Accelerate Your Plant Projects with a Component-Based Solution

Jarek Sitek – Bentley Systems

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OpenPlant CONNECT Edition: Component-Based Design

- Collaboration
  - Component-based concurrent design with intelligent change merging
  - Consolidated multi-discipline modeling and management
  - High performing and supports offline mode
- Data Consistency
  - Consistent data available anytime, anywhere
- Cloud-based services
  - Data management
  - Visualizations
  - Extensibility
- Aligning engineering and operations

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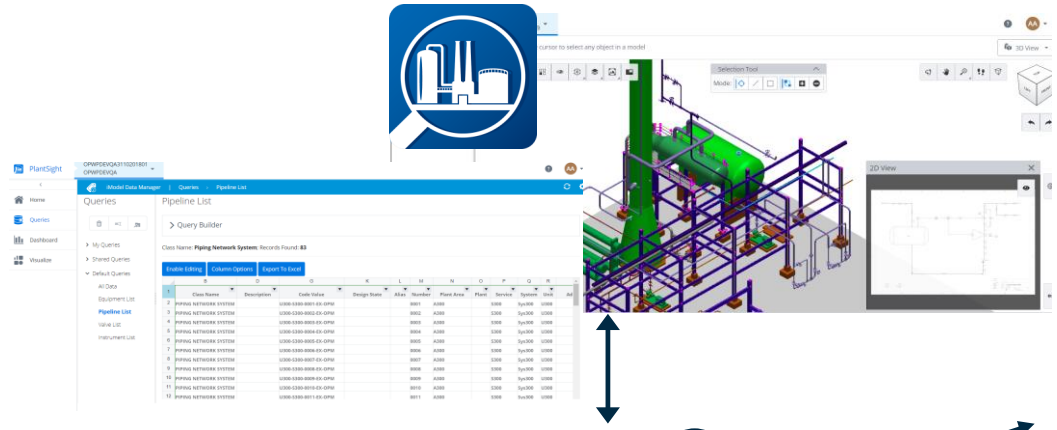
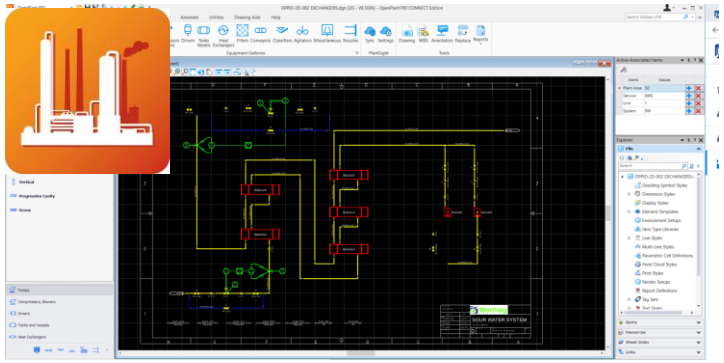
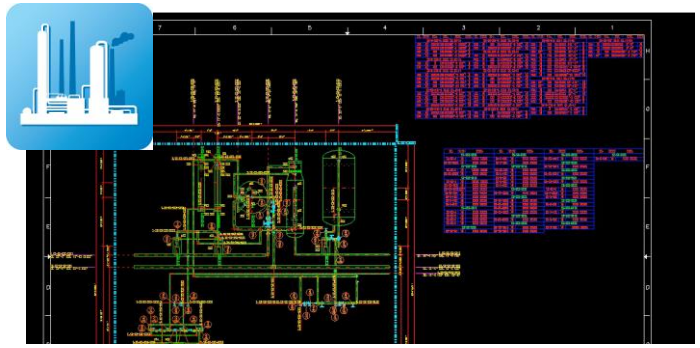
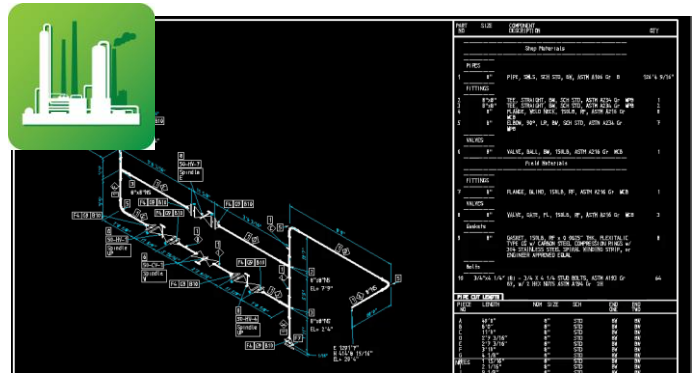
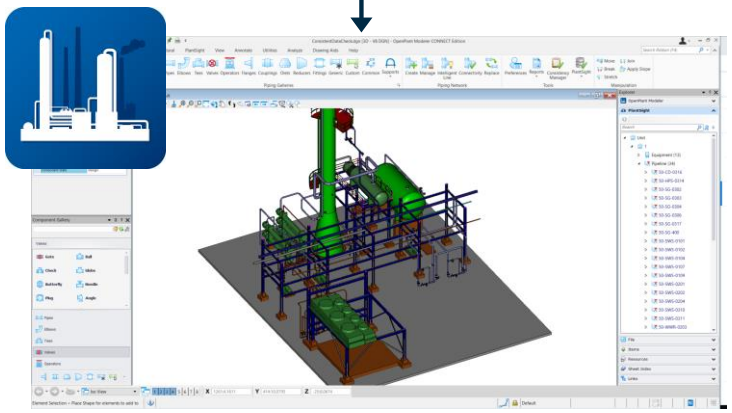
OpenPlant CONNECT Edition: Data Consistency











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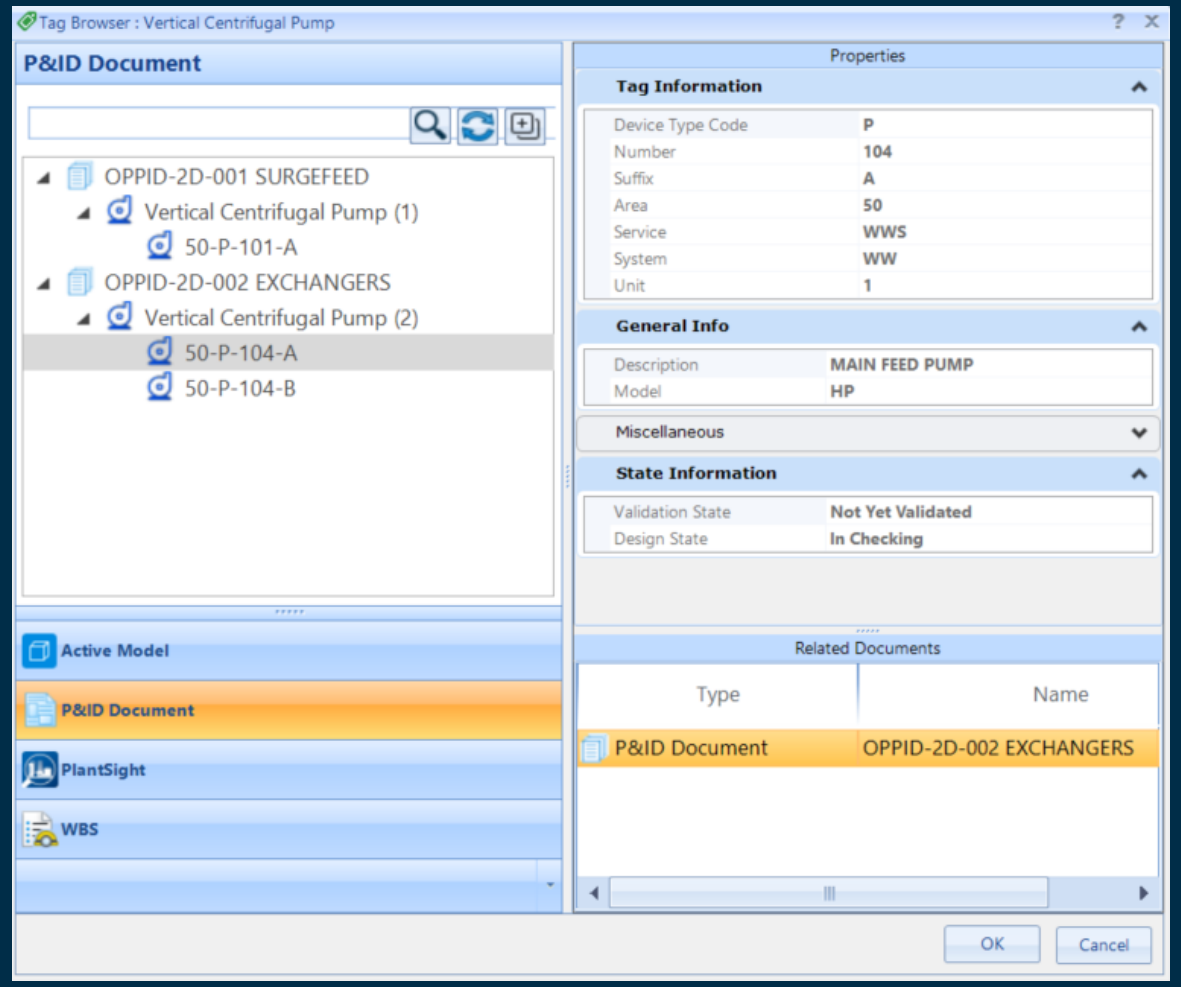
Data Consistency – Tag Management

- Intelligent reservation of tags
- Ability to assign next available tag number
- Easily browse available tags from PID documents, digital twin, or active model
- Plant breakdown items synching between PID and 3D design



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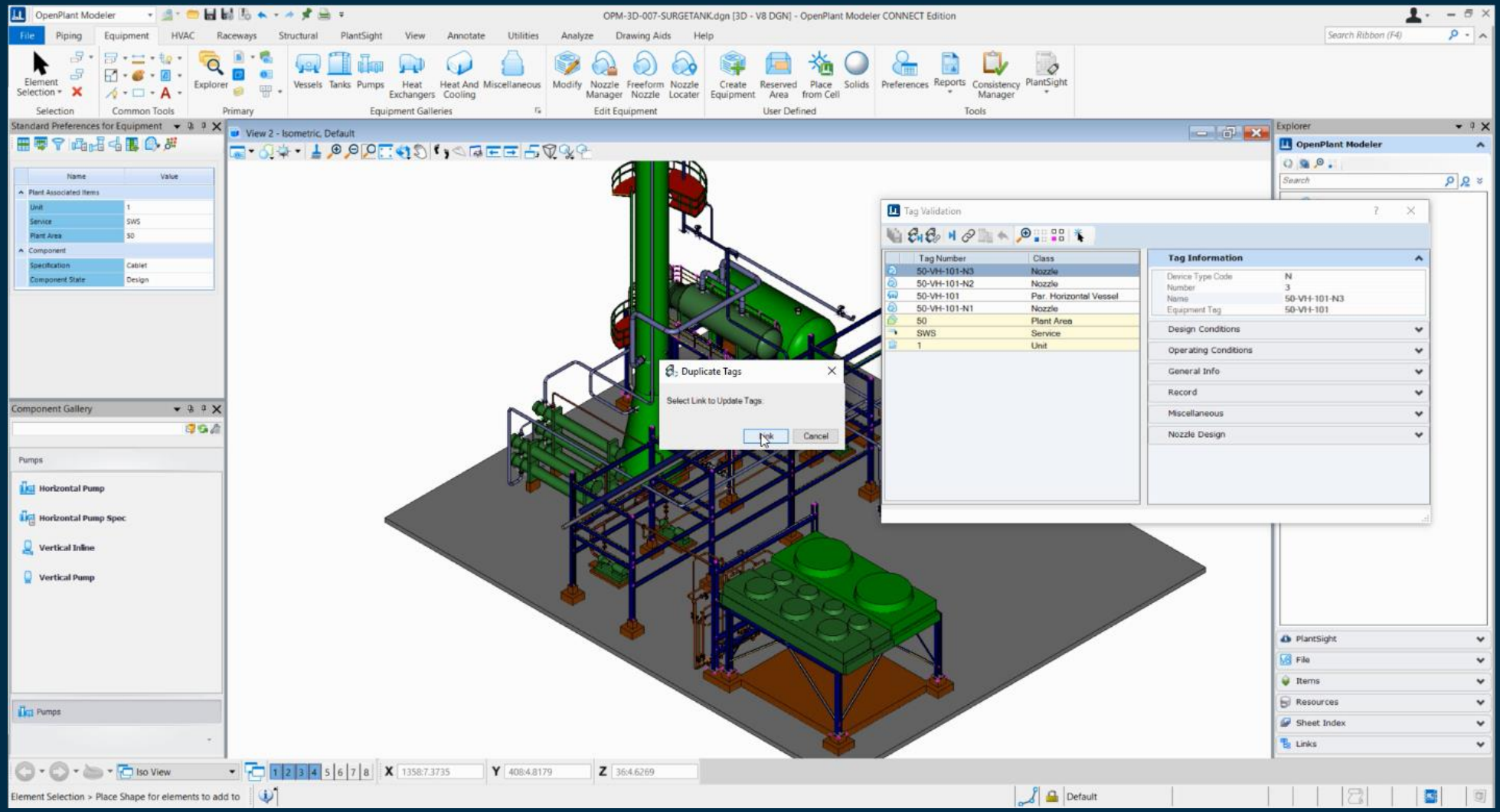
Data Consistency – Tag Conflict Resolution

- Easily resolve any conflicts
- Reuse tags defined in offline mode



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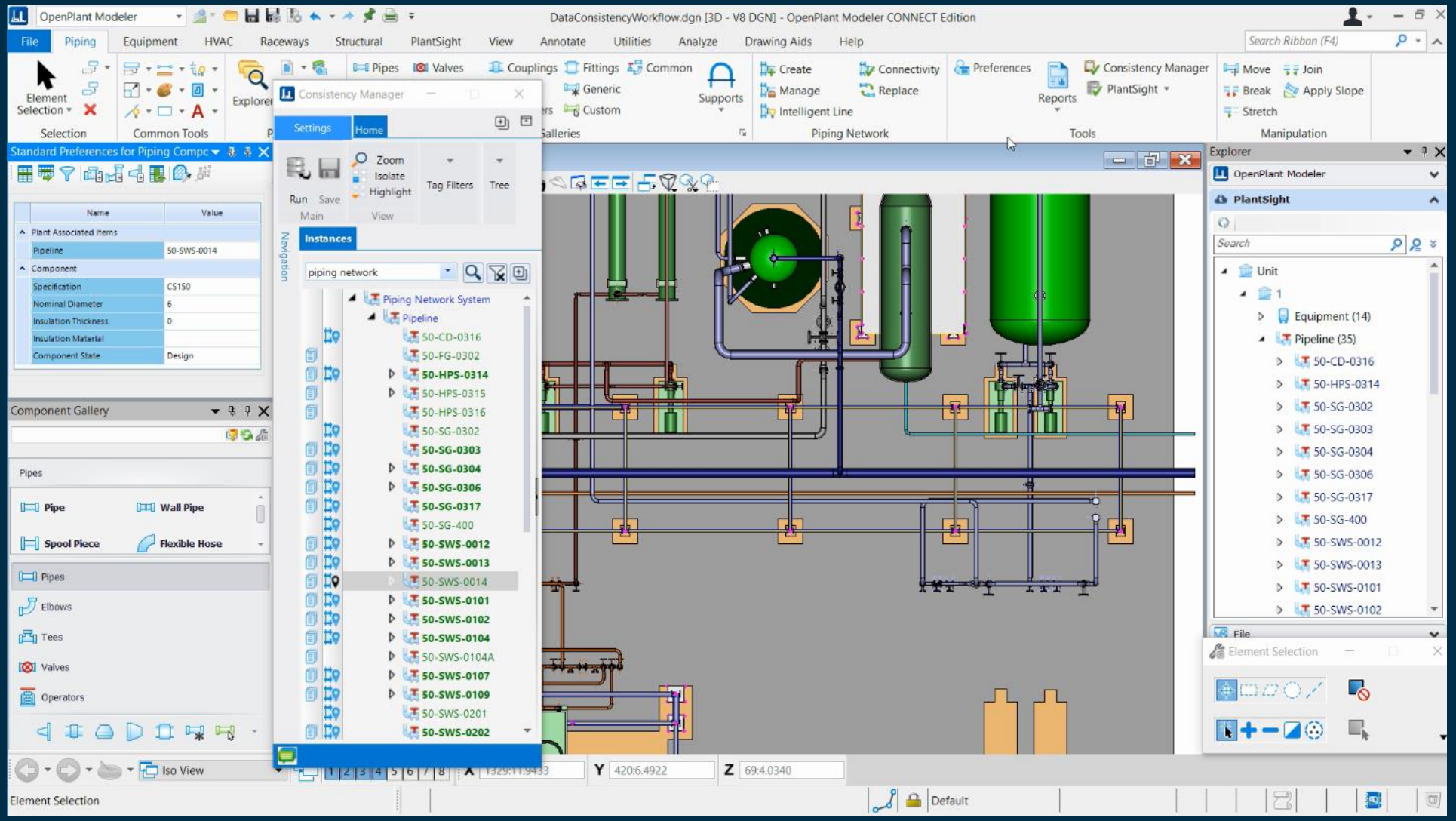
Data Consistency – Always use Accurate Data

- Ensures consistent and up-to-date engineering information across the entire design phase



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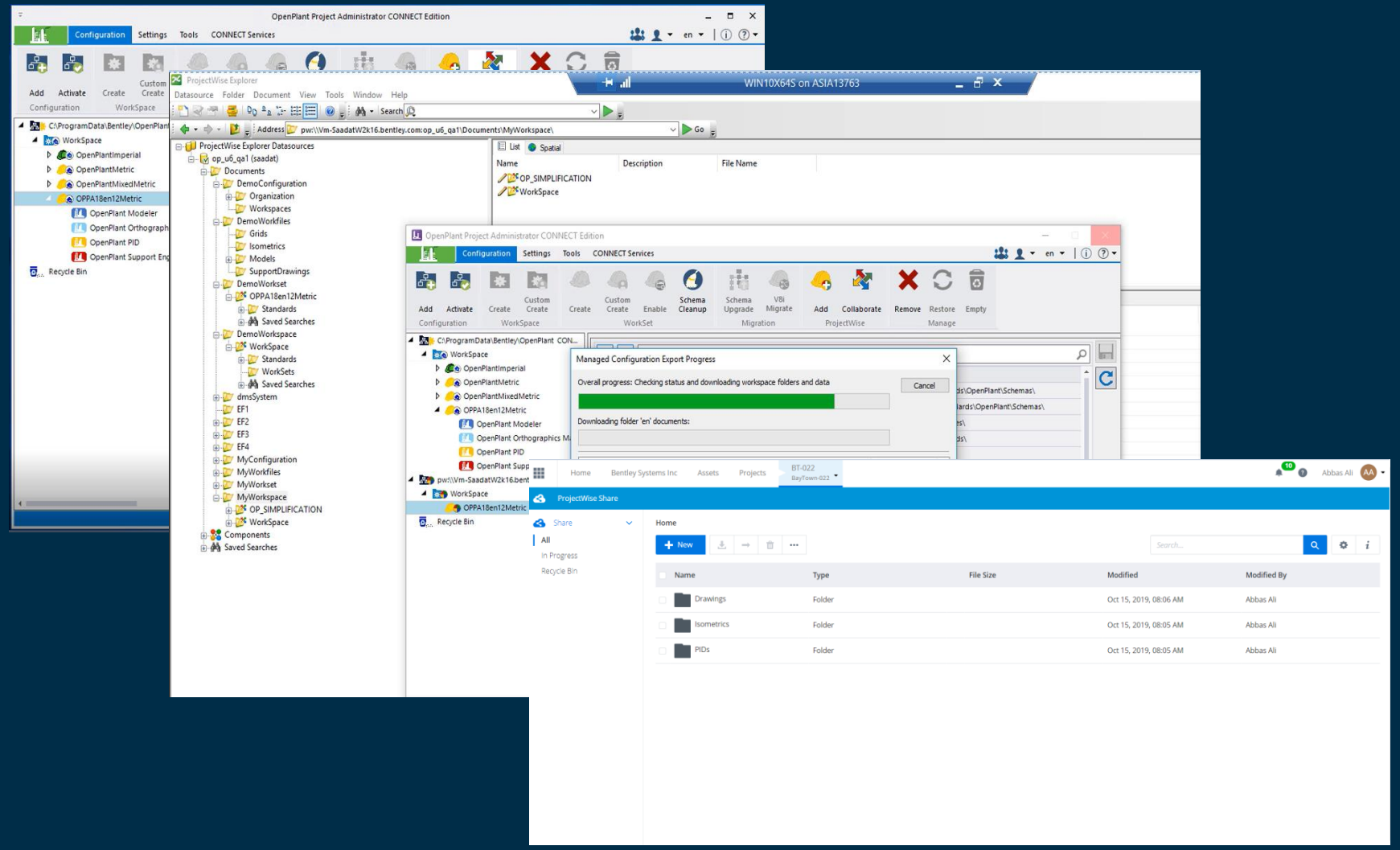
Collaboration – Easily setup distributed teams

- **Better control for distributed teams providing flexible features for multi-discipline modeling**



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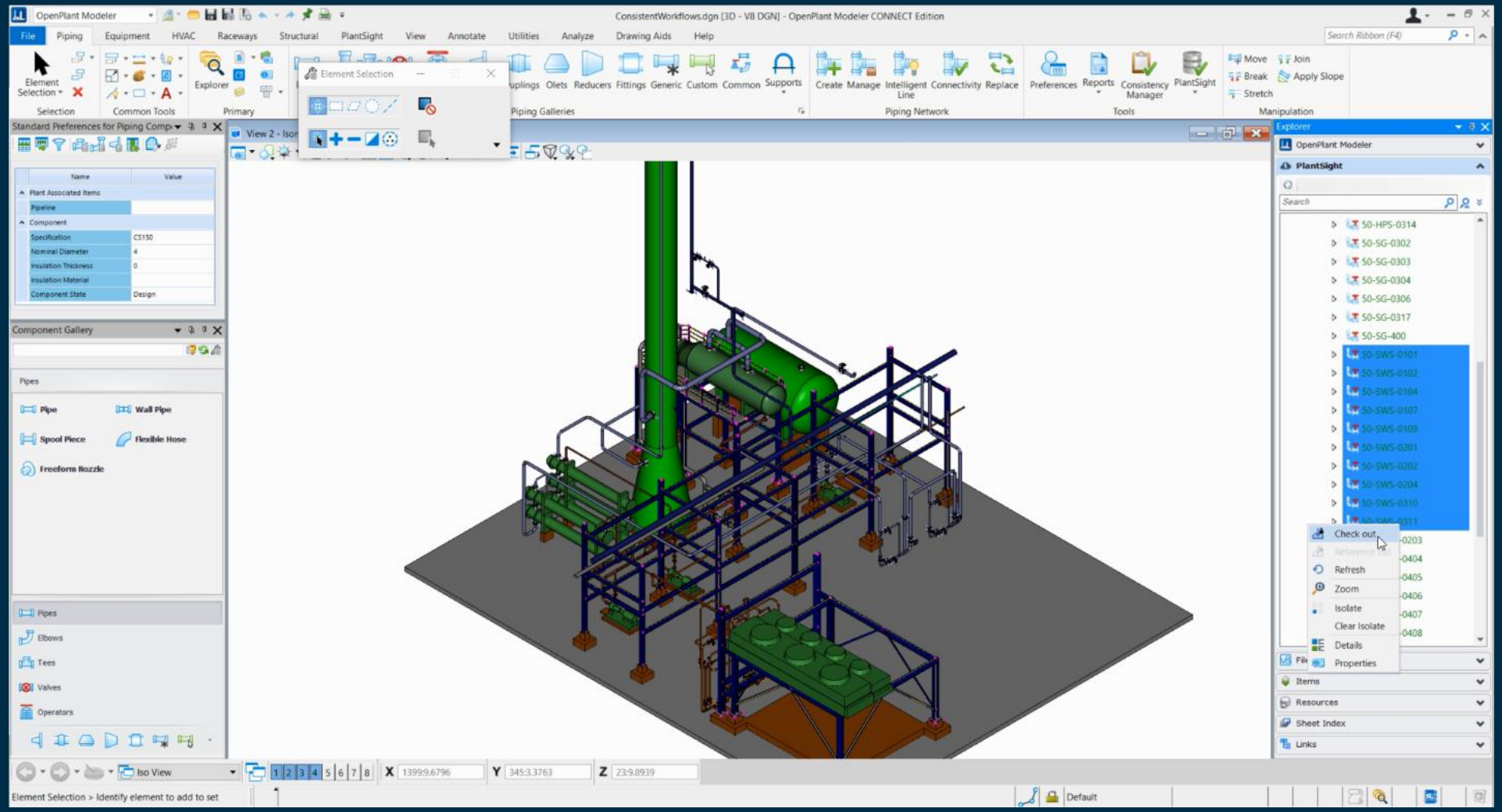
Collaboration – Component based workflows

- **Better control for distributed teams providing flexible features for multi-discipline modeling**



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Collaboration – Component based workflows

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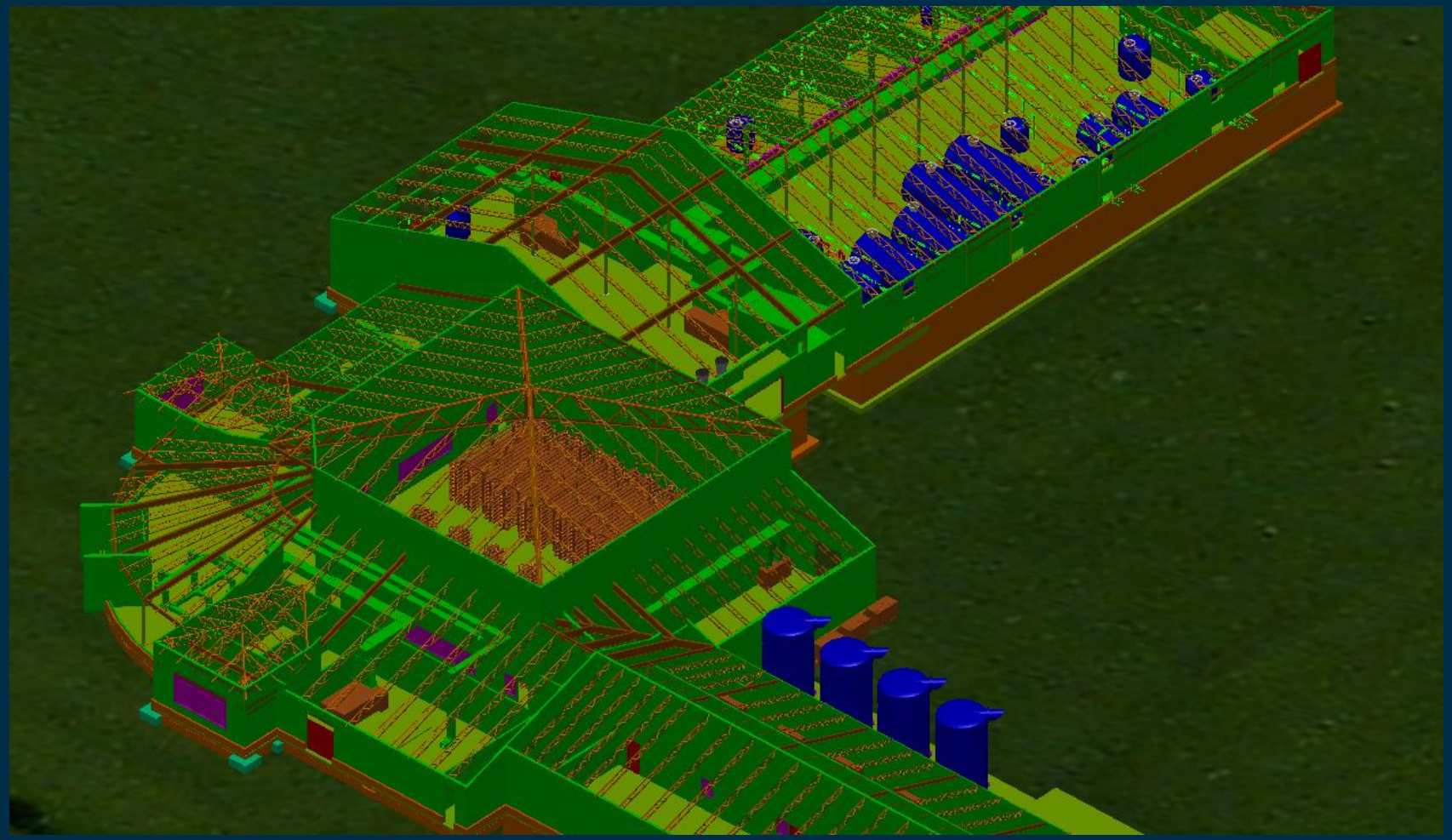

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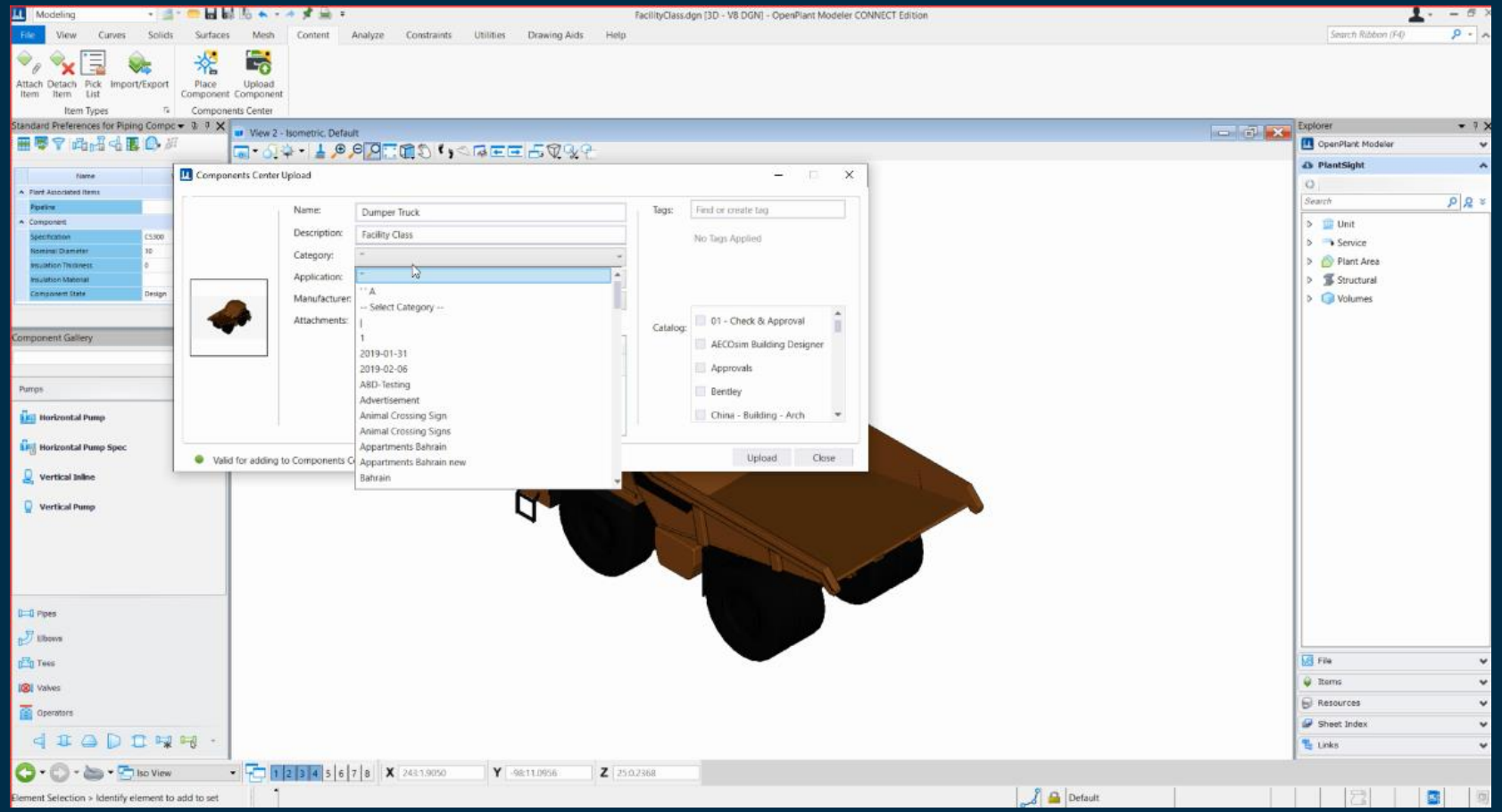
Collaboration – Using Component Center

- Components Center a cloud service that provides users with the objects that can be used in the design, construction, and operational workflows.
  - ➢Custom components support for OpenPlant
  - ➢Users can upload and define their own content.



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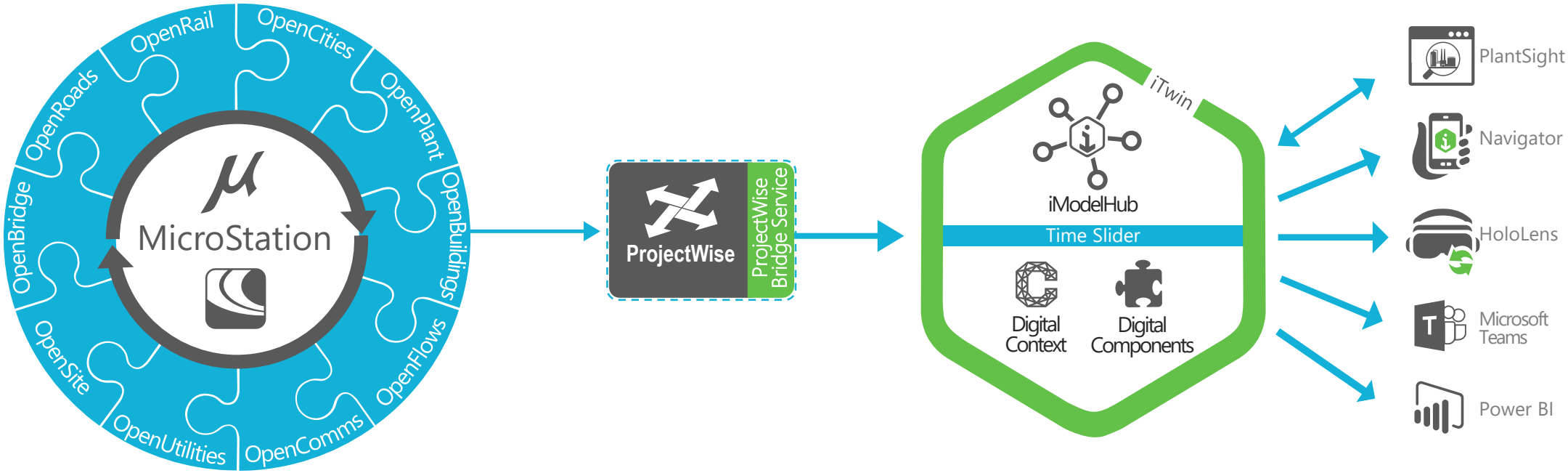
OpenPlant CONNECT Edition – Cloud-based Services



OPEN MODELING ENVIRONMENT

INFRASTRUCTURE DIGITAL TWIN

An iTwin is an Infrastructure Digital Twin

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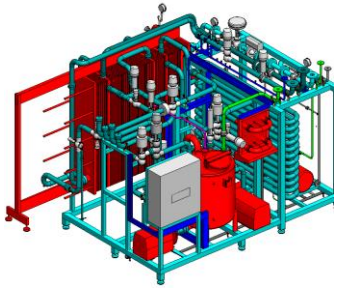
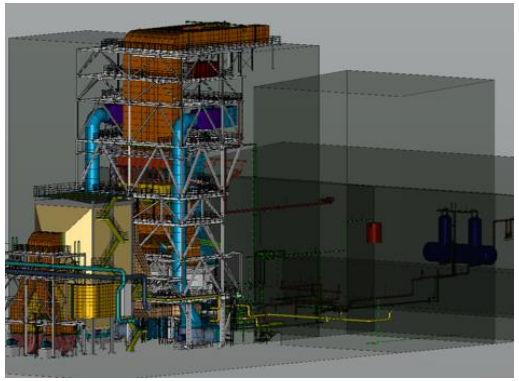
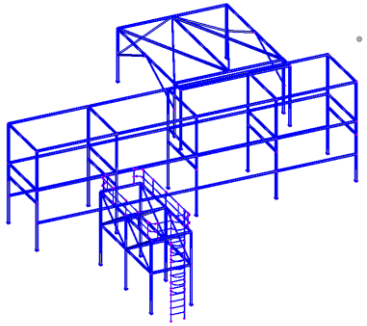
OpenPlant CONNECT Edition – Scalability

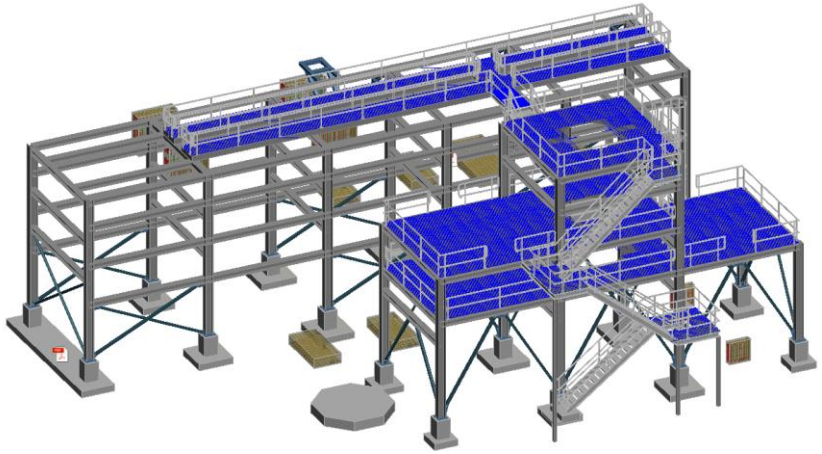
- Same solution to execute small to big projects





- Same solution to do basic engineering or detailed design





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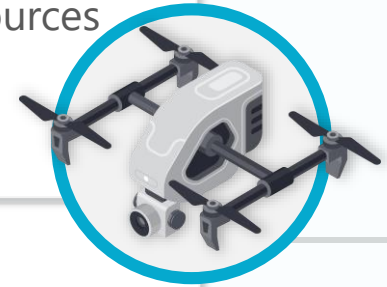
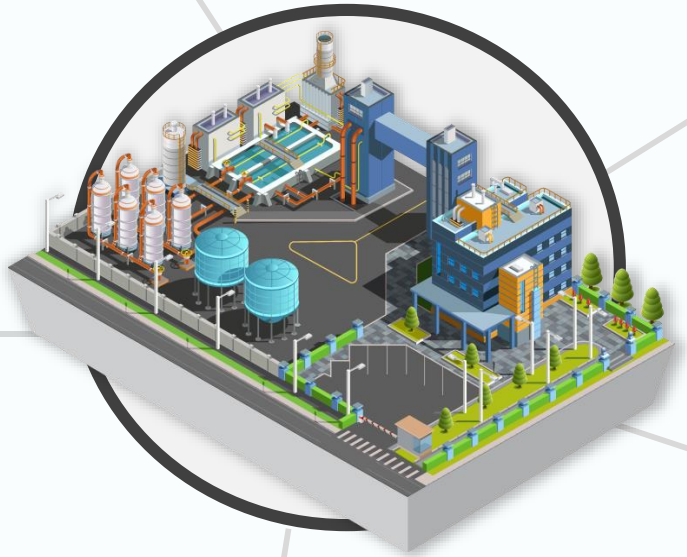
Plant Design Project Challenges

Brownfield / Greenfield

- Data acquisition
- Existing site conditions
- Data from various sources
- Communication
- Integration
- Safety



- Layout optimization
- Multiple contractors
- Multi-discipline
- Distributed / Remote teams
- Data handover
- Stakeholders involvement



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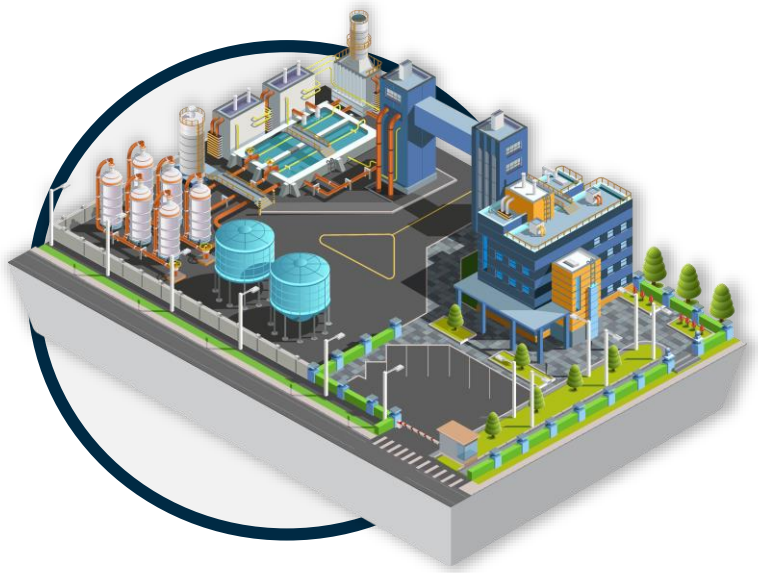
Physical Asset



Digital Twins

- Helps visualize as built against design and existing conditions in brownfield projects
- Various sources of data input and help create Digital Twins including design data from OpenPlant (3D Models, PIDs etc.), Reality Models, ERP and process data
- Integration: Once all this information is related it is easy for instance to cross probe reality data in design session

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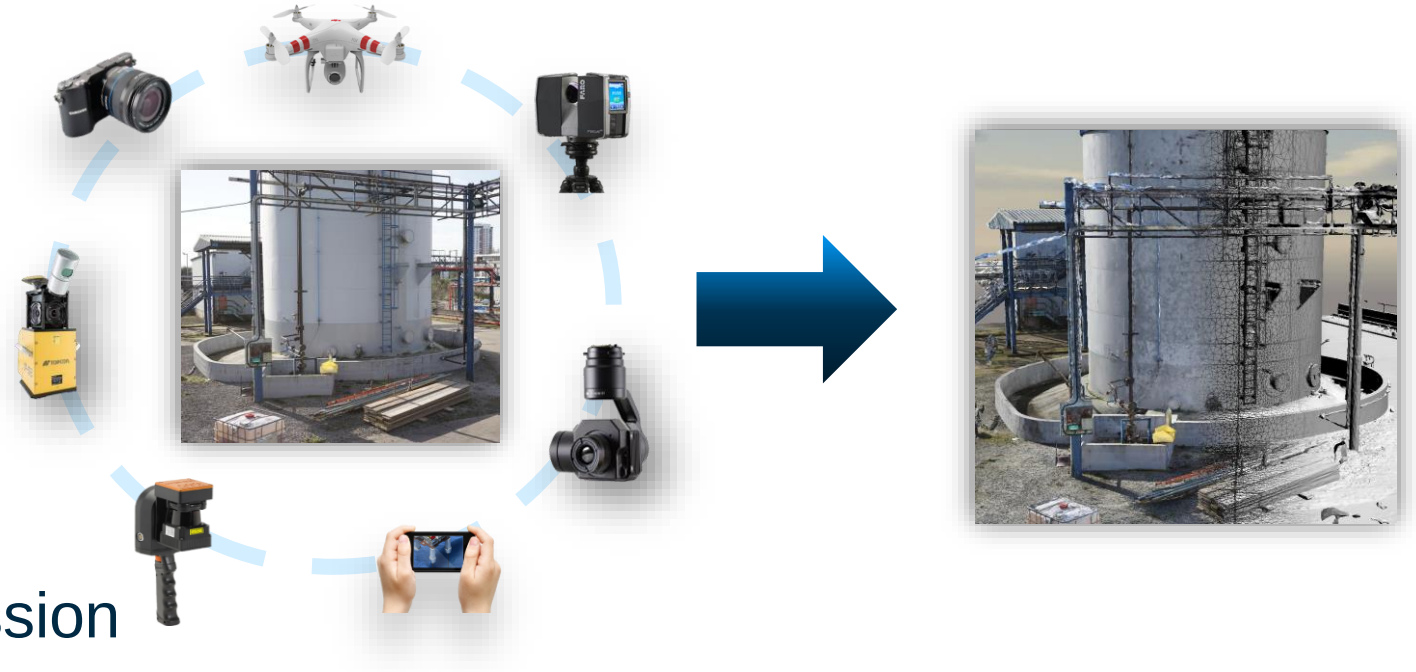
Reality Modeling – Existing Conditions

- Context Capture
  - Use photographs to accurately model existing conditions
- Point Clouds
  - Attach cloud to design session
  - Clipping tools
- LumenRT
  - Realistic walkthroughs
  - Models for review\client meetings



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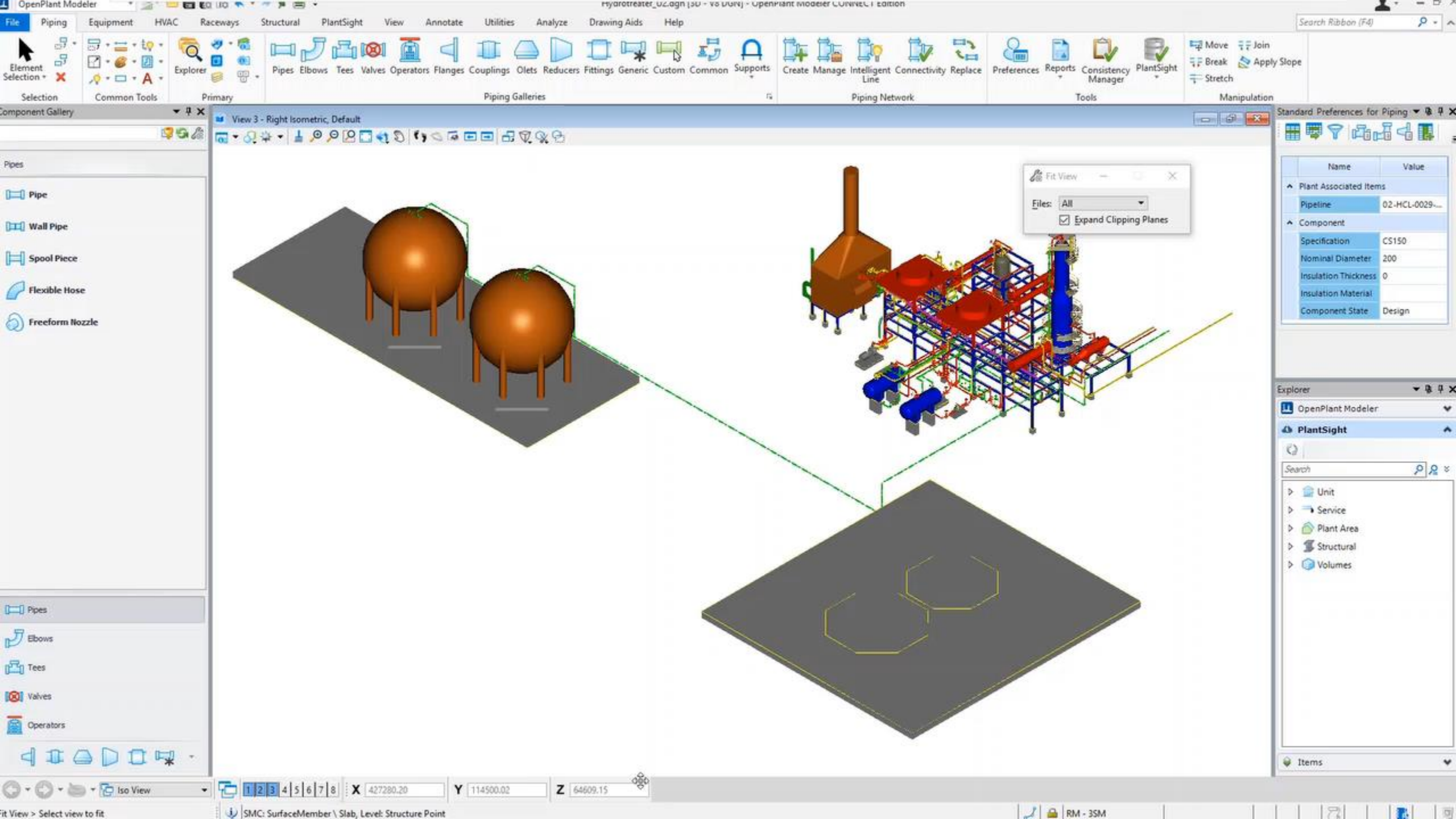
OpenPlant Modeler
File
Piping
Equipment
HVAC
Raceways
Structural
PlantSight
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Annotate
Utilities
Analyze
Drawing Aids
Help
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Element Selection
Explorer
Pipes
Elbows
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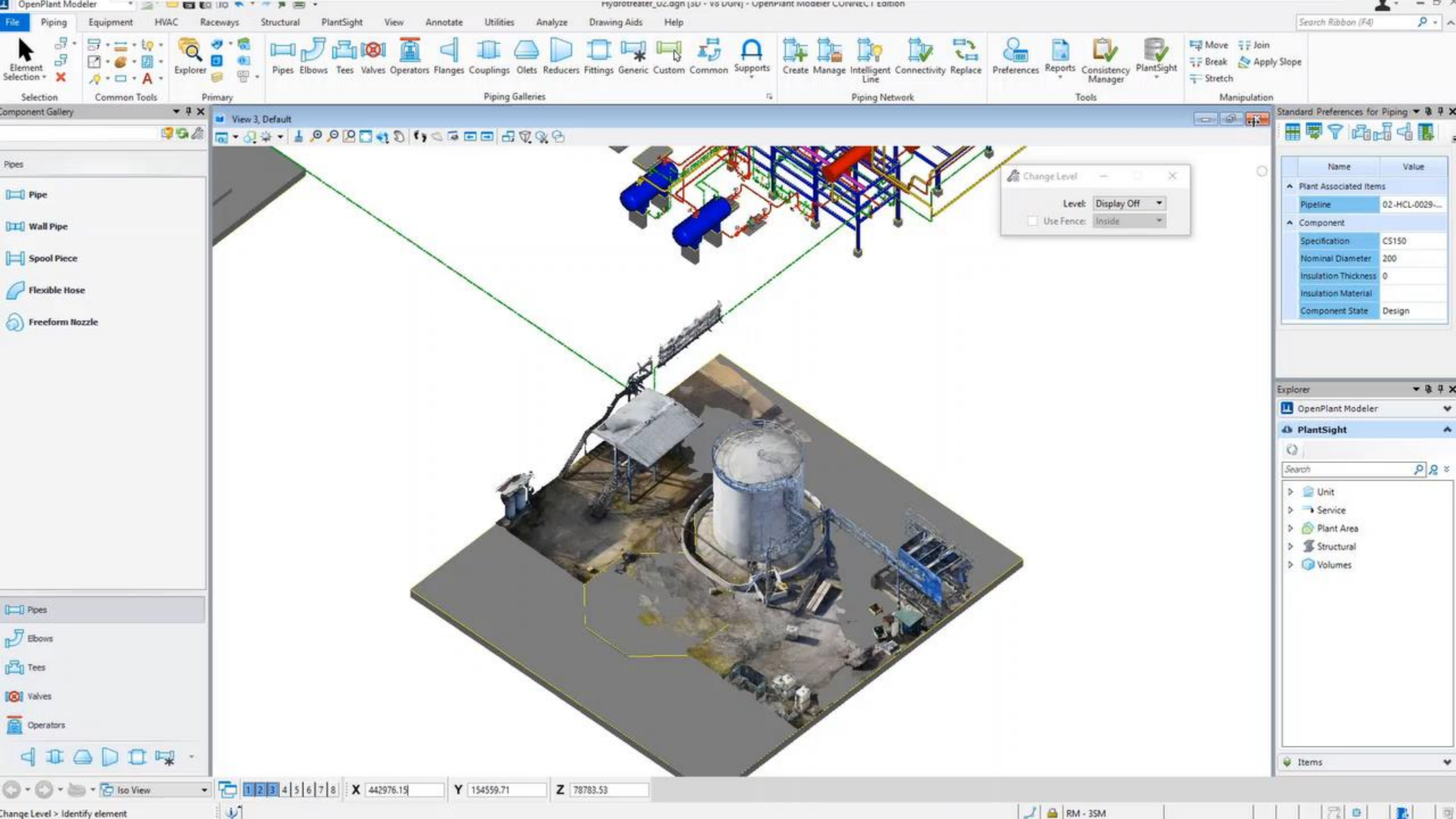
RM - 3SM


OpenPlant Modeler
Hydrotreater_02.dgn [3D - V8 DGN] - OpenPlant Modeler CONNECT Edition
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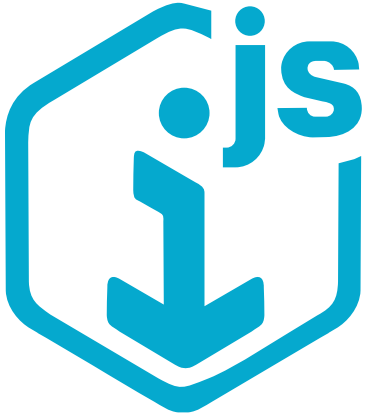
Z 78783.53
Change Level > Identify element
RM - 3SM

Extensibility with iModel.js

- ✓ Set of TypeScript API libraries
- ✓ Building web, desktop or mobile applications that interacts with iModelHub
- ✓ Support connected, as well as offline, workflows
- ✓ Frontend and backend libraries
- ✓ Open source for general access



www.imodeljs.org

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Thank you

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