AUTODESK UNIVERSITY

BLD502300 | Integrating Autodesk Tandem with Business Intelligence Data Flows

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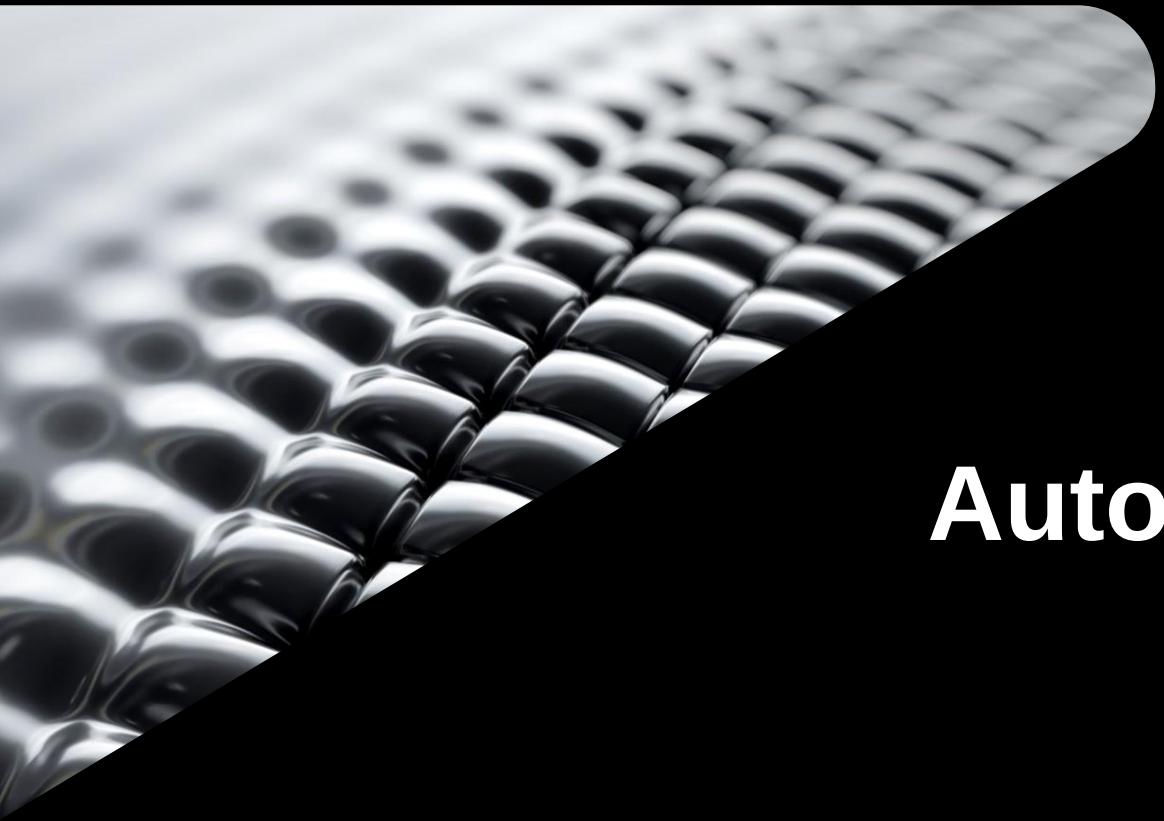
Product Expert | Safe Software

Agenda

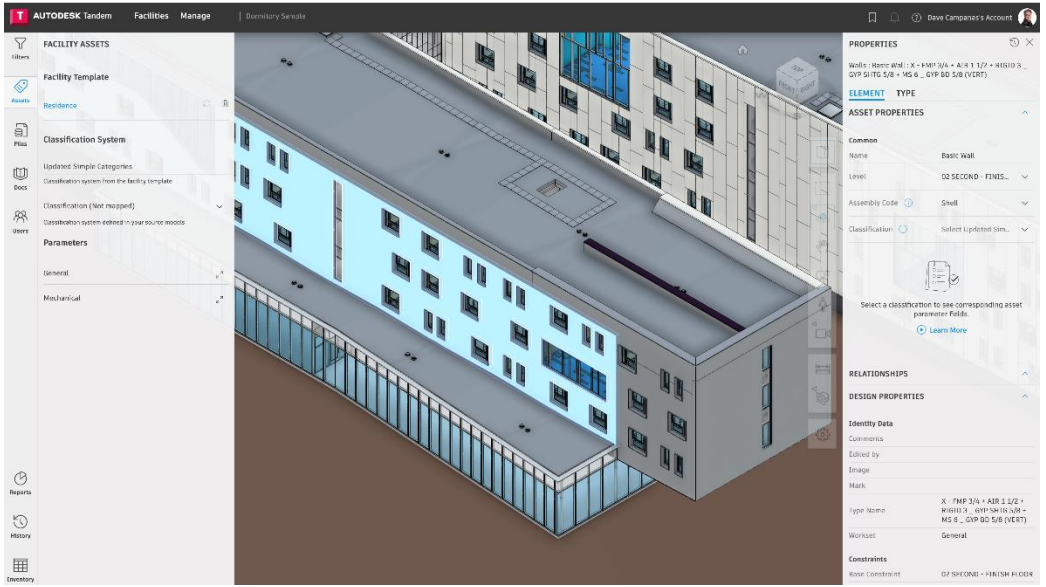
- Introduction to Tandem
- Introduction to FME
- Preparing Tandem for FME connections
- Using FME to update Tandem from Excel
- Using Tandem with real time BI dashboards
  - Using FME Server Automations to
    - Monitor and update Tandem from IoT
    - Update Power BI dashboard from Tandem



Autodesk Tandem

Autodesk Tandem

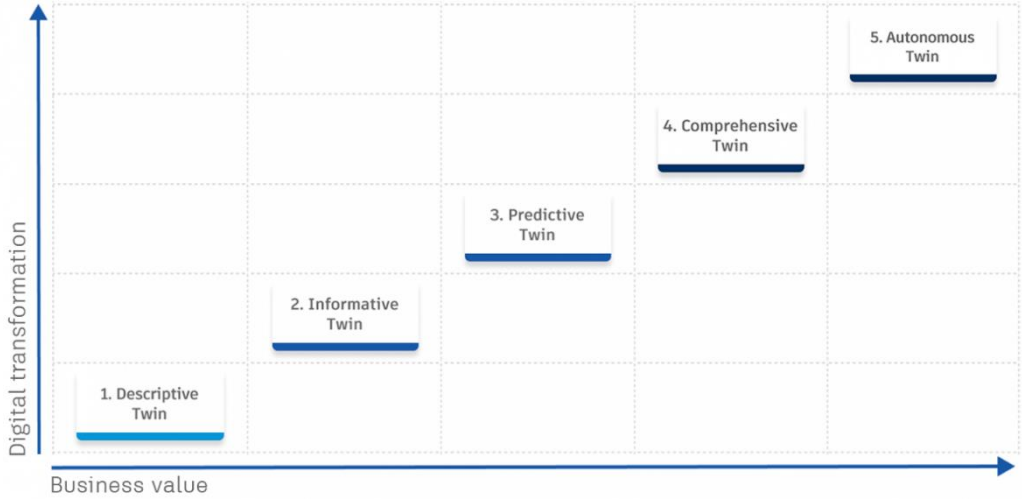
- Cloud based Digital Twin Solution
- Populated from Revit or IFC BIM data
- Extensible through user defined parameters and templates



Autodesk Tandem

- Currently a Descriptive Twin
- FME can be used to improve Tandem's data connectivity
- Boost Tandem up the scale by integrating with other digital data sources

Verdantix Digital Twin Maturity Model

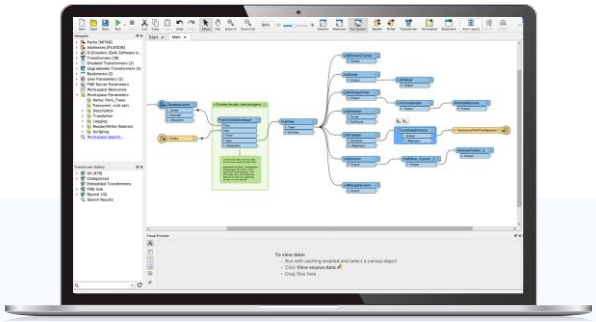


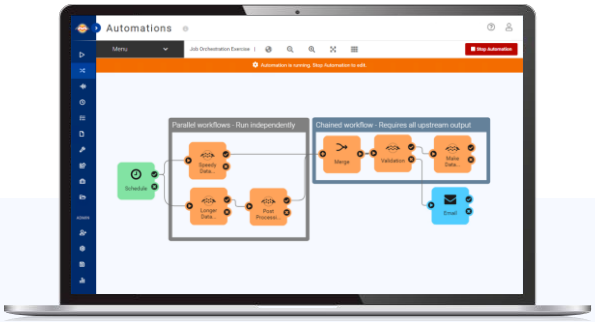
The FME Platform

Run Your Business on Data

FME® Enterprise Integration Platform

*The **only** Enterprise Integration Solution with comprehensive support for Spatial Data*





FME Desktop

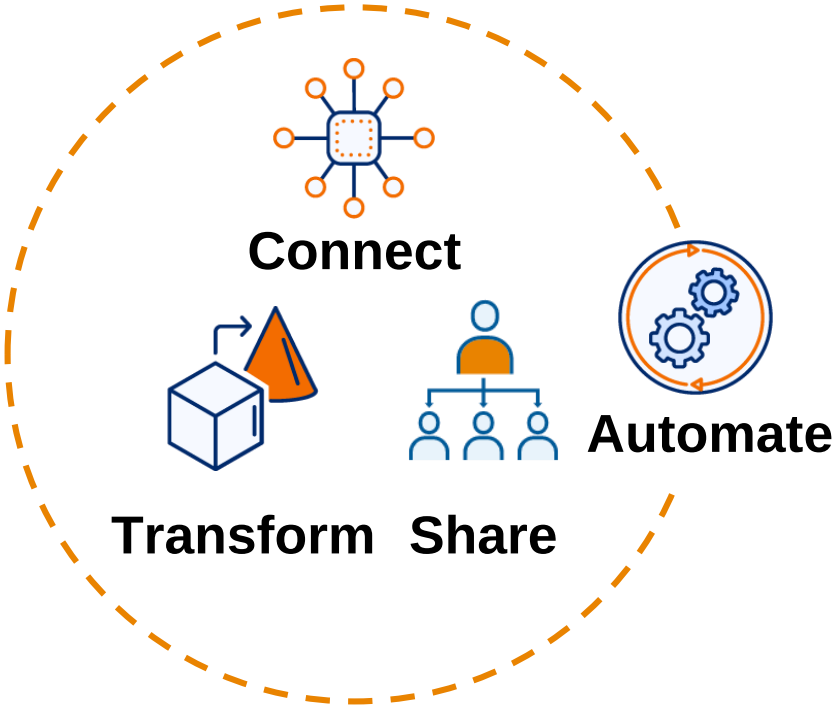
Build & Run Data Workflows

FME Server

Automate Data Workflows

Can be hosted on **FME Cloud**

***Powering your dataflows** on premises and in the cloud*



Power your business decisions with enterprise integration and no-code automation.

- Connect data across **450+ systems** including geospatial data, big data, and real-time data
- Combine, restructure, and transform your data with over **500+ transformers**
- Automate your data workflows including **batch, event-based, and stream processing**.
- Improve data accessibility and sharing with **self-serve apps**
- Scale to your organization's needs with **flexible, secure, and platform-agnostic deployment**

Company Profile

Safe Software

28+
Years of solving data challenges

13,000+
Organizations trusting us worldwide

128
Countries with FME customers

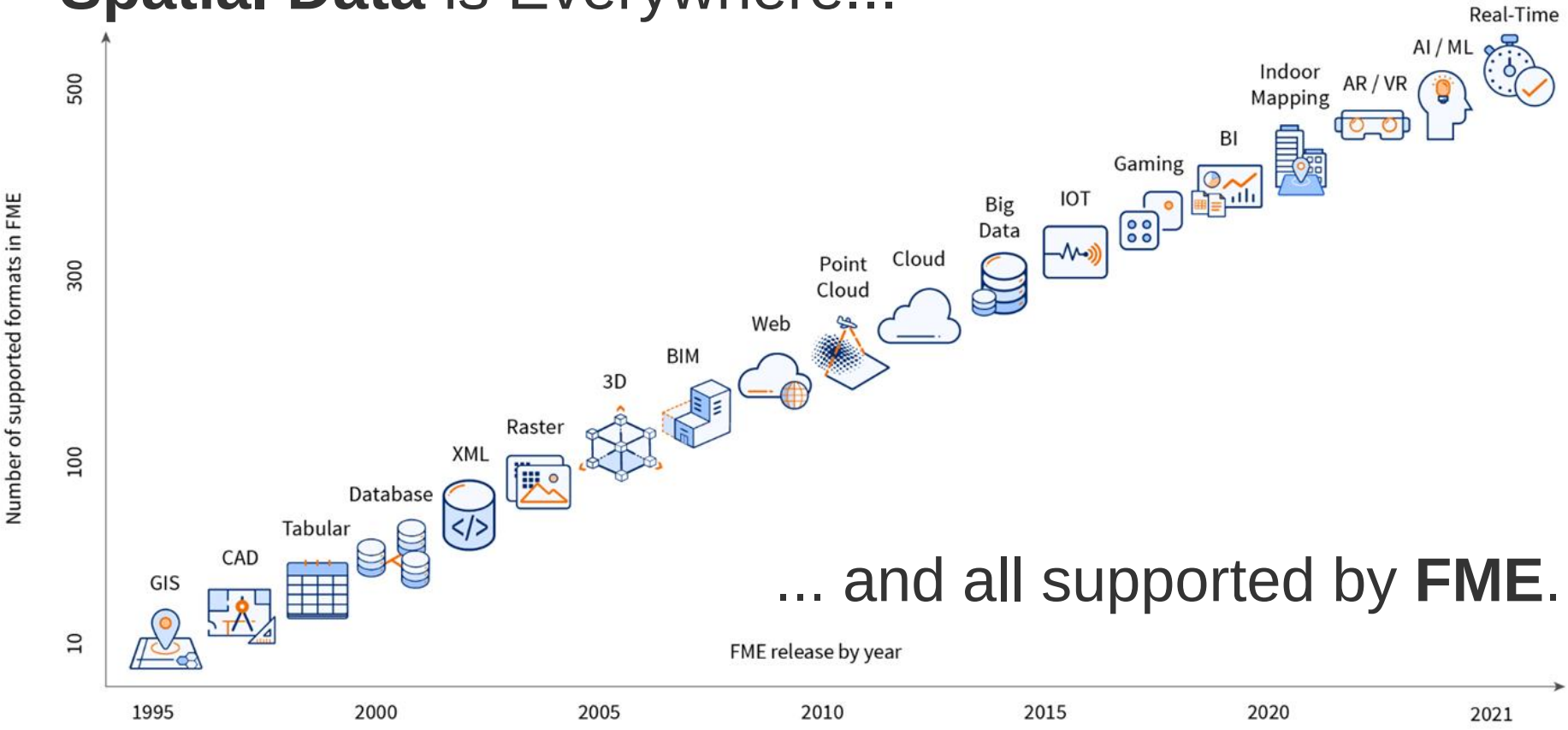
190+
Global partners delivering FME Services

19,000+
Users active in FME Community

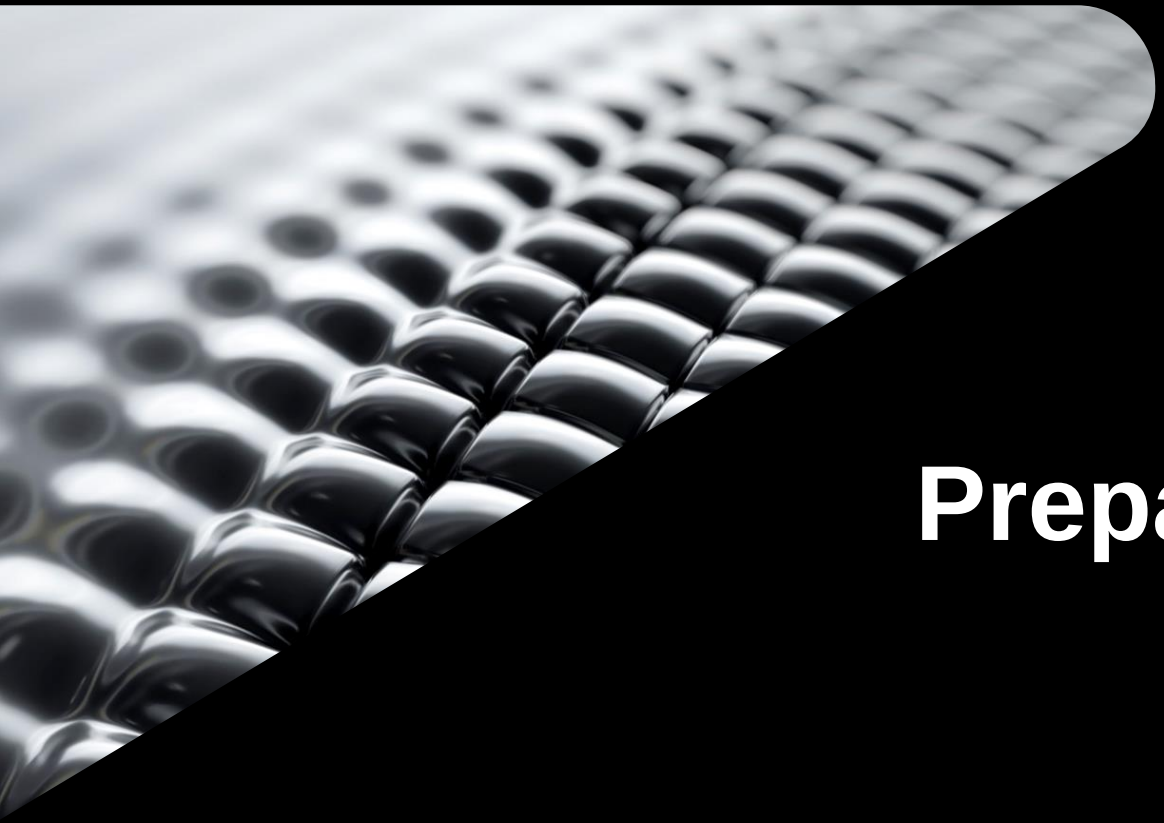
www.safe.com

SAFE SOFTWARE

Spatial Data is Everywhere...



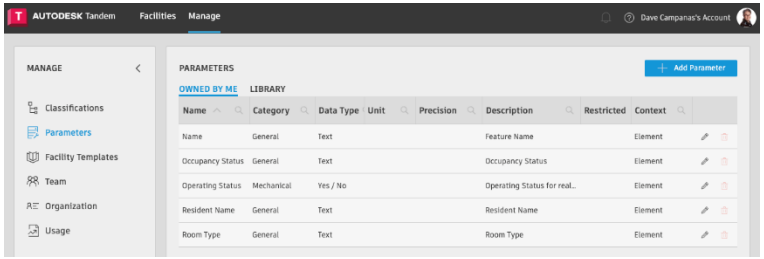
... and all supported by **FME**.



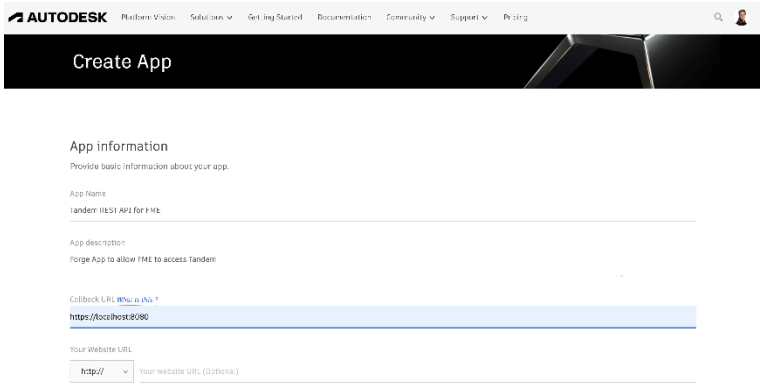
Preparing Tandem

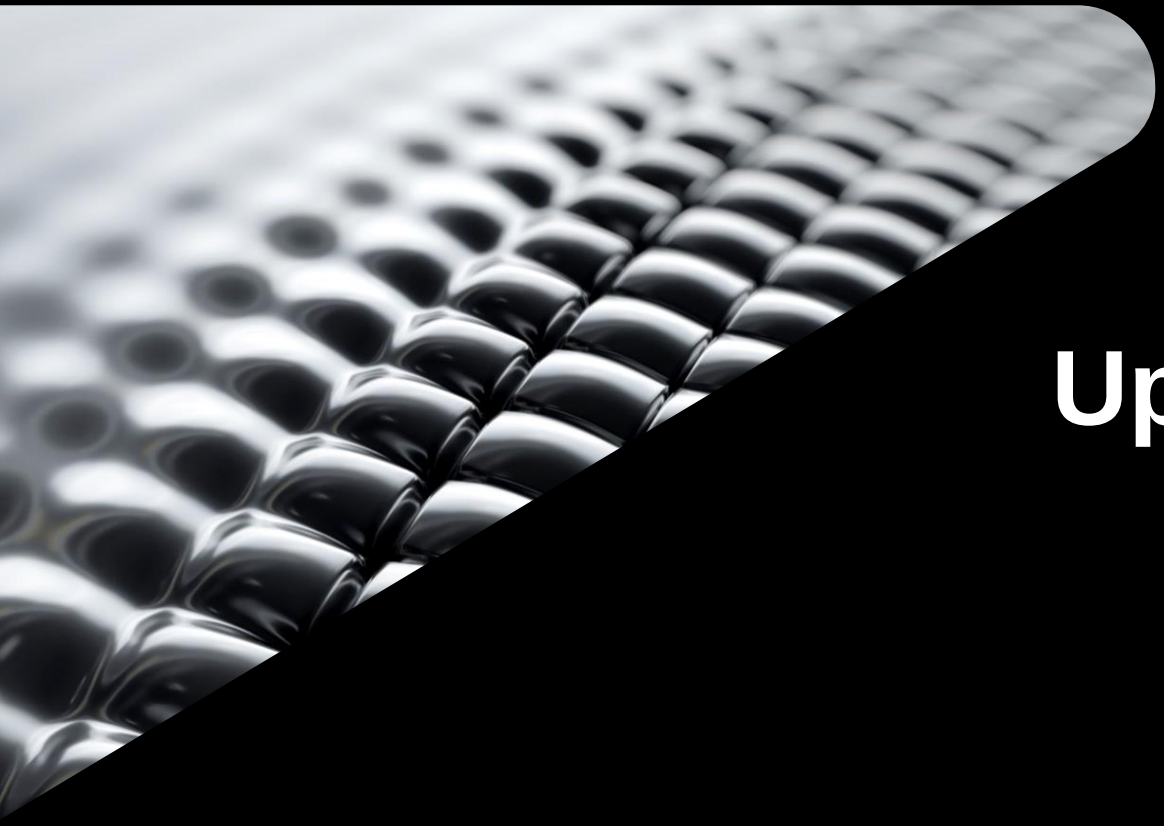
Preparing Tandem

- Add new Parameters to store linked data



- Create Forge App to communicate with Tandem REST API





Update Tandem from Excel

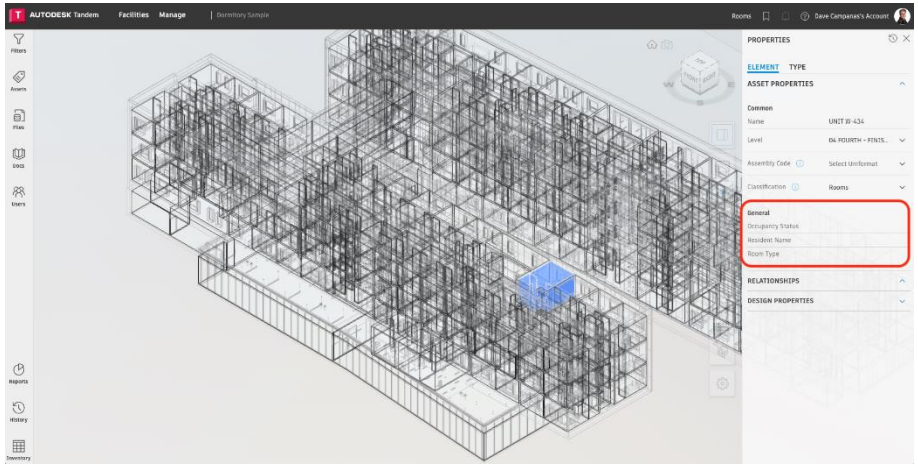
Update Tandem from Excel

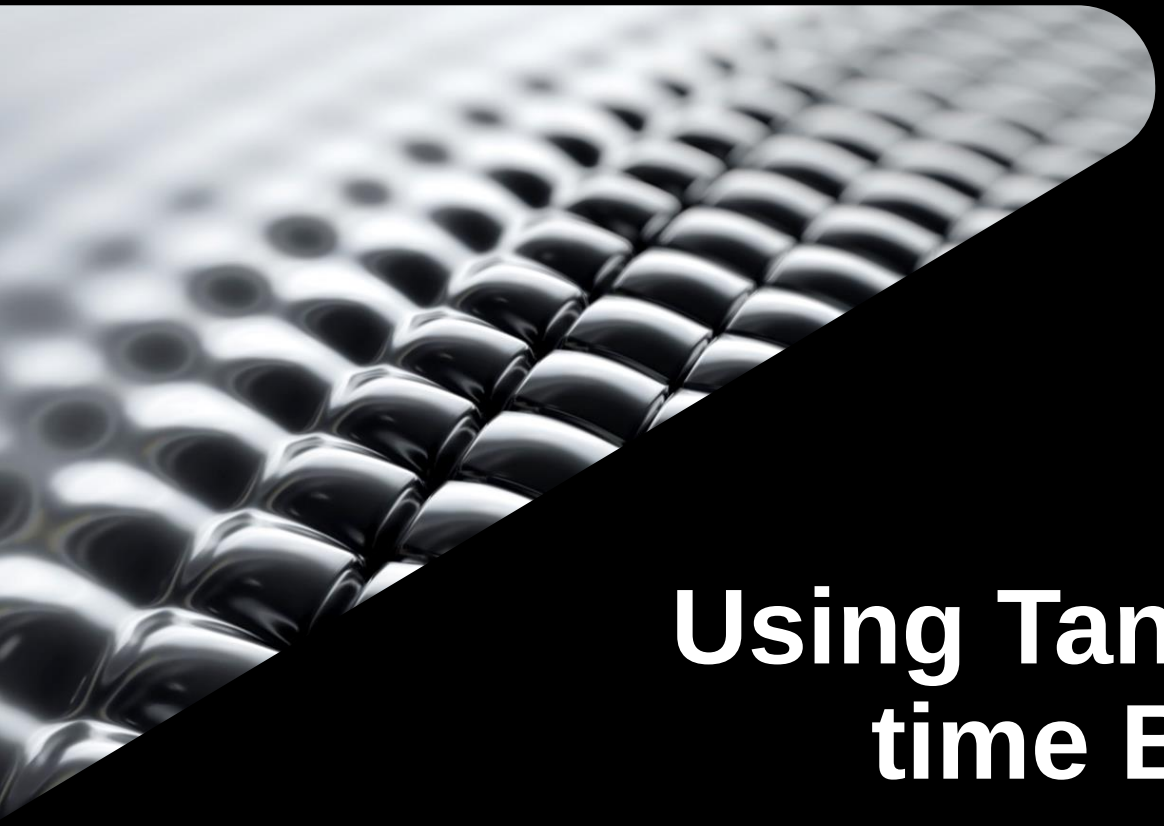
- Populate Room Parameters from Excel table

D9 | DORMITORY CORRIDOR

	A	B	C	D	E	F	G	H
1	Room Number	Room Name	Level	Full Room Name	Room Type	Status	Capacity	Resident Name
35	W-312	UNIT	THIRD FLOOR	DORMITORY UNIT	Residence	Occupied	2	Angelita Kihn, Brandyn Abbott
36	W-345	UNIT	THIRD FLOOR	DORMITORY UNIT	Residence	Unoccupied	2	
37	W-341	UNIT	THIRD FLOOR	DORMITORY UNIT	Residence	Occupied	2	Dixie Schiller, Manley Zemlak
38	W-339	UNIT	THIRD FLOOR	DORMITORY UNIT	Residence	Occupied	2	Clark Gorczany, Price Durgan
39	W-335	UNIT	THIRD FLOOR	DORMITORY UNIT	Residence	Occupied	2	Miles Cassin, Garfield Hirthe
40	W-325	UNIT	THIRD FLOOR	DORMITORY UNIT	Residence	Occupied	2	Halie Douglas, Friedrich Jast
41	W-320	UNIT	THIRD FLOOR	DORMITORY UNIT	Residence	Occupied	2	Emely Quitzon, Kiana Prosacco
42	W-309	UNIT	THIRD FLOOR	DORMITORY UNIT	Residence	Occupied	2	Immanuel Grant, Mariela Harber
43	W-306	UNIT	THIRD FLOOR	DORMITORY UNIT	Residence	Occupied	2	Tanya Collins II, Cody Carter
44	W-301	UNIT	THIRD FLOOR	DORMITORY UNIT	Residence	Occupied	2	Saige Predovic, Leola Lesch
45	W-342	UNIT	THIRD FLOOR	DORMITORY UNIT	Residence	Unoccupied	2	
46	W-310	UNIT	THIRD FLOOR	DORMITORY UNIT	Residence	Occupied	2	Shanel Miller, Murl Gottlieb

East Residence Hall

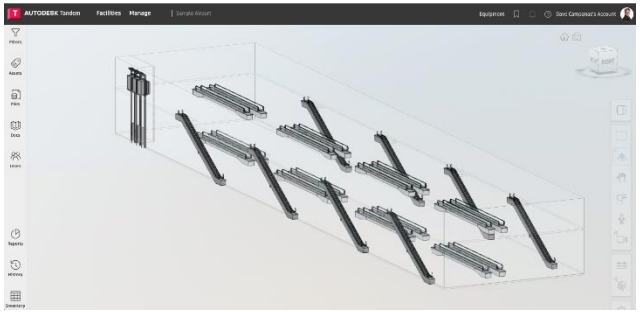




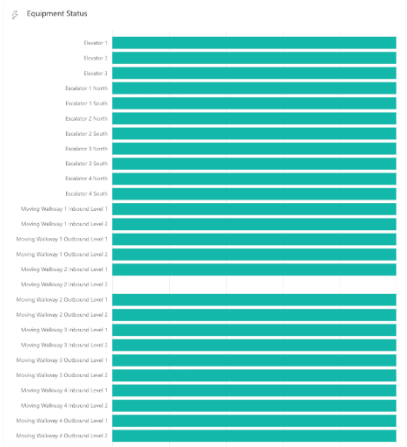
Using Tandem with real time BI dashboards

Using Tandem with real time BI dashboards

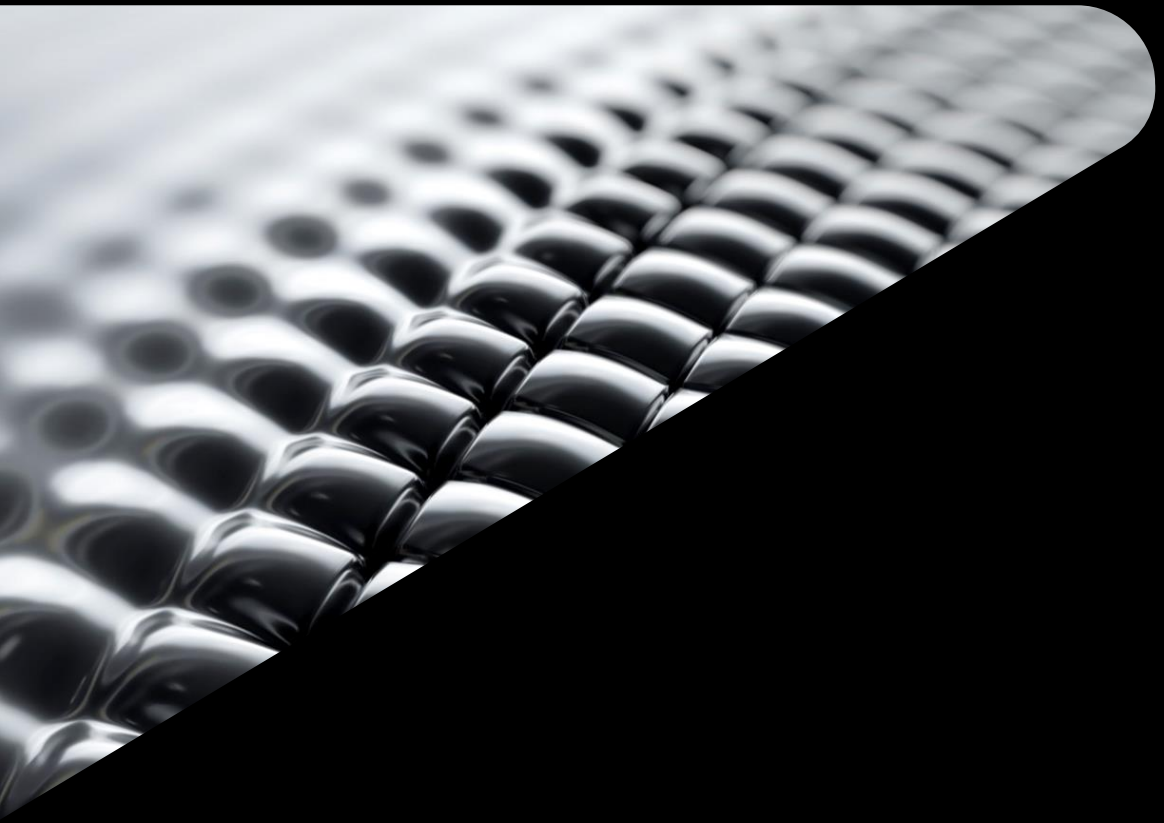
- Update Tandem from IoT sensors



- Update Power BI dashboard from Tandem in real time



Data Flow using REST APIs and Webhooks



Conclusion

Conclusion

- Tandem twins can be set up from Revit or IFC data
- FME can be used to extend Tandem with external data
- FME Server can easily enable complex automated data flows with Tandem

Resources

- For any questions about this presentation, please contact me
  - dave.campanas@safe.com
- For more information on FME, or a free trial of FME Desktop or Server
  - www.safe.com
- For assistance using FME
  - community.safe.com
- For more information on Tandem
  - help.autodesk.com/view/TANDEM/ENU/
- Tandem REST API documentation
  - https://autodesk-tandem.github.io/

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