• Model Coordination• Constructability Review• Quality Planning• Issue Management	<ul style="list-style-type: none">• Scope Analysis• 2D/3D Take Off	<ul style="list-style-type: none">• RFIs• Submittals• Meeting Minutes• Daily Reports• Progress Tracking	<ul style="list-style-type: none">• Contract Creation / Administration• Change Orders• Payment Applications• Forecasting	<ul style="list-style-type: none">• Quality Planning• Quality Checking• Punchlists• Issue/Task Management	<ul style="list-style-type: none">• Safety Planning• Safety Training• Safety Observations• Safety Inspections	<ul style="list-style-type: none">• Commissioning• Turnover Documentation• Warranty Mgmt.• Final Completion• As-Built Survey
		Document Management Document Control · Document Versioning · Document Approvals						
Unified Data		Models · Drawings · Documents · Cost Items · Assets · As-Built's · Photos · Videos						
Insights		Dashboards · Reports · Construction IQ · Data Connector						
Admin		Admin Console · Permissions · Project Setup · Templates · Notifications						



Product UI

Disclaimer: MAY NOT BE CURRENT UI




Project Directory

All Projects ACC Project Templates

Create Project

Search project name, address, organization or project code.

Project Name ^	Project Type v	Project Code v	Last Updated v
SF MoMa Museum Main St, Houston, Texas	ACC	XXXXXXXXXXXX	6 hours ago
15550 Banner Behavior Health Hospital (BBHH) Main St, Scottsdale, Arizona	ACC	XXXXXXXXXXXX	Feb 10, 2019
15592-SJHMC Absorption Chiller Replacement Main St, Scottsdale, Arizona	BIM360	XXXXXXXXXXXX	Nov 24, 2018
18600 - SOMC Vacuum Pump Replacement  Main St, Phoenix, Arizona	PlanGrid	XXXXXXXXXXXX	Sept 14, 2019
19628 - ADC Tiberius - Chiller Cooler Expansion	ACC	XXXXXXXXXXXX	Feb 10, 2019



Build

Home

Sheets

Documents

Issues

Forms

Gallery

Asset Tracking

RFIs

Submittals

Meeting Minutes

Members

Settings

Build

Home

Sheets

Documents

Issues

Forms

Gallery

Asset Tracking

RFIs

Submittals

Meeting Minutes

Members

Settings

Build

Home

Sheets

Documents

Issues

Forms

Gallery

Asset Tracking

RFIs

Submittals

Meeting Minutes

Members

Settings

AUTODESK CONSTRUCTION CLOUD

SF MoMa

?

RFIs

+ Create RFI

Export all

Search

ID ^	Status ^	Title ^	Assigned to ^	Company ^	Due Date ^	Location ^	Document ^	Cost Impact ^
#65	Open In Review	Clash between Hvac	John Green	Hvac America INC	02/28/2020	Main foyer	Level 6 001....	Yes
#66	Open Answered	Entrance door color	Julia Franco	United Constuction	06/30/2020	1st floor	A.101 Level ...	No
#67	Closed	Electrical sub main ent...	Jake Beyer	United Constuction	06/30/2020	-	-	-
#68	Open Answered	Fix main roof cieling	Brad Buckels	Autodesk Pro	01/30/2020	Main foyer	A.601 Level ...	Unkownn
#69	Draft	Patch hole main hall	David Cooper	United Constuction	06/30/2020	1st floor lo...	-	Yes
#70	Draft	Panels cieling ER	Guru Khalsa	GGIM panels	06/30/2020	14th floor	A141 Level 1...	-
#68	Closed	Fix main roof cieling	Brad Buckels	Autodesk Pro	01/30/2020	Main foyer	A.601 Level ...	Unkownn
#69	Closed	Patch hole main hall	David Cooper	United Constuction	06/30/2020	1st floor lo...	-	Yes
#70	Open Answered	Panels cieling ER	Guru Khalsa	GGIM panels	06/30/2020	14th floor	A141 Level 1...	-

Acco

Project Links



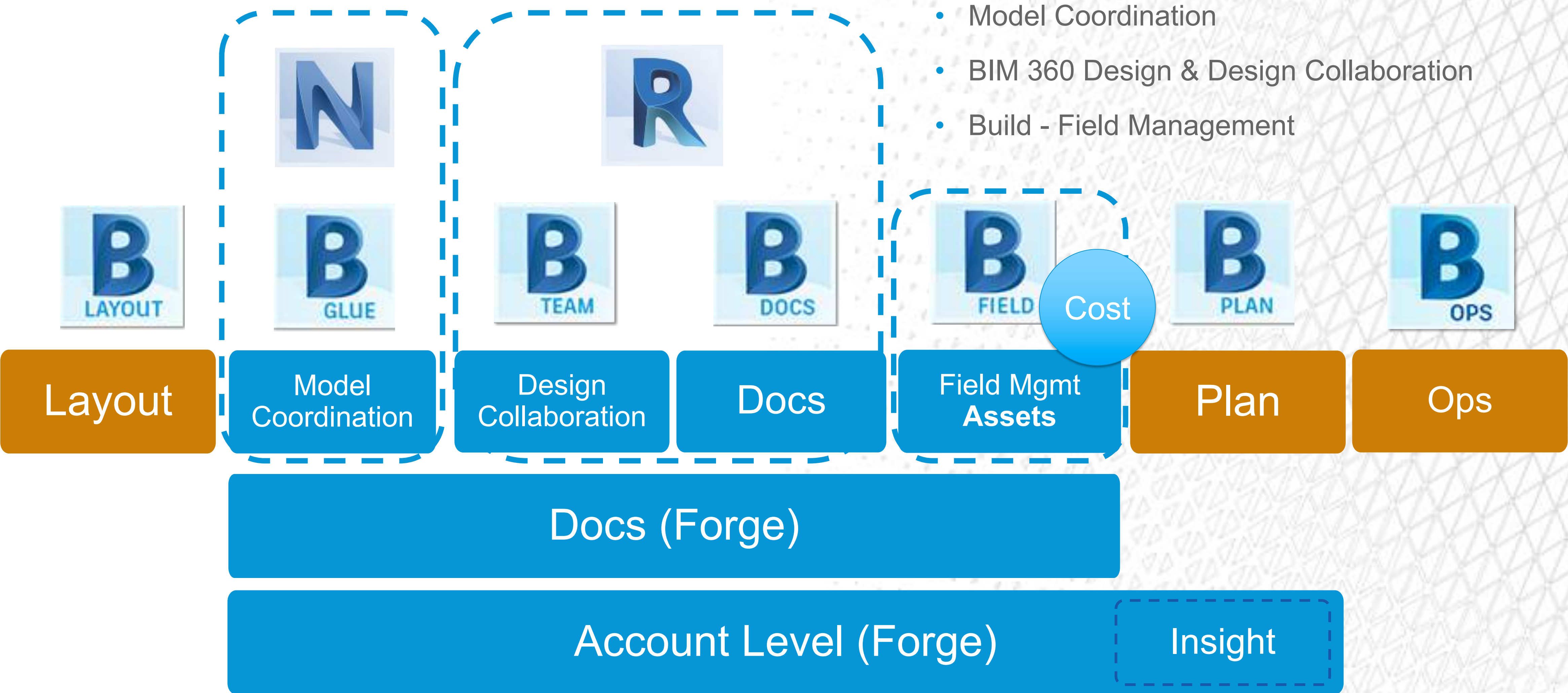
BIM 360 & API Status and Updates



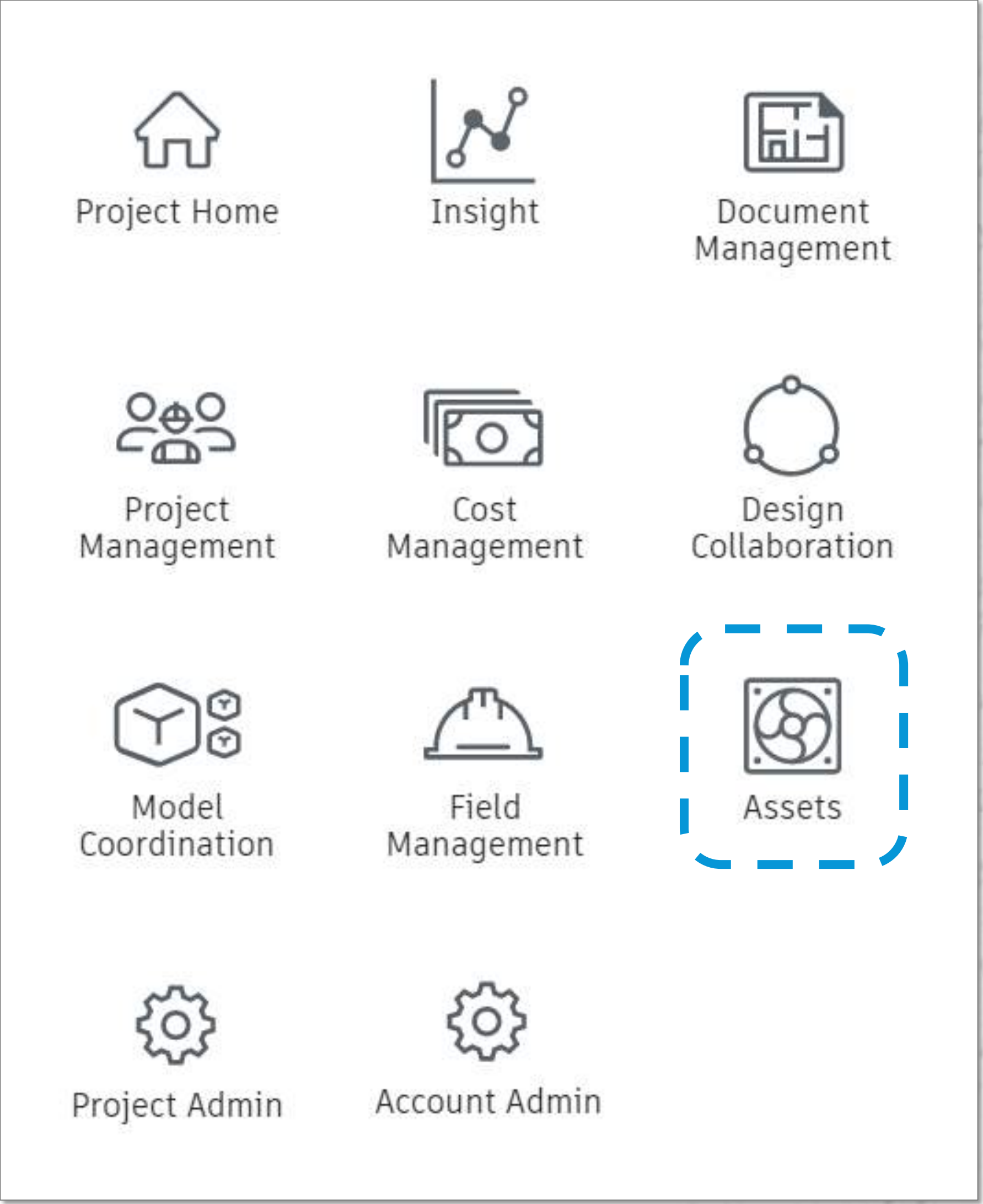
BIM 360 Family Products

Next generation modules

- Model Coordination
- BIM 360 Design & Design Collaboration
- Build - Field Management




BIM 360 Modules



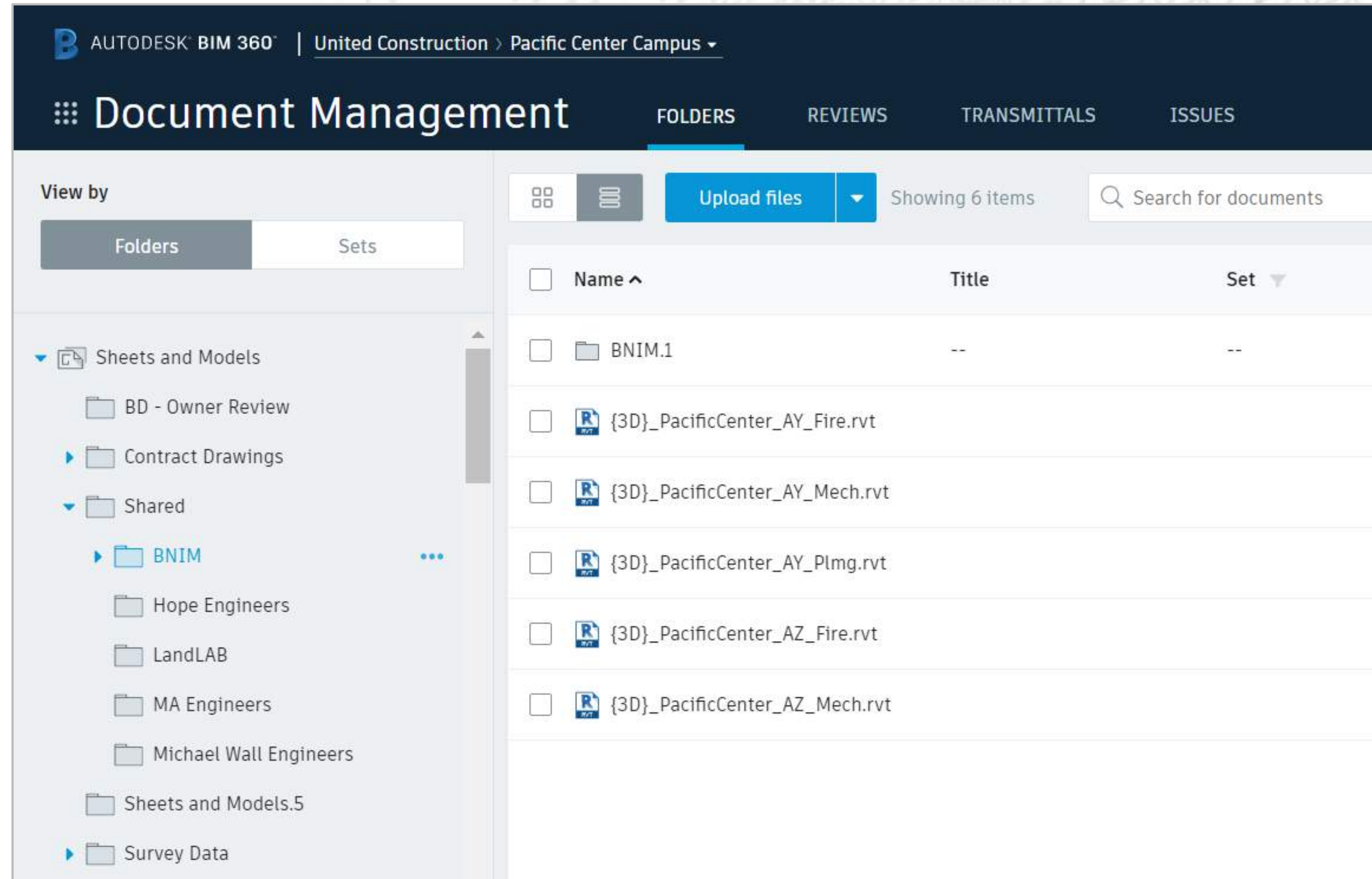
Document Management

- Data Management API

- API Enhancements:

- 
 - Folder permissions (r/w)
 - Custom attribute values (r/w)*1

*1) Definition next





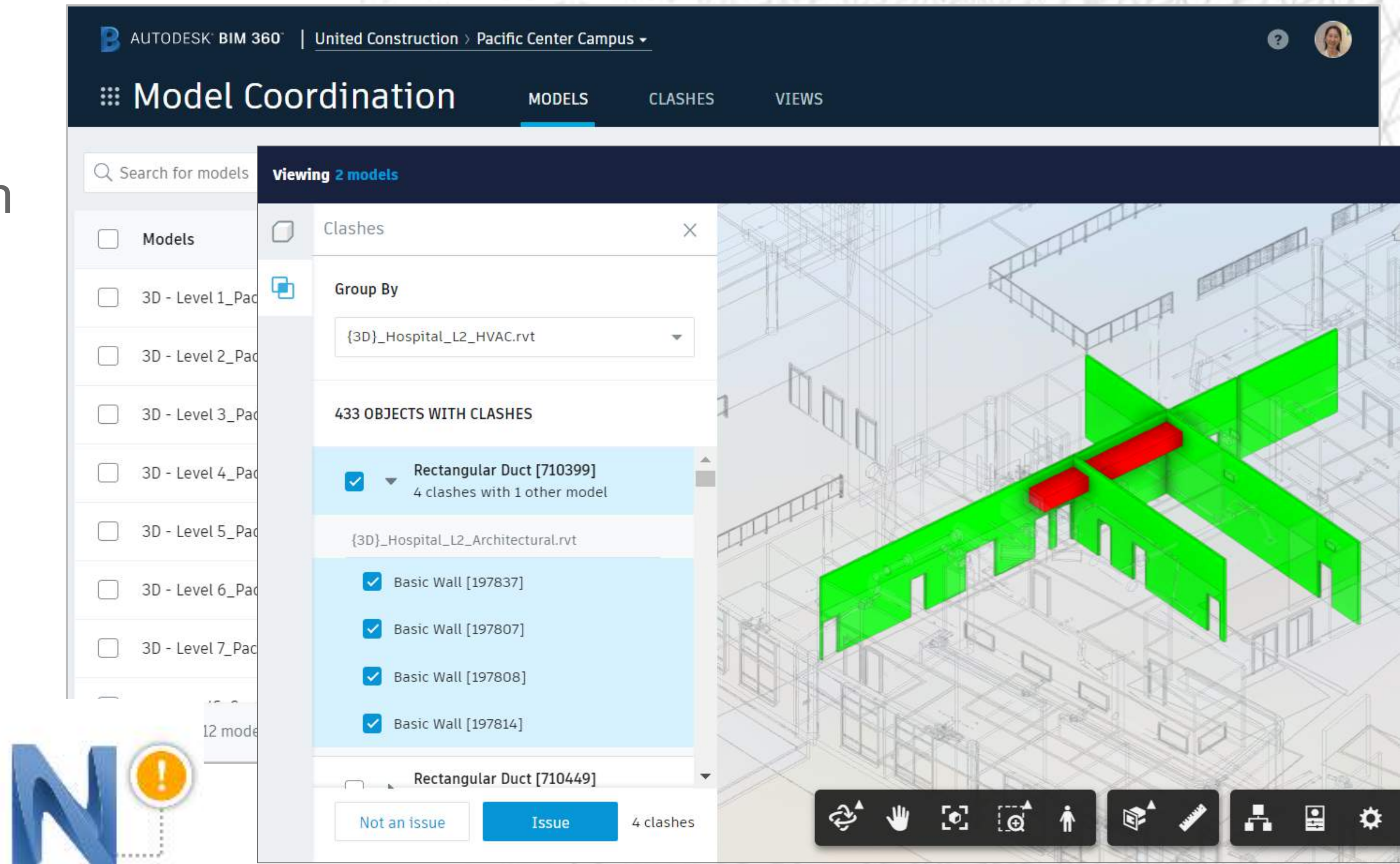
Model Coordination

- Navisworks + Model Coordination integration

- **API Enhancements**



- *Officially out of beta!*
- Project Files folder support
- Relationship API





Cost
Management

Cost Management

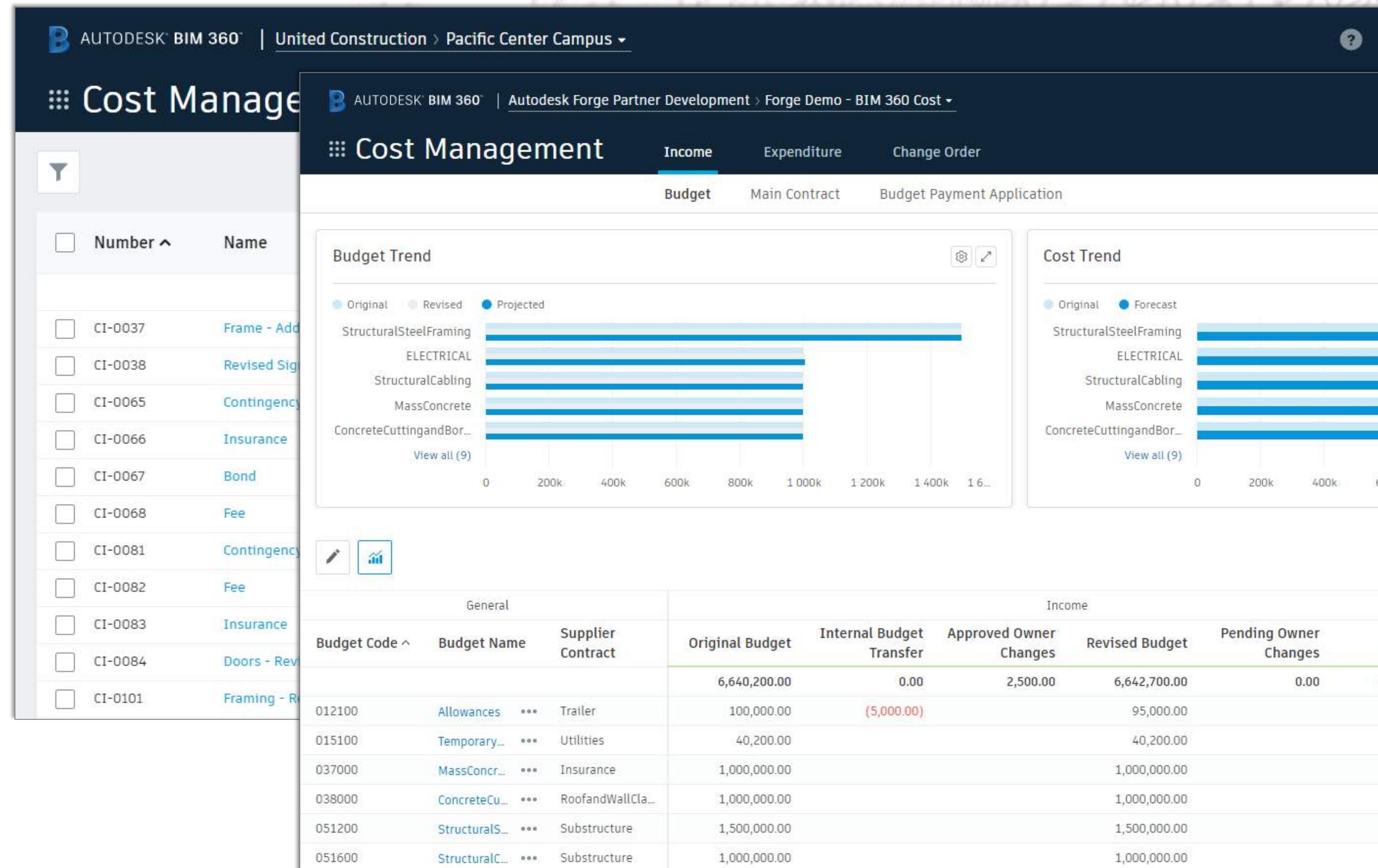
API Enhancement

- Budget code template
- Create/update/search external relationships*¹



Both based on requests!

*1) waiting for documentation updated

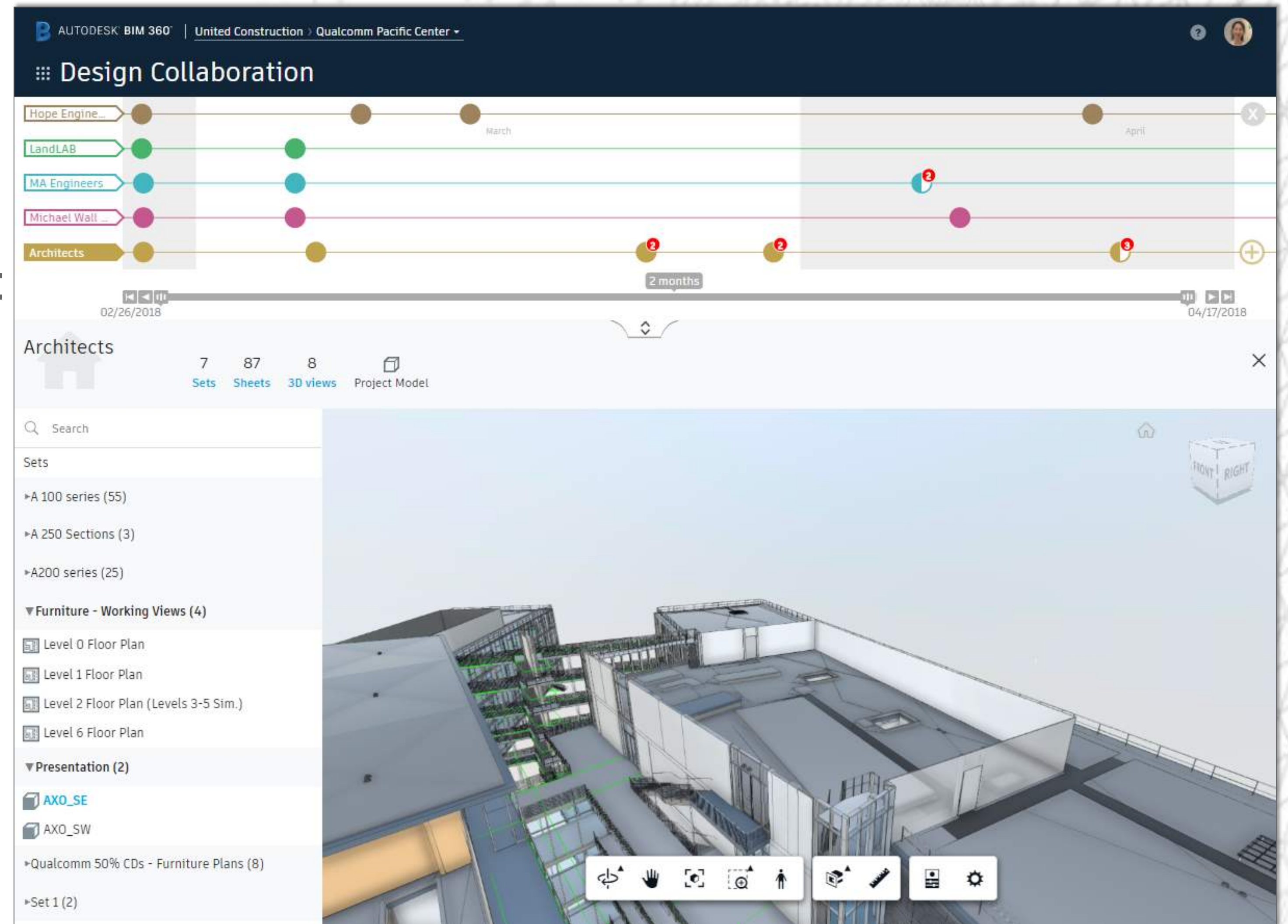




Design Collaboration

Update


- A sample with Revit Cloud Worksharing webhooks events:
<https://github.com/Autodesk-Forge/forge-bim360notifier>
- European data center support





Project Home


Project Home




United Construction

Pacific Center Campus

Project Dates: Tue Oct 17 2017 - Fri Oct 29 2021




Project Address



1 Market street
San Francisco, CA 94105

Weather

52°

Cloudy

Tue 52°

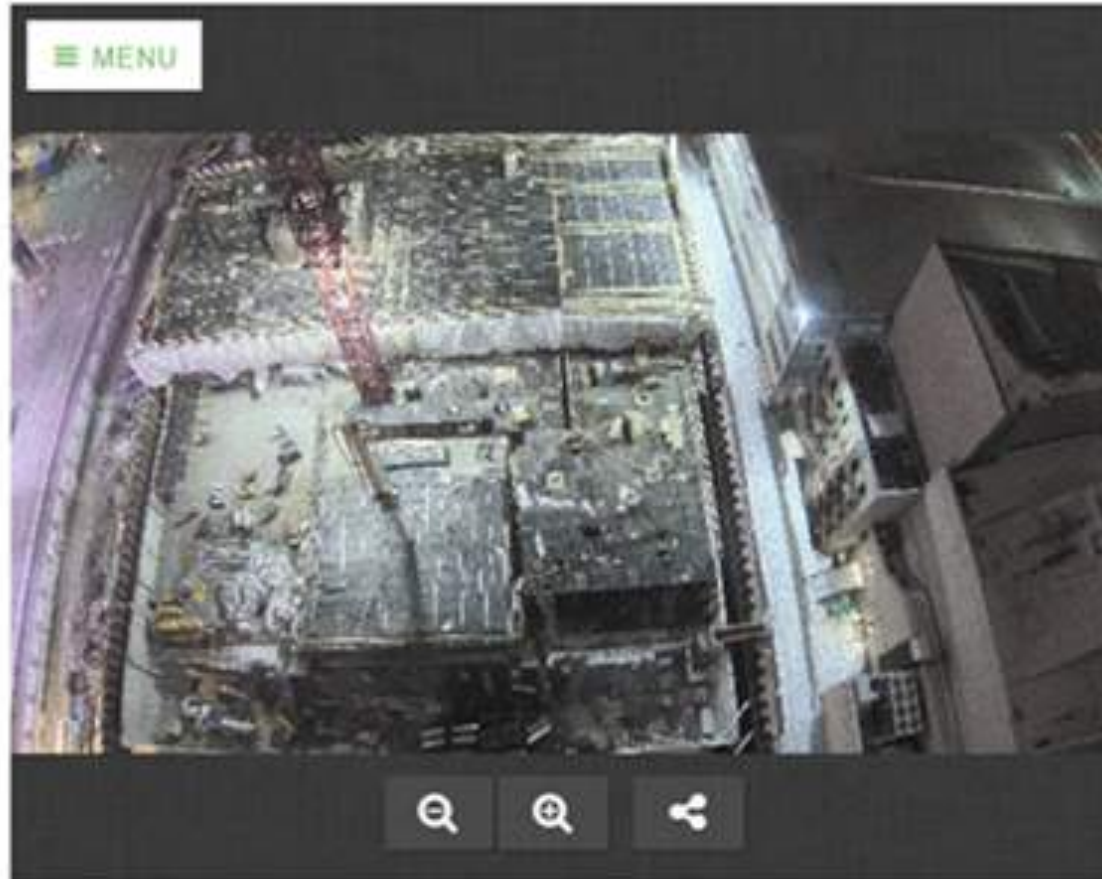
Wed 58°

Thu 56°

Fri 57°

Powered by Dark Sky

TrueLook



MENU

Q

Q

Q

Project Checklists

Title	Location	Scheduled
Safety Event Form		May 31, 2018
General Space - Punch		May 31, 2018
Above Ceiling Inspection		May 31, 2018
Above Ceiling Inspection		May 31, 2018
Above Ceiling Inspection		May 31, 2018

5 of 134 Open Checklists | View all (134)

Open RFIs and Submittals

44 RFIs

30

2

12

106 Submittal Items

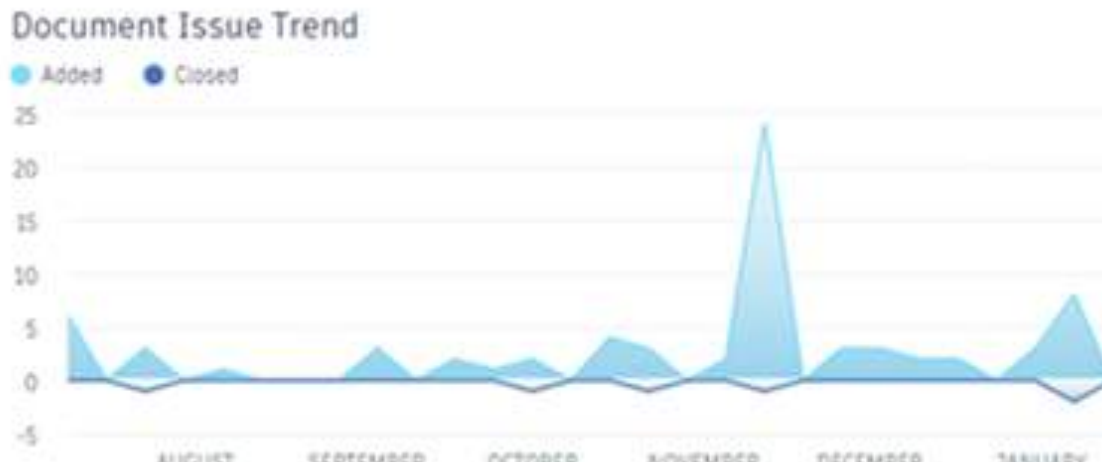
15

91

Document Issue Trend

Added

Closed



Partner Card
E-mail to:
bim360partnercard@autodesk.com



Field Management

[illegible]



Project Management

API Update

- RFI v2

The screenshot displays the Autodesk BIM 360 Project Management interface for the 'United Construction > Pacific Center Campus' project. The main navigation bar includes 'Project Management', 'RFIs', 'SUBMITTALS', and 'MEETINGS'. The 'RFIs' tab is active, showing a list of RFIs with columns for Status and ID. A modal window is open for an RFI titled '#Unspecified', showing a 'SUBMITTED' status and a 'Submit to Reviewer' button. The modal also displays fields for 'Assigned to' (Zohar Liran), 'Due date' (Mar 31, 2020), 'Cost impact' (Unspecified), 'Schedule impact' (Unspecified), and a 'Question' field with the text 'Have you completed the work on this site?'. The 'Suggested answer' field shows 'Yes'.

Project Management | United Construction > Pacific Center Campus

Project Management | RFIs | SUBMITTALS | MEETINGS

Search RFI

Status	ID
SUBMITTED	-
SUBMITTED	-
SUBMITTED	-
SUBMITTED	-
DRAFT	-
SUBMITTED	-
SUBMITTED	-
SUBMITTED	-

RFI | SUBMITTED

#Unspecified

Your action is required | **Submit to Reviewer**

DETAILS | ATTACHMENTS | ACTIVITY

Have you completed the work on this site?

Assigned to: Zohar Liran

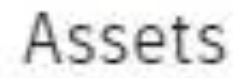
Due date: Mar 31, 2020

Cost impact: Unspecified

Schedule impact: Unspecified

Question: Have you completed the work on this site?

Suggested answer: Yes



Assets

Autodesk® BIM 360®

Autodesk Forge Partner Development > Forge Sandbox MH

Assets

ASSETS

Asset Tree

All Categories

Air Handling Units (AHU's)

Electrical Equipment

Lighting Devices

Lighting Fixtures

Mechanical Equipment

Plumbing Fixtures

Pumps

Details

Asset ID	Category	Location	Model
621642	Lighting Fixtures > Rece...	... > Rm 212	-
621643	Lighting Fixtures > Rece...	Tower 2 > 1 Floor	-
621644	Lighting Fixtures > Rece...	... > Rm 116	-
694117	Lighting Fixtures > Rece...	... > Rm 115	-
694251	Lighting Fixtures > Rece...	... > Security Of...	-
694268	Lighting Fixtures > Rece...	... > Elevator Lo...	-
694269	Lighting Fixtures > Rece...	... > Facility Offi...	-

Asset

621642

INSTALLED

DETAILS

ISSUES

CHECKLISTS

ATTACHMENTS

Create Issue

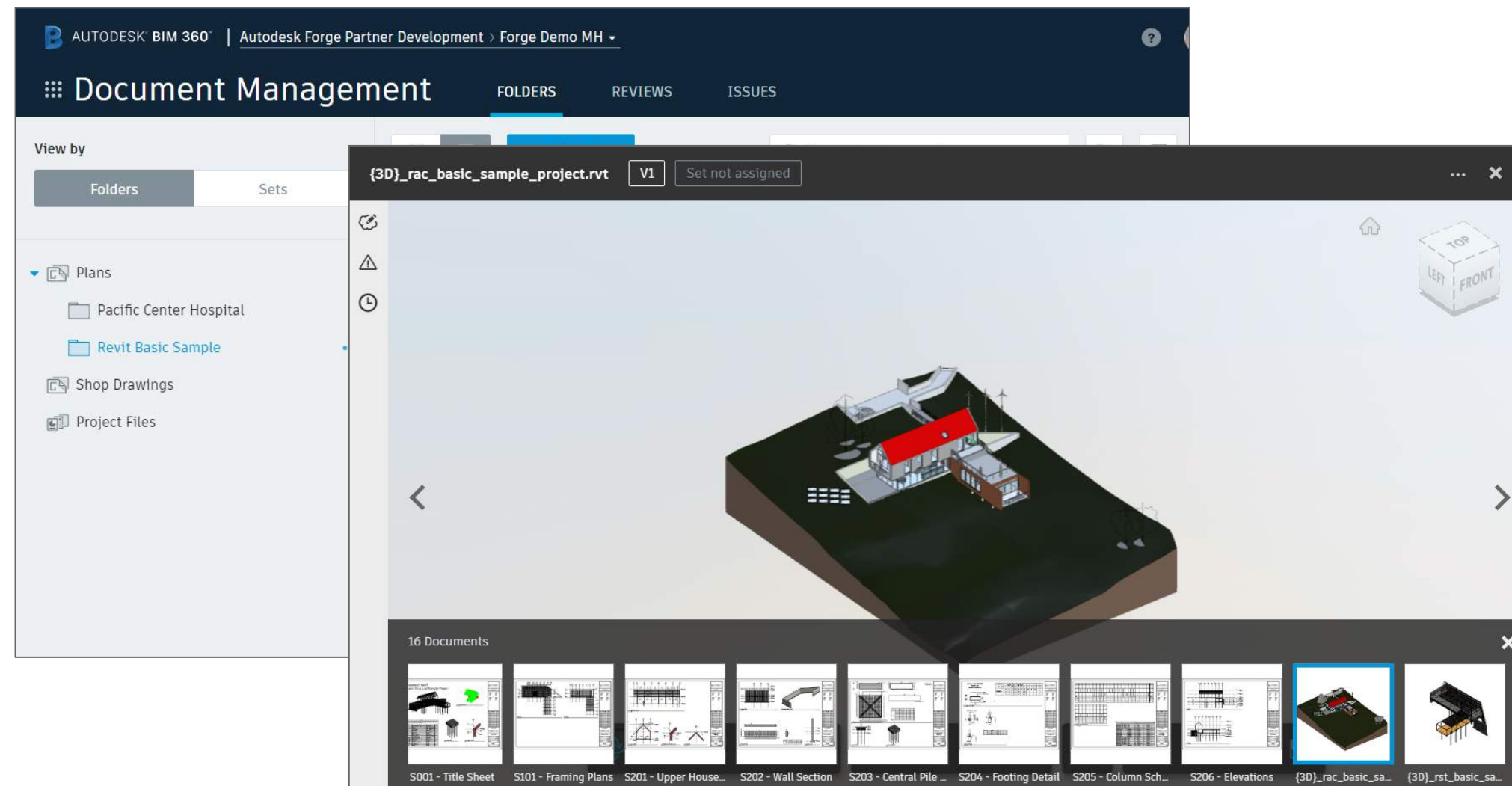
Linked references

Add reference

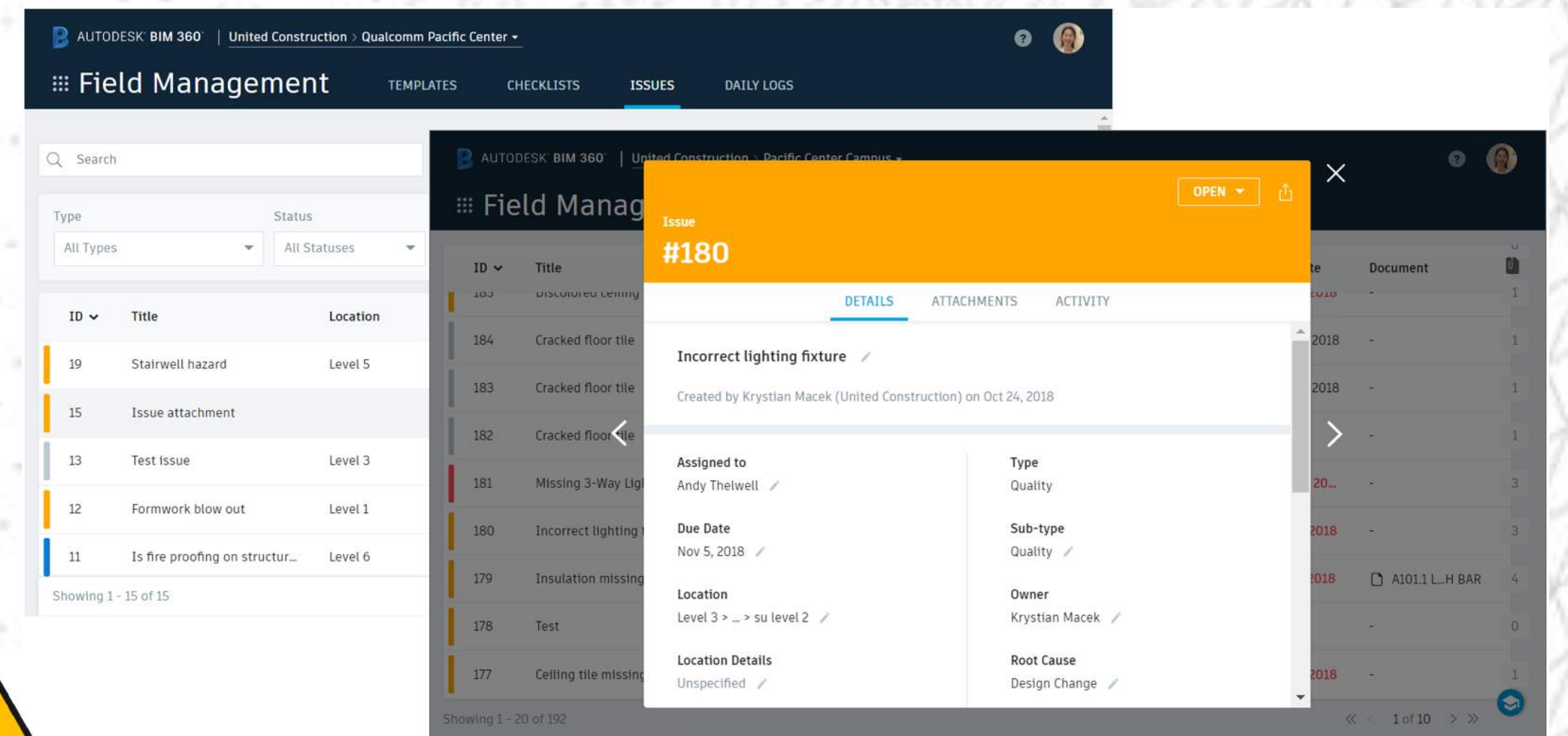
Issue OPEN #35 air handler installation issue

Issues

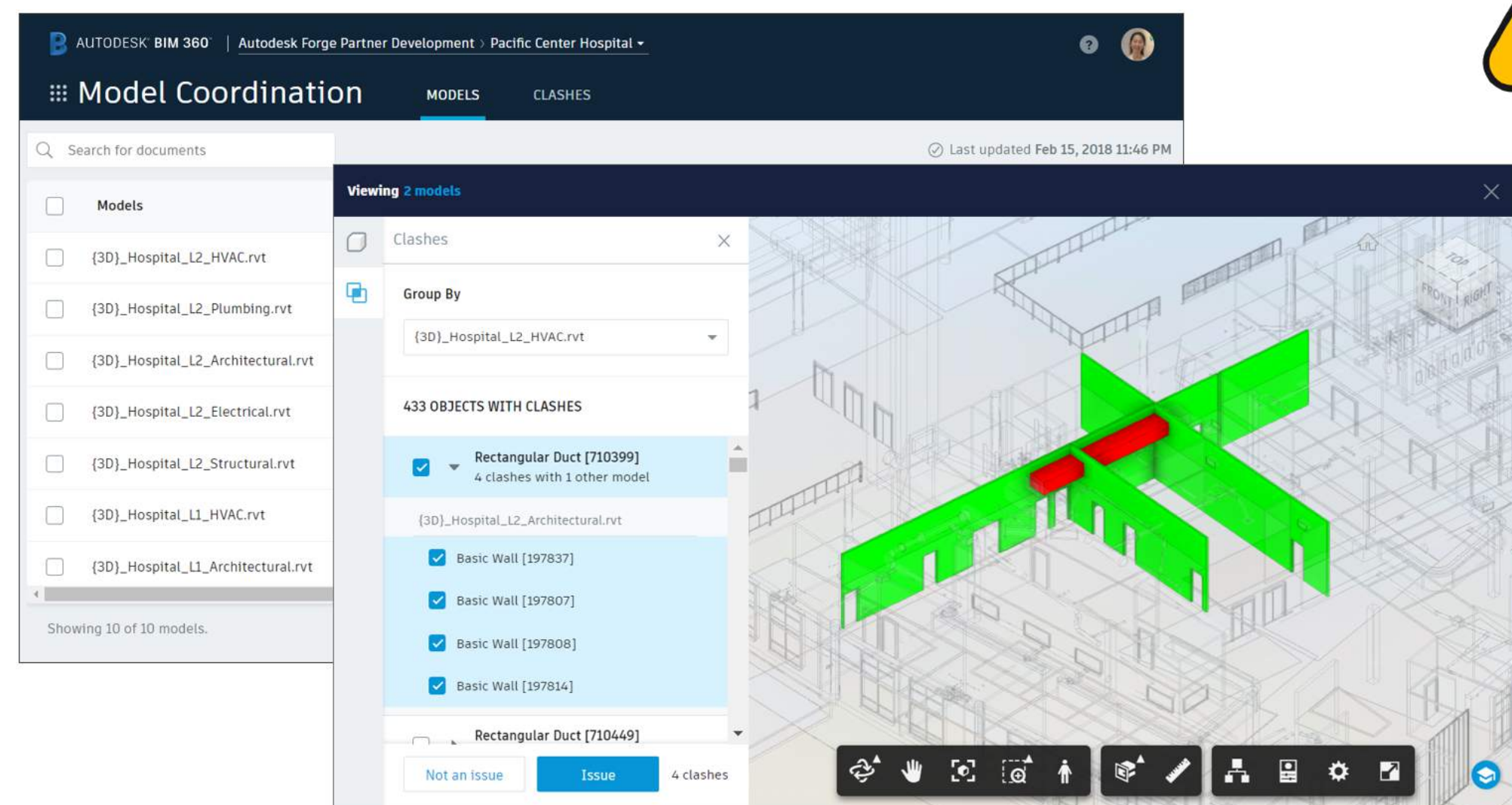
Document Management



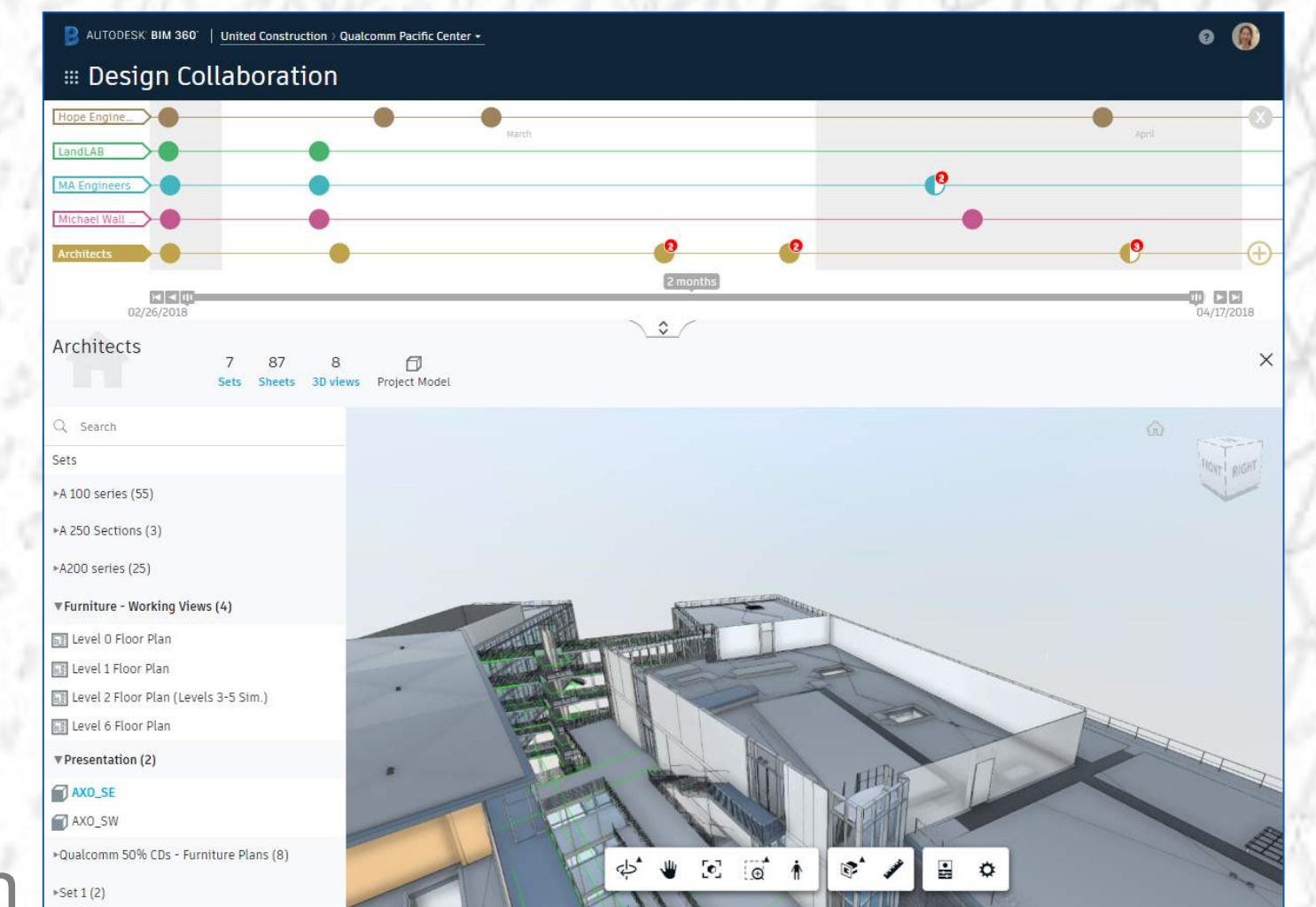
Field Management



Model Coordination



Design Collaboration



Navisworks BIM 360 Issues




Revit Issues Add-in


BIM 360 Release Notes

<https://blogs.autodesk.com/bim360-release-notes/2020>

<https://help.autodesk.com/view/BIM360D/ENU/>




BIM 360 Release Notes




Multiple Daily Logs

FIELD MANAGEME... Sep 24, 2020



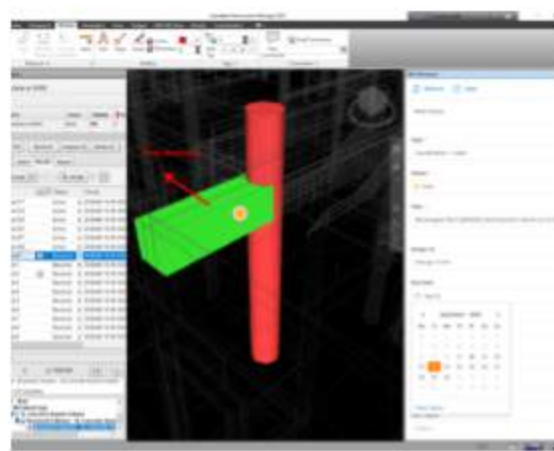
BIM 360 Docs Search and Filter Enhancements f...

NEXT GEN BIM 3... Sep 23, 2020



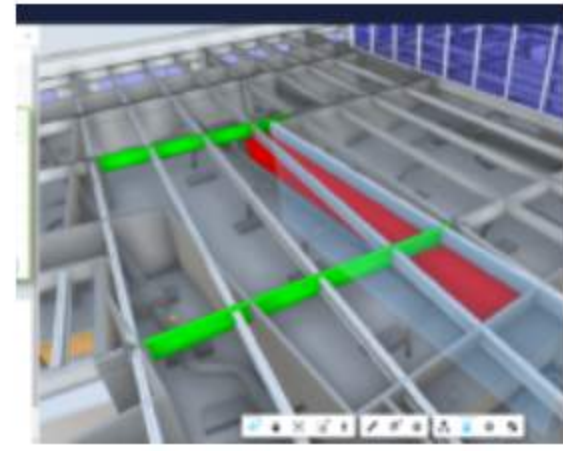
Reopen Closed RFI

PROJECT MANAGE... Sep 22, 2020

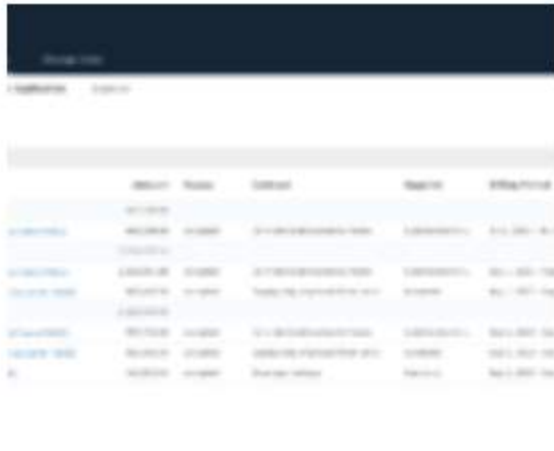


Navisworks Issues Integration – September 202...

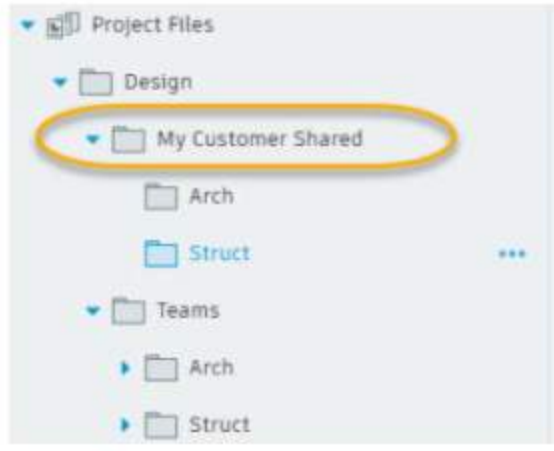
NAVISWORKS Sep 22, 2020



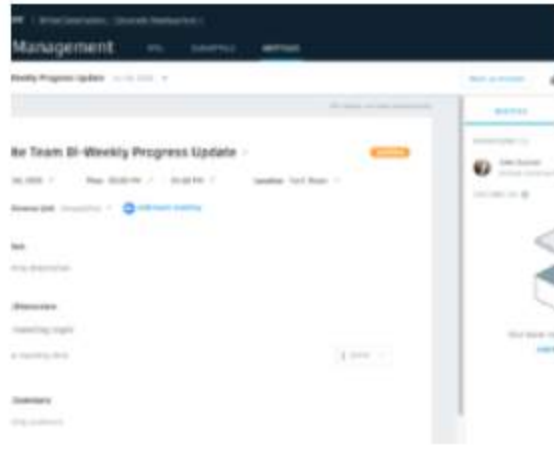
BIM 360 Model Coordination – September 2020 R...



BIM 360 Cost Management Updates – Septe...



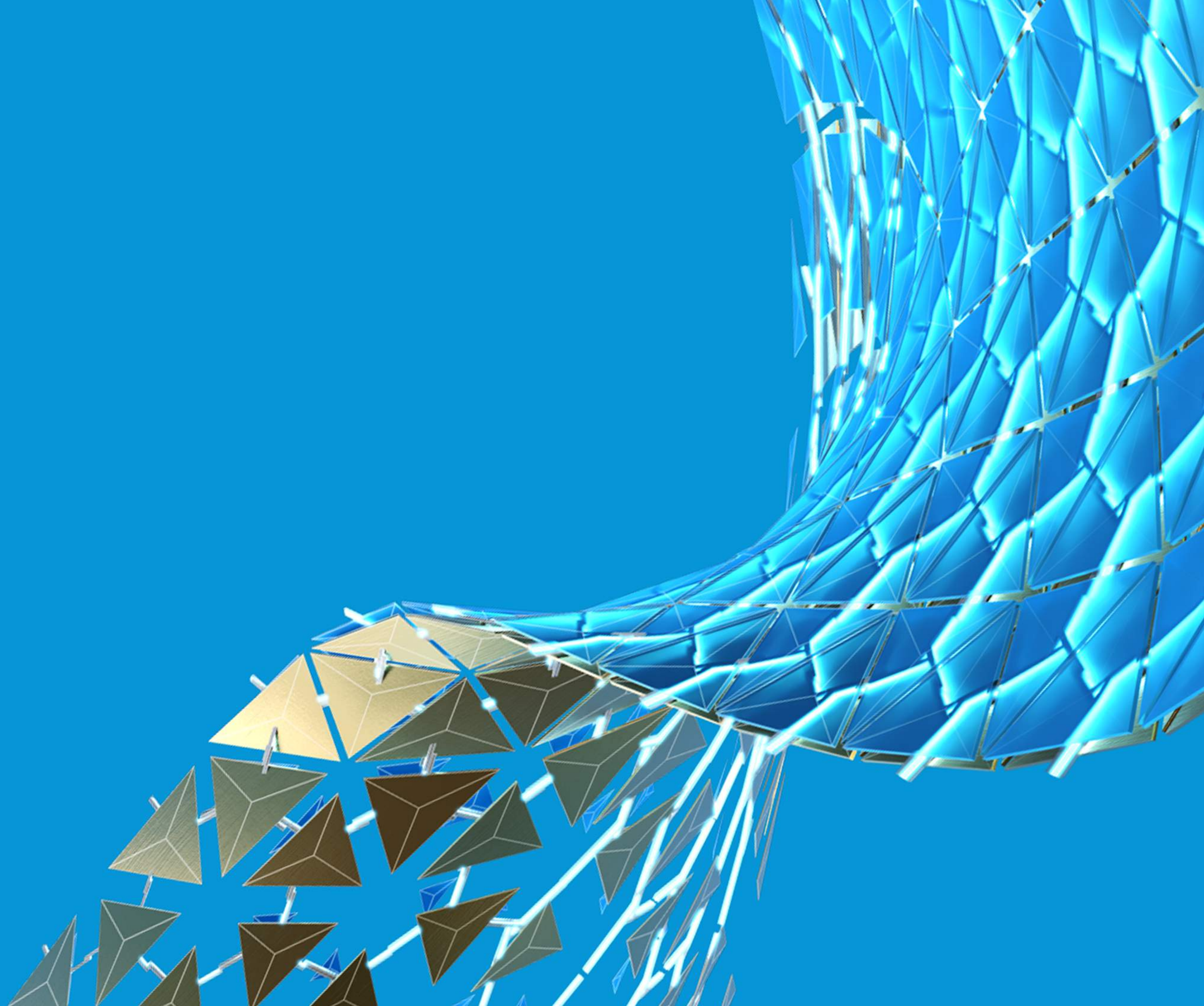
BIM 360 Design Collaboration Update – Septemb...



Meetings Release – Delete a Record

Assets API

In Pipeline



Assets API

Private beta (read) current

- asset items
- custom attributes
- categories
- status sets

Public beta near future

- Read + write items, batch, import^{*1}

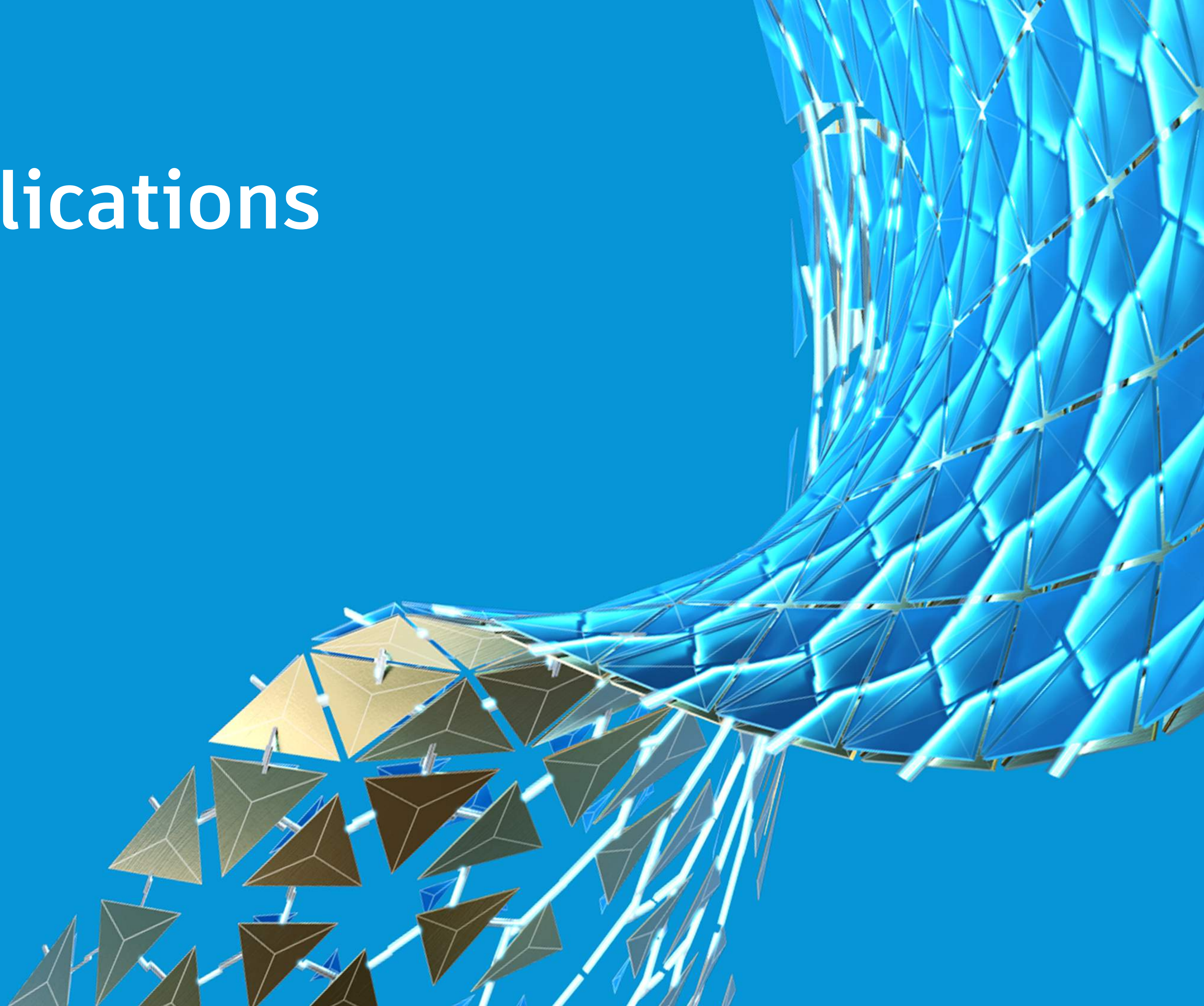
Priority feedback welcome!

^{*1}) prioritize based on feedbacks

The screenshot displays the Autodesk BIM 360 Project Admin interface. The top navigation bar includes 'Project Admin' and tabs for 'MEMBERS', 'COMPANIES', 'SERVICES', and 'PROFILE'. The left sidebar lists 'Overview', 'Issues', 'Notifications', 'Locations', 'Document Management', and 'Assets'. The main content area shows the 'Categories' tab, which is highlighted with an orange dashed box. Below this, a table lists categories with columns for 'Name', 'Active / Inactive', 'Status Set', and 'Attributes'. The table shows 'All Categories' and 'Air Handling Units (AHU's)'.

The bottom screenshot shows the 'Assets' page. The left sidebar lists 'Asset Tree' and 'Details'. The 'Asset Tree' is highlighted with an orange dashed box. The 'Details' panel shows a table of assets with columns for 'Asset ID' and 'Category'. The table lists assets with IDs 621642, 621643, 621644, 694117, 694251, and 694268, all categorized as 'Lighting Fixtur...'. The right panel shows the details for asset 621642, including 'Asset ID', 'Category', 'Description', 'Barcode', 'Location', 'Serial number', 'Submittal', 'Purchase order', and 'Purchase date'.

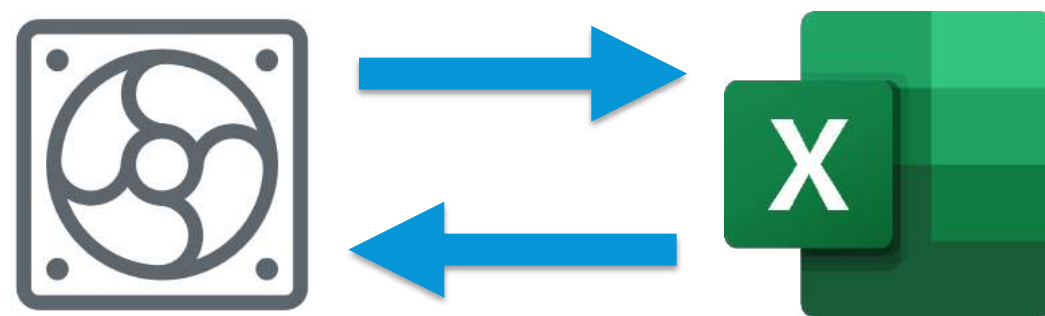
Sample Applications



Export/Import to/from Excel

- **What it does:** Export all the Assets data in BIM 360 Assets module to a custom web page with links, then to Excel sheet. Modification in Excel is import back to Assets. This sample is to demonstrate the basic read/write access with Assets module.

- **Code:** GitHub Sample (TBD)
- **Author:** Xiaodong Liang, Autodesk



BIM 360 Assets

BIM 360 Asset Data Export & Import

localhost:3000

Apps

BIM360

MC API

China

AU2018

aws

Live Demos

Video Demos

quick-demos

DevDays 2016

3DWebFest

Autodesk

Prototype

Customer

AUTODESK FORGE

BIM 360 Asset Data Exchange

Enable n

BIM360 Project List

Autodesk Forge Partner Development

BIM360 AU Asset Test Project(Zhong)

Daimler POC Project

Delete Test Sample 4 by Zhong

Flow Test

Forge Concert Hall

Forge Demo EK

Forge Demo ZW DA

Forge Demo Zhong

Forge Infracore

Pacific Center Hospital v2

Xiaodong Tes & Patch

Xiaodong-test-MC

Zhong Revit File Upgrader Project

xiaodong-test-asset

FPD EMEA

ASSETS

CATEGORIES

CUSTOM ATTRIBUTES

STATUSES

clientAssetId	version	description	isActive	category	status	barcode	serialNumber	installationDate	installedBy	warrantyStartDate	warrantyEndDate
AHU-999	3937	Performance Climate Changer Air Handler Floor 1	true	Air Cooled Chiller	Installed	barcode-12345	SN-7890456	2020-09-02	company-B	2020-09-09	2021-09-09
AHU-998	3938	Performance Climate Changer Air Handler Floor 2	true	Air Cooled Chiller	Functional Performance Tests	barcode-45789	SN-7890456	2020-09-02	company-C	2020-09-09	2021-09-09
AHU-997	3939	Performance Climate Changer Air Handler Floor 3	true	Air Cooled Chiller	Acceptance	barcode-34896	SN-674456	2020-09-02	company-R	2020-09-09	2021-09-09
VAV-996	3940	Base Mounted	true	Primary Water Pump	Installed	barcode-33556	SN-490874	2020-09-02	company-F	2020-09-09	2021-09-09
VAV-995	3941	Base	true	Primary Water	Functional Performance	barcode-	SN-098745	2020-09-02	company-	2020-09-09	2021-09-09

BIM 360
Autodesk Forge Partner Development > xiaodong-test-asset

Assets

Asset Tree

- All Categories
- Air Handling Units (AHU's)
 - Air Terminal
 - Electrical
- Mechanical
- Pumps
- xiaodongtest

Asset ID	Category	Location	Barcode
AHU-999	Air Handling U...	CH/PH Stock 1 [...]	barcode-12
AHU-998	Air Handling U...	> Stock 3 [57...]	barcode-45
AHU-997	Air Handling U...	> Workshop 4...	barcode-34
VAV-996	Pumps > Prima...	> Leader 8 [5...]	barcode-33
VAV-995	Pumps > Prima...	CH/PH 12 [5737...]	barcode-22
AHU-767	Air Handling U...	CH/PH Stock 1 [...]	barcode-99
PIPE-111	Air Handling U...	> Stock 3 [57...]	-
PIPE-222	Air Handling U...	CH/PH Stock 1 [...]	-
MECH-876	Pumps > Prima...	> Leader 8 [5...]	-
DUCT-995	Pumps > Prima...	> Workshop 4...	-

Assets

ASSETS

Export

Import

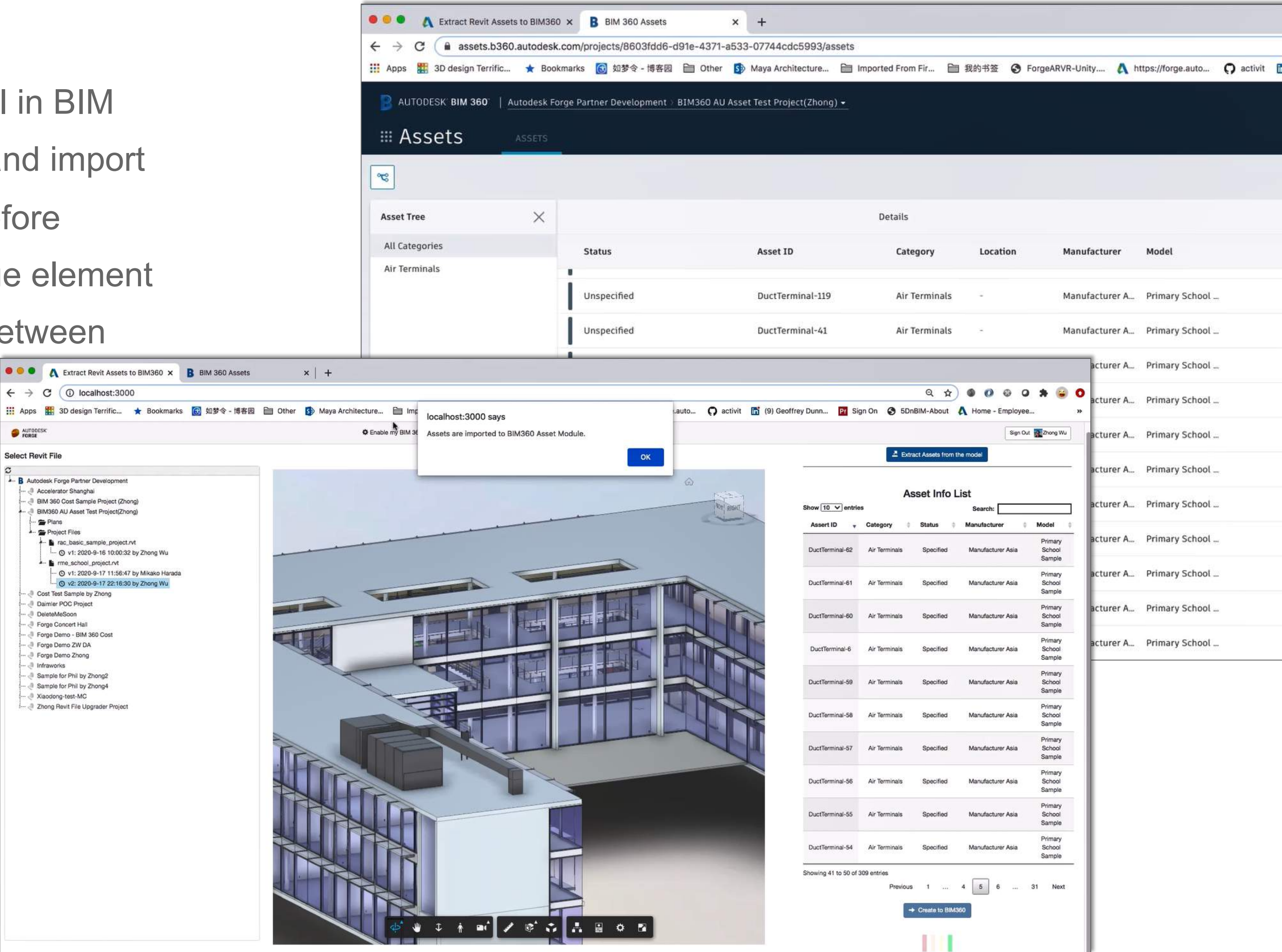
Asset Tree		Details												
All Categories		Asset ID	Category	Location	Barcode	Created by	Spec section	Purchase order	Purchase date	Manufacturer	Model	vendor	count	maintai engine
Air Handling Units (AHU's)														
Air Terminal		AHU-999	Air Handling U...	CH/PH Stock 1 [...]	barcode-12345	Xiaodong Liang	mechanical	P03678056	Sep 9	Schneider Elect...	Basic-MEP	Daikin	20	David,M
Electrical		AHU-998	Air Handling U...	... > Stock 3 [57...	barcode-45789	Xiaodong Liang	electrical	P03678056	Sep 9	ABB Electric	Basic-MEP	Daikin	20	David,M
Mechanical		AHU-997	Air Handling U...	... > Workshop 4...	barcode-34896	Xiaodong Liang	pipe	P03678056	Sep 9	IBM	Basic-MEP	Daikin	20	David,M
Pumps														
xiaodongtest		VAV-996	Pumps > Prima...	... > Leader 8 [5...	barcode-33556	Xiaodong Liang	duct	P03678056	Sep 9	Model	Basic-MEP	Daikin	20	David,M
		VAV-995	Pumps > Prima...	CH/PH I 2 [5737...	barcode-22390	Xiaodong Liang	internet	P03678056	Sep 9	JE	Basic-MEP	Daikin	20	David,M
		AHU-767	Air Handling U...	CH/PH Stock 1 [...]	barcode-999	Devtech China	floor5	P0888888	Sep 9	ABB	Mechanical	ABB	30	Michael
		PIPE-111	Air Handling U...	... > Stock 3 [57...	-	Devtech China	-	-	-	-	-	-	-	-
		PIPE-222	Air Handling U...	CH/PH Stock 1 [...]	-	Devtech China	-	-	-	-	-	-	-	Peter, Ji
		MECH-876	Pumps > Prima...	... > Leader 8 [5...	-	Devtech China	-	-	-	-	-	-	-	-
		DUCT-995	Pumps > Prima...	... > Workshop 4...	-	Devtech China	-	-	-	-	-	-	-	-

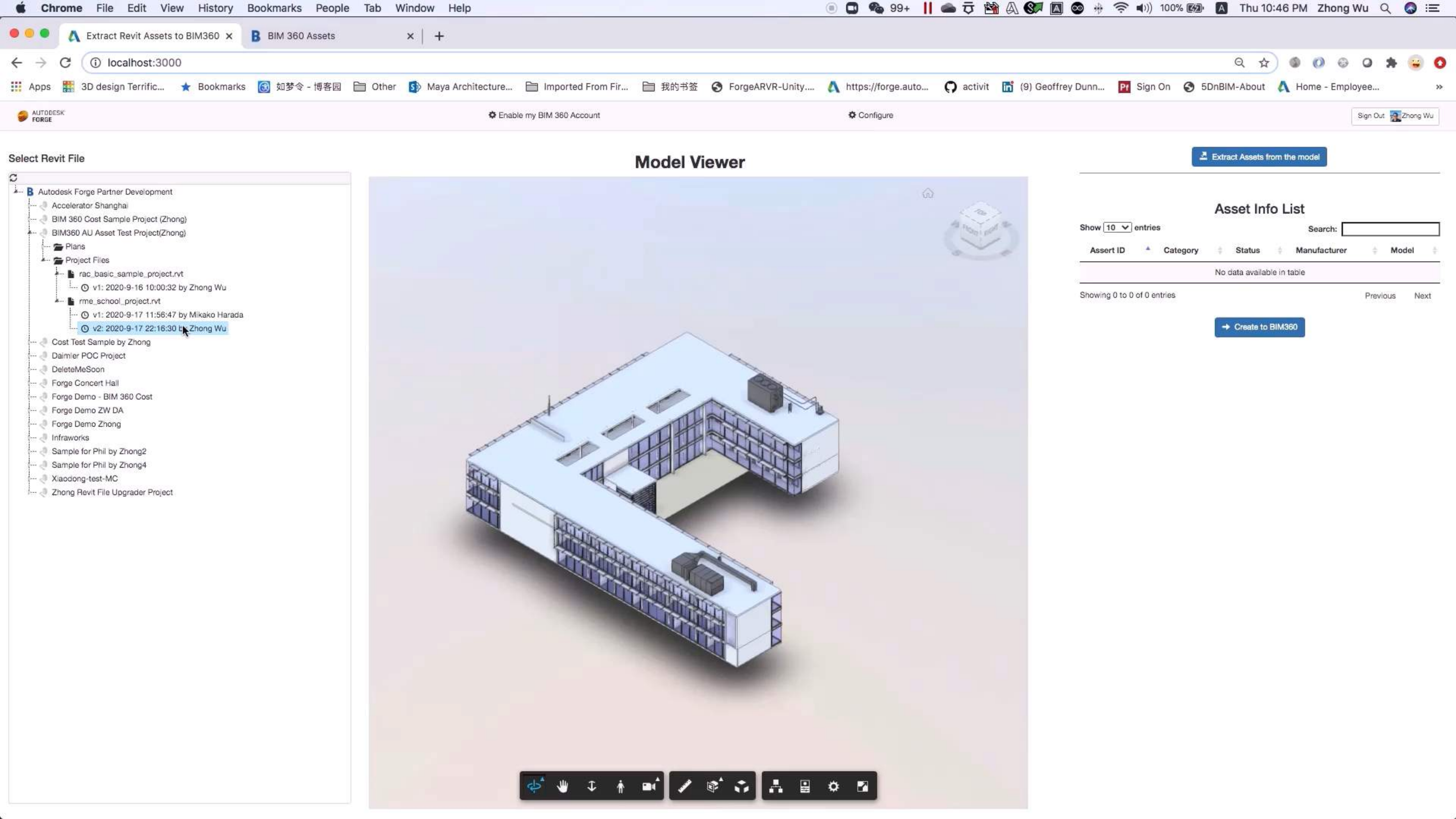
Set up Assets from a Design Model

What it does: Extract assets from a design model in BIM 360 Docs, using **Design Automation for Revit**, and import to Assets module. Optionally filter/verify assets before importing to Assets module. (We save Revit unique element ids as custom attributes to keep the association between assets to elements in Revit.)

Code: GitHub Sample (TBD)

Author: Zhong Wu, Autodesk



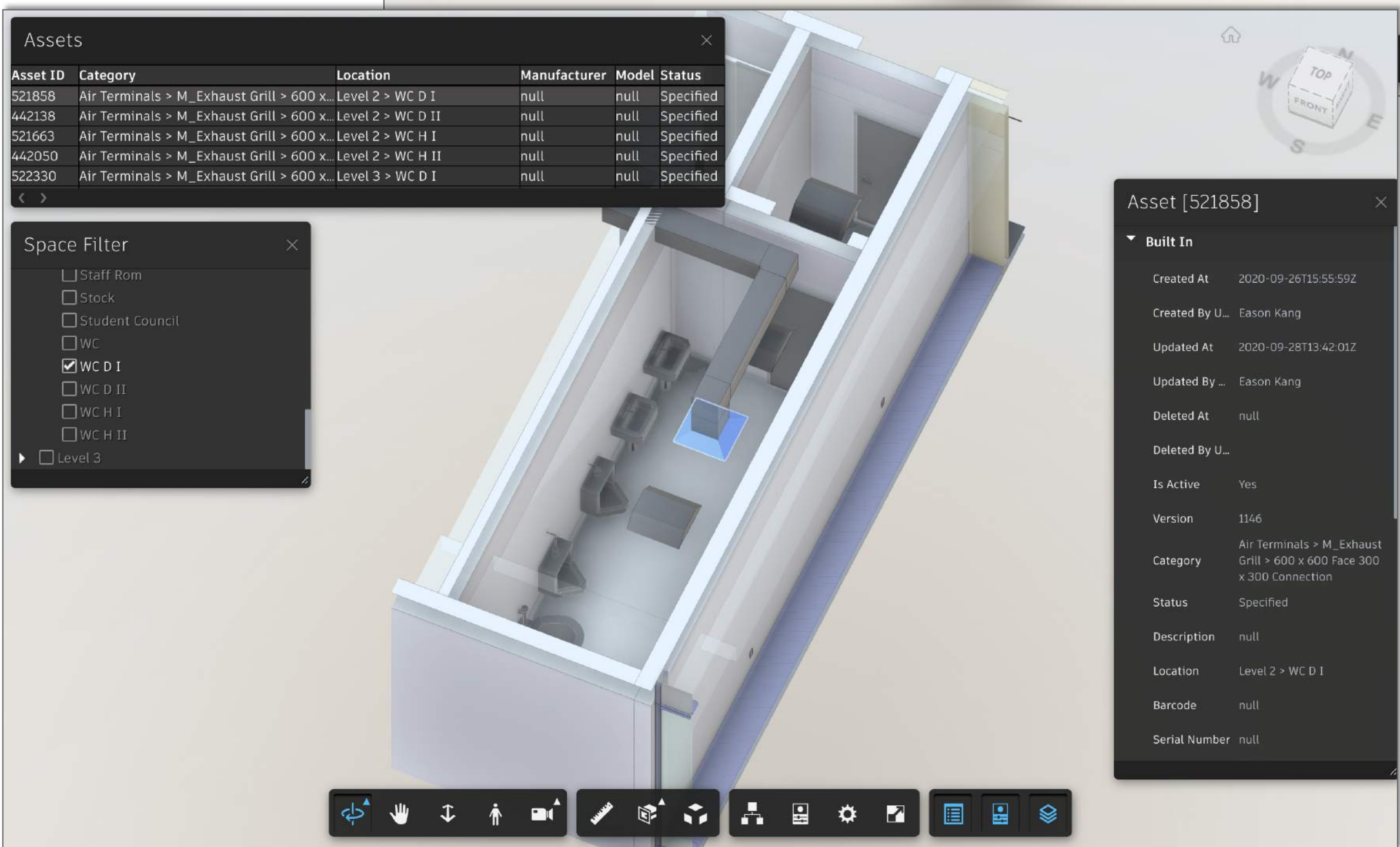
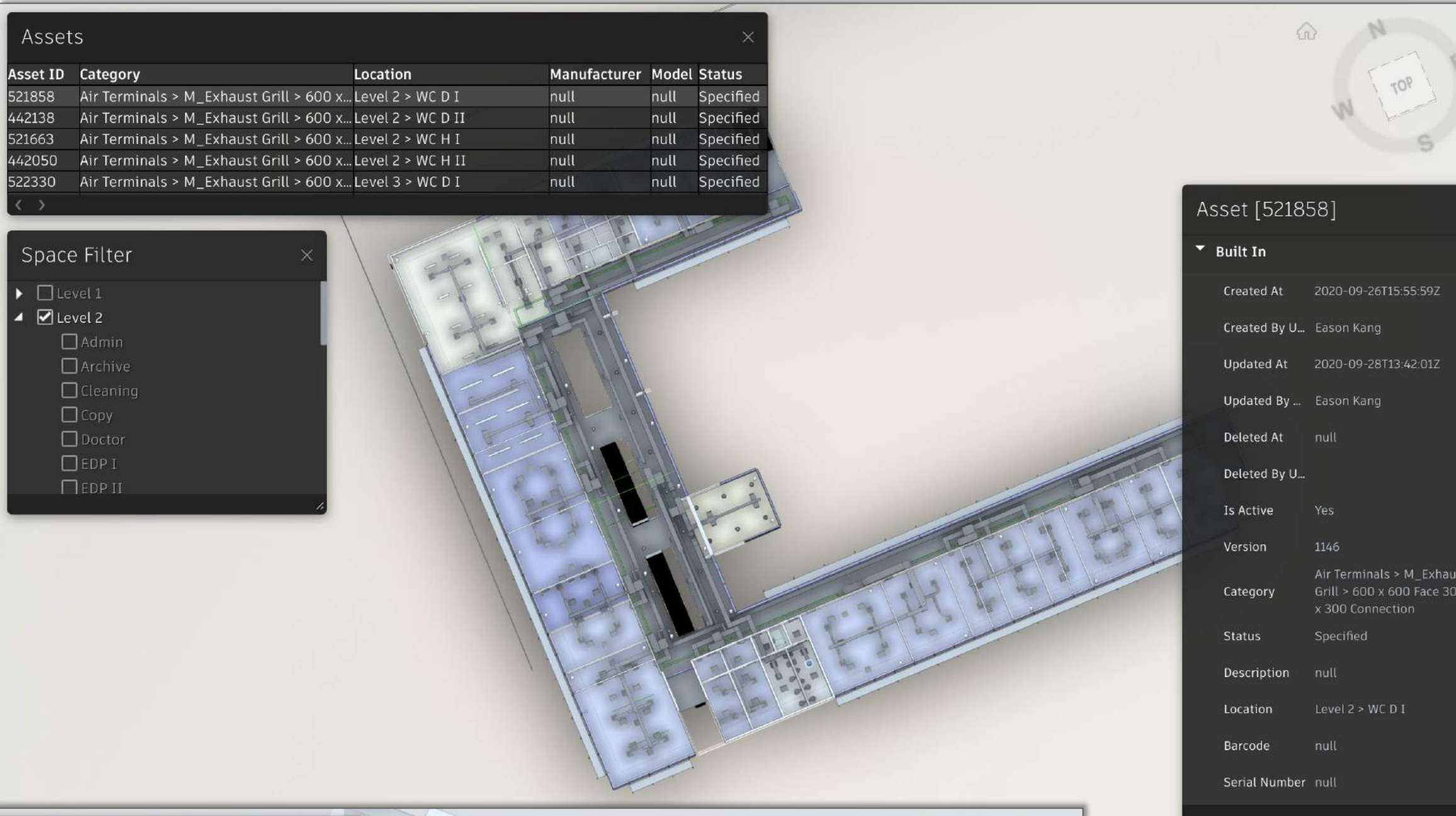
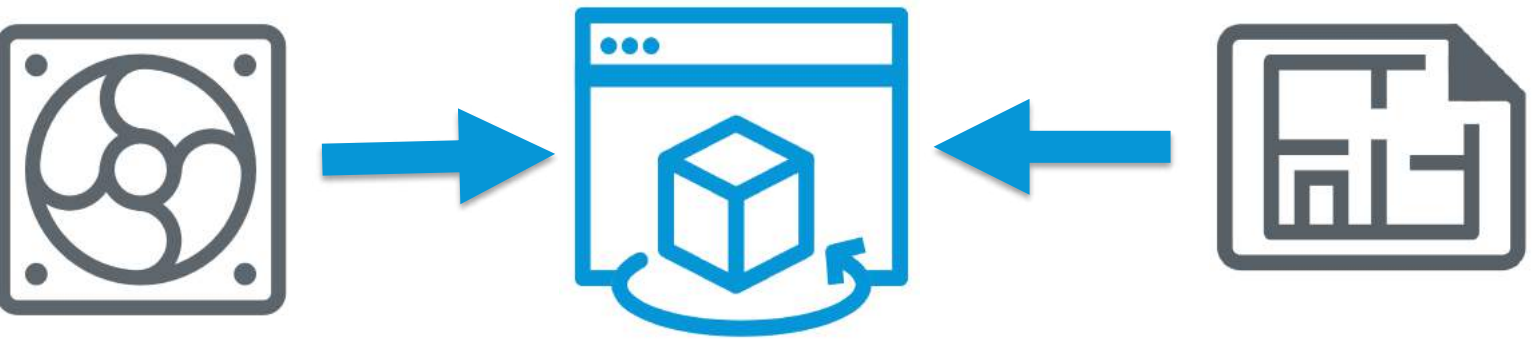


View Assets in Design Model

What it does: View asset data in the model viewer. You can filter assets by level and room. (We use Revit unique element ids saved as custom attributes to keep the association between assets to elements in Revit.)

Code: GitHub Sample (TBD)

Author: Eason Kang, Autodesk




DETAILS		ISSUES		CHECKLISTS		ATTACHMENTS	
Asset ID		521858					
Category		Air Terminals > ... > 600 x 600 Face 300 x 300 Connection					
Description		Unspecified					
Barcode		Unspecified					
Location		Level 2 > WC D I					
Serial number		Unspecified					
Submittal		Unspecified					
Purchase order		Unspecified					
Purchase date		Unspecified					
Installation date		Unspecified					
Warranty start date		Unspecified					
Warranty end date		Unspecified					
Expected life (years)		Unspecified					
Installed by		Unspecified					
Spec section		Unspecified					
Manufacturer		Unspecified					
Model		Unspecified					
External Id		f056ea9d-8fba-434e-80ce-46b4df0ea740-0007f682					

Asset Tree		Details	
All Categories		Asset ID	
Air Terminals		Category	
Electrical Equipment		Location	
Electrical Fixtures		521858	
Lighting Devices		Air Terminals > M_ Exhaust Grill > 600 x 600 Face 300 x 30...	
Lighting Fixtures		Level 2 > WC D I	
Mechanical Equipment		442138	
		Air Terminals > M_ Exhaust Grill > 600 x 600 Face 300 x 30...	
		Level 2 > WC D II	
		521663	
		Air Terminals > M_ Exhaust Grill > 600 x 600 Face 300 x 30...	
		Level 2 > WC H I	
		442050	
		Air Terminals > M_ Exhaust Grill > 600 x 600 Face 300 x 30...	
		Level 2 > WC H II	
		522330	
		Air Terminals > M_ Exhaust Grill > 600 x 600 Face 300 x 30...	
		Level 3 > WC D I	
		522312	
		Air Terminals > M_ Exhaust Grill > 600 x 600 Face 300 x 30...	
		Level 3 > WC H I	
		431155	
		Air Terminals > M_ Return Diffuser > 600 x 600 Face 300 x ...	
		Level 2 > Admin	
		430655	
		Air Terminals > M_ Return Diffuser > 600 x 600 Face 300 x ...	
		Level 2 > Archive	
		431276	
		Air Terminals > M_ Return Diffuser > 600 x 600 Face 300 x ...	
		Level 2 > Cleaning	
		430663	
		Air Terminals > M_ Return Diffuser > 600 x 600 Face 300 x ...	
		Level 2 > Copy	
		431304	
		Air Terminals > M_ Return Diffuser > 600 x 600 Face 300 x ...	
		Level 2 > EDP I	
		431365	
		Air Terminals > M_ Return Diffuser > 600 x 600 Face 300 x ...	
		Level 2 > EDP I	
		430875	
		Air Terminals > M_ Return Diffuser > 600 x 600 Face 300 x ...	
		Level 2 > EDP II	
		430885	
		Air Terminals > M_ Return Diffuser > 600 x 600 Face 300 x ...	
		Level 2 > EDP II	



Developer Resources

- Documentation
- Code samples on GitHub
- Postman collection

AUTODESK
FORGE

Success Stories

Solutions ▾

Getting Started

Documentation

Community ▾

Support ▾

Pricing

Q

▾ API Reference

▾ HTTP Specification

> Admin

▾ Assets

▾ Assets

GET assets

POST assets:batch-get

▾ Asset-Statuses

GET asset-statuses

POST asset-statuses:batch-get

▾ Categories

GET categories

POST categories:batch-get

▾ Custom-Attributes

GET custom-attributes

POST custom-attributes:batch-get

GET categories/:categoryId/custom-attributes

▾ Status-Step-Sets

GET status-step-sets

GET categories/:categoryId/status-step-set

Get all Assets paginated

GET

assets

Get all Assets paginated

Resource Information

Method and URI

GEThttps://developer.api.autodesk.com/bim360/assets/v1/projects/:projectId

Authentication Context

user context required

Required OAuth Scopes

data:read

Data Format

JSON

Request

Headers

What's Next



Public Beta

Almost there

Open API access to all
partners

[Get feedback](#)

[Webinars/Accelerators](#)

Public Release

TBD

Production level
release

Post Release

Continuous Updates
and enhancement

Private Beta

We are here

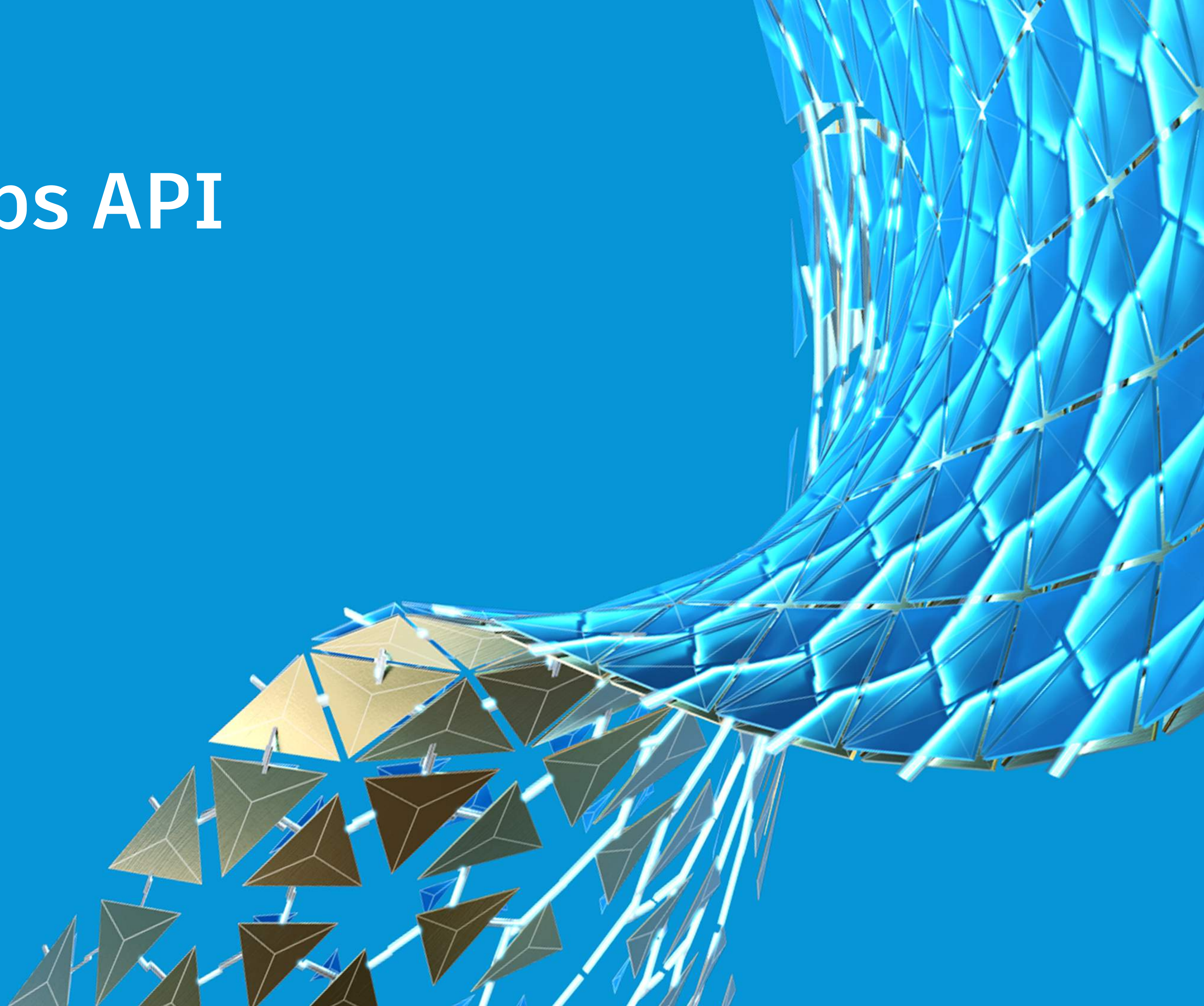
Fine tuning

Documentation

Samples

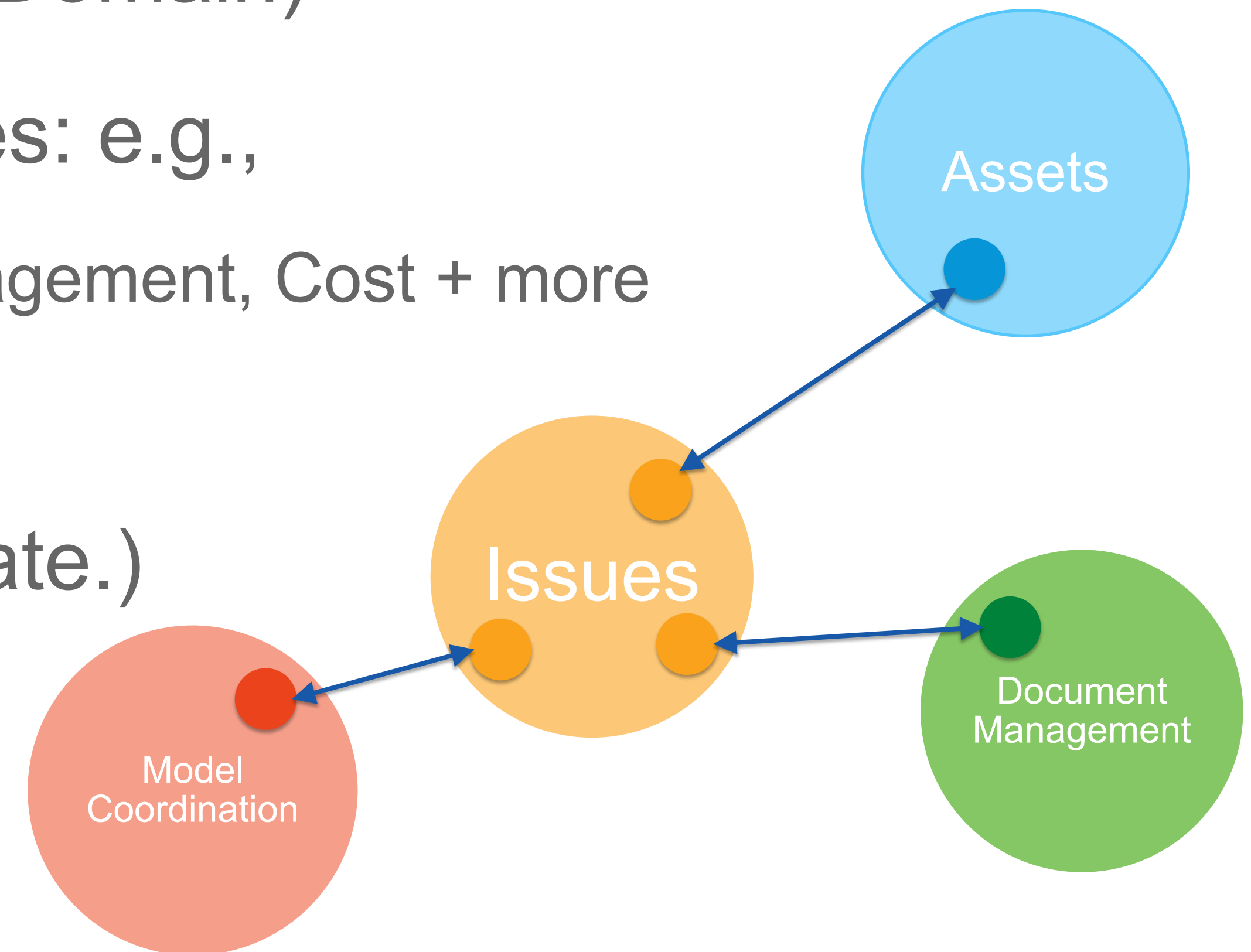
Select partnership

Relationships API



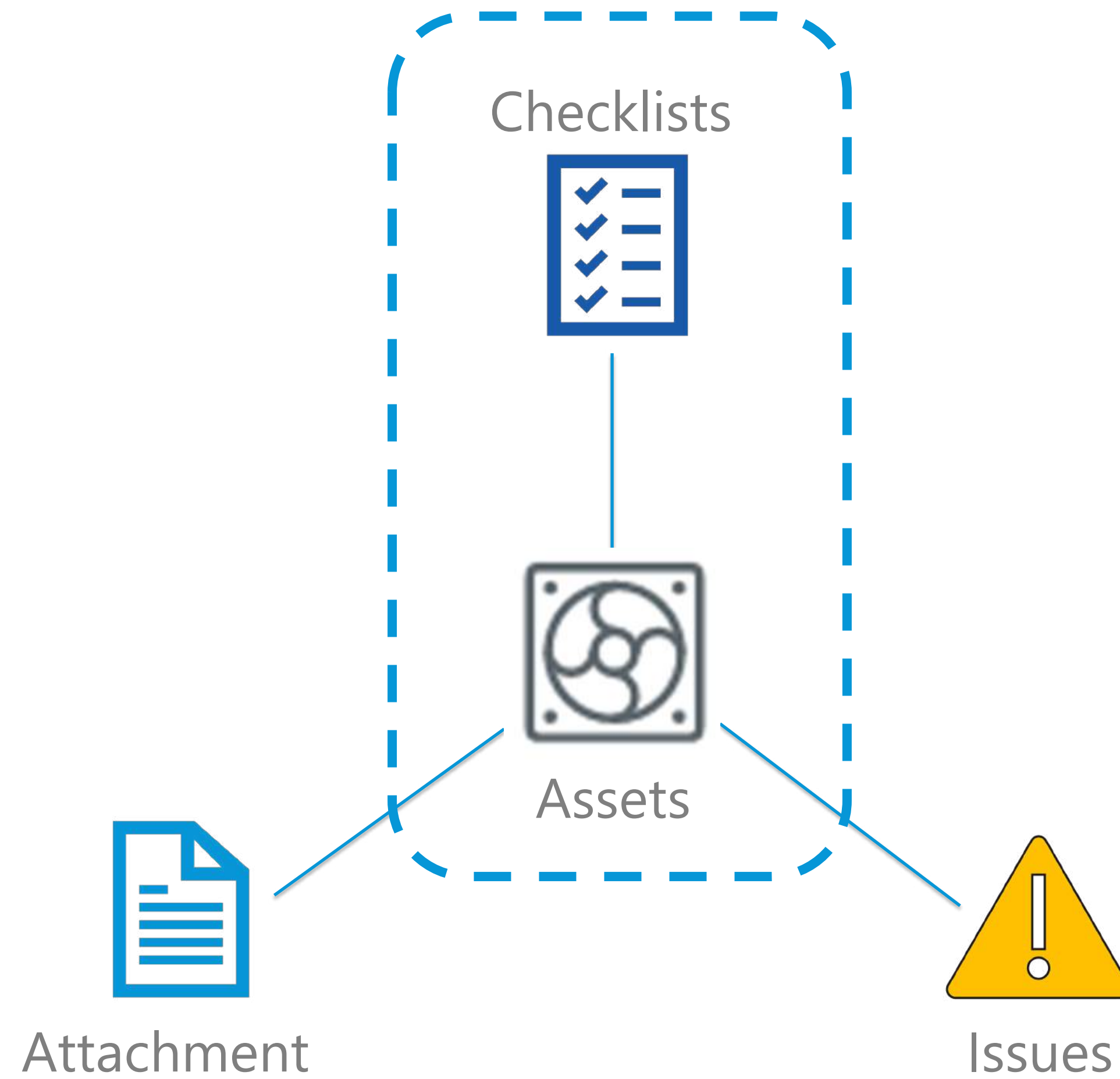
Relationships API

- Represent links between items (Entity) that reside in different functional components (Domain)
- Used in BIM 360 by various modules: e.g.,
 - Model Coordination, Assets, Field Management, Cost + more
 - Older implementation may not
- Read-only. (Domain function to create.)
- Publicly available today

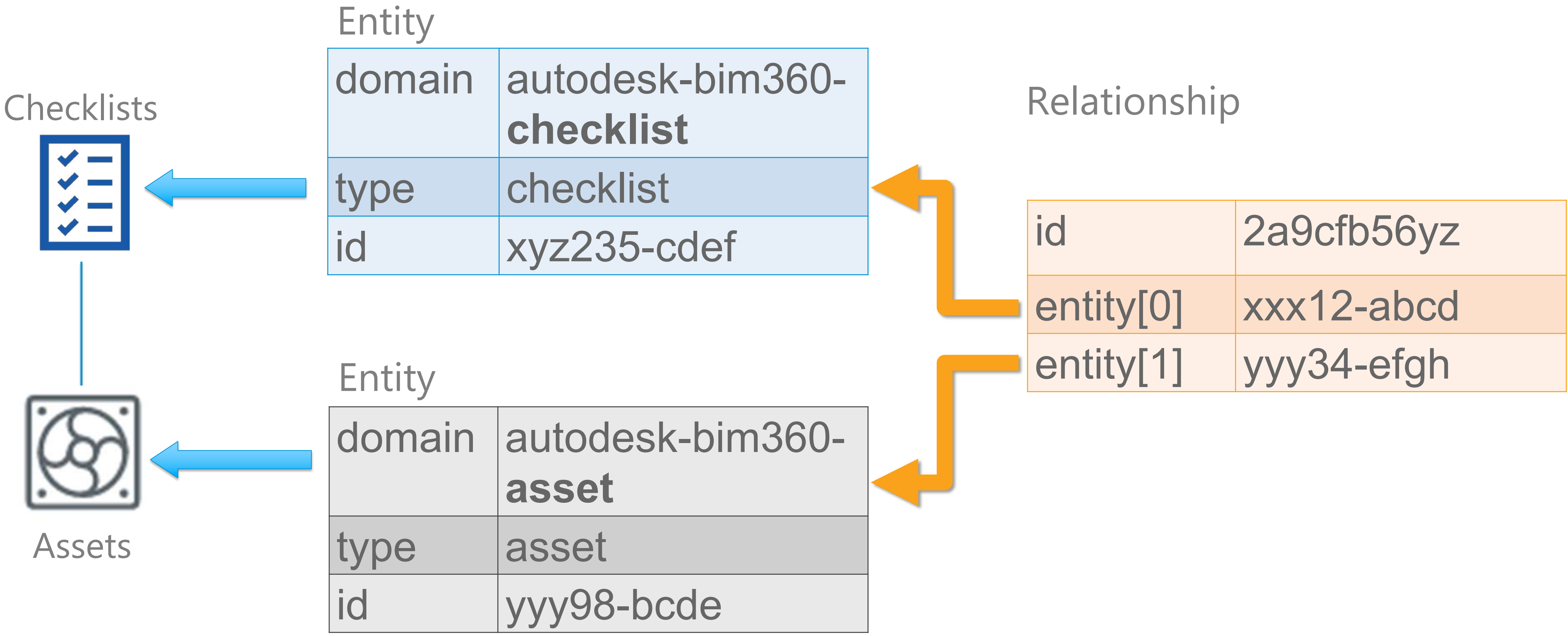


Relationships API

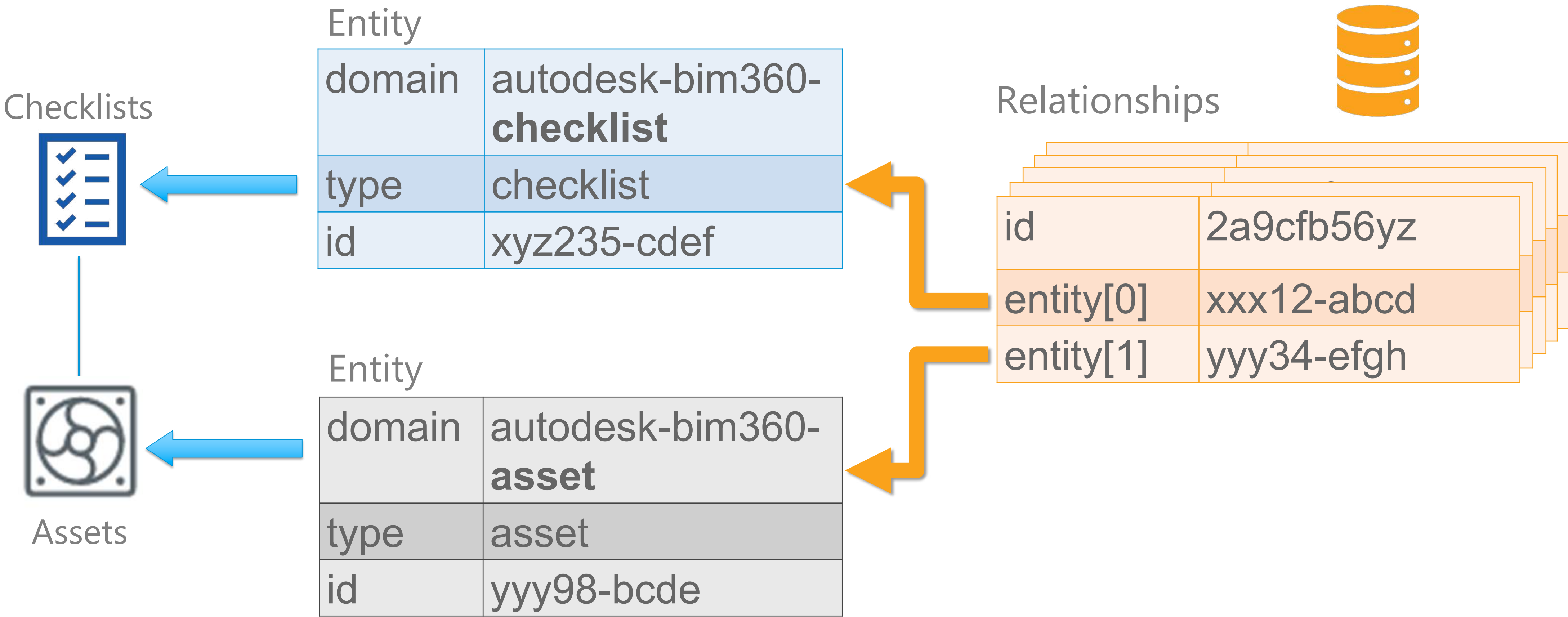
Example



Relationships API



Relationships API



Relationships API

Category	Endpoints
Search	GET relationships/:relationshipId
	POST relationships:batch
	GET relationships:search
	POST relationships:intersect
Sync	POST relationships:sync
	POST relationships:syncStatus

Relationships API

Category	Endpoints
Search	GET relationships/:relationshipId
	POST relationships:batch
	GET relationships:search
Sync	POST relationships:intersect
	POST relationships:sync
	POST relationships:syncStatus

Get relationship(s) from id(s)

```
JSON
{
  id : "79835e9e-ab4c-4c43-b480-a7ba54196e6e"
  createdOn : "2020-10-03T20:53:14.268952+00:00"
  isReadOnly : true
  isService : true
  isDeleted : false
  entities : [
    0
    {
      createdOn : "2020-10-03T20:53:14.175205+00:00"
      domain : "autodesk-bim360-checklist"
      type : "checklist"
      id : "569859"
    }
    1
    {
      createdOn : "2020-10-03T20:49:21.651508+00:00"
      domain : "autodesk-bim360-asset"
      type : "asset"
      id : "f972c095-d6b2-4fd3-ae1c-70ef6061c8af"
    }
  ]
}
```


Relationships API

Category	Endpoints
Search	GET relationships/:relationshipId
	POST relationships:batch
	GET relationships:search
	POST relationships:intersect
Sync	POST relationships:sync
	POST relationships:syncStatus

Search rel's that match the given criteria (domain, type, ids, date). e.g.,

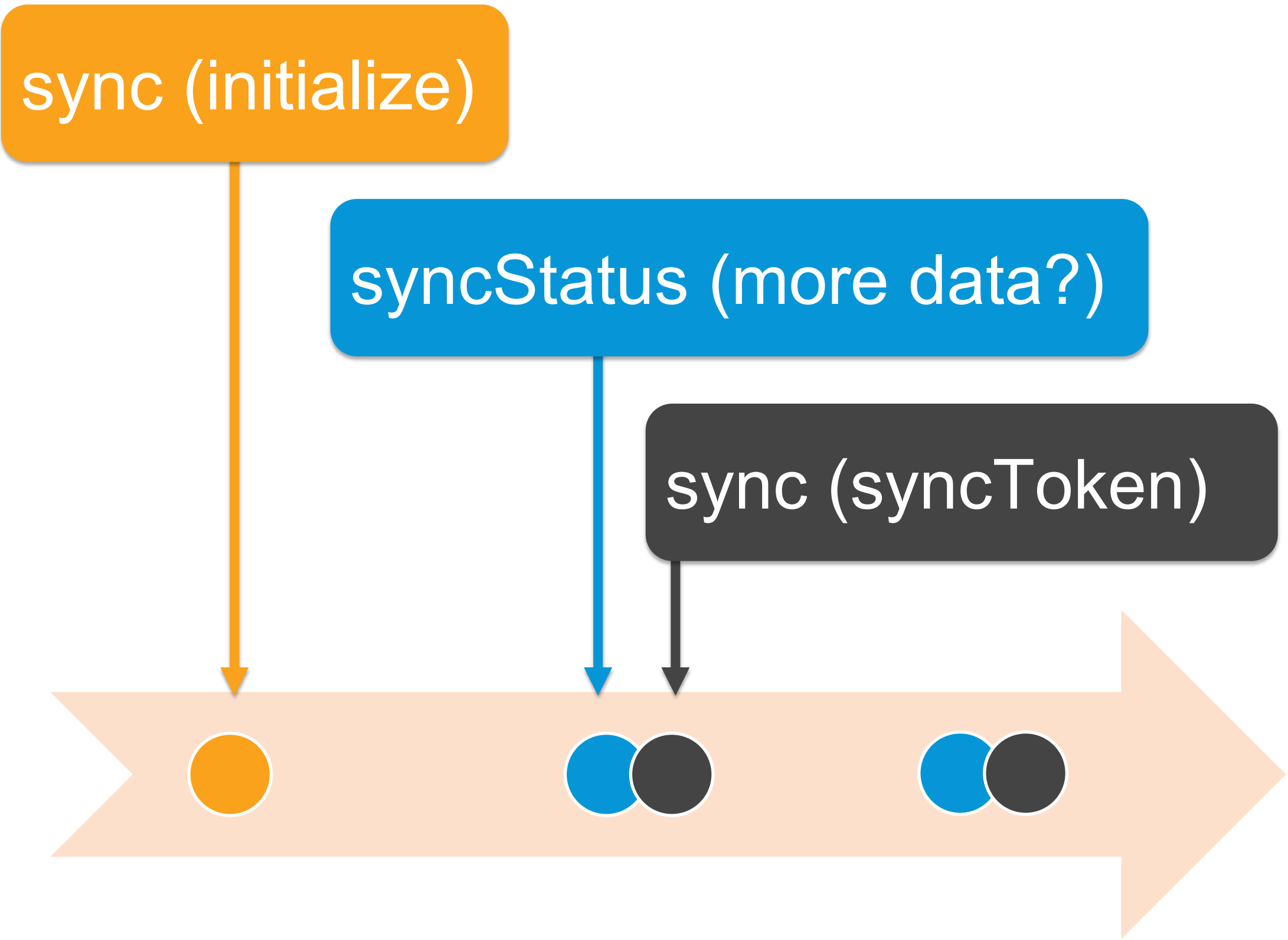
“Give me all the relationships between assets and checklists”

```
GET relationships:/search?  
domain=autodesk-bim360-asset  
&withDomain=autodesk-bim360-  
checklist
```


Relationships API

Category	Endpoints
Search	GET relationships/:relationshipId
	POST relationships:batch
	GET relationships:search
	POST relationships:intersect
Sync	POST relationships:sync
	POST relationships:syncStatus

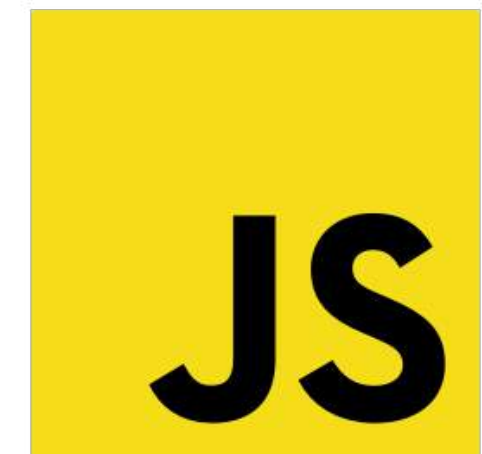
Used to sync rel. data and external repository.



Developer Resources

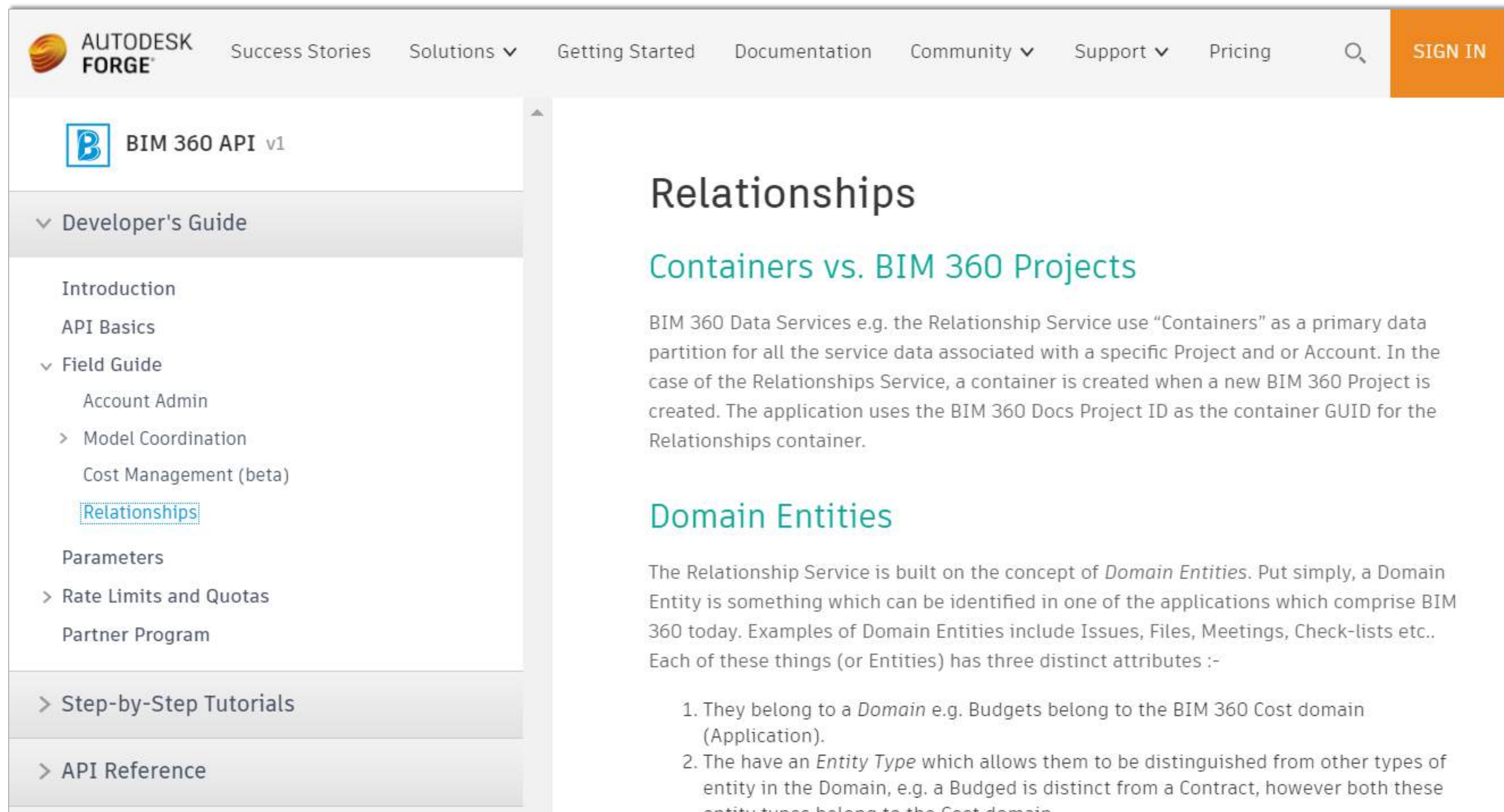
Relationship API SDK

- .NET Core nuget packages
- JavaScript and Node.js





Developer Resources

Documentation



The screenshot shows the Autodesk Forge BIM 360 API v1 documentation page. The top navigation bar includes the Autodesk Forge logo, links for Success Stories, Solutions, Getting Started, Documentation, Community, Support, Pricing, a search icon, and a SIGN IN button. The left sidebar contains a table of contents for the BIM 360 API v1, with sections like Developer's Guide, Introduction, API Basics, Field Guide (including Account Admin, Model Coordination, Cost Management, Relationships, Parameters, Rate Limits and Quotas, and Partner Program), Step-by-Step Tutorials, and API Reference. The 'Relationships' link is highlighted. The main content area is titled 'Relationships' and features a sub-section 'Containers vs. BIM 360 Projects' with a paragraph explaining that BIM 360 Data Services use 'Containers' as a primary data partition. Below this is another sub-section 'Domain Entities' with a paragraph explaining the concept of Domain Entities and a list of three attributes: 1. They belong to a Domain (e.g., Budgets belong to the BIM 360 Cost domain), 2. They have an Entity Type which allows them to be distinguished from other types of entity in the Domain (e.g., a Budgeted is distinct from a Contract), and 3. They belong to a specific Domain (e.g., a Budgeted belongs to the Cost domain).

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 **BIM 360 API v1**

▼ Developer's Guide

- Introduction
- API Basics
- ▼ Field Guide
 - Account Admin
 - > Model Coordination
 - Cost Management (beta)
 - [Relationships](#)
 - Parameters
 - > Rate Limits and Quotas
 - Partner Program
- > Step-by-Step Tutorials
- > API Reference

Relationships

Containers vs. BIM 360 Projects

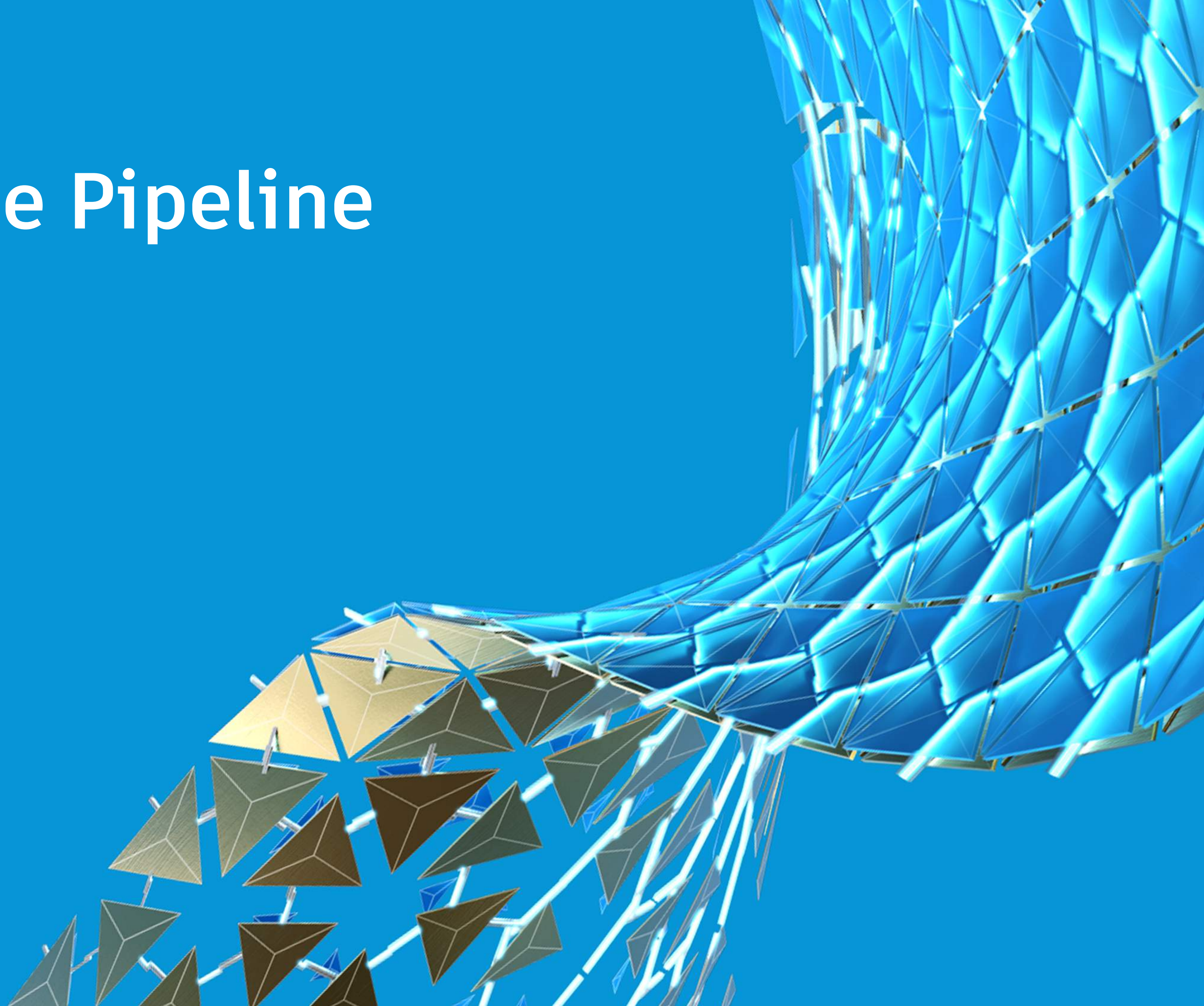
BIM 360 Data Services e.g. the Relationship Service use “Containers” as a primary data partition for all the service data associated with a specific Project and or Account. In the case of the Relationships Service, a container is created when a new BIM 360 Project is created. The application uses the BIM 360 Docs Project ID as the container GUID for the Relationships container.

Domain Entities

The Relationship Service is built on the concept of *Domain Entities*. Put simply, a Domain Entity is something which can be identified in one of the applications which comprise BIM 360 today. Examples of Domain Entities include Issues, Files, Meetings, Check-lists etc.. Each of these things (or Entities) has three distinct attributes :-

1. They belong to a *Domain* e.g. Budgets belong to the BIM 360 Cost domain (Application).
2. They have an *Entity Type* which allows them to be distinguished from other types of entity in the Domain, e.g. a Budgeted is distinct from a Contract, however both these entity types belong to the Cost domain.
3. They belong to a specific Domain (e.g. a Budgeted belongs to the Cost domain).

What's in the Pipeline



What's in the Pipeline

Document Management

- Custom attributes definition, review, controls on translation/viewables

Assets

- Initial release!

Cost Management

- Payments, billing period, main contracts, schedule of values, expenses^{*1}

Admin

- Project API: fill gaps, add users, update companies
- Activities

Model Coordination

- Alignments, aggregation, indexing enhancements^{*1}
- 2LO, webhooks

Field Managements

- Fill gaps: checklists, RFI, issues

^{*1}) prioritize based on feedbacks

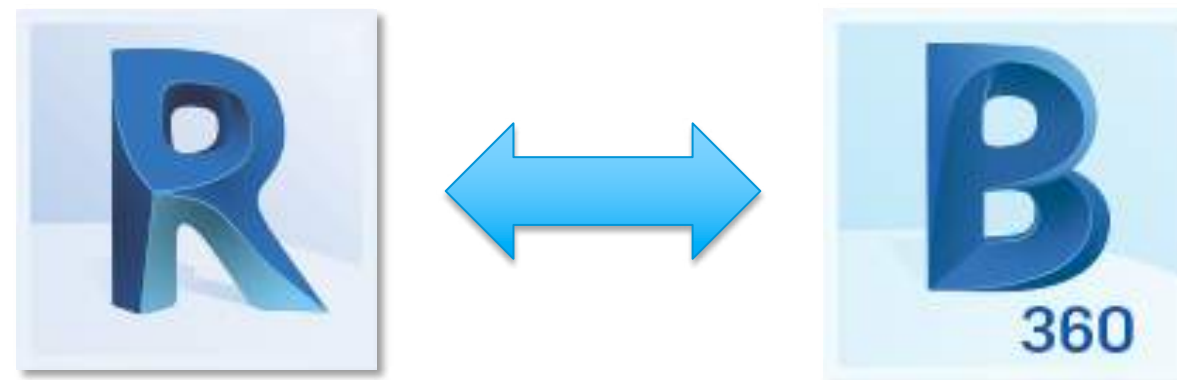
What's in the Pipeline

Insight

- Data connector

Design

- cloud model/
worksharing^{*2}



*2) Revit API



AUTODESK
CONSTRUCTION
CLOUD™

Qué sigue?

Pre AU

This recording

Development

AU Virtual

11/17~ We are here

Share the latest at
class QA session and
Answer Bar

Product Release

Early 2021

Webinars

API Release

Shortly after product
release

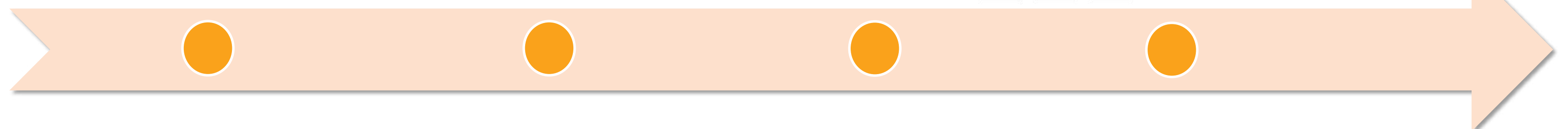
Webinars

Accelerators

Get feedback



Monthly Update Webinars



Resumen

- Autodesk Construction Cloud
- BIM 360 & API Status and Updates
- Assets API
- Relationship API
- In Pipeline

Preguntas?

Join me at

Class Q&A session (CS471435)

Forge Answer Bar

Muchas Gracias!



@autodeskforge @afrojme



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