



BIM 360 API アップデート と今後の予定

原田 美佳子

AEC シニアマネージャー デベロッパ テクニカル サービス

Autodesk | @Mikako_harada



原田 美佳子

AEC シニアマネージャー
デベロッパ テクニカル サービス
Autodesk

米国カーネギーメロン大学で博士号を習得。ゼネラルモータース人工知能認知システムグループ、スイス連邦工科大学研究員を経て、現在米国オートデスク Forge AECマネージャーとして世界中のパートナーを支援する役割に従事。詳細 [blog:](https://fieldofviewblog.wordpress.com/)
<https://fieldofviewblog.wordpress.com/>

免責事項

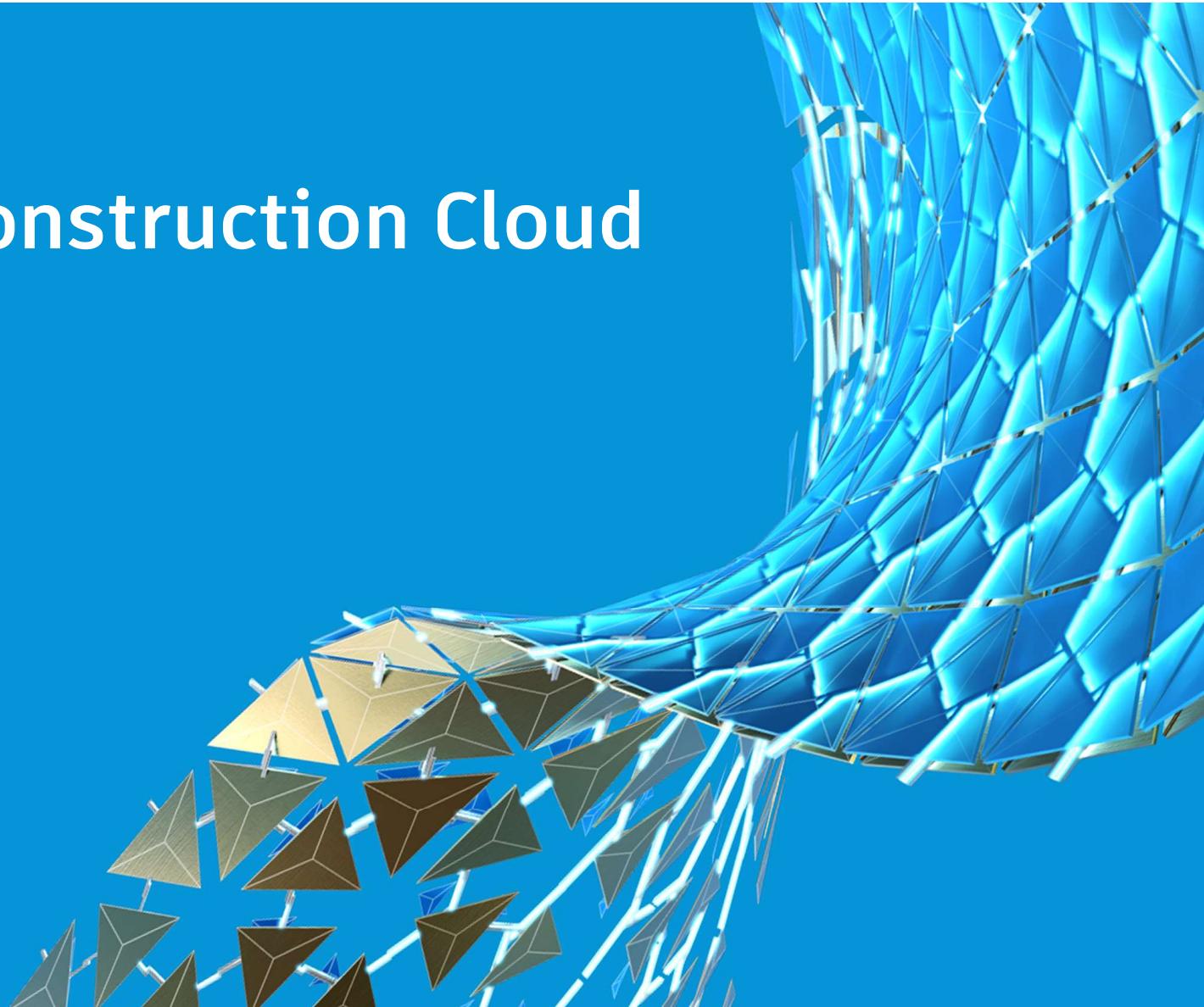
本セッションでは、当社の既存または新規の製品やサービスについて計画中、または今後の開発について述べる内容が含まれています。これらのステートメントは製品、サービス、または機能の将来の利用可能性について約束や保証を意図するものではありません。私たちに現時点で知らされている要因に基づいて、単に現在の計画を反映するものです。これらの計画的および今後の開発努力は、予告なしに変更されることがあります。購入に関する決定は、これらのステートメントに依存することがないようにお願い申し上げます。このレコーディングは2020年10月12日に行われており、発生した事象またはそれらが作成された日以降に変更される状況を反映しているため、将来予想される変更に関して記述を更新する義務はないものとします。このプレゼンテーションが同日以降にレビューされた場合、ステートメントには最新の情報や正確な情報が含まれない可能性があります。

2020年10月12日

Agenda

- Autodesk Construction Cloud 概要
- BIM 360 & API ステータスとアップデート
- アセット(Assets) API
- リレーションシップ(Relationships) API
- 今後の予定

Autodesk Construction Cloud





AUTODESK CONSTRUCTION CLOUD™



Assemble



BIM 360



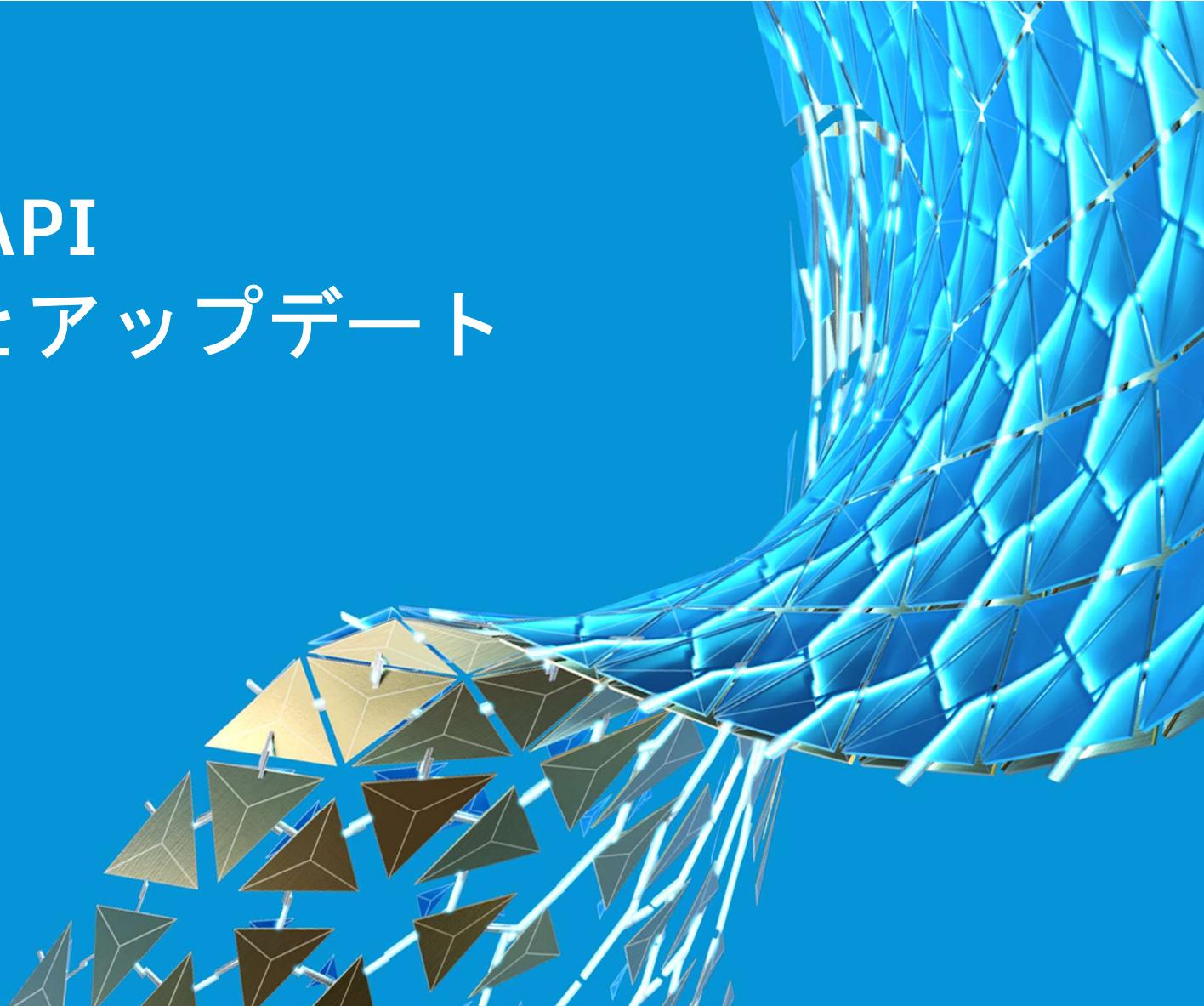
BuildingConnected



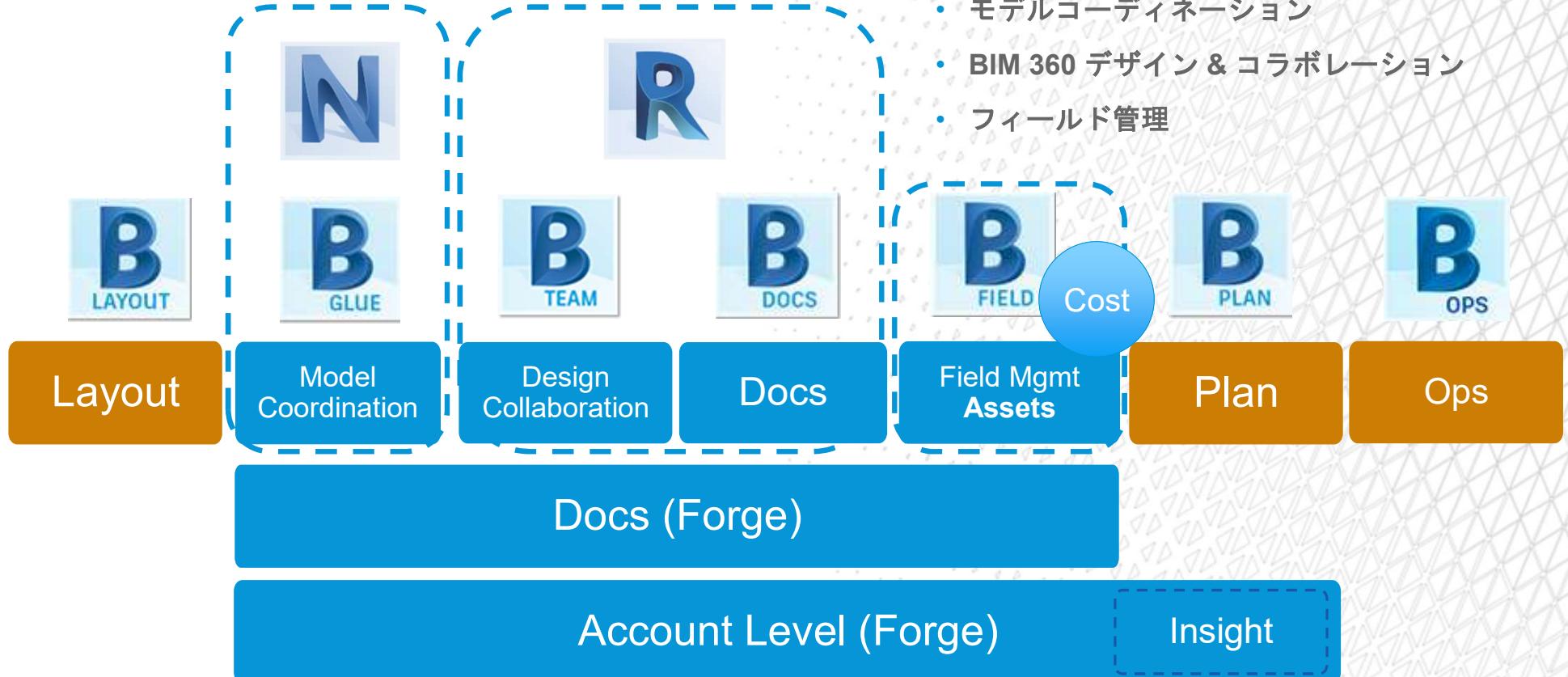
PlanGrid

BIM 360 & API

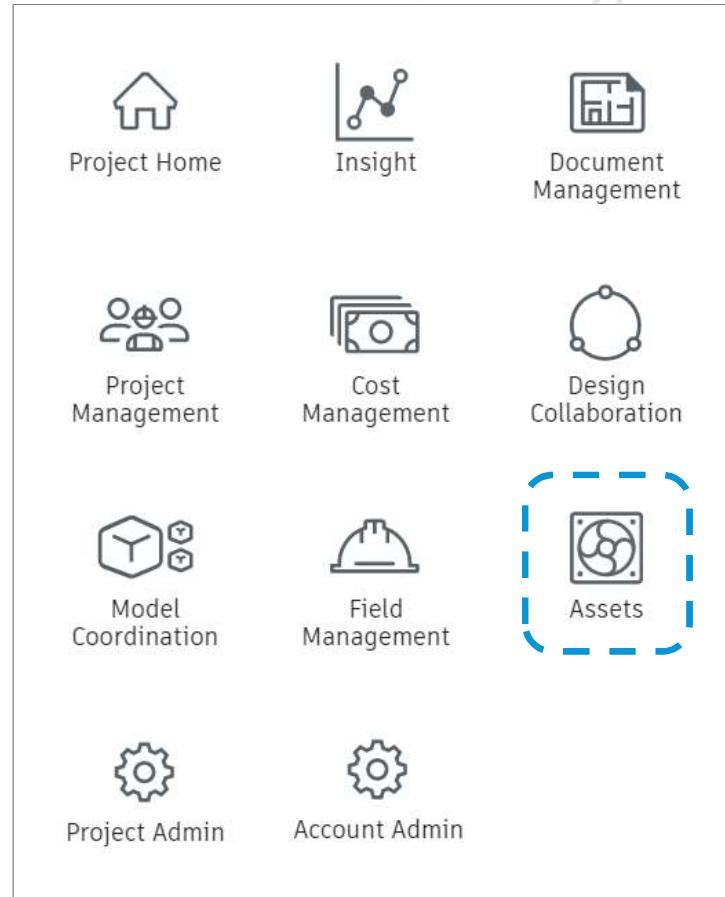
ステータスとアップデート



BIM 360 ファミリー プロダクト



BIM 360 モジュール





Document Management

ドキュメント管理

- Data Management API

- API 機能強化:



- フォルダーのアクセス許可 (r/w)
- カスタム属性値 (r/w)^{*1}

*1) 定義は次の予定

The screenshot shows the Autodesk BIM 360 Document Management interface. At the top, there's a navigation bar with the Autodesk logo, the text "AUTODESK BIM 360", "United Construction", "Pacific Center Campus", and dropdown menus for "FOLDERS", "REVIEWS", "TRANSMITTALS", and "ISSUES". Below the navigation is a search bar with the placeholder "Search for documents".
The main area is titled "Document Management" and has a "View by" section with "Folders" and "Sets" tabs, currently set to "Folders". On the left, there's a sidebar with a tree view of document categories:

- Sheets and Models
 - BD - Owner Review
 - Contract Drawings
- Shared
 - BNIM
 - Hope Engineers
 - LandLAB
 - MA Engineers
 - Michael Wall Engineers
 - Sheets and Models.5
 - Survey Data

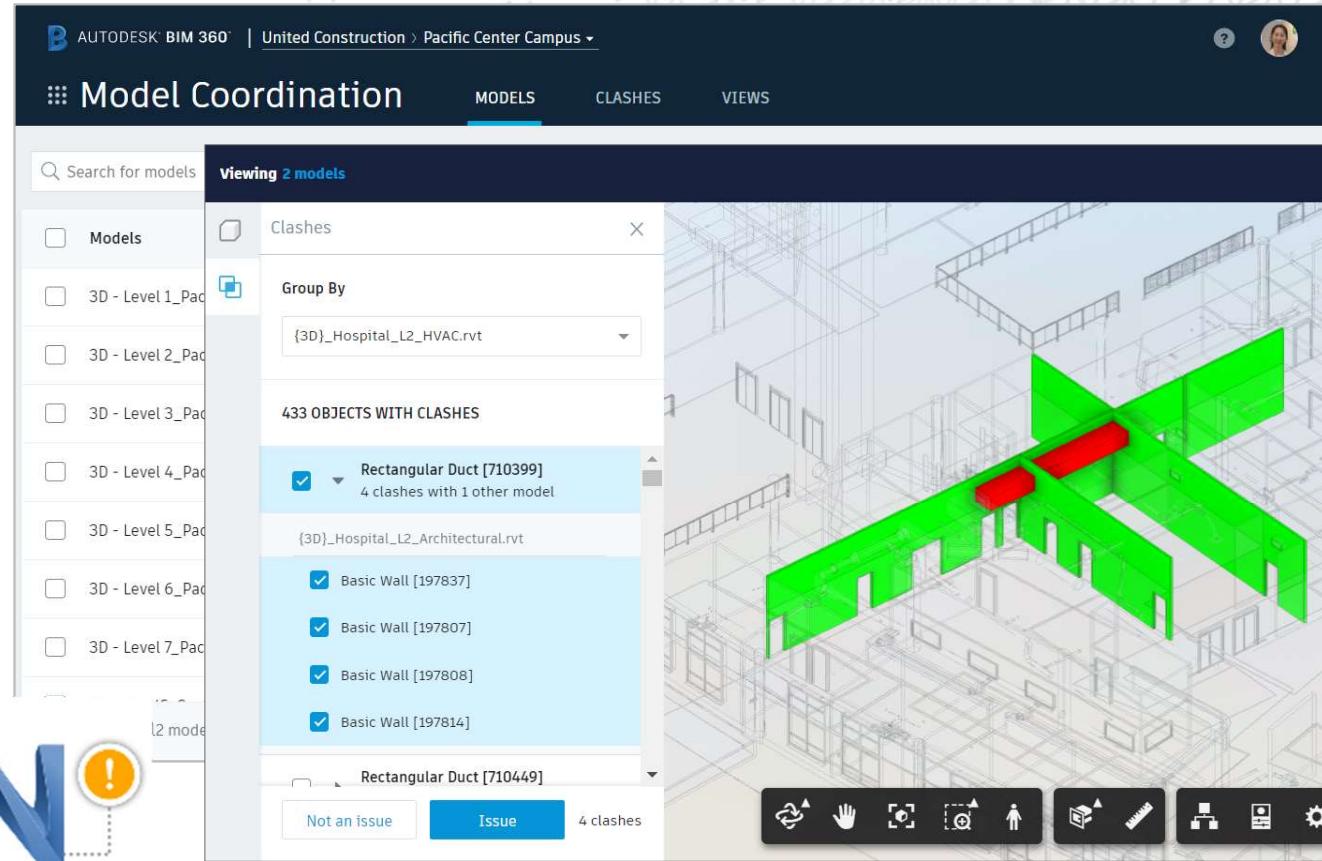
On the right, a list of 6 items is displayed in a table format:

Name	Title	Set
BNIM.1	--	--
{3D}_PacificCenter_AY_Fire.rvt		
{3D}_PacificCenter_AY_Mech.rvt		
{3D}_PacificCenter_AY_Plmg.rvt		
{3D}_PacificCenter_AZ_Fire.rvt		
{3D}_PacificCenter_AZ_Mech.rvt		



モデルコーディネーション

- Navisworks + Model Coordination の統合
- API機能強化
 - オフィシャルにリリース！
 - プロジェクトファイルフォルダのサポート
 - リレーションシップ(Relationships) API





Cost Management

コスト管理

API 機能強化

- 予算コードのテンプレート
- 外部関係の作成/更新/検索^{*1}



どちらもリクエストに基づいています！

The screenshot displays two views of the Autodesk BIM 360 Cost Management interface. The left view shows a list of budget items with columns for Number and Name. The right view shows a detailed budget trend chart and a table of financial data.

Budget Trend (Left View):

Category	Original	Revised	Projected
StructuralSteelFraming	1,400k	1,400k	1,400k
ELECTRICAL	1,000k	1,000k	1,000k
StructuralCabling	1,000k	1,000k	1,000k
MassConcrete	1,000k	1,000k	1,000k
ConcreteCuttingandBor...	1,000k	1,000k	1,000k

Cost Trend (Right View):

Category	Original	Forecast
StructuralSteelFraming	1,400k	1,400k
ELECTRICAL	1,000k	1,000k
StructuralCabling	1,000k	1,000k
MassConcrete	1,000k	1,000k
ConcreteCuttingandBor...	1,000k	1,000k

Financial Data Table:

Budget Code	Budget Name	Supplier Contract	Income				
			Original Budget	Internal Budget Transfer	Approved Owner Changes	Revised Budget	Pending Owner Changes
012100	Allowances	*** Trailer	6,640,200.00	0.00	2,500.00	6,642,700.00	0.00
015100	Temporary...	*** Utilities	100,000.00	(5,000.00)		95,000.00	
037000	MassConcr...	*** Insurance	40,200.00			40,200.00	
038000	ConcreteCu...	*** RoofandWallCla...	1,000,000.00			1,000,000.00	
051200	StructuralS...	*** Substructure	1,500,000.00			1,500,000.00	
051600	StructuralC...	*** Substructure	1,000,000.00			1,000,000.00	

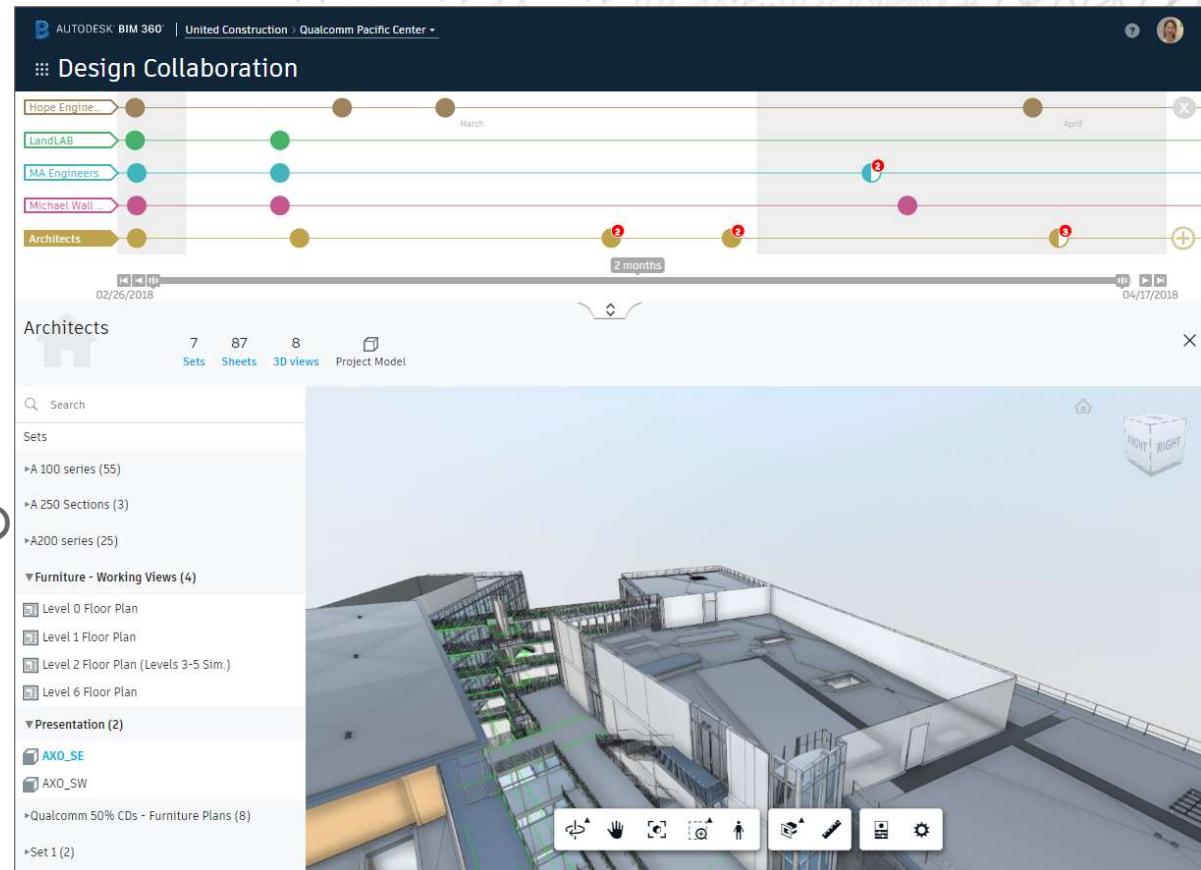
*1) ドキュメントの更新待ち



デザインコラボレーション

更新

- Revit Cloud Worksharing
- Webhookイベントのサンプル：
<https://github.com/Autodesk-Forge/forge-bim360notifier>
- ヨーロッパのデータセンターのサポート





Project Home

プロジェクトホーム

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

Safety Event Form

General Space - Punch

Above Ceiling Inspection

Above Ceiling Inspection

Above Ceiling Inspection

May 31, 2018

5 of 134 Open Checklists | View all (134)

Open RFIs and Submittals

Overdue Due in the next 5 days Due after 5 days

44 RFIs

30 2 12

106 Submittal Items

15 91

Document Issue Trend

Added Closed

25
20
15
10
5
-5

AUGUST SEPTEMBER OCTOBER NOVEMBER DECEMBER JANUARY

パートナー カード

E-mail to:

bim360partnercard@autodesk.com



Insight

	schemas
	admin_account_services.csv
	admin_accounts.csv
	admin_business_units.csv
	admin_companies.csv
	admin_project_companies.csv
	admin_project_services.csv
	admin_project_user_roles.csv
	admin_project_user_services.csv
	admin_projects.csv
	admin_roles.csv
	admin_users.csv
	checklists_checklist_assignees.csv
	checklists_checklist_items.csv
	checklists_checklist_items_answers.csv
	checklists_checklist_section_assignees.csv
	checklists_checklist_signatures.csv
	checklists_checklists.csv
	dailylogs_weather_logs.csv
	issues_attachments.csv
	issues_comments.csv
	issues_issue_subtypes.csv
	issues_issue_types.csv
	issues_issues.csv

AUTODESK BIM 360 | Autodesk Forge Partner Development →

Insight

RISK DESIGN QUALITY SAFETY DATA

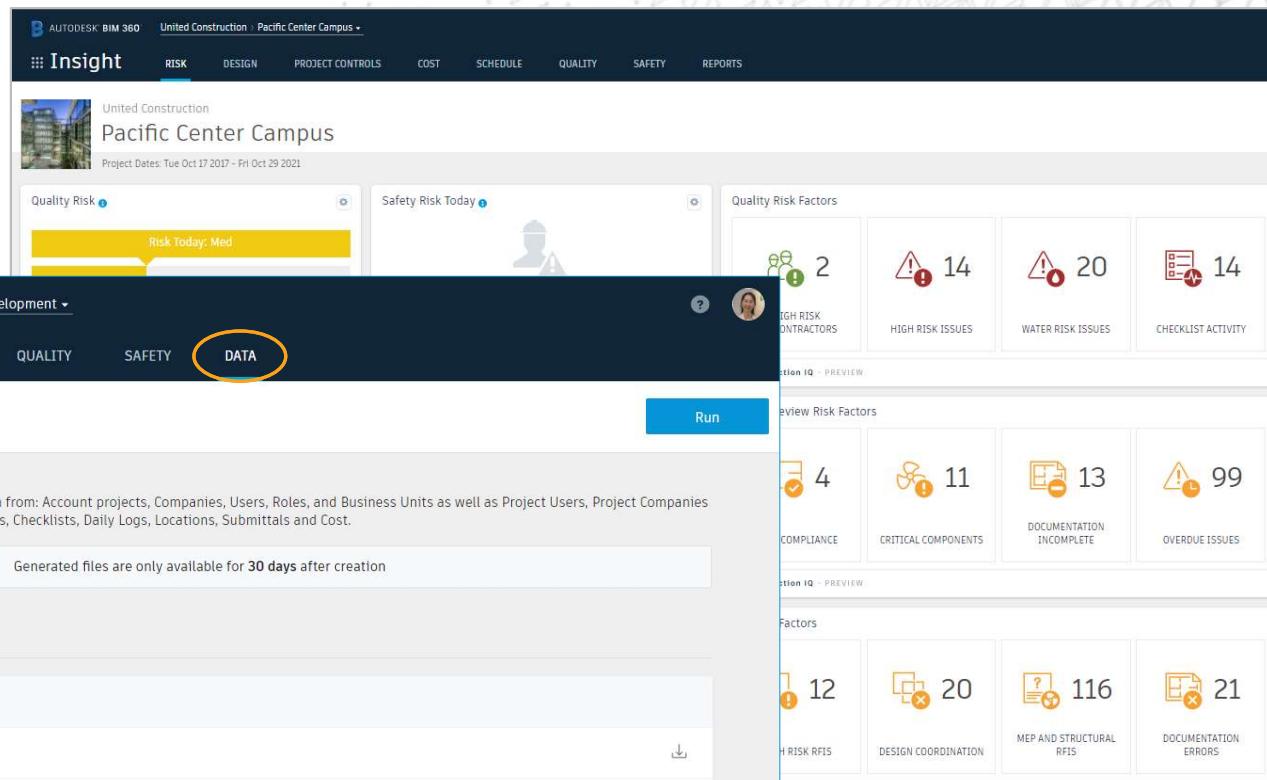
Data Connector [Preview](#) Run

The data connector will automatically extract data from: Account projects, Companies, Users, Roles, and Business Units as well as Project Users, Project Companies (including archived projects), Project Roles, Issues, Checklists, Daily Logs, Locations, Submittals and Cost.

Generated files are only available for **30 days** after creation

AVAILABLE EXTRACTIONS

Created	Download
May 7, 2020 3:54 PM	Download
May 7, 2020 2:38 PM	Download





Field Management

現場管理

The screenshot displays the Autodesk BIM 360 Field Management interface. At the top, there's a navigation bar with the Autodesk BIM 360 logo, the project name "United Construction > Pacific Center Campus", and user profile icons.

The main header says "Field Management". Below it, there are tabs for "TEMPLATES", "CHECKLISTS", "ISSUES" (which is underlined in blue), and "DAILY LOGS".

On the left, there's a sidebar with "Issues" and "Templates" tabs. Under "Issues", there's a search bar and a table with columns "ID" and "Type". The table lists several issues:

ID	Type
778	Commissioning
777	Coordination
776	Safety
775	Safety
774	Safety
773	Safety
772	Safety

On the right, a modal window is open for "Issue #750". The modal has tabs for "DETAILS", "ATTACHMENTS", and "ACTIVITY". The "DETAILS" tab is active, showing the following details:

- Issue**: #750
- Location**: elevator shaft
- Created by**: Manu Demo (Autodesk) on Feb 13, 2020
- Assigned to**: Manu Demo
- Type**: Safety > Safety Infraction
- Due Date**: Feb 13, 2020
- Owner**: Manu Demo
- Location**: Level 3
- Root Cause**: Unspecified
- Location Details**: Unspecified
- Linked document**: Unspecified

At the bottom right of the modal, there are "Export" and "Create Issue" buttons.



プロジェクト管理

API 更新

- RFI v2

The screenshot shows the Autodesk BIM 360 Project Management interface. At the top, there are tabs for 'RFIs', 'SUBMITTALS', and 'MEETINGS'. The 'RFIs' tab is selected. On the left, there is a list of RFIs with columns for 'Status' (all listed as 'SUBMITTED') and 'ID'. On the right, a detailed view of an RFI is open. The RFI has the title '#Unspecified'. It includes sections for 'DETAILS', 'ATTACHMENTS', and 'ACTIVITY'. The 'DETAILS' section contains the question 'Have you completed the work on this site?' and the answer 'Yes'. It also shows 'Assigned to Zohar Liran', 'Due date Mar 31, 2020', and impact information ('Cost impact Unspecified', 'Schedule impact Unspecified').



アセット(Assets)

AUTODESK® BIM 360™ | Autodesk Forge Partner Development > Forge Sandbox MH ▾

Assets ASSETS

Asset Tree X 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 ▾ X

DETAILS ISSUES CHECKLISTS ATTACHMENTS

Create Issue Add reference

Linked references

Issue OPEN #35 air handler installation issue

Issues/指摘事項

Document Management

The screenshot shows the Autodesk BIM 360 Document Management interface. At the top, there's a navigation bar with tabs for FOLDERS, REVIEWS, and ISSUES. Below it, a sidebar lists categories like Plans, Shop Drawings, and Project Files. The main area displays a 3D rendering of a hospital building and a grid of document thumbnails. A search bar at the top of the main area allows filtering by document type and status.

Field Management

The screenshot shows the Autodesk BIM 360 Field Management interface. It features a search bar and filters for Type and Status. The main list displays various issues such as 'Cracked floor tile', 'Stairwell hazard', and 'Incorrect lighting fixture'. On the right, a detailed view of issue #180 is shown, including fields for ID, Title, Location, Assigned to, Due Date, Type, Sub-type, Location, Owner, and Root Cause. The interface also includes tabs for ATTACHMENTS and ACTIVITY.

Model Coordination

The screenshot shows the Autodesk BIM 360 Model Coordination interface. It has tabs for MODELS and CLASHES. The CLASHES tab is active, displaying a report titled 'Viewing 2 models' with '433 OBJECTS WITH CLASHES'. A list on the left shows 'Rectangular Duct [710399]' and 'Basic Wall [197937]' as objects involved in clashes. The main area shows a 3D model of a hospital structure with green highlights indicating collision points. A legend at the bottom defines 'Not an issue', 'Issue', and '4 clashes'.



Navisworks BIM 360 Issues



Revit
Issues Add-in

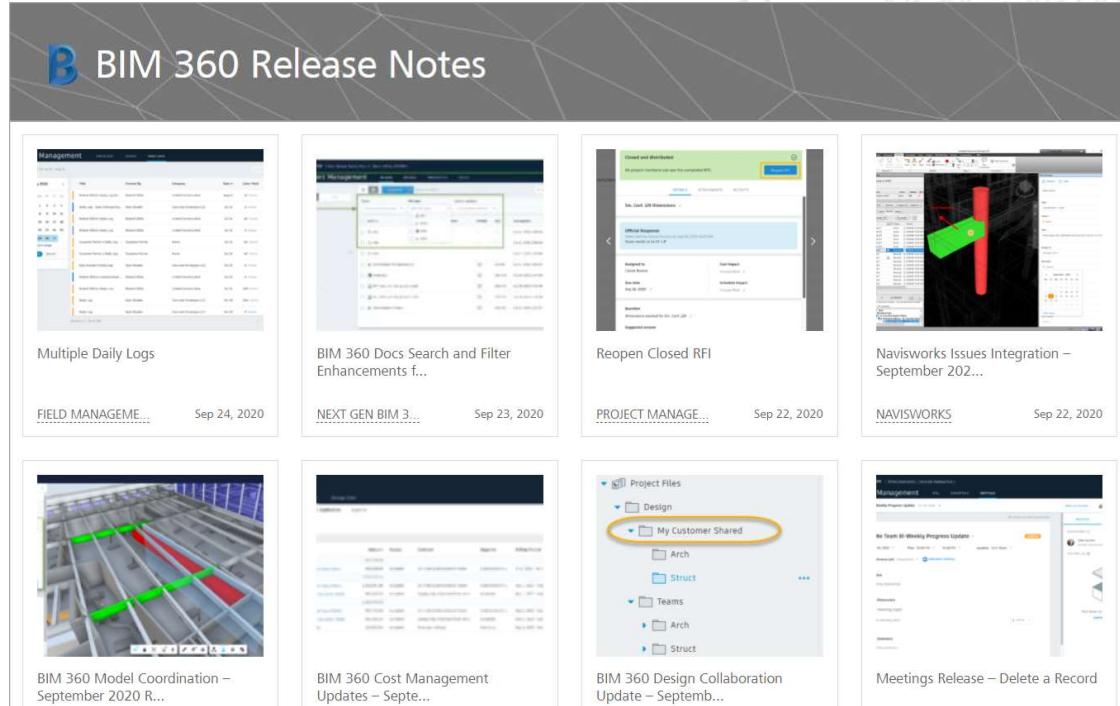
Design Collaboration

The screenshot shows the Autodesk BIM 360 Design Collaboration interface. It features a timeline at the top with various tasks and their progress. Below it, a sidebar shows 'Architects' and 'Sets'. The main area displays a 3D architectural model of a building under construction, with specific components highlighted in red and green.

BIM 360リリース ノート

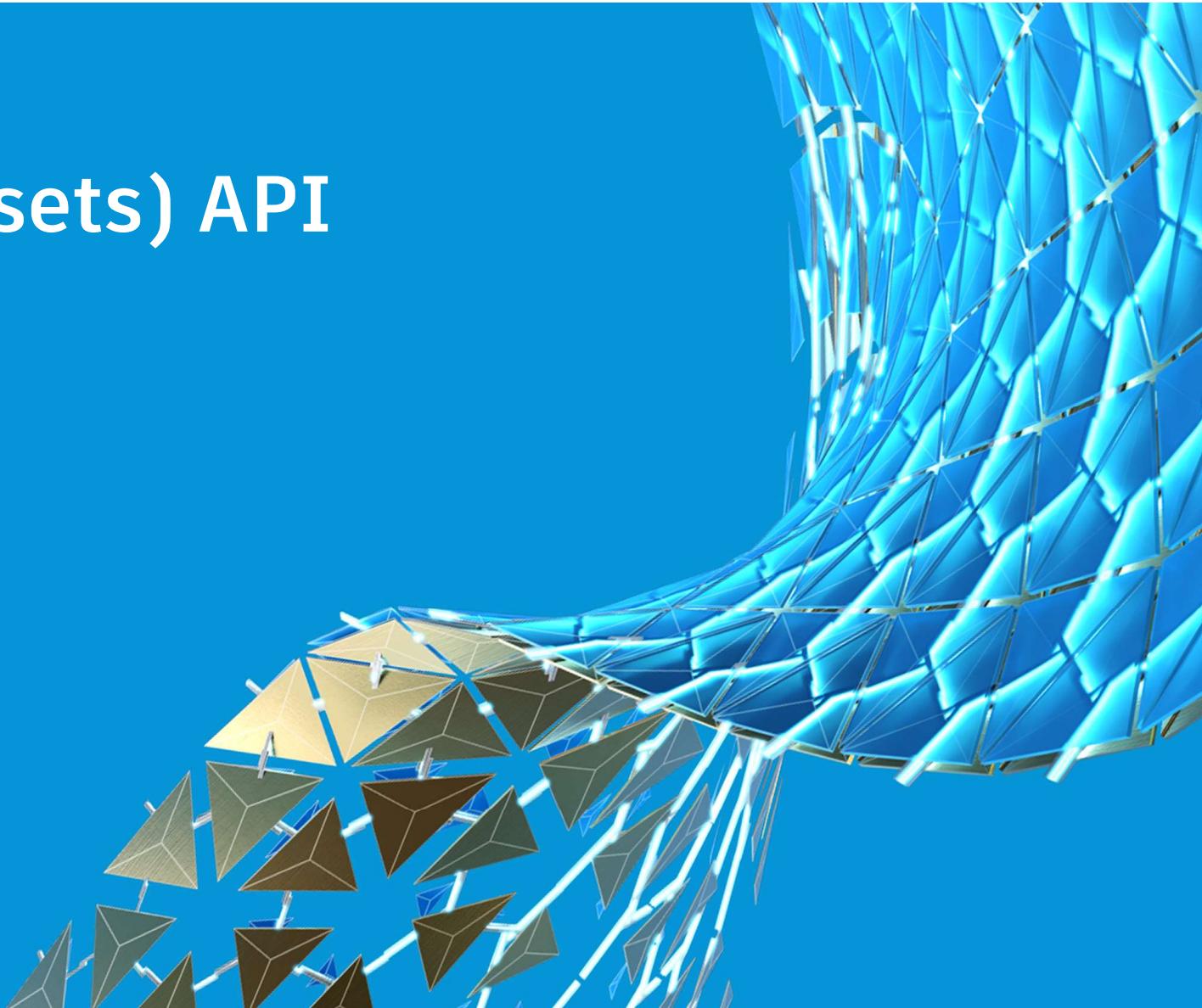
<https://blogs.autodesk.com/bim360-release-notes/2020>

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



アセット(Assets) API

リリース予定



アセット(Assets) API

プライベートベータ（読み取り）現在

- アセットアイテム
- カスタム属性
- カテゴリ
- ステータスセット

パブリックベータ 近い将来

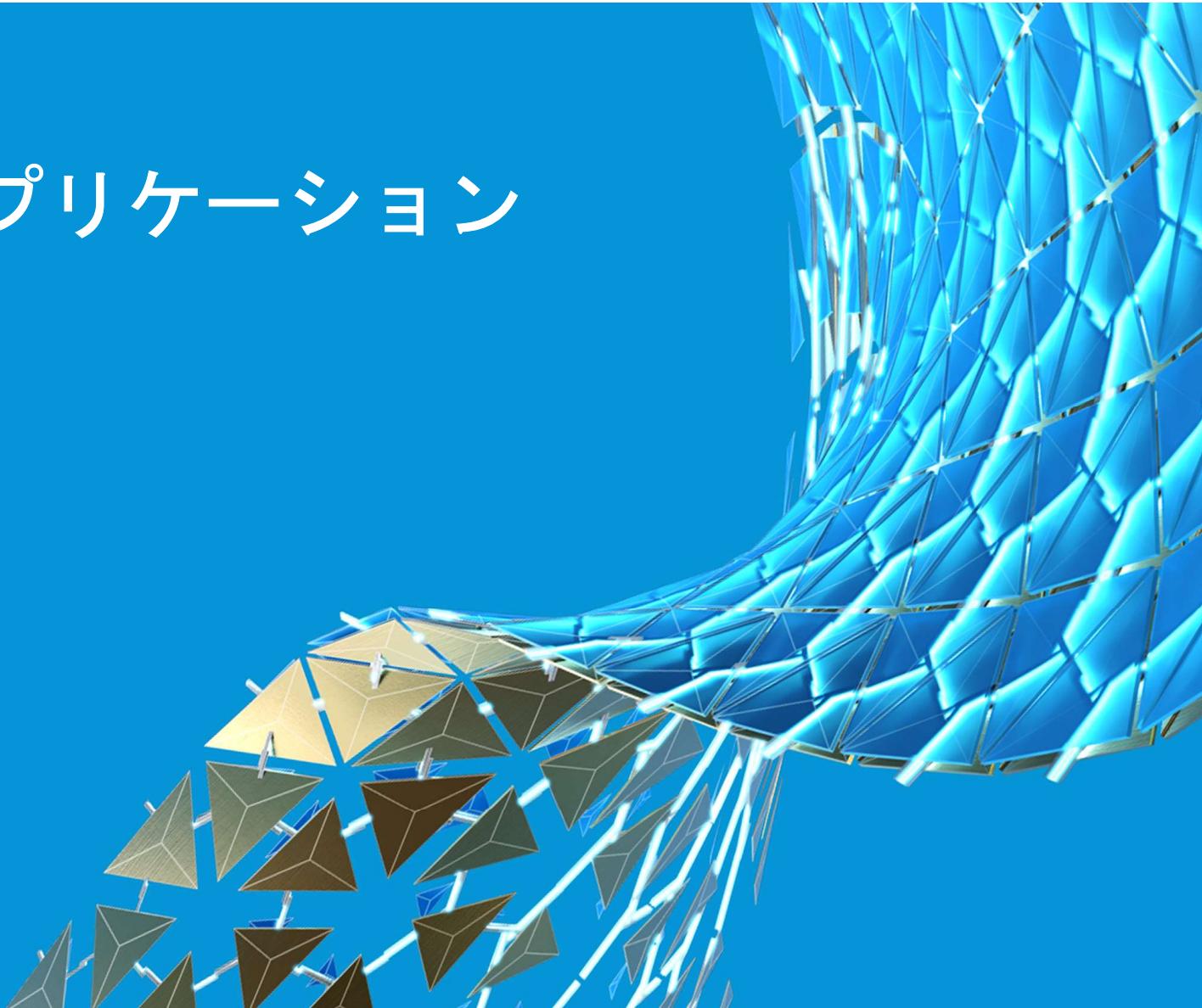
- アイテムの読み取り+書き込み、
バッチ、インポート *1

優先順位のフィードバックを！

The image shows two screenshots of the Autodesk BIM 360 interface. The top screenshot is titled 'Project Admin' and shows a navigation bar with 'MEMBERS', 'COMPANIES', 'SERVICES' (highlighted with a dashed orange box), and 'PROFILE'. Below the navigation bar are sections for 'Overview', 'Issues', 'Notifications', 'Locations', 'Document Management', and 'Assets'. The 'Assets' section is highlighted with a dashed orange box. The bottom screenshot is titled 'Assets' and shows a grid of asset items. One item, '621642', is highlighted with a dashed orange box and shown in detail. The detail view includes fields for Asset ID (621642), Category (Lighting Fixtures > Recessed Parabolic Light), Description (2'x2'(2 Lamp) - 277V), Barcode (Unspecified), Location (Tower 2 > 2 Floor > Rm 212), Serial number (Unspecified), Submittal (Unspecified), Purchase order (Unspecified), and Purchase date (Unspecified). A legend at the bottom right indicates 'SPECIFIC'.

*1) フィードバックに基づいて優先順位を付けます

サンプル アプリケーション

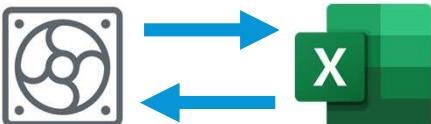


Excel エクスポート/インポート

機能 : BIM 360 Assets モジュールのすべてのアセットデータをカスタムWebページにエクスポートし、さらにExcelシートにエクスポートします。Excelで変更し、アセットにインポートします。このサンプルは、Assetsモジュールを使用した基本的な読み取り/書き込みアクセスを示すためのものです。

ソースコード : GitHub サンプル (予定)

作者 : Xiaodong Liang, Autodesk



The screenshot displays three windows illustrating the process of exporting and importing asset data between BIM 360 Assets and Excel.

- BIM 360 Assets Web Interface:** Shows the "BIM360 Project List" sidebar and the "ASSETS" tab of the main table view. The table lists assets with columns for clientAssetId, version, description, isActive, category, status, barcode, serialNumber, installationDate, installedBy, warrantyStartDate, and warrantyEndDate. One row is selected, showing an AHU unit.
- Excel Spreadsheet:** A Microsoft Excel sheet titled "bim360-assets-report_xiaodong-test-asset.xlsx" showing the same asset data in a grid format. The columns include id, clientAssetId, category, statusId, status, description, barcode, serialNumber, specSection, purchaseOrder, purchaseDate, installedBy, and installationDate. The data corresponds to the selected asset in the BIM 360 interface.
- Autodesk Forge Partner Development Asset Tree:** A smaller window showing the asset tree structure under "Autodesk Forge Partner Development". It includes categories like Air Handling Units (AHU's), Electrical, Mechanical, Pumps, and a specific node for "xiaodongtest".

設計モデルからアセットデータを設定

機能: Design Automation for Revit を使用して、BIM 360

Docs に保存された設計モデルからアセットを抽出し、アセットモジュールにインポートします。オプションで、インポートする前にアセットをフィルタリング/検証します。

(RevitのUnique Element IDをカスタム属性として保存し、アセットとRevitの要素との関連付けを維持します。)

ソースコード : GitHub サンプル (予定)

作者 : Zhong Wu, Autodesk



The screenshot shows the Autodesk BIM 360 Assets interface. On the left, there's a modal window titled "Asset Tree" showing a list of "All Categories" under "Air Terminals". It lists two items: "Unspecified" (Asset ID: DuctTerminal-119) and "Unspecified" (Asset ID: DuctTerminal-41). On the right, there's a large 3D model of a multi-story building with various components highlighted in blue. Below the 3D model is a table titled "Asset Info List" showing a list of 15 entries for "DuctTerminal" objects, each with columns for Asset ID, Category, Status, Manufacturer, and Model.

Asset ID	Category	Status	Manufacturer	Model
DuctTerminal-42	Air Terminals	Specified	Manufacturer Asia	Primary School Sample
DuctTerminal-61	Air Terminals	Specified	Manufacturer Asia	Primary School Sample
DuctTerminal-40	Air Terminals	Specified	Manufacturer Asia	Primary School Sample
DuctTerminal-6	Air Terminals	Specified	Manufacturer Asia	Primary School Sample
DuctTerminal-58	Air Terminals	Specified	Manufacturer Asia	Primary School Sample
DuctTerminal-67	Air Terminals	Specified	Manufacturer Asia	Primary School Sample
DuctTerminal-56	Air Terminals	Specified	Manufacturer Asia	Primary School Sample
DuctTerminal-55	Air Terminals	Specified	Manufacturer Asia	Primary School Sample
DuctTerminal-54	Air Terminals	Specified	Manufacturer Asia	Primary School Sample
DuctTerminal-41	Air Terminals	Unspecified	Manufacturer Asia	Primary School Sample
DuctTerminal-119	Air Terminals	Unspecified	Manufacturer Asia	Primary School Sample
DuctTerminal-41	Air Terminals	Unspecified	Manufacturer Asia	Primary School Sample
DuctTerminal-41	Air Terminals	Unspecified	Manufacturer Asia	Primary School Sample
DuctTerminal-41	Air Terminals	Unspecified	Manufacturer Asia	Primary School Sample

Chrome File Edit View History Bookmarks People Tab Window Help

Extract Revit Assets to BIM360 × BIM 360 Assets × | +

localhost:3000

Autodesk Forge

Select Revit File

- Autodesk Forge Partner Development
 - Accelerator Shanghai
 - BIM 360 Cost Sample Project (Zhong)
 - BIM360 AU Asset Test Project (Zhong)
- Plans
 - Project Files
 - rac_basic_sample_project.rvt
 - v1: 2020-9-16 10:00:32 by Zhong Wu
 - v1: 2020-9-17 11:56:47 by Mikako Harada
 - v2: 2020-9-17 22:16:30 by Zhong Wu
 - rme_school_project.rvt
- Cost Test Sample by Zhong
- Daimler POC Project
- DeleteMeSoon
- Forge Concert Hall
- Forge Demo - BIM 360 Cost
- Forge Demo ZW DA
- Forge Demo Zhong
- Infraworks
- Sample for Phil by Zhong2
- Sample for Phil by Zhong4
- Xiaodong-test-MC
- Zhong Revit File Upgrader Project

Model Viewer

Extract Assets from the model

Asset Info List

Show 10 entries	Search:			
Asset ID	Category	Status	Manufacturer	Model
No data available in table				

Showing 0 to 0 of 0 entries Previous Next

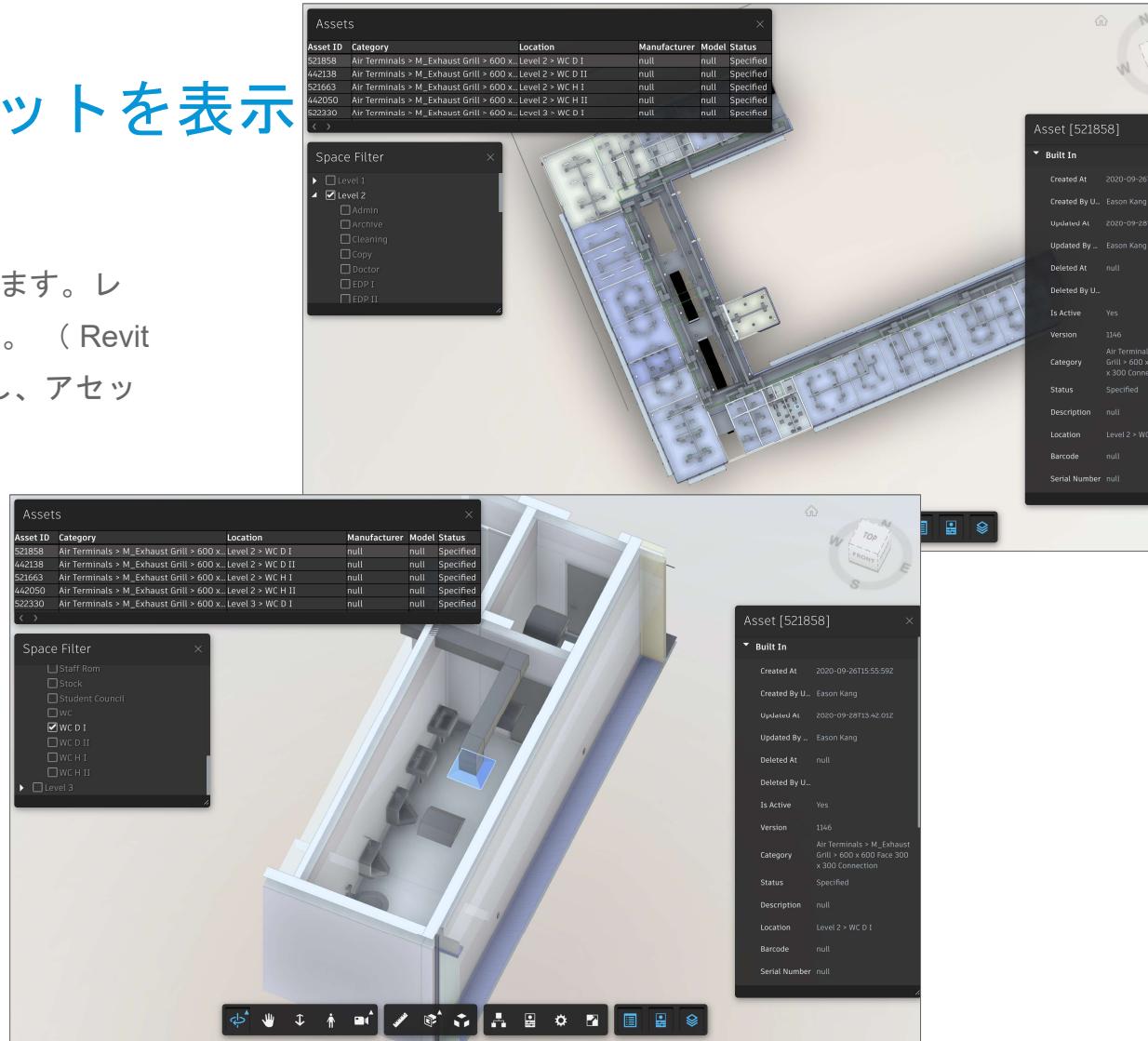
Create to BIM360

モデルビューア上でアセットを表示

機能：モデルビューアでアセットデータを表示します。レベルと部屋でアセットをフィルタリングできます。（Revit のUnique Element IDをカスタム属性として保存し、アセットとRevit の要素との関連付けを維持します。）

ソースコード：GitHub サンプル（予定）

作者：Eason Kang, Autodesk



Microsoft Edge File Edit View History Favorites Tools Profiles Tab Window Help

Autodesk Forge - BIM 360 Assets BIM 360 Assets https://assets.b360.autodesk.com/projects/f6698202-e0a1-40f6-af11-e81d407bd366/assets?preview=ca5cf41e-38ed-4b0b-b28b-848c3b926a4f

Enterprise Daily Work BIM360 Forge Revit AU

AUTODESK BIM 360 Autodesk ADN Taiwan > Assets Demo

Assets

ASSETS

Asset Tree	Asset ID	Category	Location
All Categories	521858	Air Terminals > M_Exhaust Grill > 600 x 600 Face 300 x 30...	Level 2 > WC D I
Air Terminals	442138	Air Terminals > M_Exhaust Grill > 600 x 600 Face 300 x 30...	Level 2 > WC D II
Electrical Equipment	521663	Air Terminals > M_Exhaust Grill > 600 x 600 Face 300 x 30...	Level 2 > WC H I
Electrical Fixtures	442050	Air Terminals > M_Exhaust Grill > 600 x 600 Face 300 x 30...	Level 2 > WC H II
Lighting Devices	522330	Air Terminals > M_Exhaust Grill > 600 x 600 Face 300 x 30...	Level 3 > WC D I
Lighting Fixtures	522312	Air Terminals > M_Exhaust Grill > 600 x 600 Face 300 x 30...	Level 3 > WC H I
Mechanical Equipment	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

Asset 521858

SPECIFIED

	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			



Assets API デベロッパリソース

- ドキュメンテーション
 - GitHubのコードサンプル
 - Postman コレクション

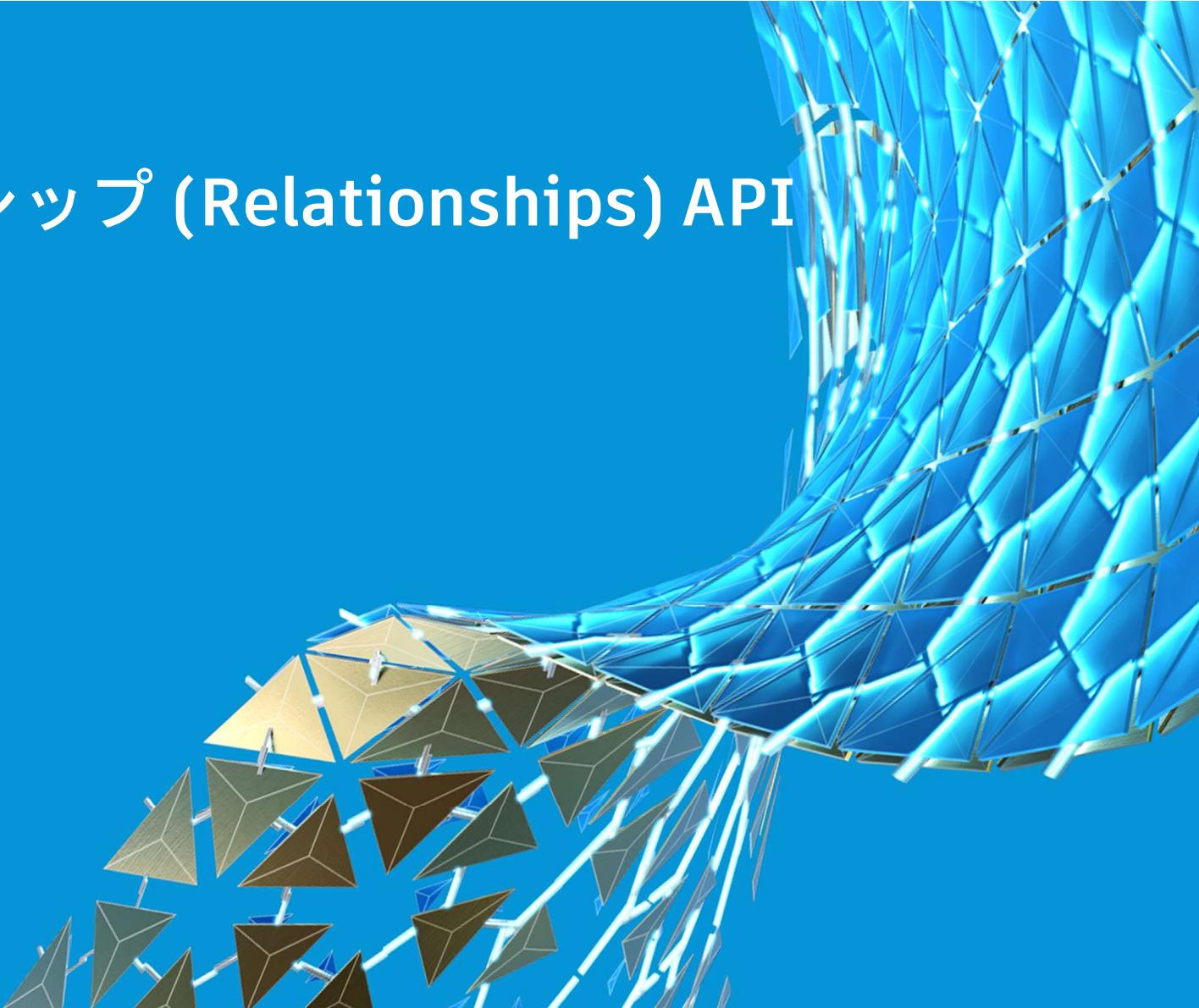
The screenshot shows the Autodesk Forge API Reference documentation. The left sidebar contains a navigation tree:

- Success Stories
- Solutions ▾
- Getting Started
- Documentation
- Community ▾
- Support ▾
- Pricing

API Reference

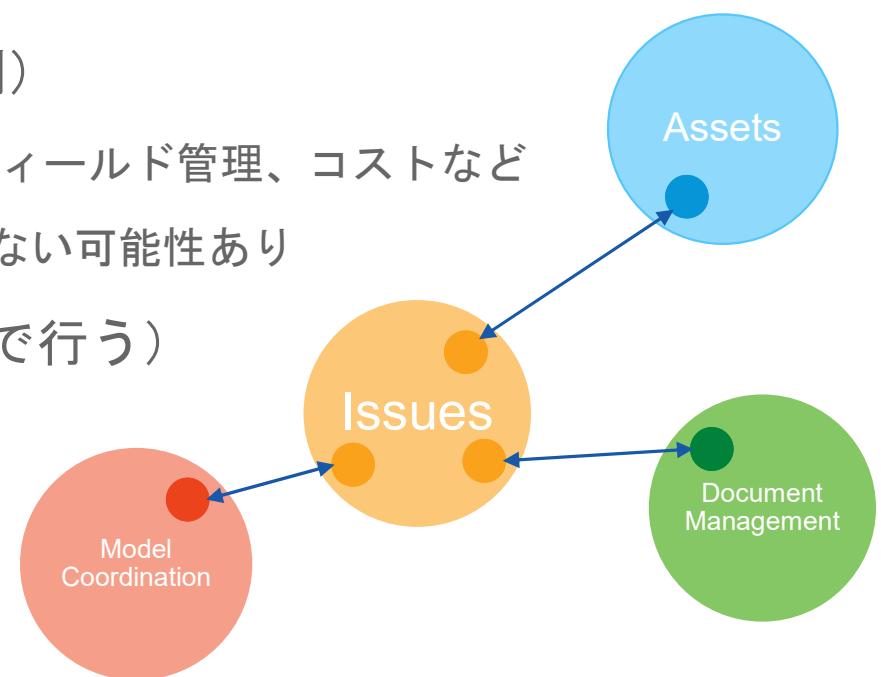
- HTTP Specification
 - > Admin
 - Assets
 - Assets
 - [GET assets](#)
 - POST assets:batch-get
 - Asset-Statuses
 - GET asset-statuses
 - POST asset-statuses:batch-get
 - Categories
 - GET categories
 - POST categories:batch-get
 - Custom-Attributes
 - GET custom-attributes
 - POST custom-attributes:batch-get
 - GET categories/categoryId/custom-attributes
 - Status-Step-Sets
 - GET status-step-sets
 - GET categories/categoryId/status-step-set

リレーションシップ(Relationships) API



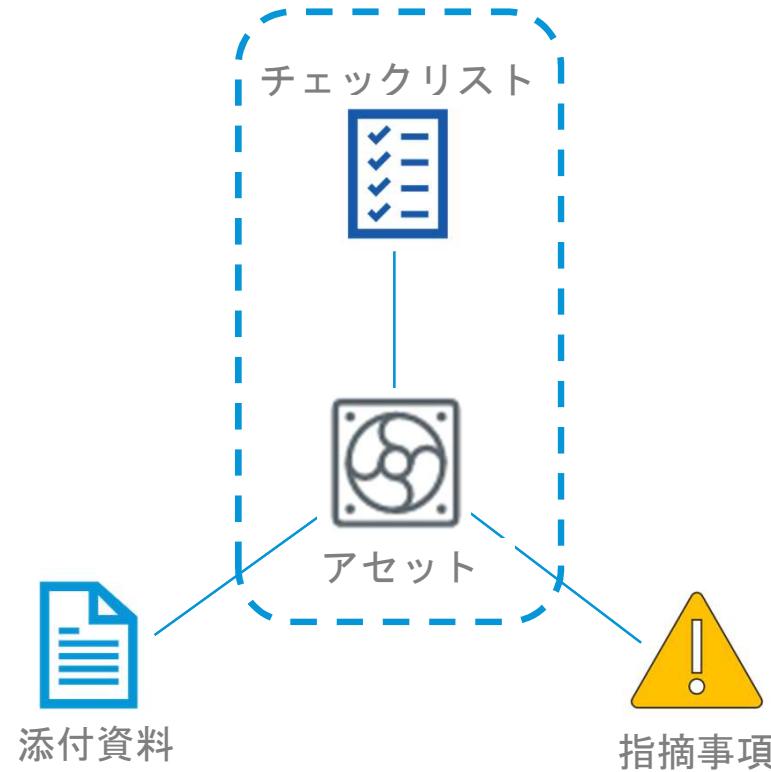
リレーションシップ (Relationships) API

- 異なる機能コンポーネント（ドメイン）に存在するアイテム（エンティティ）間のリンクを表現
- BIM 360の様々なモジュールで使用：例)
 - モデル コーディネーション、アセット、フィールド管理、コストなど
 - 古くから存在する機能では、使用されていない可能性あり
- 読み取り専用（作成はドメイン関数側で行う）
- すでにリリース済み

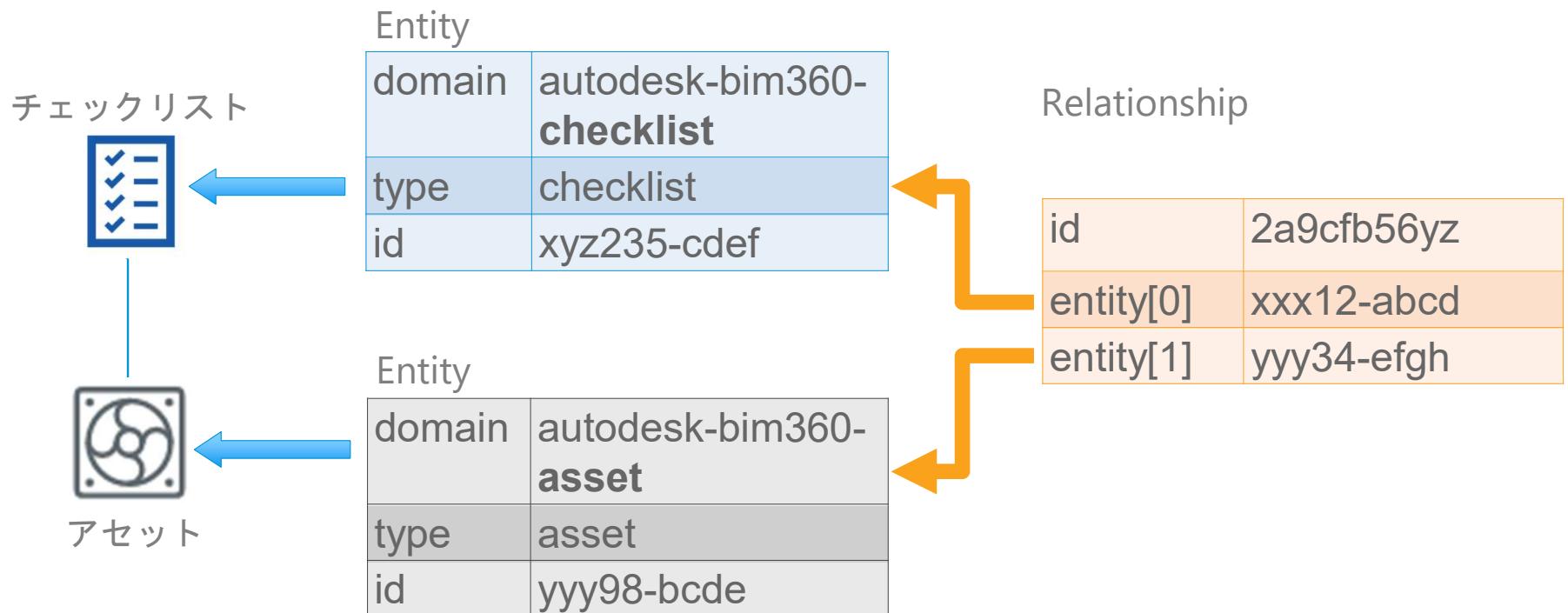


リレーションシップ (Relationships) API

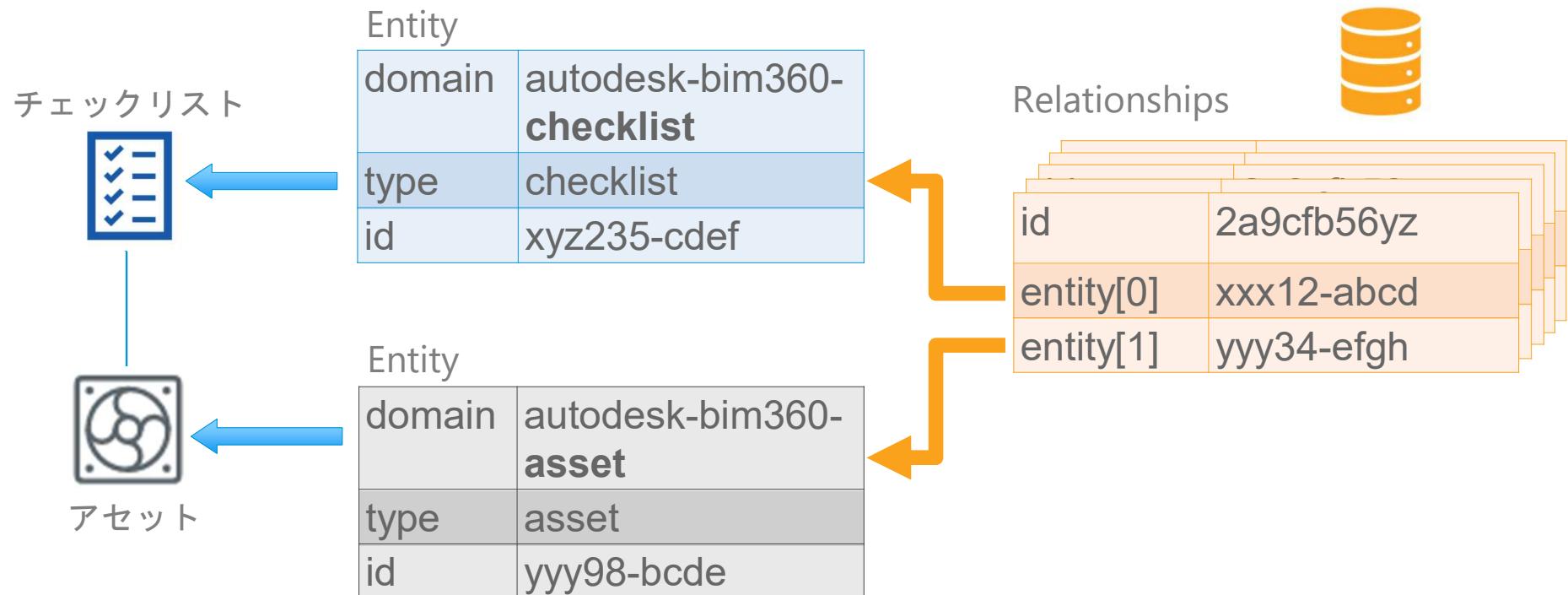
例)



リレーションシップ (Relationships) API



リレーションシップ (Relationships) API



リレーションシップ (Relationships) API

カテゴリー	エンドポイント
検索	GET relationships/:relationshipId
	POST relationships:batch
	GET relationships:search
	POST relationships:intersect
同期	POST relationships:sync
	POST relationships:syncStatus

リレーションシップ (Relationships) API

カテゴリー	エンドポイント
検索	GET relationships/:relationshipId
	POST relationships:batch
同期	GET relationships:search
	POST relationships:intersect
同期	POST relationships:sync
	POST relationships:syncStatus

Relationship を id から取得

```
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"
      }
    }
  ]
}
```

リレーションシップ (Relationships) API

カテゴリー	エンドポイント
検索	GET relationships/:relationshipId
	POST relationships:batch
	GET relationships:search
	POST relationships:intersect
同期	POST relationships:sync
	POST relationships:syncStatus

与えられた条件 (domain, type, ids, 日時)に一致するRelationshipを検索. 例,

“アセットとチェックリスト間のリレーションシップを取得してください”

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

リレーションシップ (Relationships) API

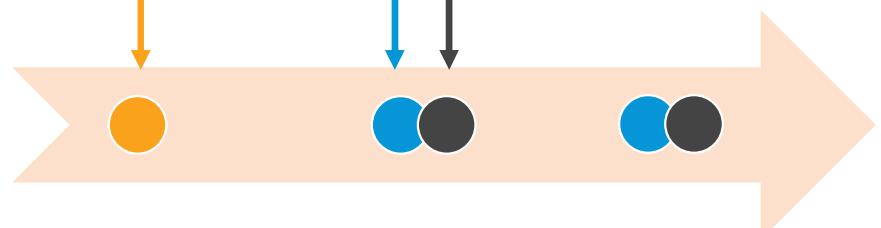
カテゴリー	エンドポイント
検索	GET relationships/:relationshipId
	POST relationships:batch
	GET relationships:search
	POST relationships:intersect
同期	POST relationships:sync
	POST relationships:syncStatus

Relationshipデータを外部で保存しているデータと同期する際に使用

sync (初期設定)

syncStatus (more data?)

sync (syncToken)



Relationships API デベロッパリソース

SDK

- .NET Core nuget パッケージ
- JavaScript と Node.js



Relationships API デベロッパリソース

ドキュメンテーション

The screenshot shows the Autodesk Forge BIM 360 API v1 documentation website. The left sidebar has a tree view of the Developer's Guide:

- Developer's Guide
 - Introduction
 - API Basics
 - Field Guide
 - Account Admin
 - Model Coordination
 - Cost Management (beta)
 - Relationships** (highlighted in blue)
 - Parameters
 - Rate Limits and Quotas
 - Partner Program- Step-by-Step Tutorials
- API Reference

The main content area is titled "Relationships". It contains a sub-section titled "Containers vs. BIM 360 Projects" which includes the following text:

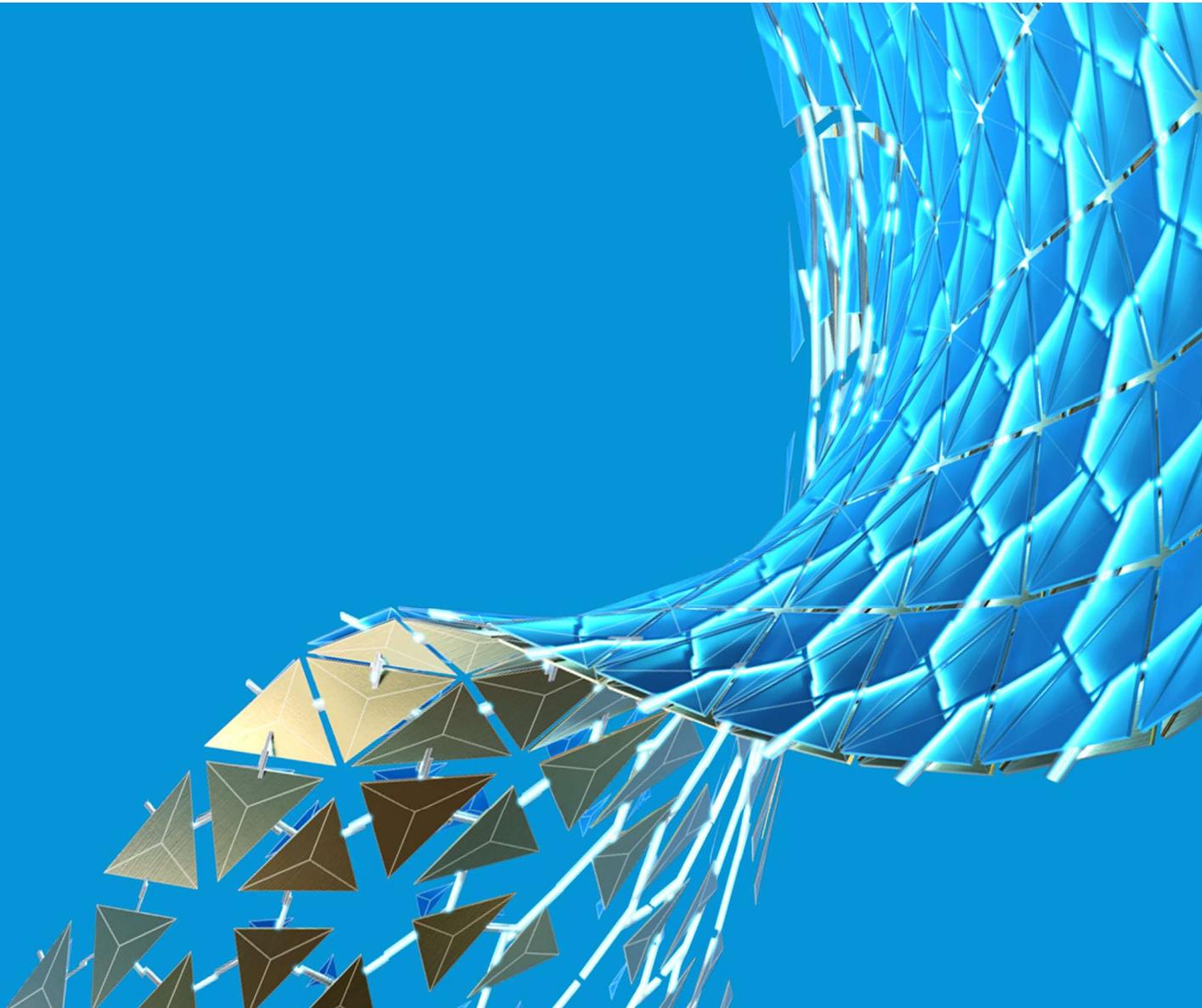
BIM 360 Data Services e.g. the Relationship Service use “Containers” as a primary data partition for all the service data associated with a specific Project and or Account. In the case of the Relationships Service, a container is created when a new BIM 360 Project is created. The application uses the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

Below this is another sub-section titled "Domain Entities" which includes the following text:

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 Budget is distinct from a Contract, however both these

今後の予定



今後の予定

Document Management

- ・カスタム属性の定義、レビュー、translation/viewables 制御

Assets

- ・最初のAPIリリース!

Cost Management

- ・支払い、請求期間、主契約、費用価値 の集計表、費用^{*1}

Admin

- ・プロジェクトAPI:ギャップを埋めるユーザーの追加、会社の更新
- ・アクティビティ

Model Coordination

- ・アラインメント、アグリゲーション、インデックス作成の機能強化^{*1}
- ・2LO、 webhook

Field/Project Managements

- ・ギャップを埋める:チェックリスト、RFI、指摘事項

*1) prioritize based on feedbacks

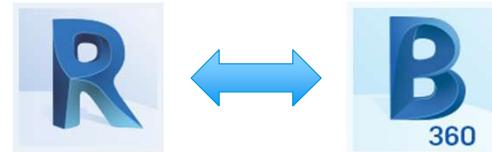
今後の予定

Insight

- Data Connector

Design

- cloud model/
worksharing^{*2}



*2) Revit API

まとめ

- Autodesk Construction Cloud 概要
- BIM 360 & API ステータスとアップデート
- アセット(Assets) API
- リレーションシップ(Relationships) API
- 今後の予定

ご質問は？

Join me at
Class Q&A セッション (CS469611)
Forge Answer Bar

Thank you!



@autodeskforge @mikako_harada



mikako.harada@autodesk.com



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