

MAY 2022

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# Maximizing the Potential of AVEVA Operations Management Interface

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**AVEVA**



System Platform and OMI Background

Examples of OMI in Use

OMI Extensibility

What's Next

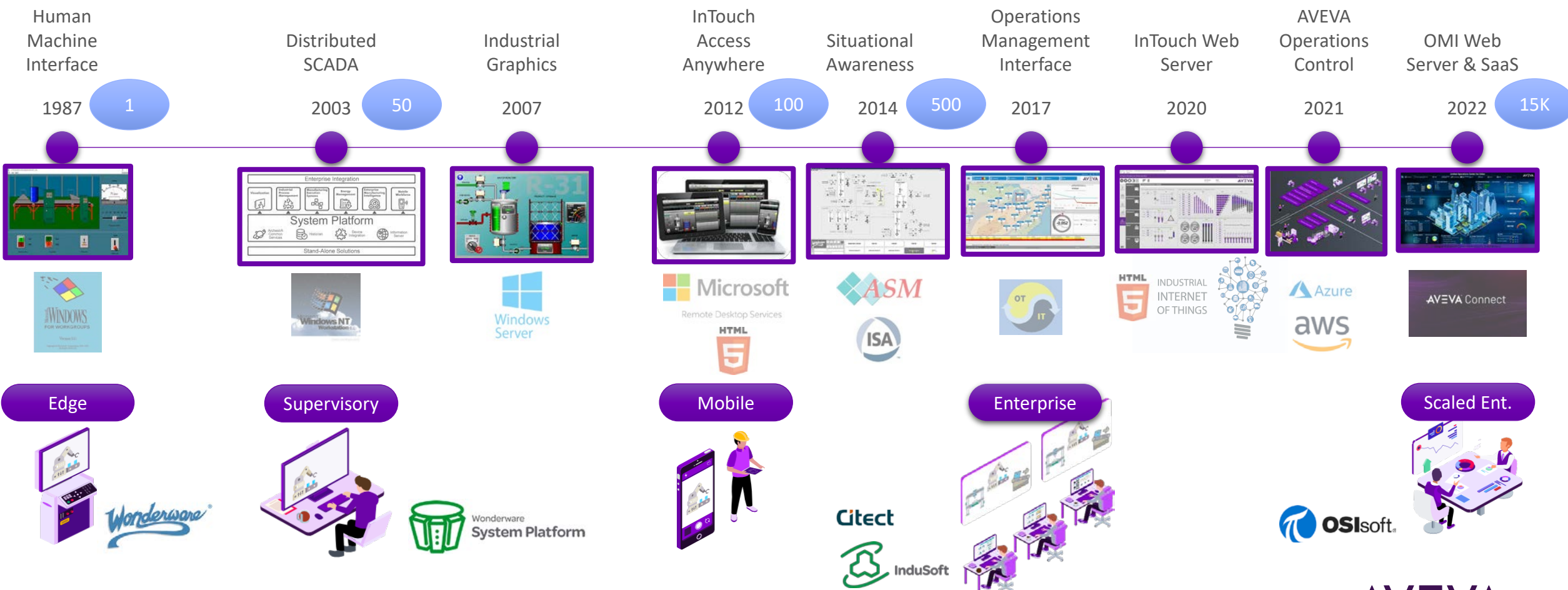


# System Platform and OMI Background



# Technical Evolution to Unified Operations

## Proven History of Market Leading Innovation



# AVEVA Operations Control

## Evolving HMI/SCADA to Operations Control

### Enterprise Edition

Long Term Focus  
(up to 1 Year)  
Enterprise View  
IT/OT Convergence



Command Center



Remote Operations Center



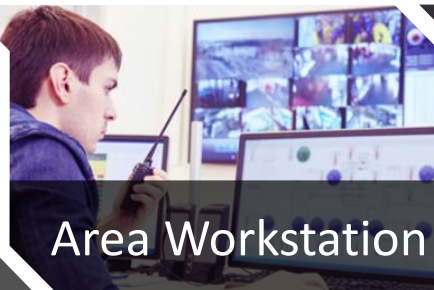
Casual User

### Supervisory Edition

Medium Term Focus  
(up to 1 Week)  
Process View  
OT Convergence



Control Room



Area Workstation



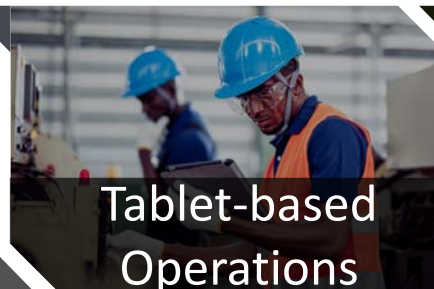
Mobile Supervisor

### Edge Edition

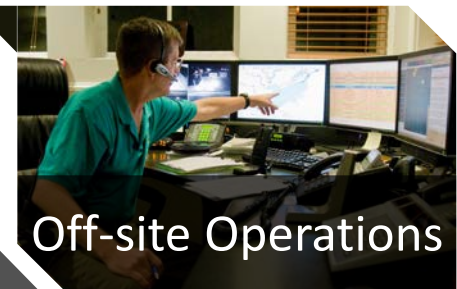
Short Term Focus  
(up to 1 Shift)  
Work Cell View  
Control Convergence



Panel-based Operations



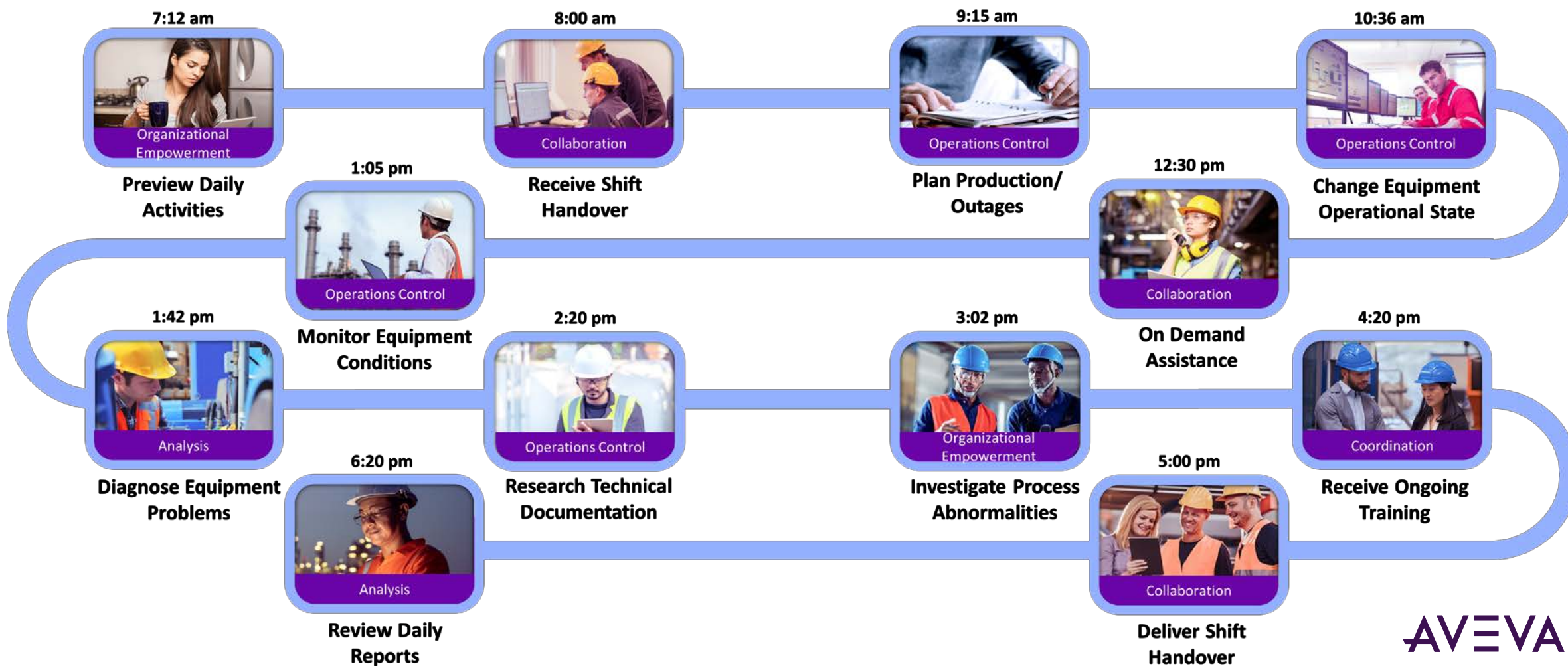
Tablet-based Operations



Off-site Operations

# Operations – A Day in the Life

Enabled By AVEVA Operations Control – Hybrid SaaS Solution



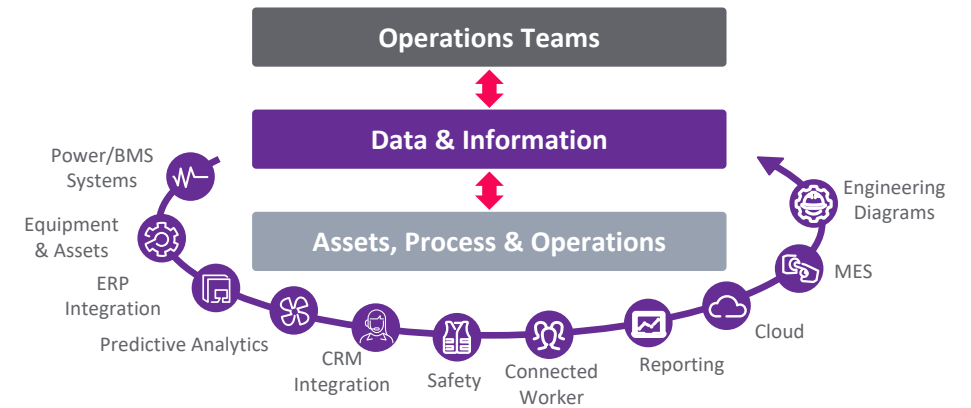
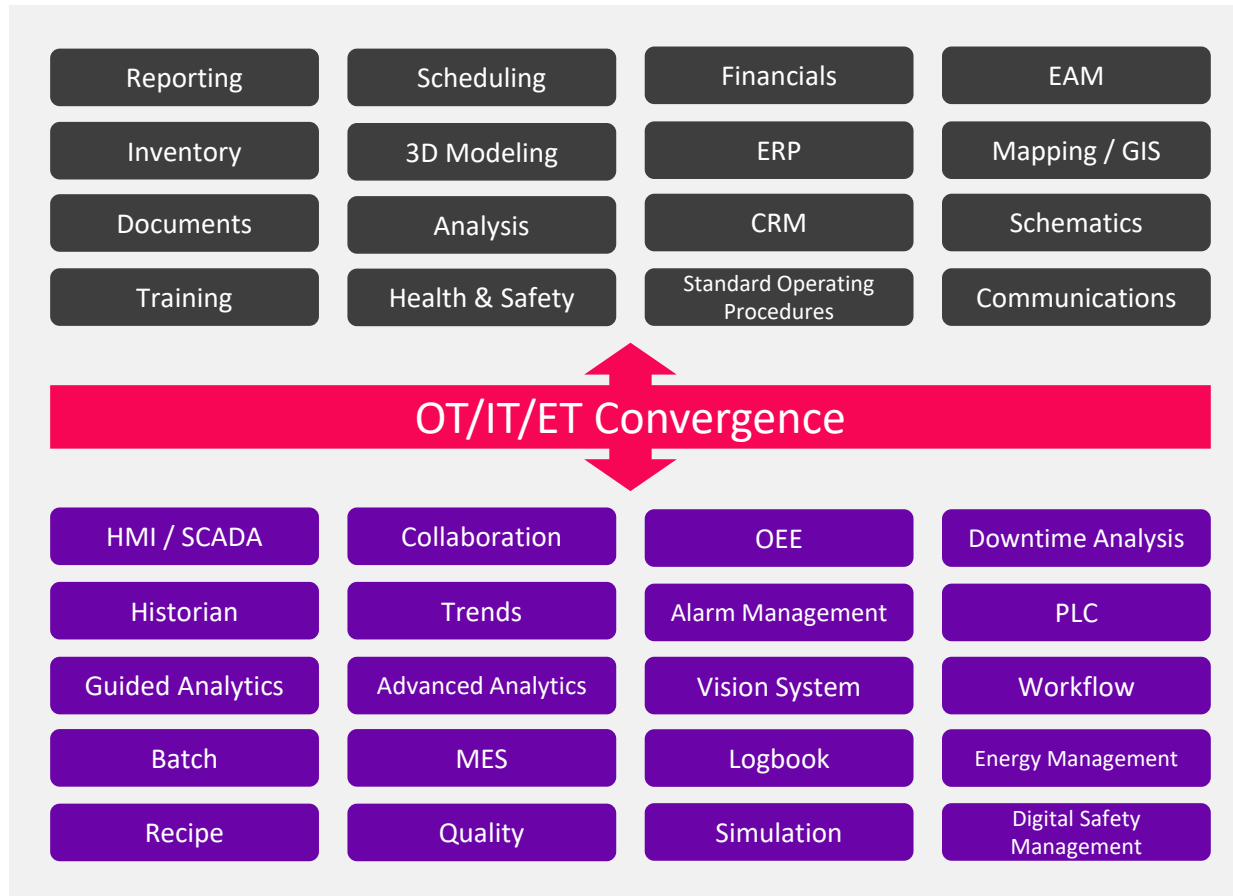
# AVEVA Operations Control

Unified Platform for All Aspects of Industrial Operations



# Unifying operations – convergence of IT, OT & ET

360° view of asset and operations life cycle



Relate disparate data sources & systems in context to each other

Reduce the effort required to identify insights between applications and data types

Provide actionable information to operations teams

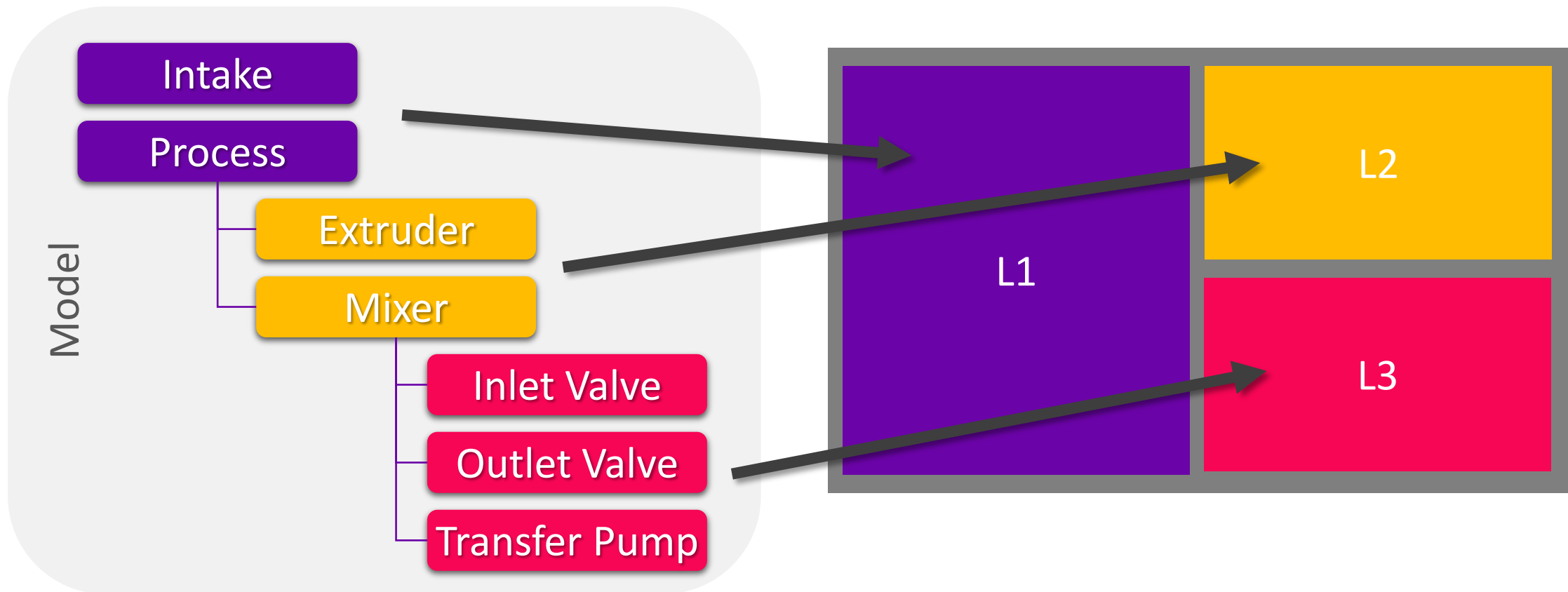
# AVEVA System Platform - Operational Digital Twin



# Data Driven Application Vision

Assembly Accelerated by Standards

Data Driven Applications

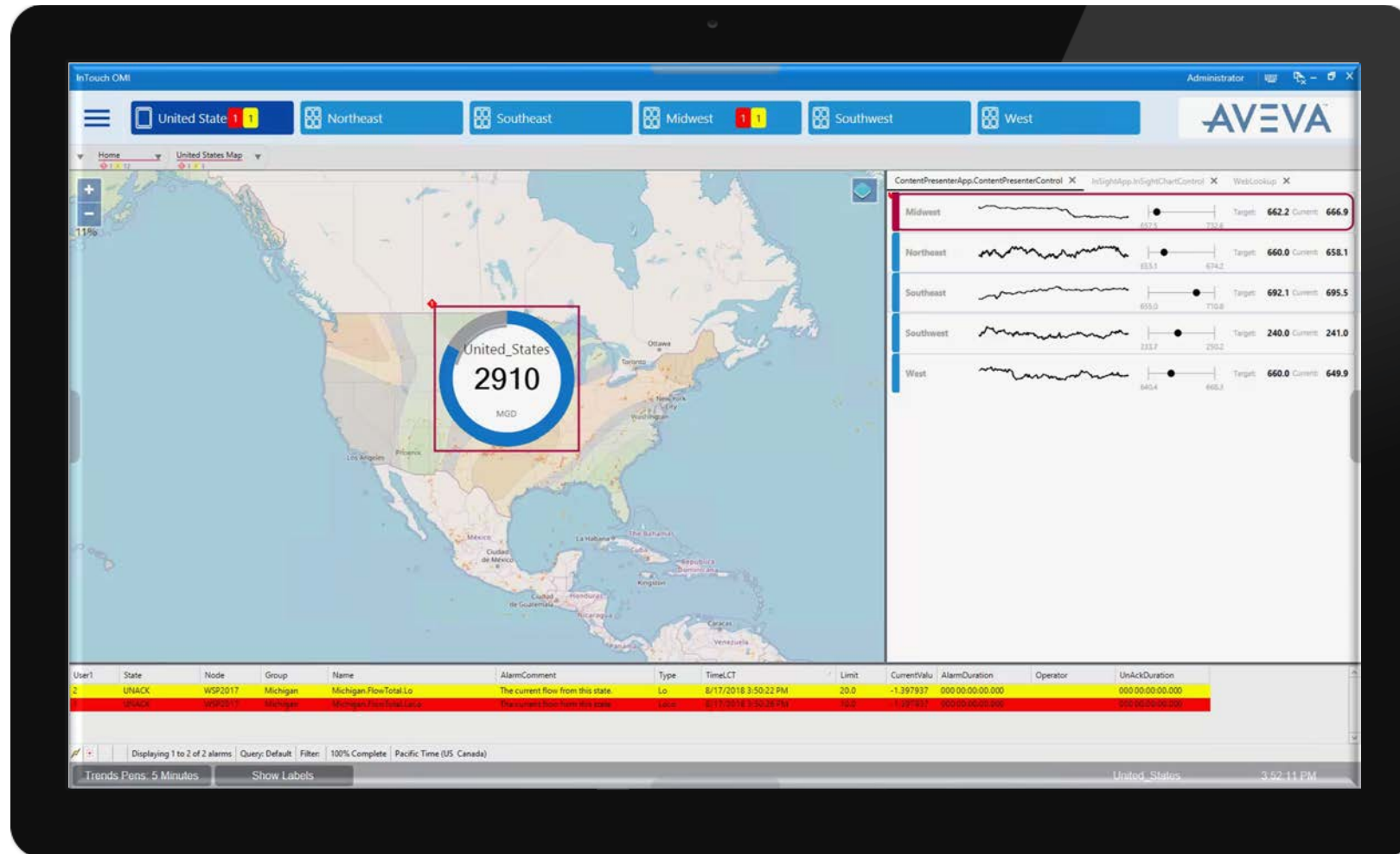




# Examples of OMI in Use

# What is OMI?

## Operations Management Interface



# AVEVA Unified Operations Center for enterprise visualization

End-to-end enterprise visibility  
across engineering and operations



Enhanced layers of intelligence that ensures  
data works in service of organizational goals

# A step change in operational awareness



## Total Generation(YTD)



OPERATION



REVENUE



FORECAST



MAINTENANCE

## Solar

Yesterday  
24.7 GWh



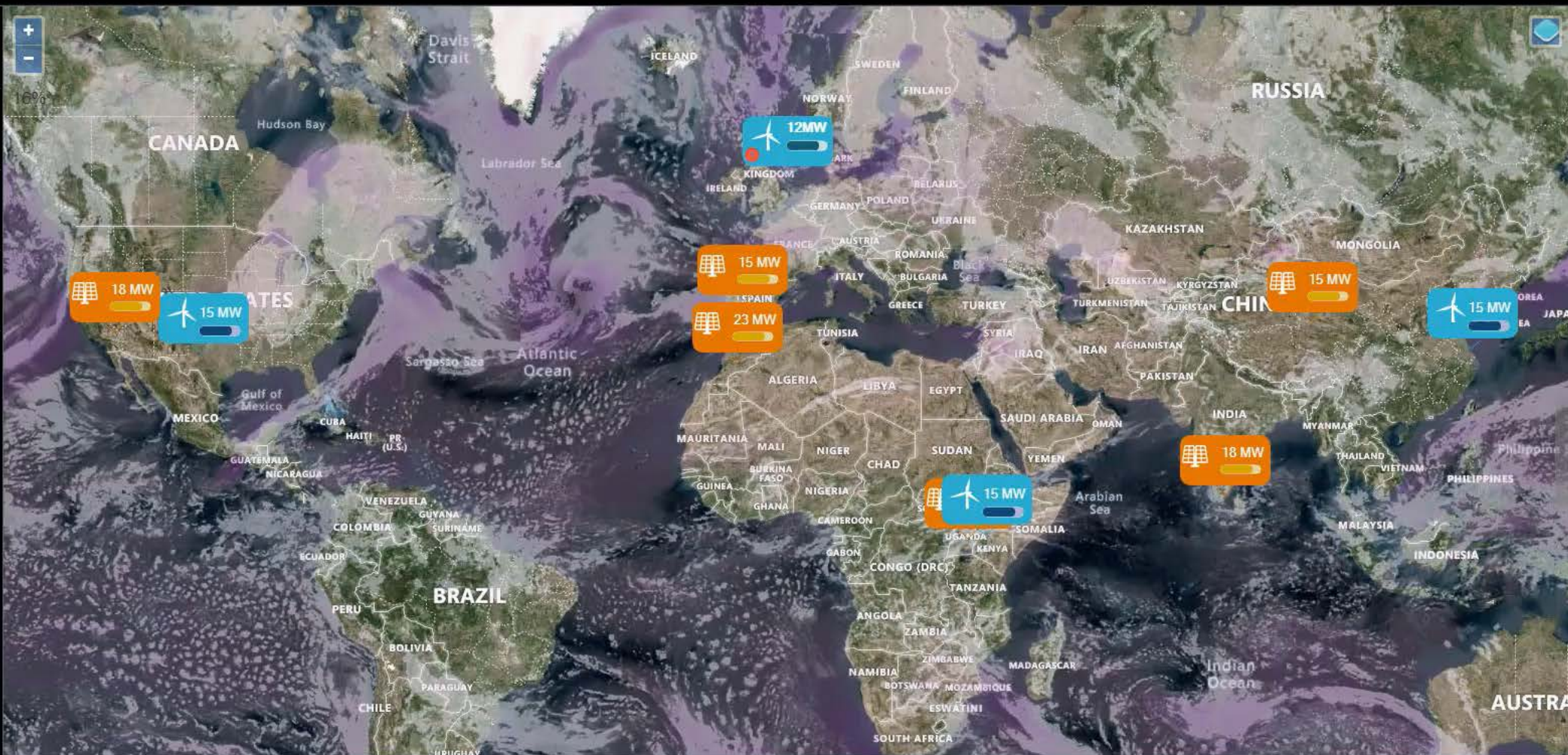
## Wind

Yesterday  
36.8 GWh



## Non Renewable

Yesterday  
29 GWh



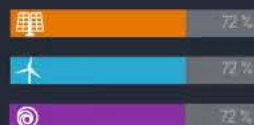
North America

2.94 TWh



Africa

3.99 TWh



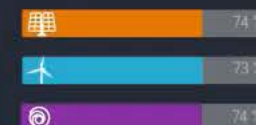
Europe

2.94 TWh



Australia

1.89 TWh



Asia Pacific

3.99 TWh



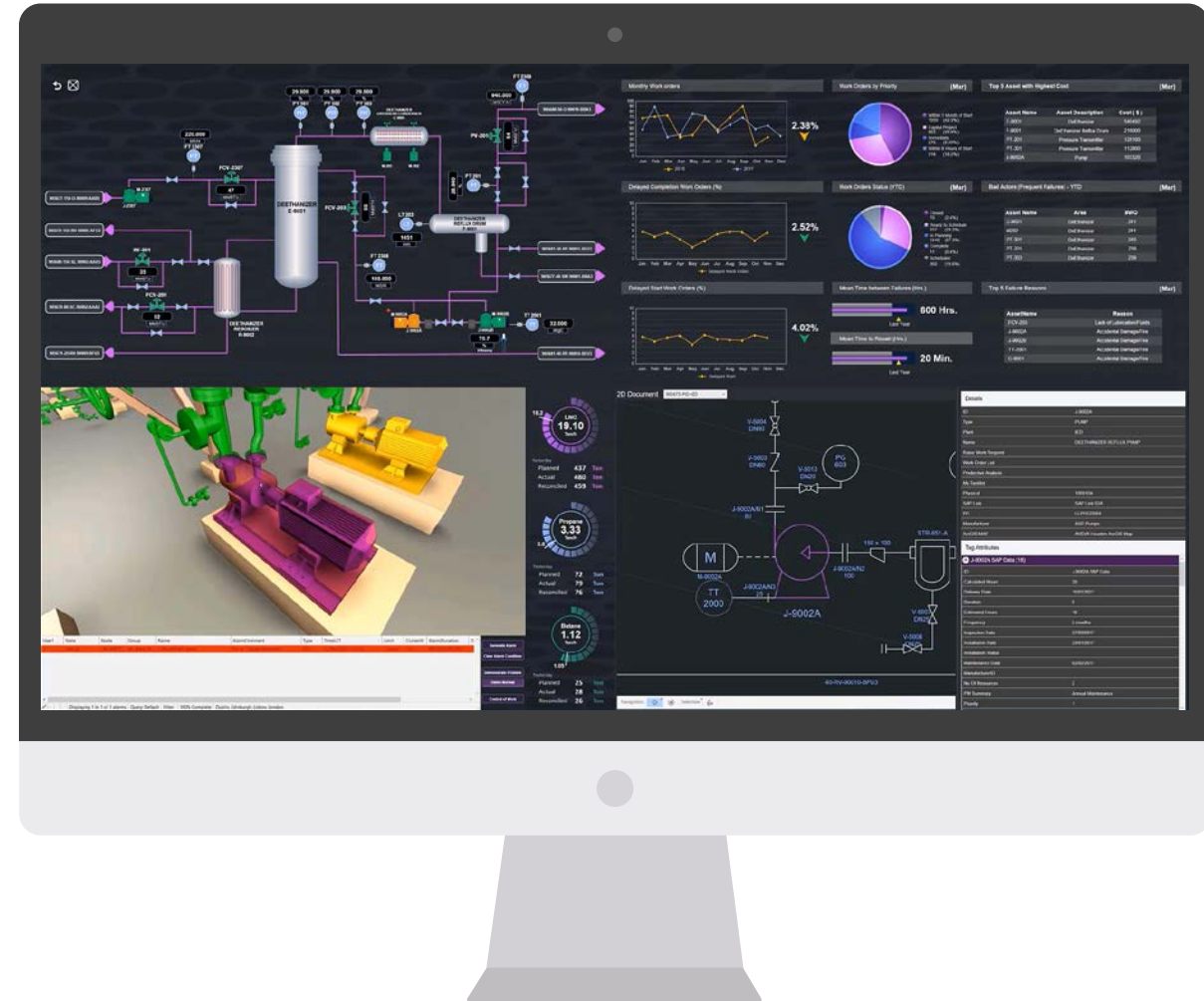


# OMI Extensibility

# 3D Viewer OMI App / Service

Deliver 3D Model visualization capability into AVEVA System Platform & OMI for spatial and situational context of an asset's operational status.

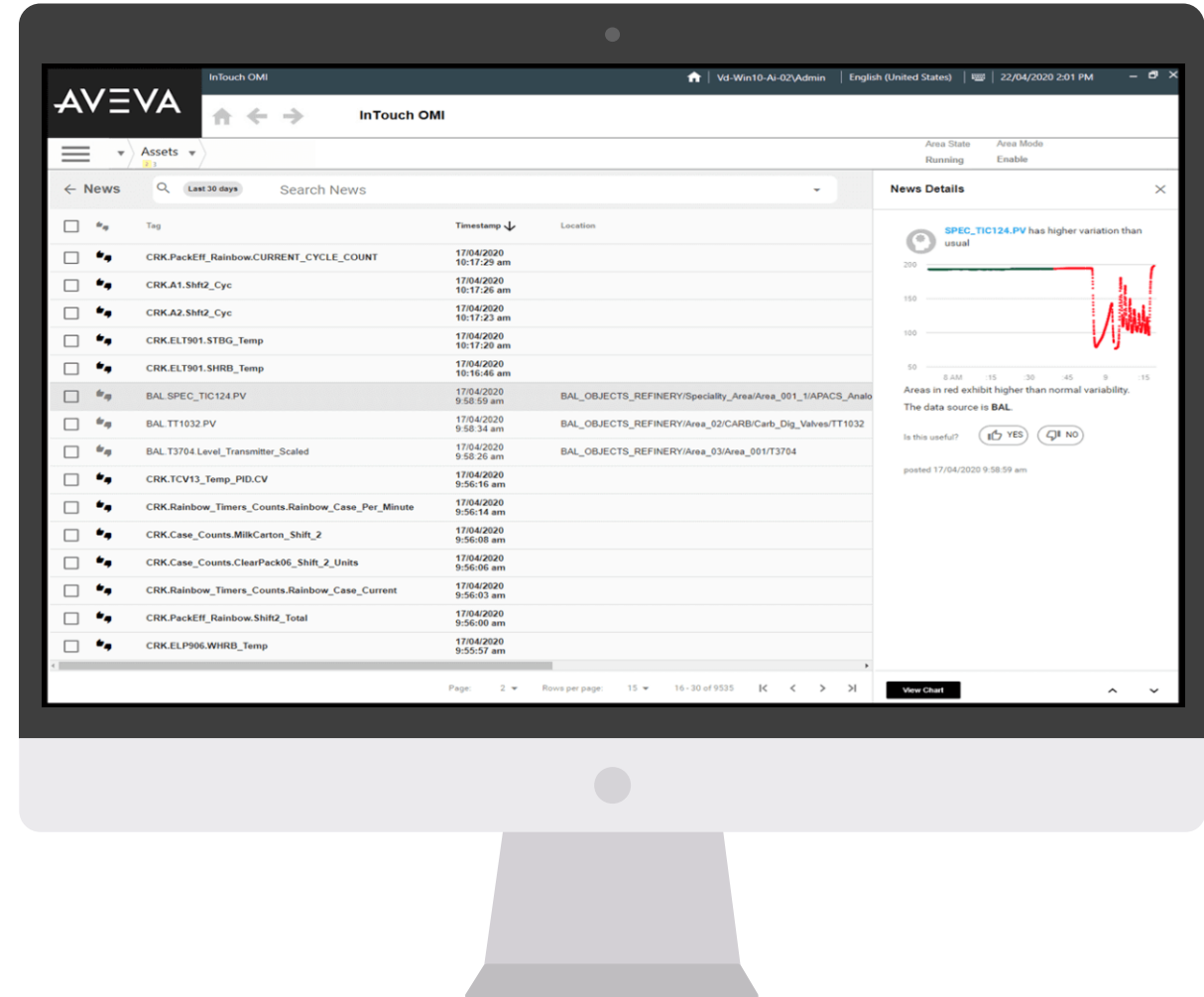
- Place output files from AVEVA E3D Design
- 3D models allow operators to more quickly and intuitively understand the context of alarms, alerts, and status changes, allowing them to visualize the impact of operational status information in the context of the surrounding asset
- 3D App to OMI: Show current OMI context when a 3D Object is selected in the 3D Viewer OMI App
- OMI to 3D App: If the OMI context changes for an object, the corresponding 3D view is changed enabling you to zoom and highlight that object.
- The Tag Colors property can be used to set the display color of one or more objects in the 3D scene.
- Allows multiple tag-color groupings in a single cell and accepts alpha values for the setting of translucent materials
- Advanced functionality that provides users with multiple navigation options using touch or a windows mouse



# AVEVA Insight OMI App (AI)

Automatically detect anomalies in your data and present this in a context-aware view for your operations team.

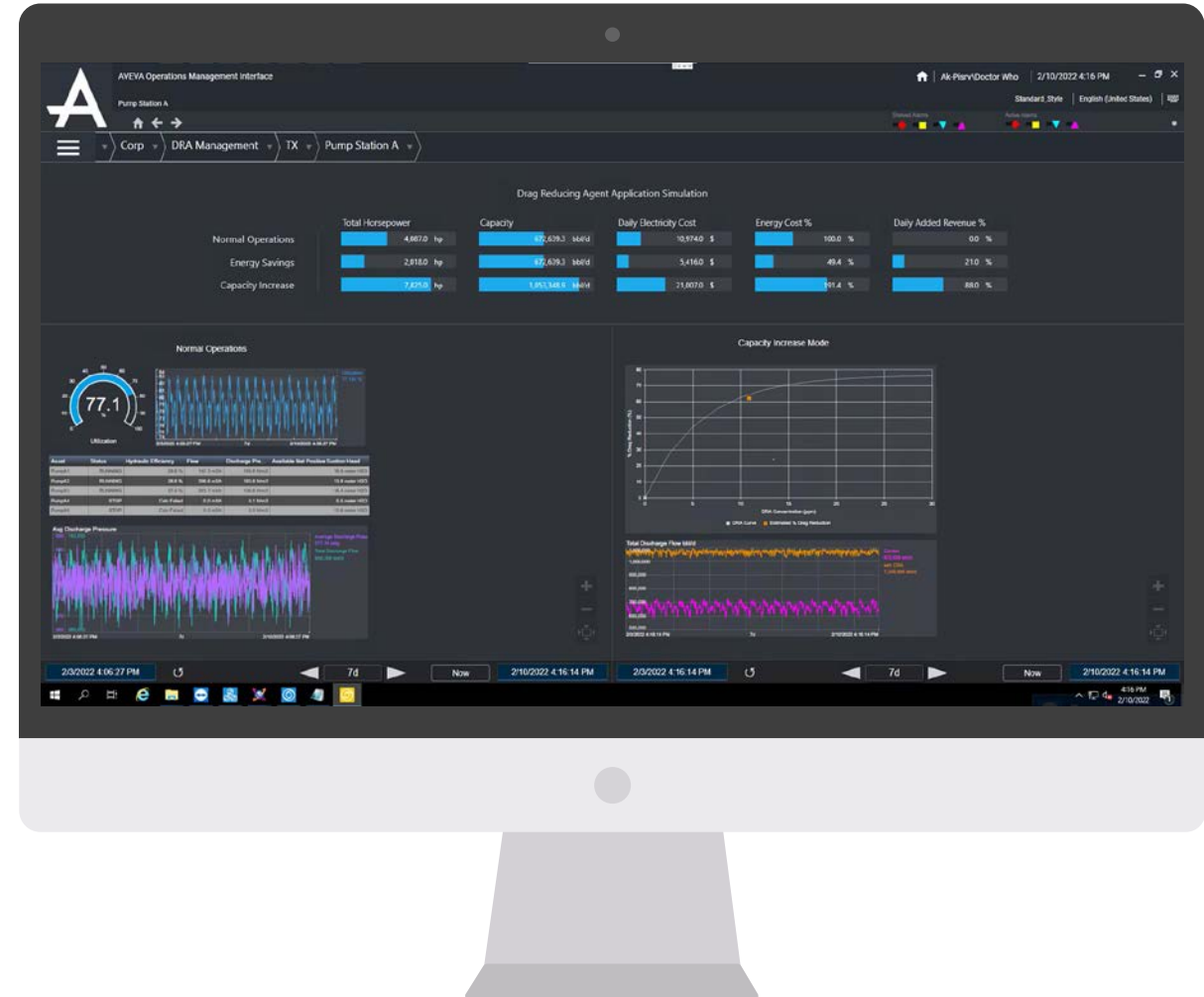
- Anomalies detected are presented in a tabular view, with sorting, filtering, and searching capabilities to help operators find what they're looking for quickly and easily. Also includes a summary view, providing a heads-up display of how many anomalies have been detected across the entire system. These are also automatically grouped into read and unread, so you know how many are awaiting review.
- Details for each anomaly are displayed in a side panel showing the asset, a summary of the anomaly, and a chart highlighting when the anomaly occurred which can be opened full-screen for a more in-depth diagnosis.
- Anomalies can be classified as either useful or not useful, which is used to help improve the Artificial Intelligence algorithms, so you see more of what's valuable and less of what isn't.
- Changes in OMI context will apply filtering within the Insight OMI App such that only stories that match the current OMI asset context are shown. When a story (anomaly) is selected in the details view, it affects the active context of other OMI content in the same layout.
- A subscription to AVEVA Insight is required.



# AVEVA PI Vision OMI App

Easily integrate existing AVEVA PI Vision dashboards into AVEVA System Platform benefiting from navigational context between selected content.

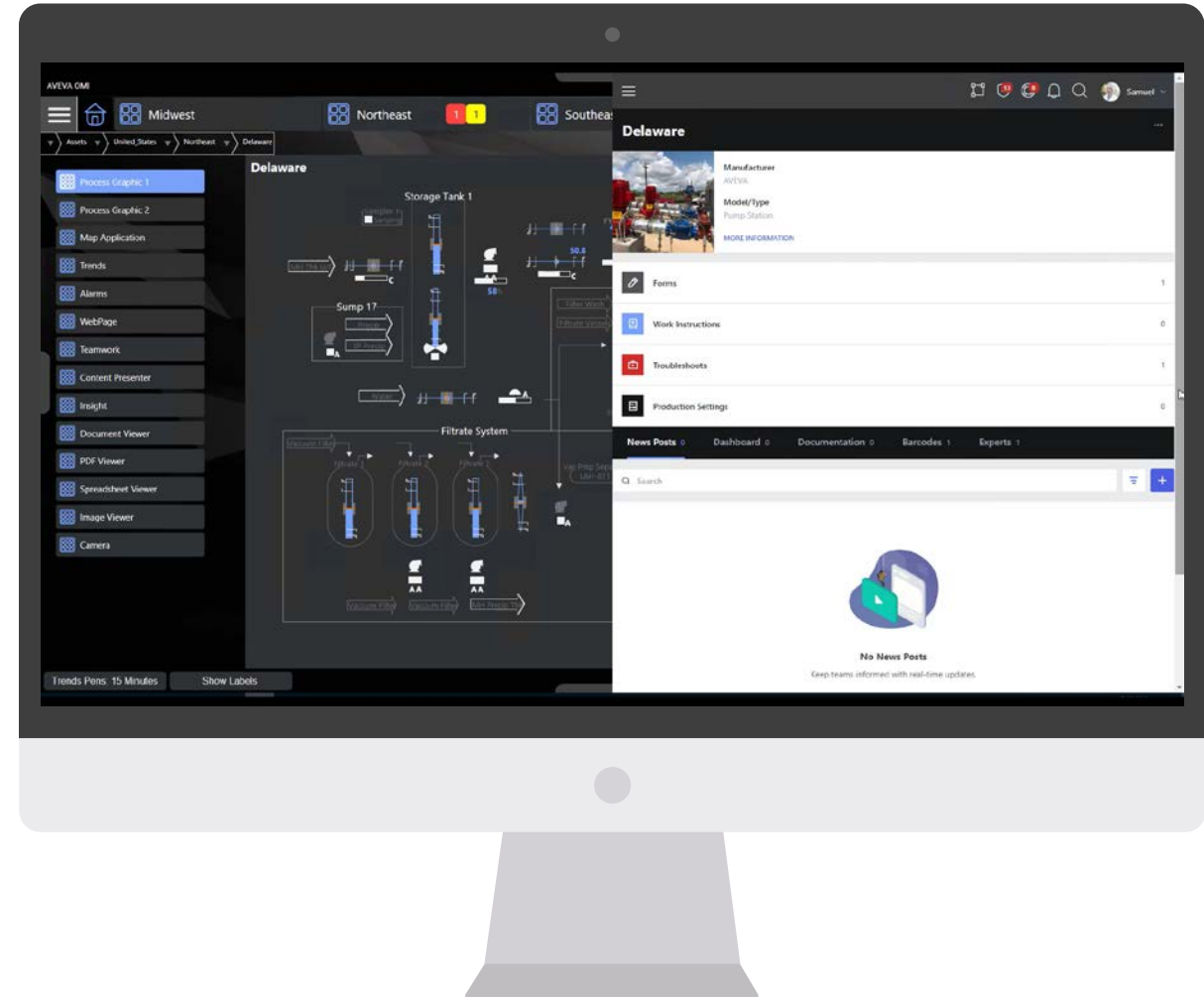
- Securely connect to a PI Vision server, with three (3) display modes:
  - Ad hoc displays: Select any of the built-in symbols (e.g., trends, gauges, tables etc.) to create ad hoc displays. If Follow Current Context is selected, the Ad hoc displays will automatically populate its data based on the asset context. Alternatively, users can manually or programmatically populate the data items.
  - Dashboard displays: Specify a custom-built dashboard to display. If Follow Current Context is selected, the app will search for and display dashboards with the asset context associated as a keyword. Alternatively, users can manually or programmatically specify a dashboard to display. Optional: Manually or programmatically, specify an asset using a PI Asset Framework Asset Path which will modify the dashboard to display data for the specified asset.
  - Freeform mode: This allows the user to supply any parameters that the webserver will accept and display the resulting configuration. This will allow adding other PI Vision content such as Event Detail or Event Comparison visualization.
- Specify a Start and End time for these dashboards which will apply aggregation or a time range, depending on the dashboard and the data.
- Can also be configured to hide or show the time bar, toolbar, sidebar or to configure the resulting dashboard in kiosk mode.



# AVEVA Teamwork Widget

Bring collaboration and knowledge retention from AVEVA Teamwork directly into an AVEVA System Platform application with single sign-on for users.

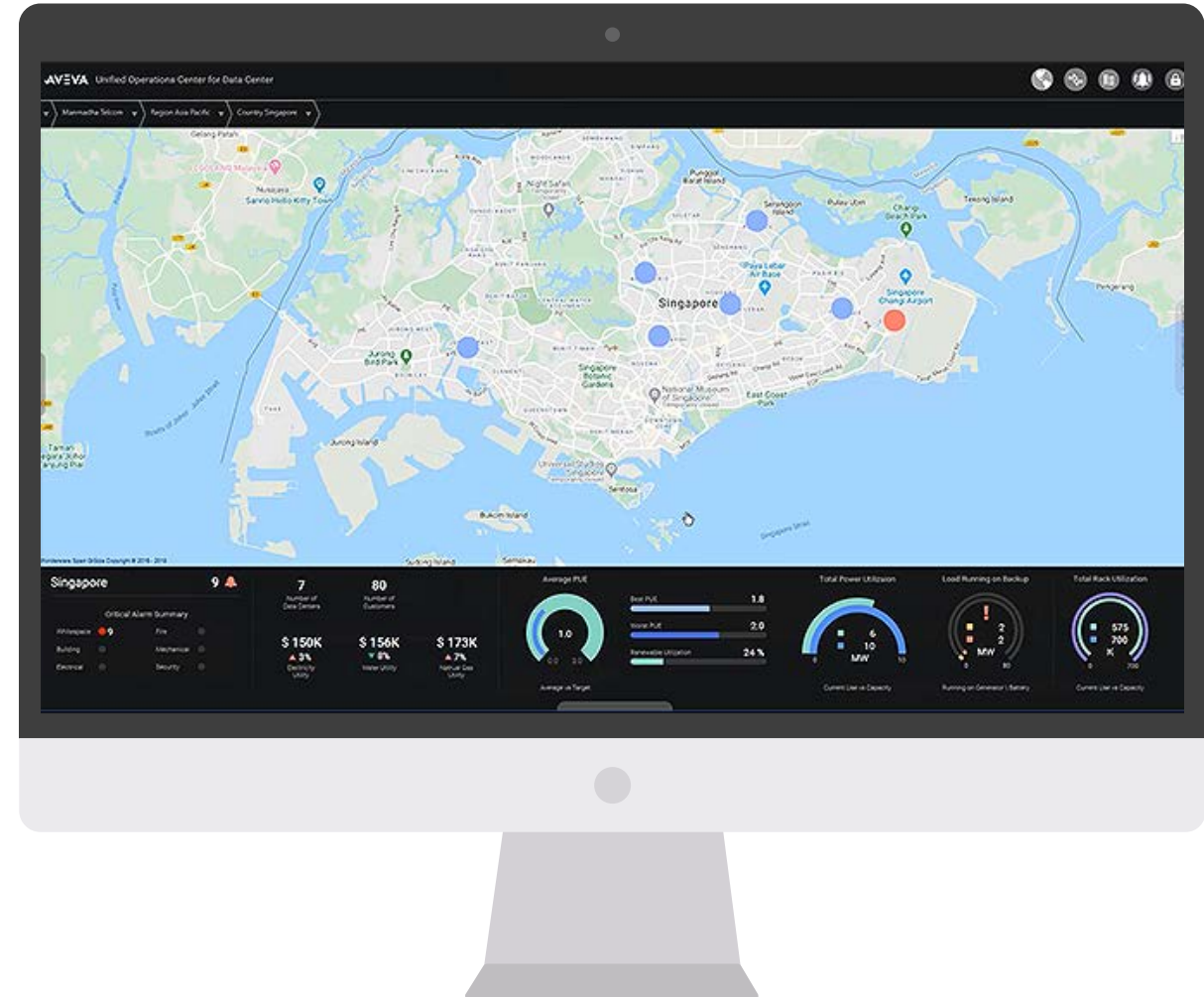
- Access News Feeds in context to the current screen to understand what colleagues have posted.
- Simplify access to troubleshooting videos and raise issues with subject matter experts from within AVEVA Operations Management Interface inline with equipment and processes.
- Utilize a slide-in pane to reveal the fully-functional Teamwork application on any screen.
- Seamlessly links your System Platform assets with Teamwork, automatically.
  - Simply point to the URL of the Teamwork instance
  - Configure security to either log in manually or use single-sign on with your OS-based security within System Platform
  - Assets within System Platform will automatically point to the named assets within Teamwork
- A subscription to AVEVA Teamwork is required.



# Map OMI App

Incorporate a zoomable world map into your OMI application and apply geographical context to operations content. The Map OMI App can be configured to show a defined area and utilize your map provider of choice.

- Leverage OMI model-based navigation to drive context-aware mapping, and allow map selections to drive application navigation
- Attach interactive real-time graphics and content to specific coordinates
- Pan and zoom for greater or lesser detail
- Restrict zoom levels and panning to a specific area of the world
- Support Map Providers
  - Google
  - Bing
  - Baidu
  - ArcGIS
  - Open Street Maps
  - WMS
  - XYZ
- Installed and available for use by default with AVEVA System Platform



# OMI App for Microsoft Power BI

Enables a Power BI report to be shown within an application allowing customers to dynamically configure dashboards based on the current context or configuration of the application.

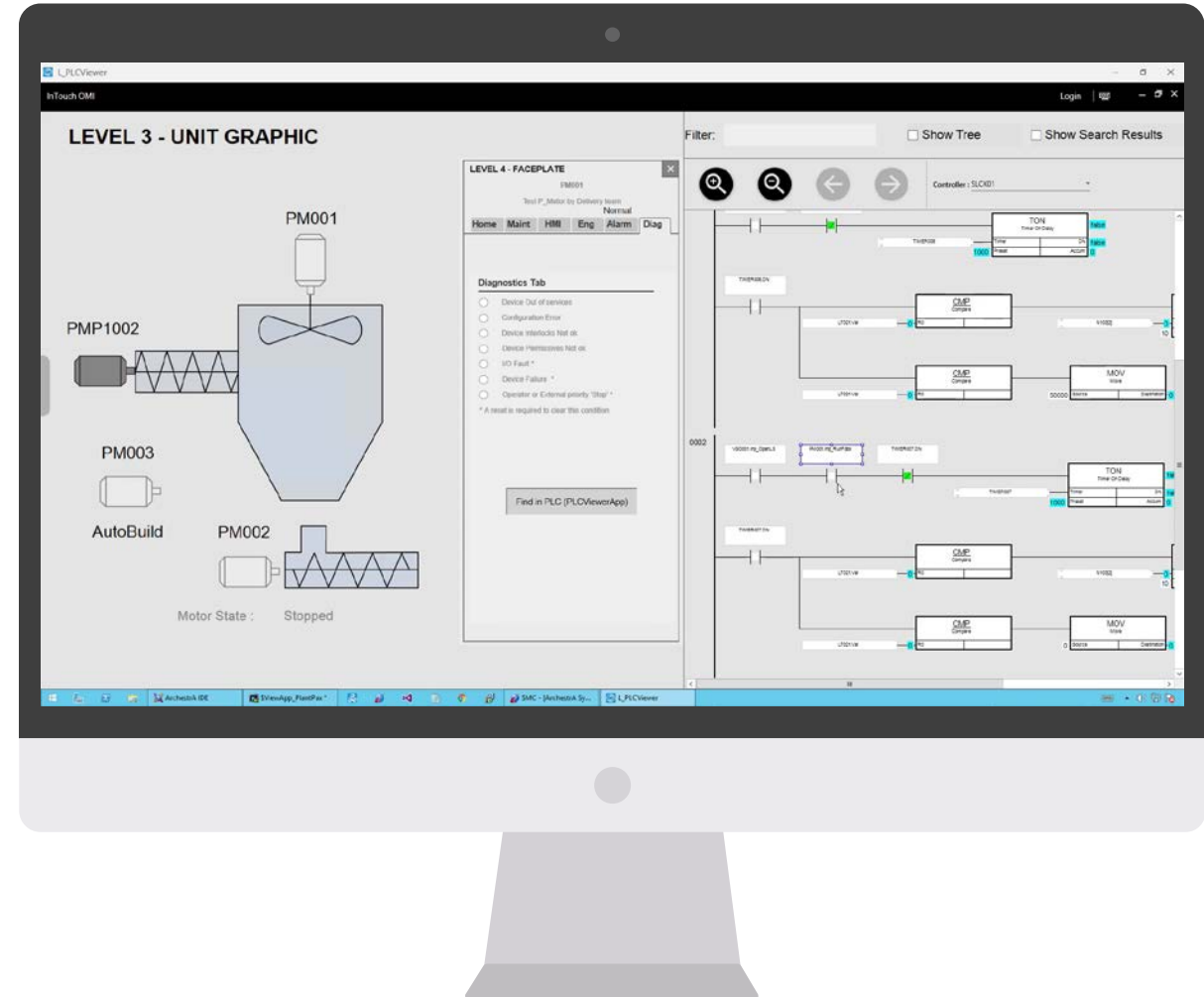
- Enables a Power BI report to be shown within a supervisory HMI and SCADA application using AVEVA System Platform, or an enterprise visualization application using AVEVA Unified Operations Center.
- Microsoft Power BI is a suite of software services, apps, and connectors that aggregate unrelated sources of data to produce business analytic reports that appear in a web dashboard using dynamic graphical representations of selected data shown on the dashboard based on a set of integrated filters.
- The OMI App for Microsoft Power BI allows customers to dynamically configure these dashboards based on the current context or configuration of the application.



# PLC Viewer OMI App

Users can navigate PLC logic in an OMI App to identify problem areas, investigate abnormal behavior, diagnose fault conditions, and identify interlocks that would otherwise require access to the PLC programming software.

- Provision for an asset naming map to translate names in the System Platform namespace to tag names in each PLC if the names are different. An asset mapping file contains a list of assets that represent physical objects like a pump or a valve in your production environment that are monitored and managed by a running OMI application.
- Handles multiple programs simultaneously, scroll around and explore the code as required.
- A system of flyover help can be shown by hovering your mouse directly over a function block to show the asset identifier associated with the block. The flyover help can also show embedded Rockwell Compute expressions by hovering the mouse over a compute block title. An optional tree view will visualize the entire PLC namespace and allow the user to explore further.
- Support for Rockwell Series 5000 controllers
- Support for Schneider Electric Unity Pro and EcoStruxure™ Control Expert
- Additional language support:
  - Sequential Function Chart (SFC)
  - Function Block Diagrams (FBD)
  - Structured Text (ST)



# Sankey Diagram OMI App

View proportional product flow between assets at multiple levels for material flow analysis

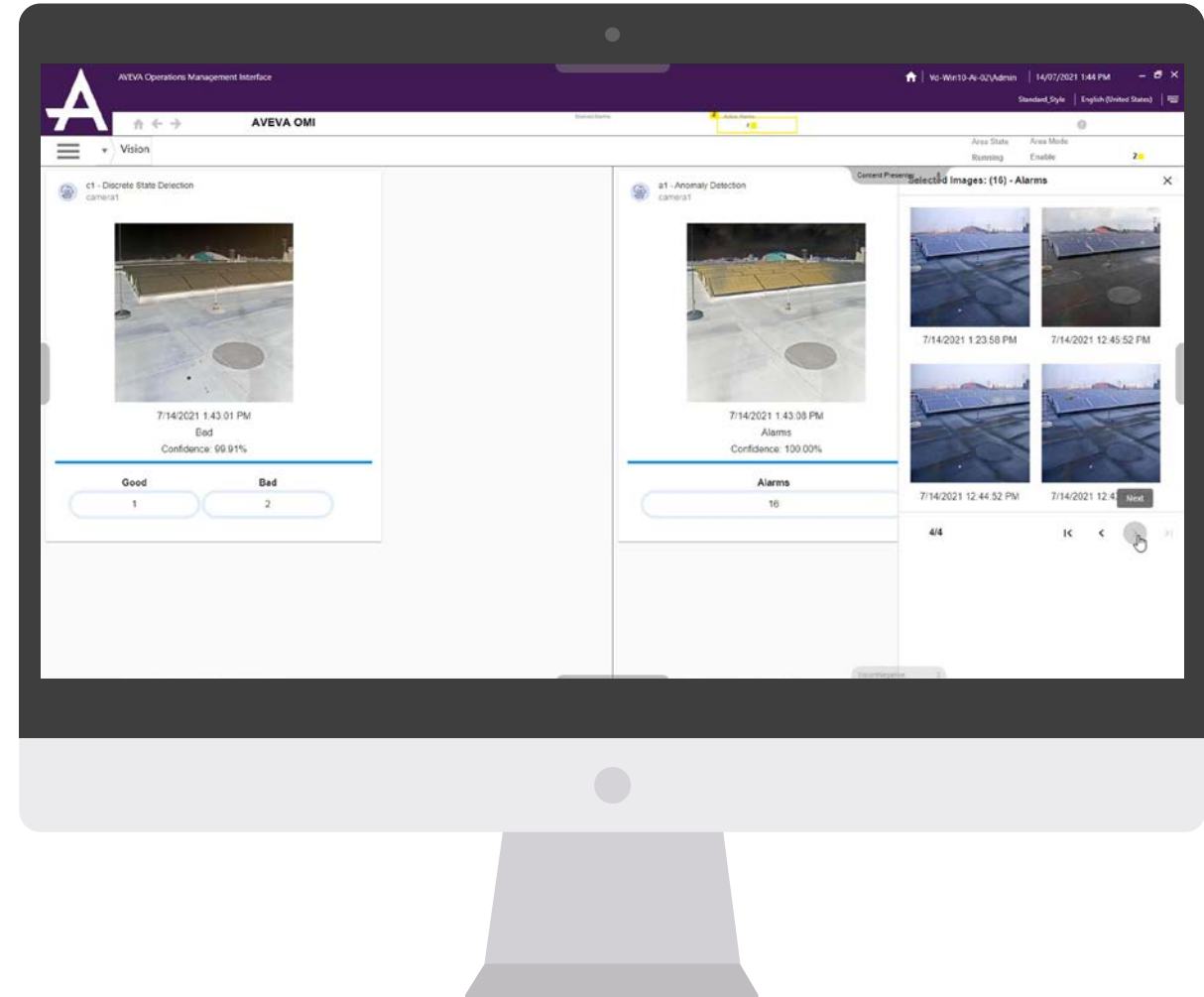
- Sankey diagrams are a type of flow diagram in which the width of the arrows is proportional to the flow rate. These diagrams emphasize the major transfers or flows within a system.
- The diagrams can visualize energy, financial, and material flow, on a regional or national level and help locate the most important contributions to a flow. They often show conserved quantities within defined system boundaries.
- Create and visualize the connectivity model between assets.
- Representation of proportional product flow between the nodes in the connectivity model. The larger the bar connecting assets the greater the flow between them.
- Updates in real-time as telemetered or other sources of data are updated from assets.
- Instantly switch between previously defined color themes.



# Vision AI Assistant OMI App / Service

Vision AI Assistant monitors real-time image streams and provides alerts and notifications to operators for immediate action.

- Integrated with AVEVA™ System Platform & OMI and AVEVA™ Insight, the solution employs deep learning to train and deploy machine learning models from an easy-to-use web-based interface. Designed for low latency industrial environments, Vision AI Assistant enhances situational awareness by helping operators maintain attention on their tasks without continuously monitoring live camera feeds.
- Anomaly Detection - An Unsupervised Machine algorithm is used to learn baseline trends, then applies a statistical test to determine if a specific image represents an anomaly. The Anomaly method can detect any type of anomaly, including novel anomalies. Users provide a collection of training images that represent the expected outcome or 'good' condition, and the Vision AI Assistant determines an anomaly when real-time images do not match training images.
- Discrete State Detection - This method utilizes a Supervised Deep Learning algorithm to distinguish between two known states. Users provide training images containing examples which are already labelled or categorized, and the algorithm builds a general model of each category. The algorithm then processes the un-categorized images and attempts to assign each item to one of the pre-learned categories





# What's Next?

**AVEVA**

# AVEVA Operations Control 2023

General Availability: Q3 CY2022

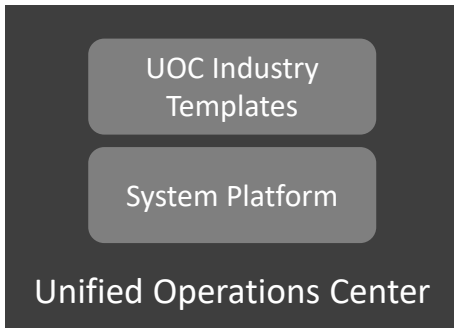


# AVEVA Operations Control - Enterprise Edition

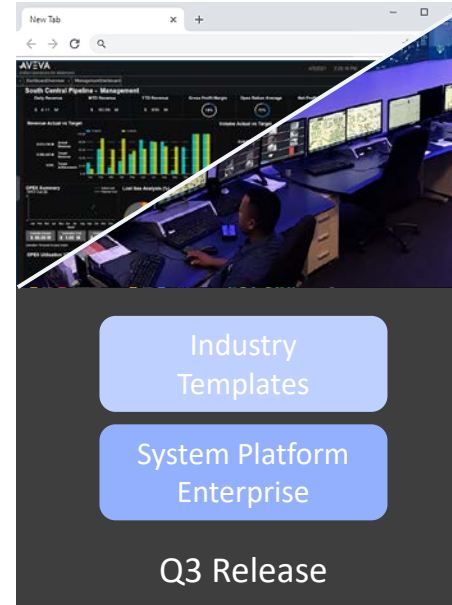
Shift towards a cloud-native framework

Available

2022 Q3



- Single instance
- On-premises desktop application
- Physical location (Room/Center)
- OT or IT network
- Industry templates recommended



- Single instance
- On-premises browser application
- Limited local network mobility
- OT or IT network
- Industry templates recommended
- Initiate Workspaces – Citizen Dev “PI Vision”

System  
Platform  
Enterprise

OMI Web  
Client

PI Vision /  
Power BI  
Integration

Web  
Widget  
Pack

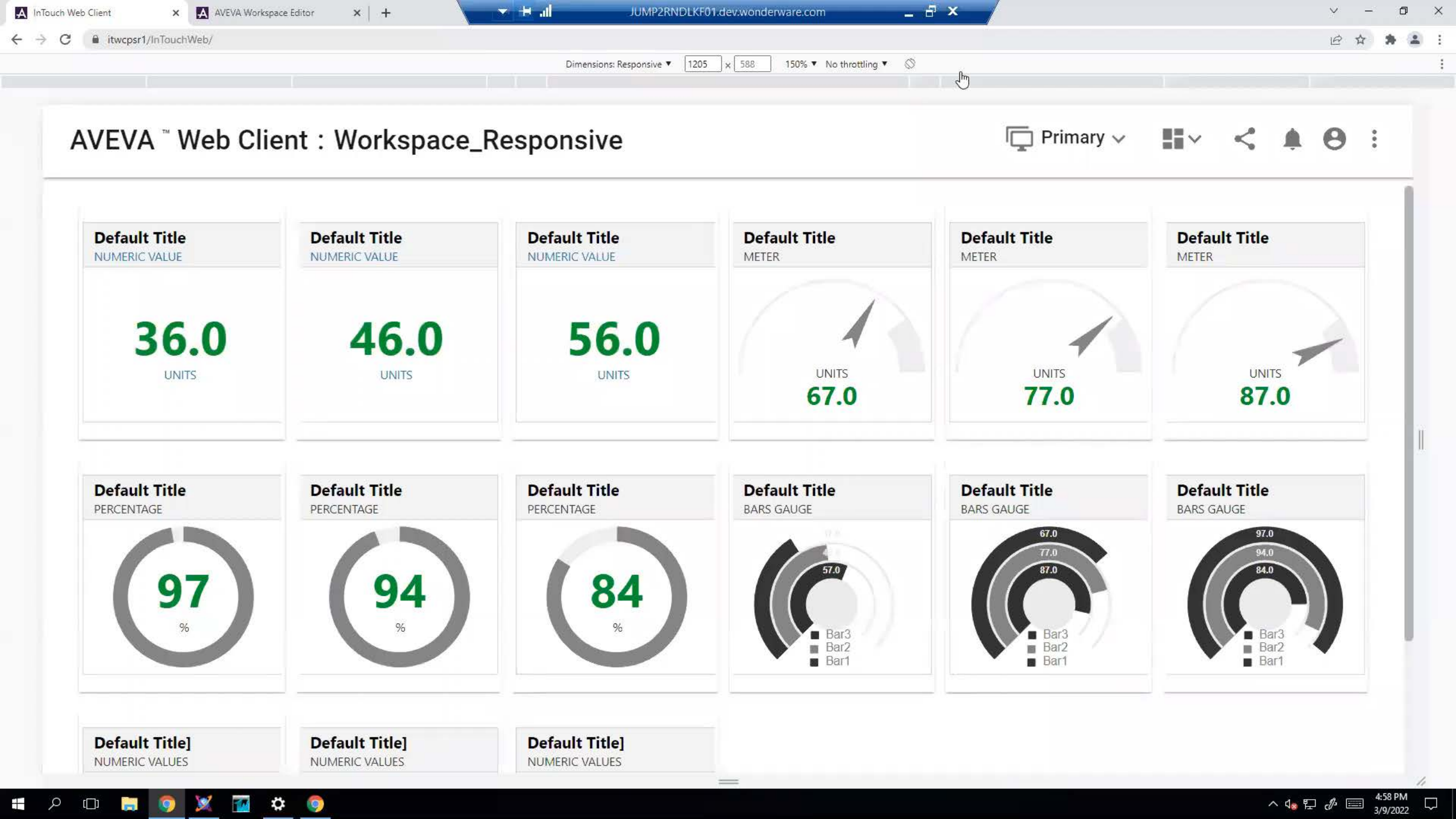


Recycle Bin



AVEVA OMI  
Applicati...



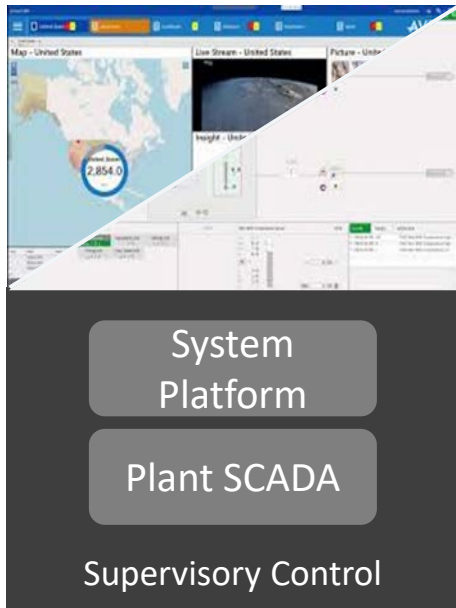


# AVEVA Operations Control - Supervisory Edition

## Innovation and Modernization

Available

2022 Q3



Multiple Offers – AVEVA System Platform and AVEVA Plant SCADA

AVEVA Operations Management Interface Introduction

New - Industrial Graphics available in Plant SCADA

OMI Apps – PLC Logic Viewer, AI Vision, Graphic Repeater



System Platform – Scalability (DEV/RT)

System Platform IDE – Modernize UI/UX

PI System – Historian Replication to PI Server

MQTT Publishing – Sparkplug Spec

OMI Apps – Grid, Vision AI Vision Assistant

PI System  
& Data Hub  
Integration

Modernized  
Development  
Environment

Cloud  
Integration

Extensibility:  
UA, MQTT,  
61850. &  
Apps



Recycle Bin



AVEVA OMI  
Applicati...



Search Results  
3 matches

3 TAGS

All Tags

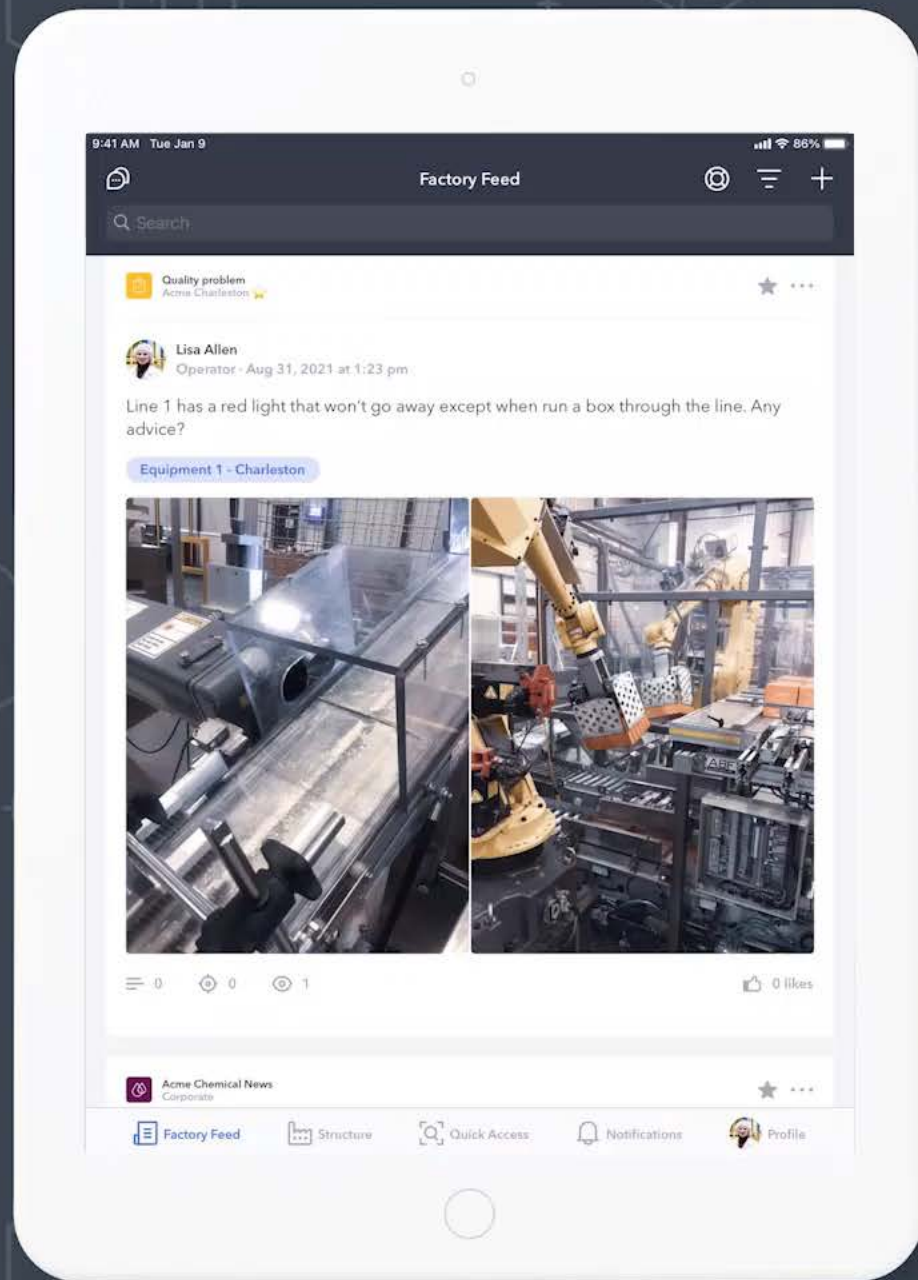
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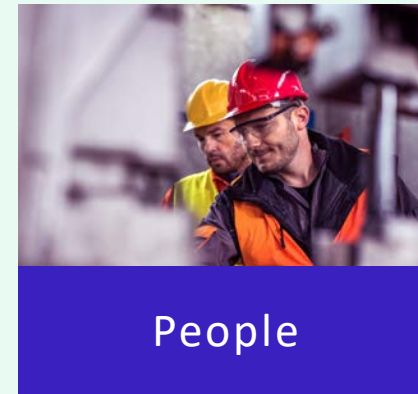
Numeric data





# HMI/SCADA to Operations Control

Comprehensive and best-of-breed solutions delivering proven results



**Evolve HMI/SCADA to Operations Control with collaboration, connected worker, and awareness**


+


**Converge engineering, operations, and business data in context for end-to-end enterprise visibility**



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AVEVA is a global leader in industrial software, driving digital transformation and sustainability. By connecting the power of information and artificial intelligence with human insight, AVEVA enables teams to use their data to unlock new value. We call this Performance Intelligence. AVEVA's comprehensive portfolio enables more than 20,000 industrial enterprises to engineer smarter, operate better and drive sustainable efficiency. AVEVA supports customers through a trusted ecosystem that includes 5,500 partners and 5,700 certified developers around the world. The company is headquartered in Cambridge, UK, with over 6,500 employees and 90 offices in over 40 countries.

Learn more at [www.aveva.com](https://www.aveva.com)