OCTOBER 24, 2023

From HMI/SCADA to Operations Control

ROADMAP

John Krajewski – Vice President of Product Management - operations control

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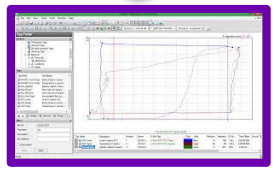
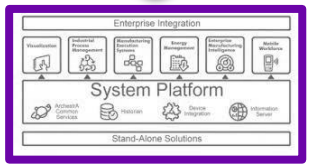
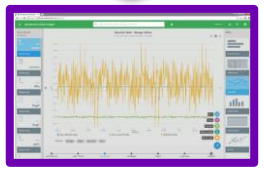
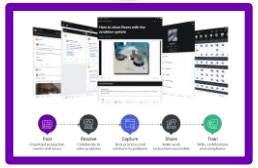
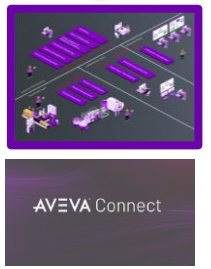
Technical evolution to AVEVA Operations Control

Proven history of market leading innovation

1987	1990	1999	2003	2004	2016	2017	2018	2021	2022
Human Machine Interface	Communications drivers	Process historian	Distributed SCADA	Industrial reports	SaaS data management	Operations Management Interface	Enterprise visualization	SaaS collaboration	Unified operations software
InTouch	Drivers	Historian	System Platform	Reports	Insight	OMI	UOC	Teamwork	AVEVA Operations Control



Edge

Supervisory

Enterprise

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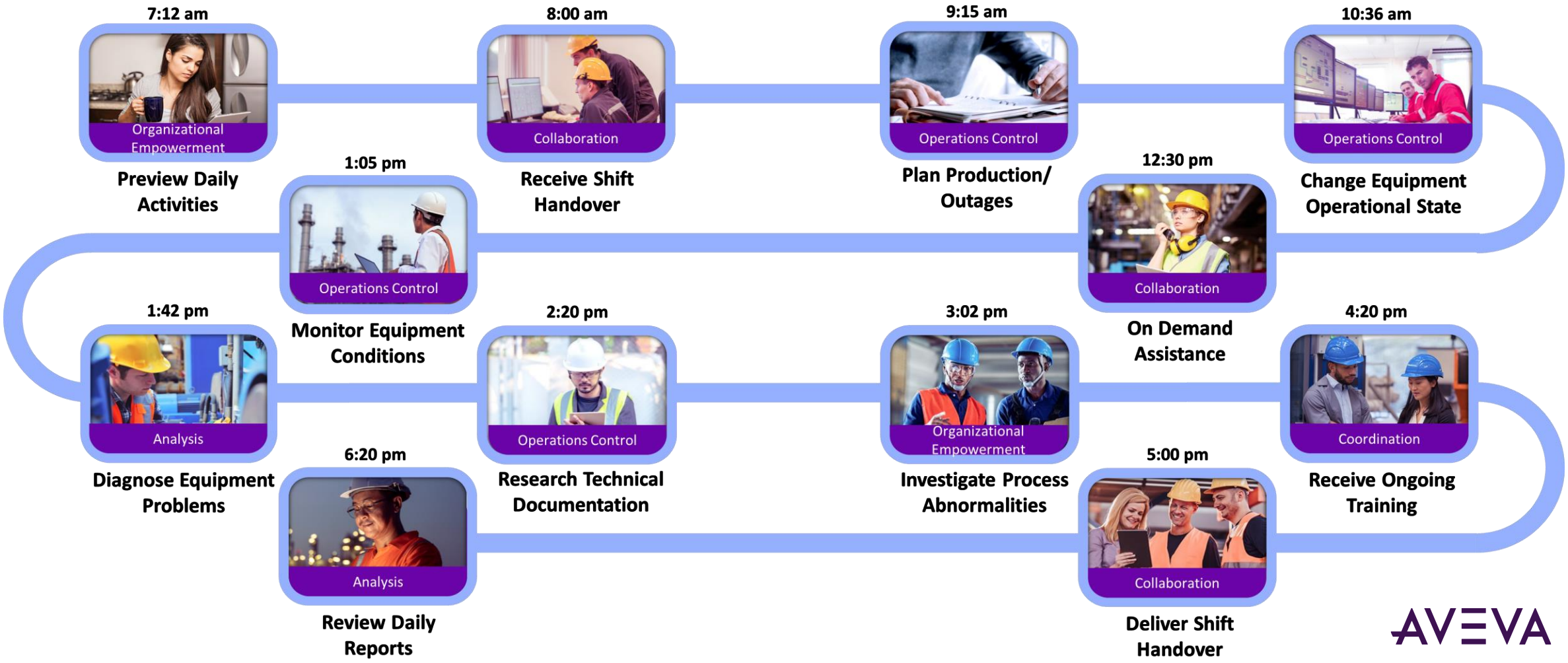
Operations – a day in the life

Enabled by AVEVA Operations Control – hybrid SaaS solution



AVEVA Operations Control

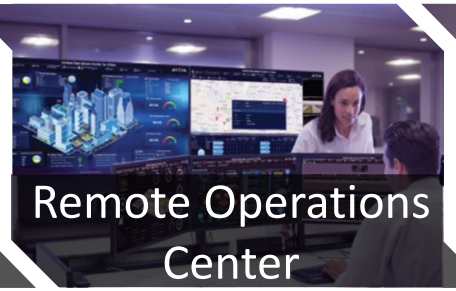
Evolving HMI/SCADA to operations control

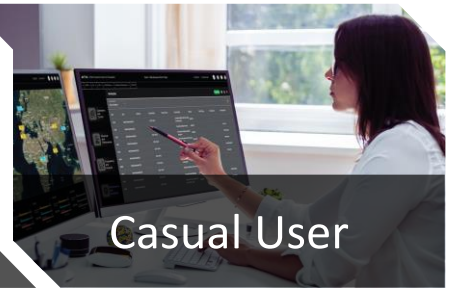
Unified Operations Center (UOC)

Long term focus (up to 1 year)

Enterprise view

IT/OT convergence





AVEVA Operations Control Supervisory

Medium term focus (up to 1 week)

Process view

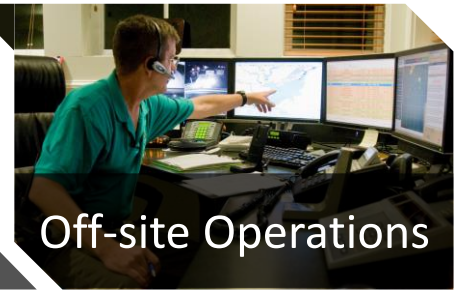
OT convergence

AVEVA Operations Control Edge

Short term focus (up to 1 shift)

Work cell view

Control convergence



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Check out these sessions:

30 tips in 30 minutes for operations control

Track: Operations Control Geek | Wednesday

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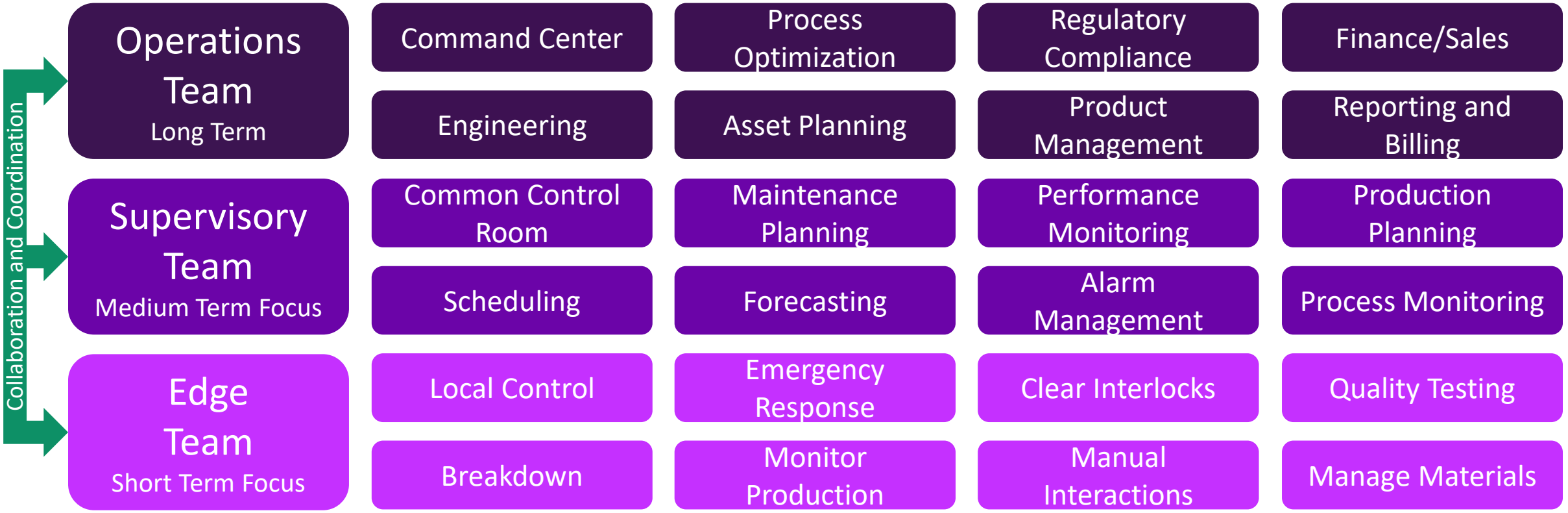
Various cross-departmental activities

Driven toward a common goal through coordination



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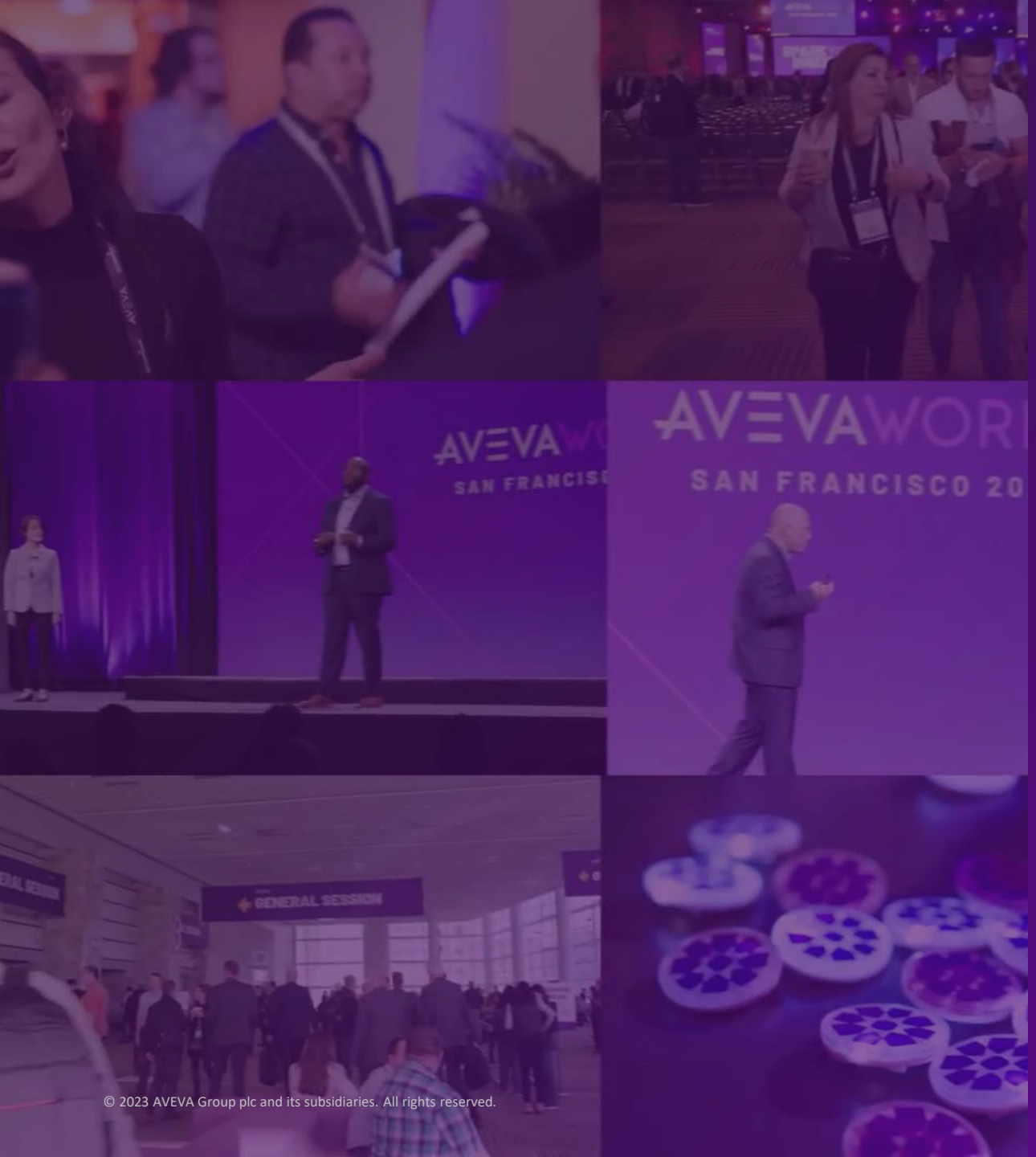
Hybrid SaaS software strategy

Leverage advantages of both on-premises and software-as-a-service for industrial operations

Software as a Service	Support Systems	Collaboration Analysis Empowerment Management & Development	**Pros:** Life Cycle Management Fast Innovation Adoption Minimal Hardware	**Cons:** External Dependencies Availability Latency
On-premises Software	Mission Critical	Human Machine Interface Manufacturing Execution Software Supervisory Control Device Communications	Pros: Minimal Dependencies Availability Latency	Cons: Life Cycle Management Slow Innovation Adoption H/W & S/W Obsolescence

AVEVA



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Hybrid cloud architectural design considerations for AVEVA Operations Control

Track: Operations Control Geek | Thursday

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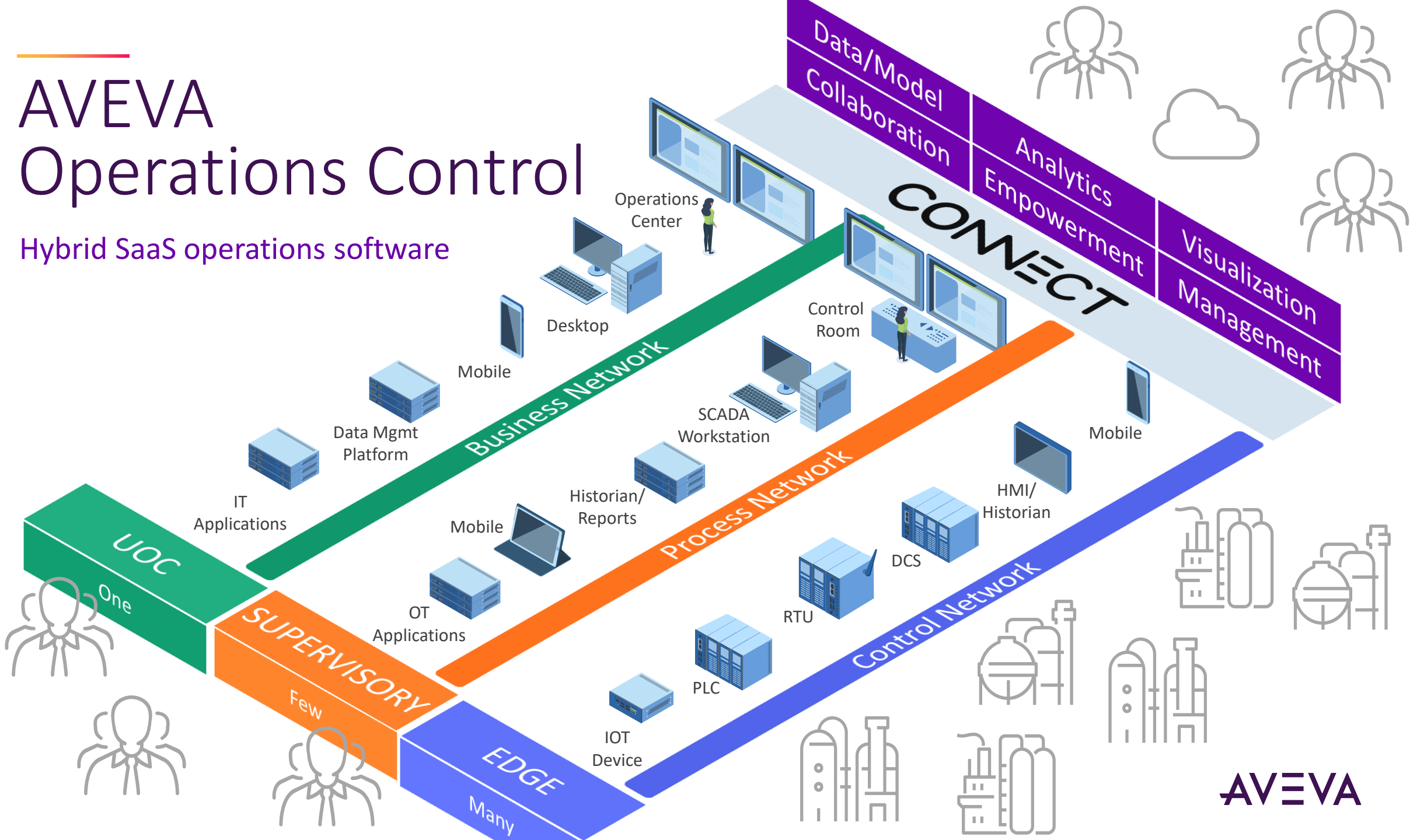
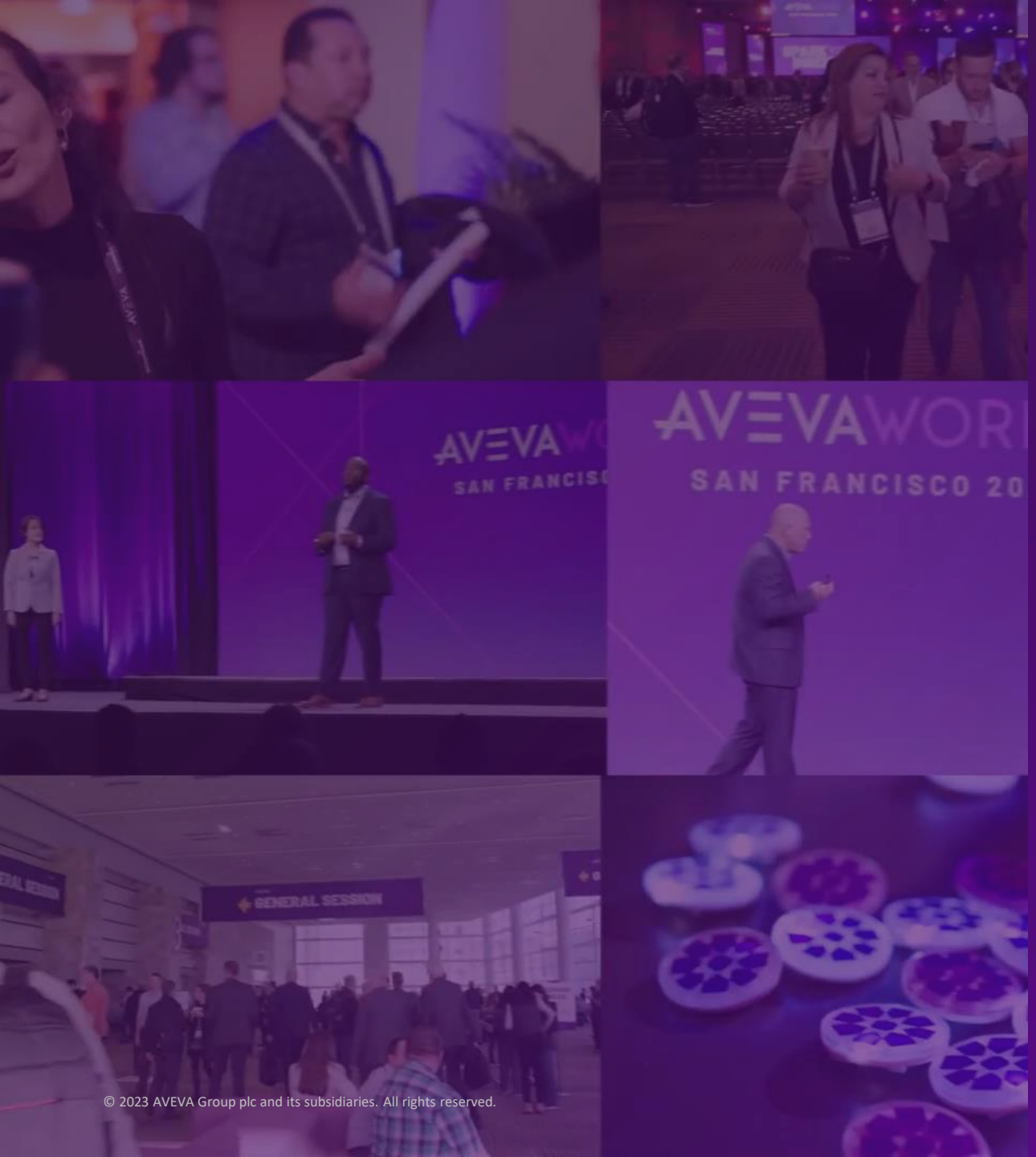
AVEVA Operations Control

Hybrid SaaS operations software





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Virtualization best practices and troubleshooting for operations control

Track: Operations Control Geek | Thursday

Operations control panel - ask the experts

Track: Operations Control Geek | Thursday

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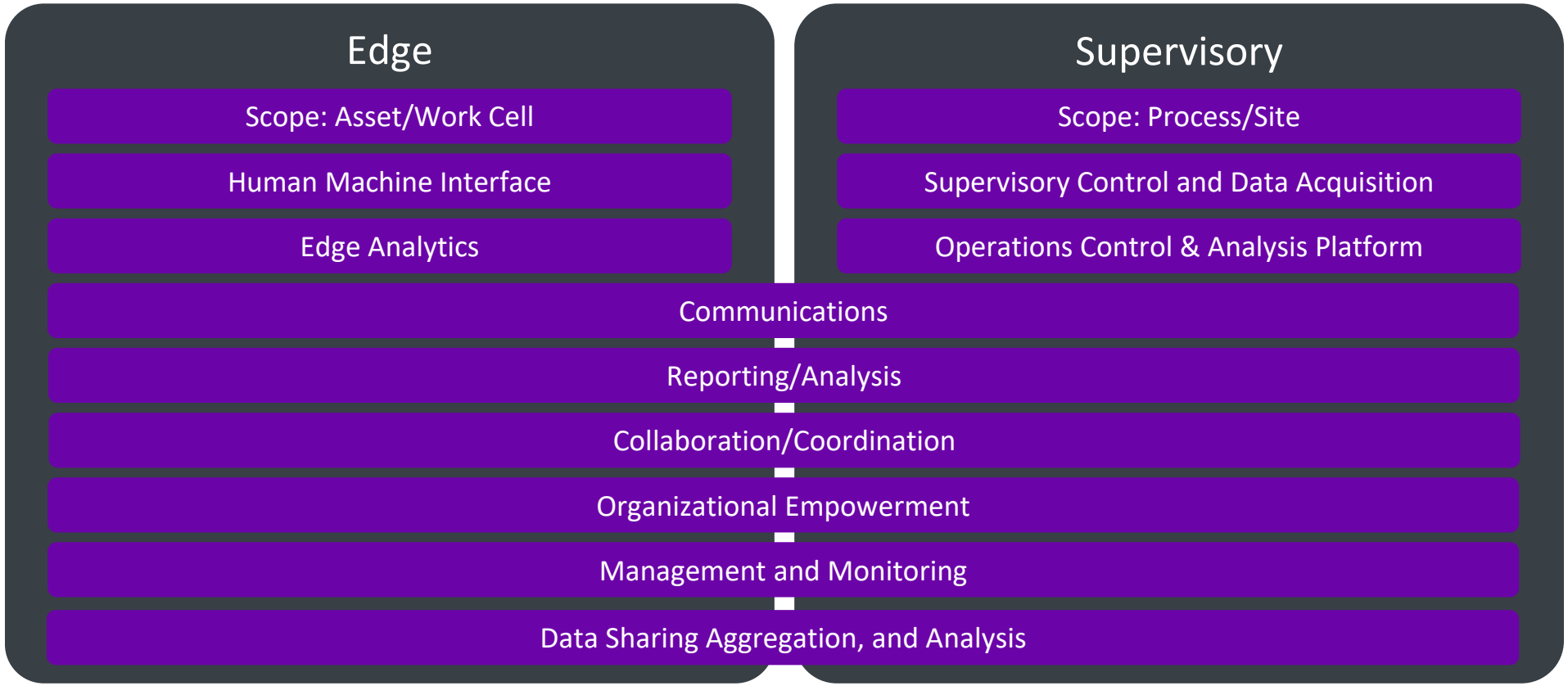
Operations control 2023 R2

General availability: Q1 CY2024



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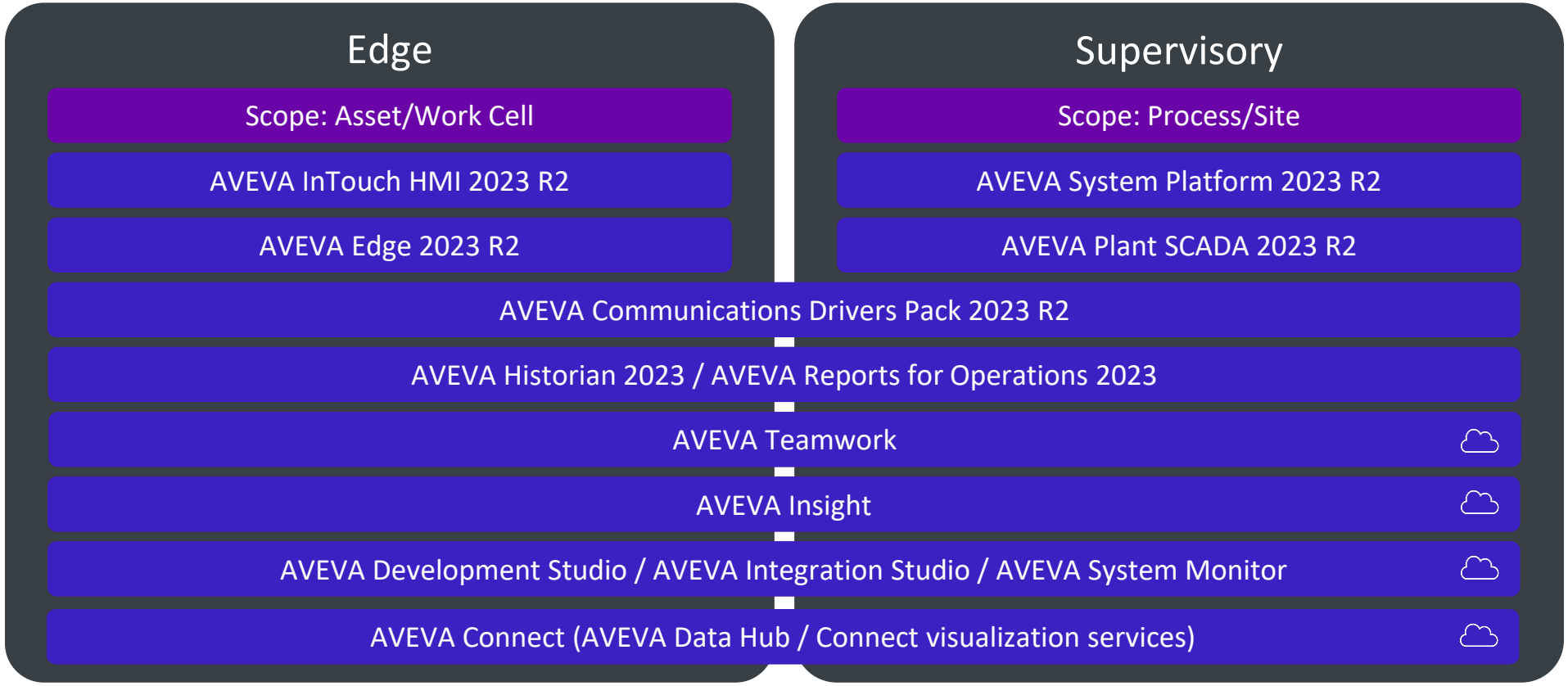
Operations control 2023 R2

General availability: Q1 CY2024



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Common technology

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Pivot from product to portfolio

AVEVA Operations Control strategy

Visualization
- Industrial graphics
- Common visualization technology

Model
- Assets/definitions
- Templates
- Data structures (UDT)

Integration
- Open standards
- Communications
- Interoperability/ security

Management
- Development Studio
- Integration Studio
- Edge Management

Collaboration
- Teamwork
- Users
- Issues/knowledge

Data/Analytics
- Data Hub
- PI System
- Historian/clients
- Insight
- Reports

Extensibility
- Core technology
- Open scripting languages

Experience
- Entitlement access
- Licensing

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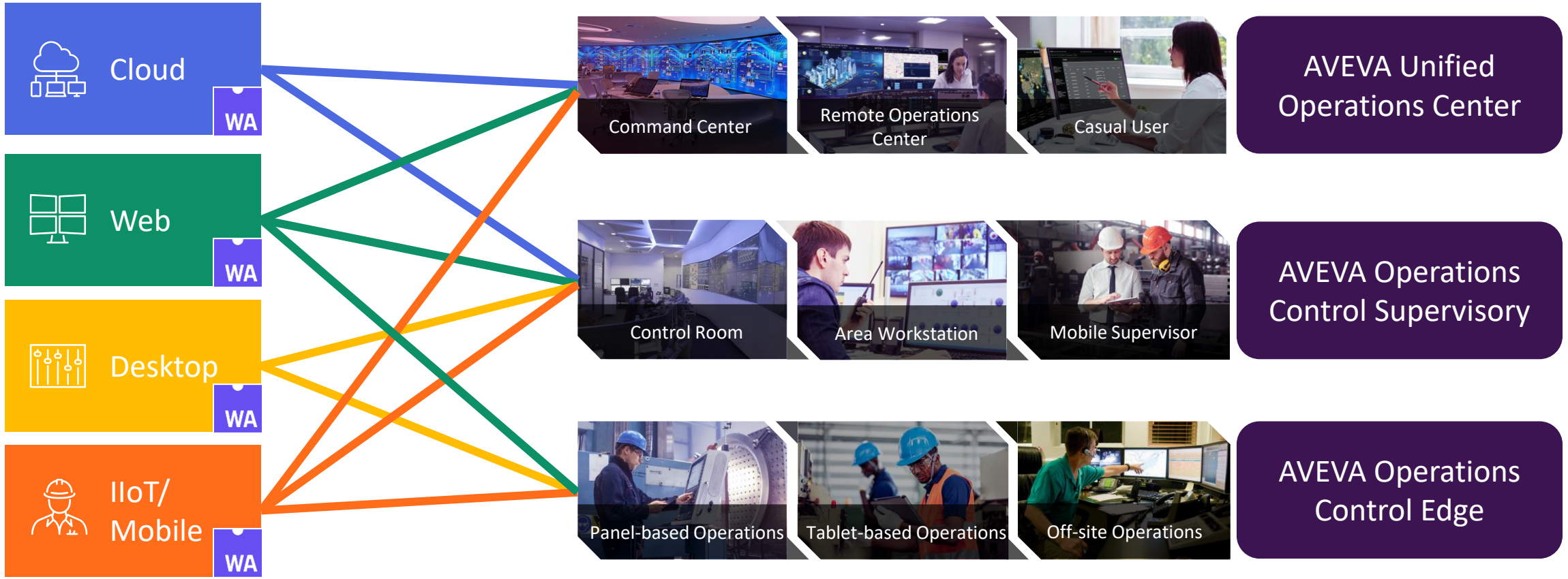
Common visualization technology

Consistent experience and management from Edge to Enterprise



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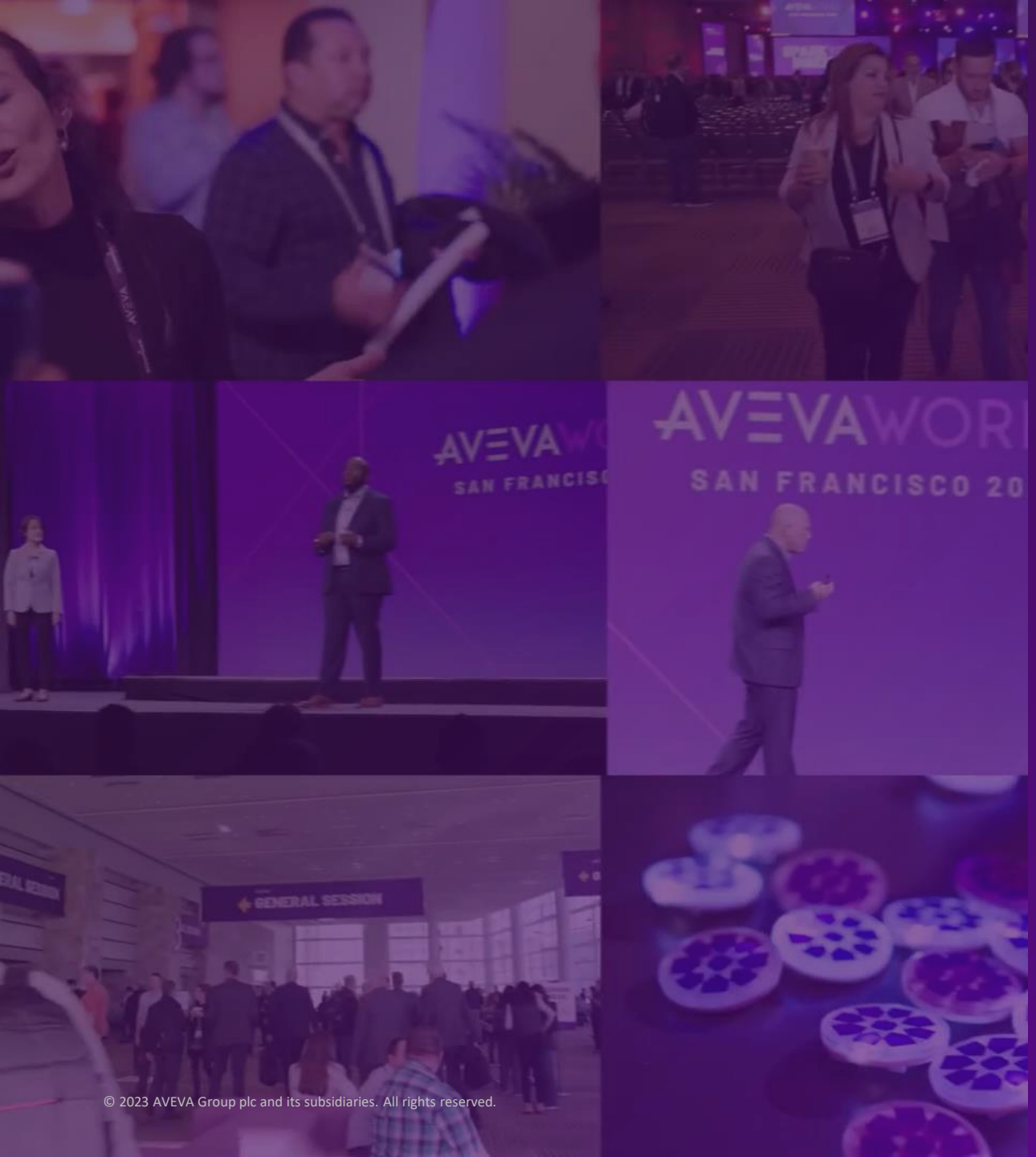

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How to leverage Industrial Graphics in your applications

Track: Operations Control Geek | Today

UX and visualization design tips, tricks and best practices

Track: Operations Control Geek | Today

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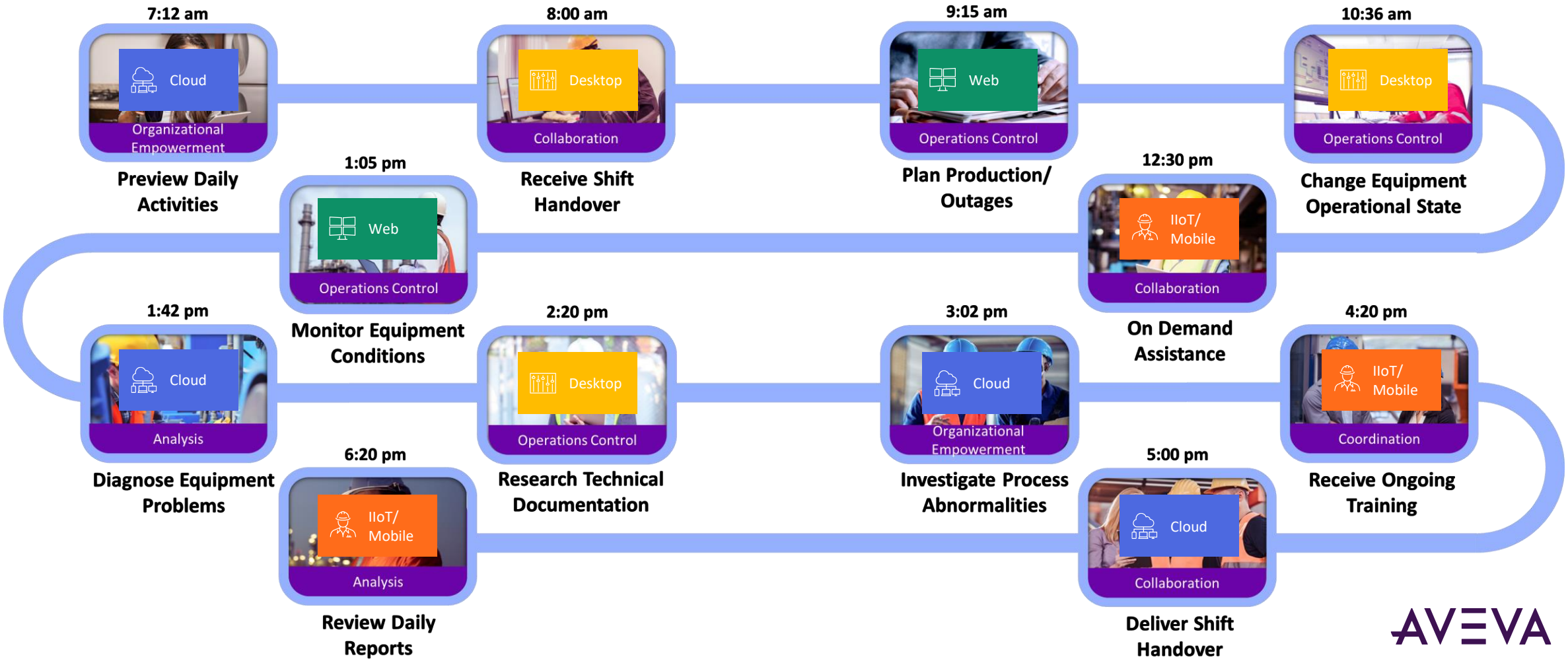
Operations – a day in the life

Enabled by AVEVA Operations Control – hybrid SaaS solution



Operations control portfolio commercial models

Redefining operational agility for industrial software deployments

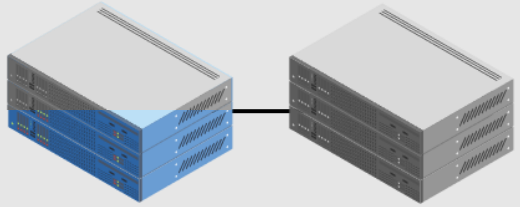
Perpetual

Customer FIRST

Optional

Client

Tags/IO/Clients/Redundancy/etc.



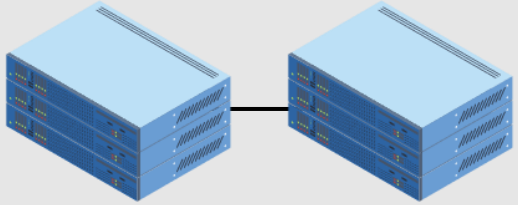
By function, limited in capacity and capability

AVEVA™ Flex Individual subscription

Customer FIRST

Client

Primary Server Redundant Server

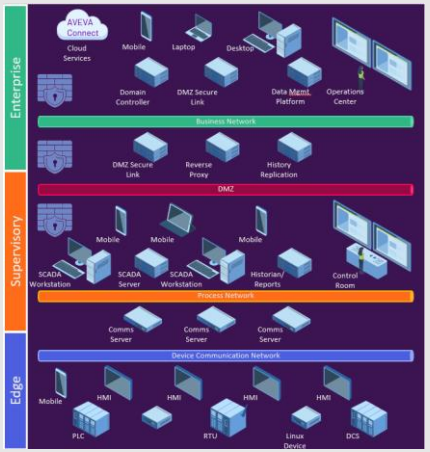


By function, unlimited in capacity, limited in capability

AVEVA™ Flex AVEVA Operations Control

Customer FIRST

Hybrid operations software with architectural flexibility



By packaged capabilities, limited by number of users

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AVEVA

AVEVA Operations Control - connected worker

Powered by AVEVA Connect user-based commercial model

User will move between devices and expects consistency

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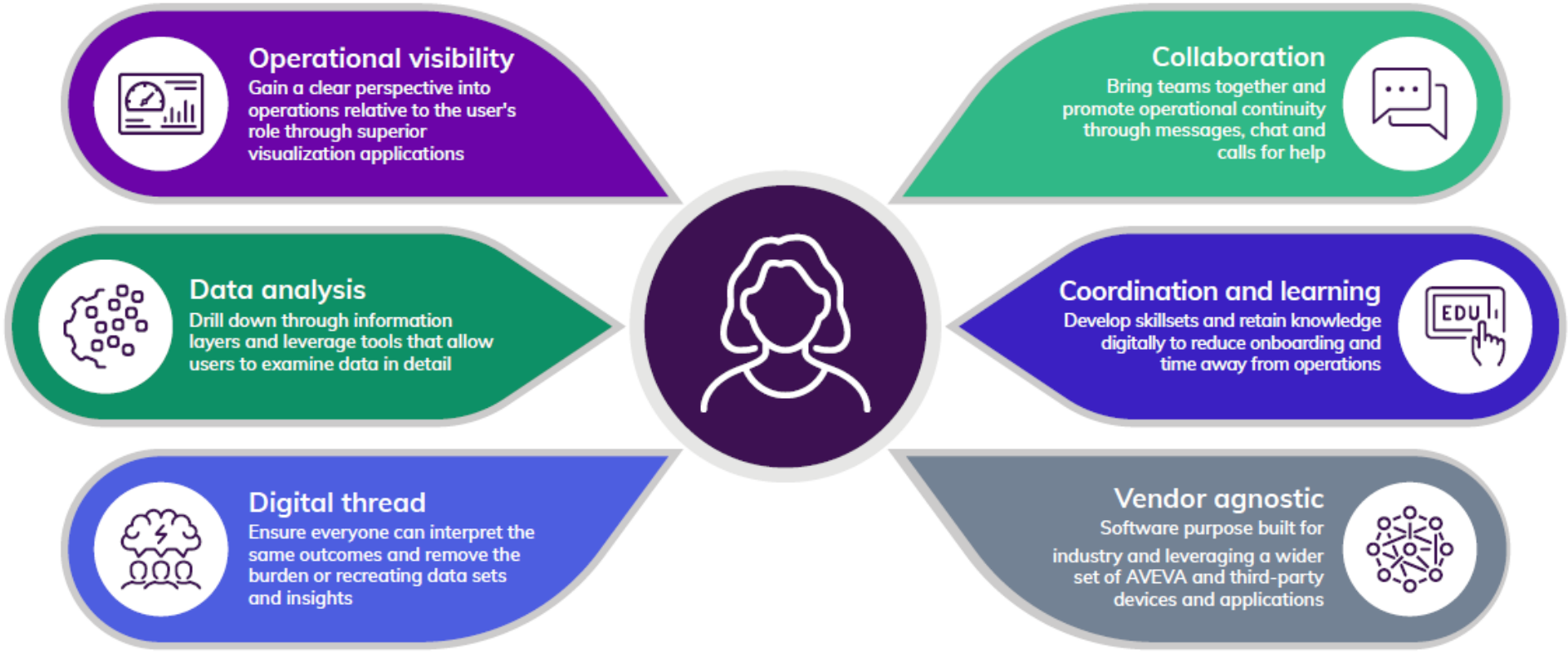
Opportunity for customer transformation

Bringing together user-centric software



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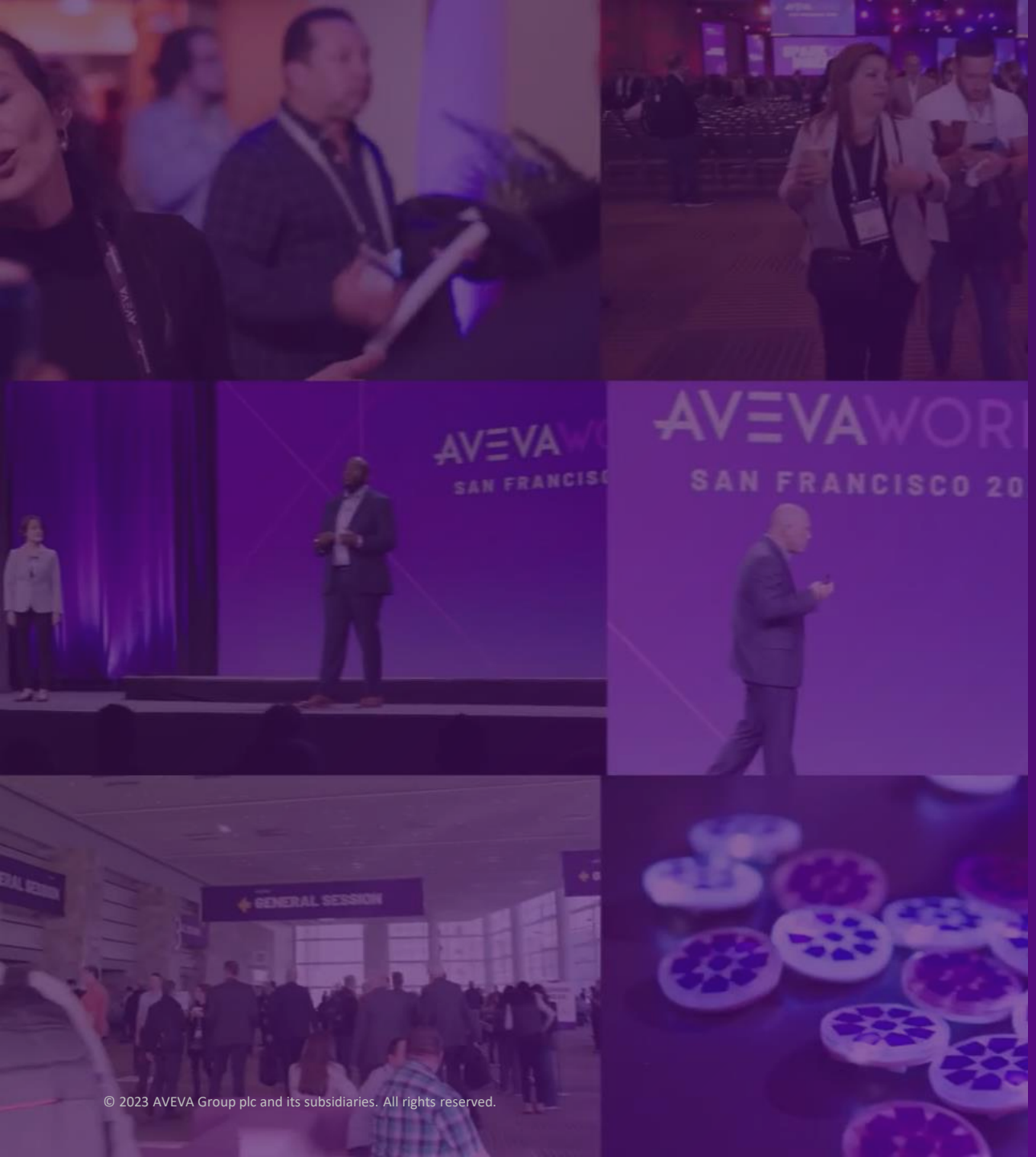

Check out these sessions:

Improving the operations control experience with AVEVA ID

Track: HMI/SCADA user | Tomorrow

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AVEVA

AVEVA teamwork

Performance support software (SaaS)

Key functions:

Digital knowledge

Scan QR codes to quickly access a standardized library of instructions, videos and troubleshooting content.

Skills management

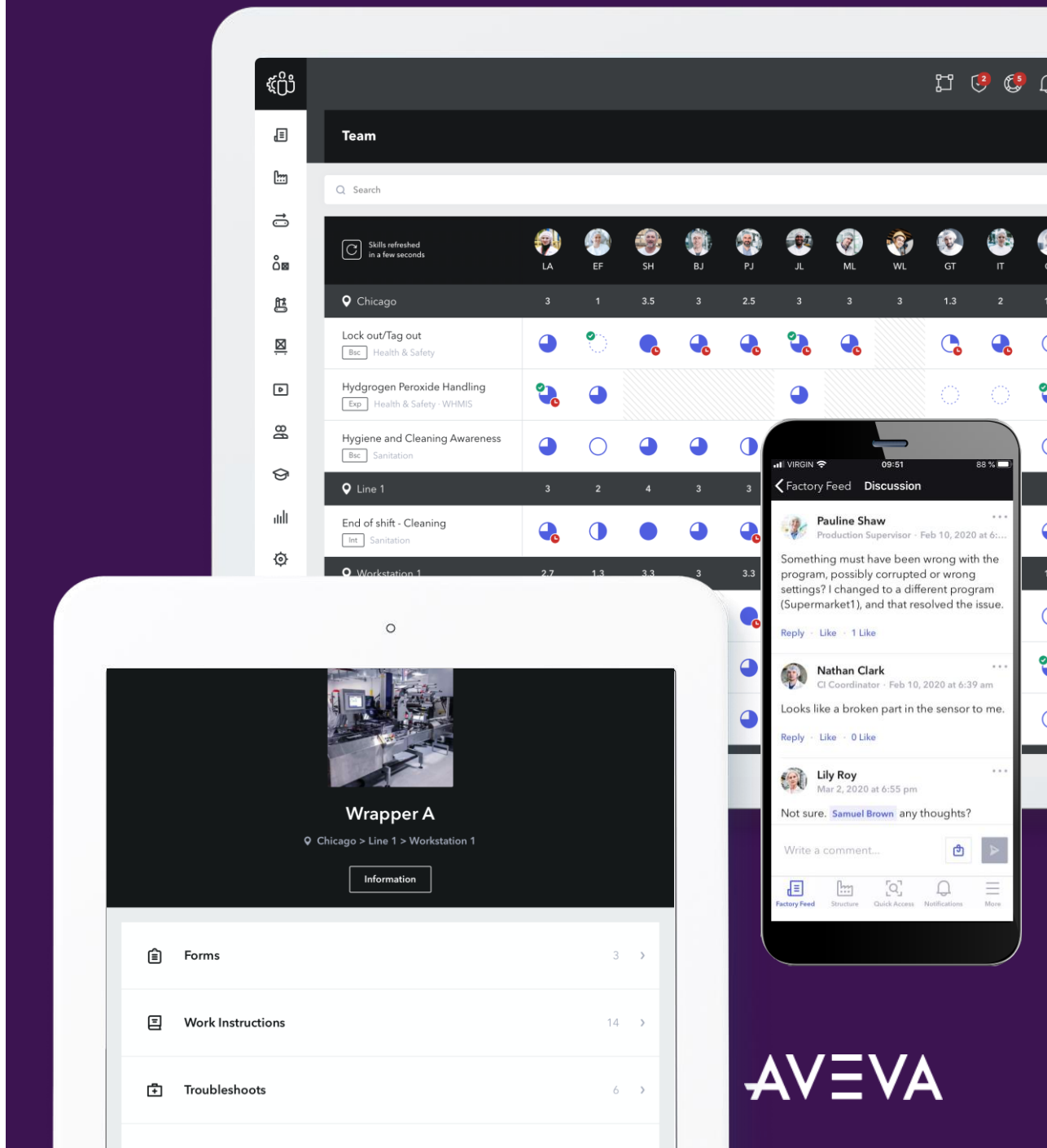
Deliver and track training for new hires, upskilling and certifications with a review pane to view pending and completed training.

Communication

Connect with workers across shifts and facilities to solve problems. Share insights in a logbook and continuously grow the archive of knowledge.

Issues management

Capture, track and resolve problems through call for help escalation and collaboration with subject matter experts.



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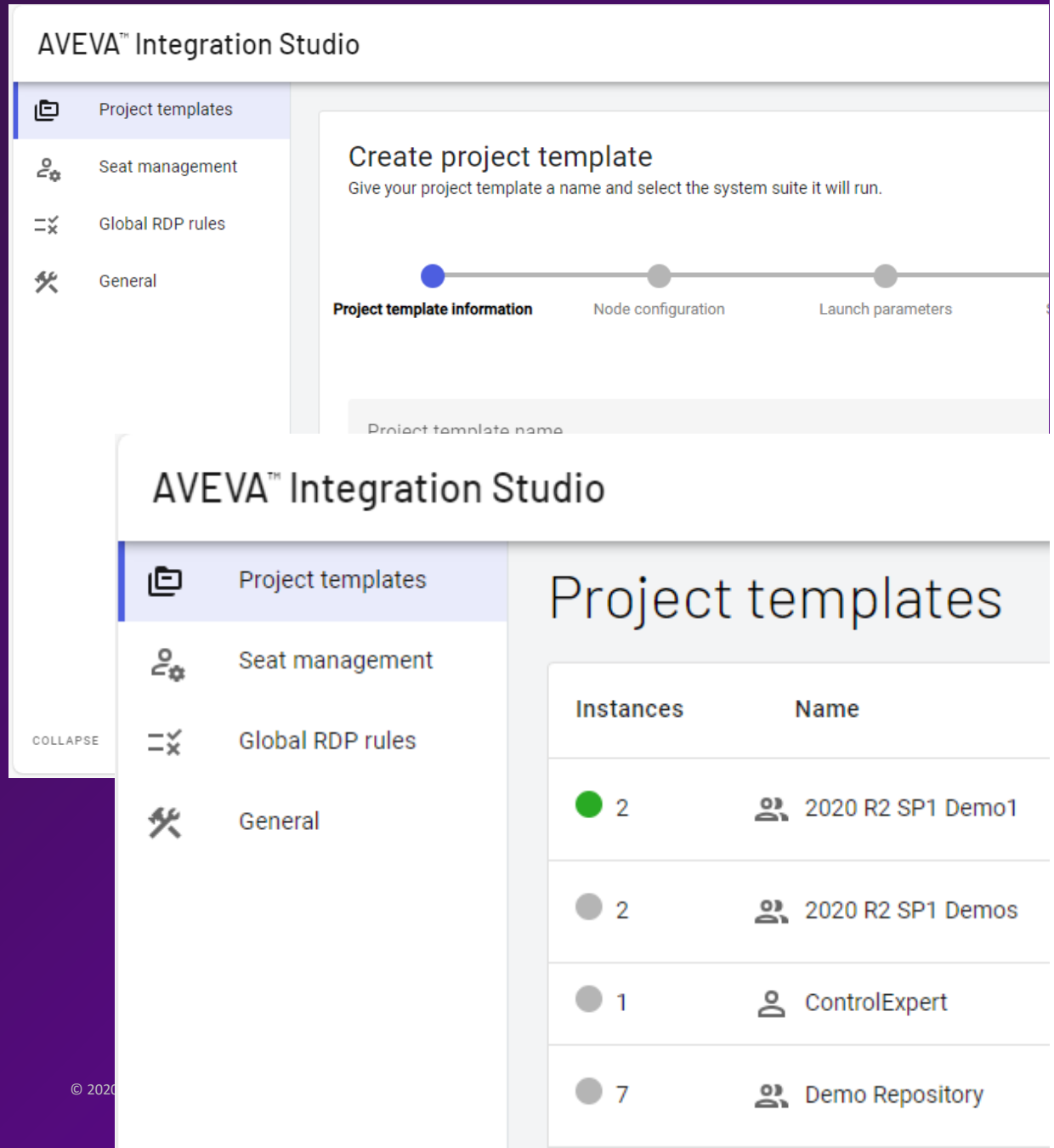
Extending operations control with the cloud - AVEVA Teamwork

Track: HMI/SCADA user | Tomorrow

AVEVA Teamwork onboarding tips & tricks

Track: Operations Control Geek | Thursday

AVEVA



AVEVA Integration Studio

Virtual development and testing environment

Key functions:

Infrastructure as a Service

Cloud hosted development environment that facilitates greater collaboration, rapid project creation and project archival.

Scalability

Manage multiple AVEVA development projects simultaneously.

Productivity

Improve engineering efficiency by enabling developers to rapidly provision software and servers.

Flexibility

Expand beyond the limitations of on premise managed virtual environments.

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Check out these sessions:

Extending operations control with the cloud - AVEVA Development Studio & AVEVA Integration Studio

Track: HMI/SCADA user | Tomorrow

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AVEVA Reports for Operations

Reporting and analysis

Key functions:

Ease of Use

Programming free, user-friendly, automated reporting and data analysis software.

Flexible

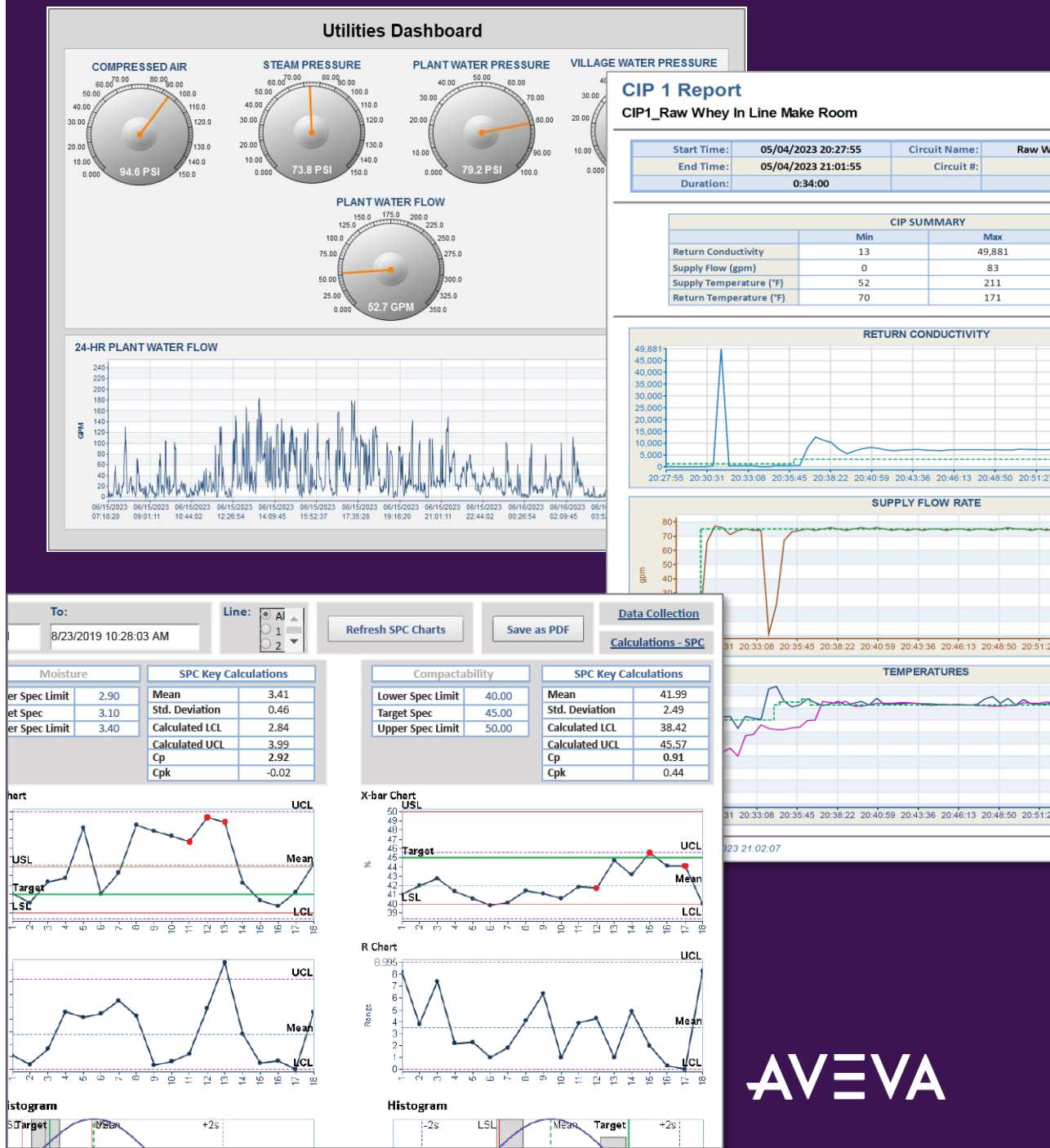
Deliver industrial reports in a variety of formats; PDF, web portal, email, file directories, FTP.

Connectivity

It leverages all real-time, historic, and business data sources. With over 120 native drivers!

Scalable

A scalable solution that will fit perfectly with your application.



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Configuring advanced reports with AVEVA Reports for Operations

Track: HMI/SCADA user | Thursday

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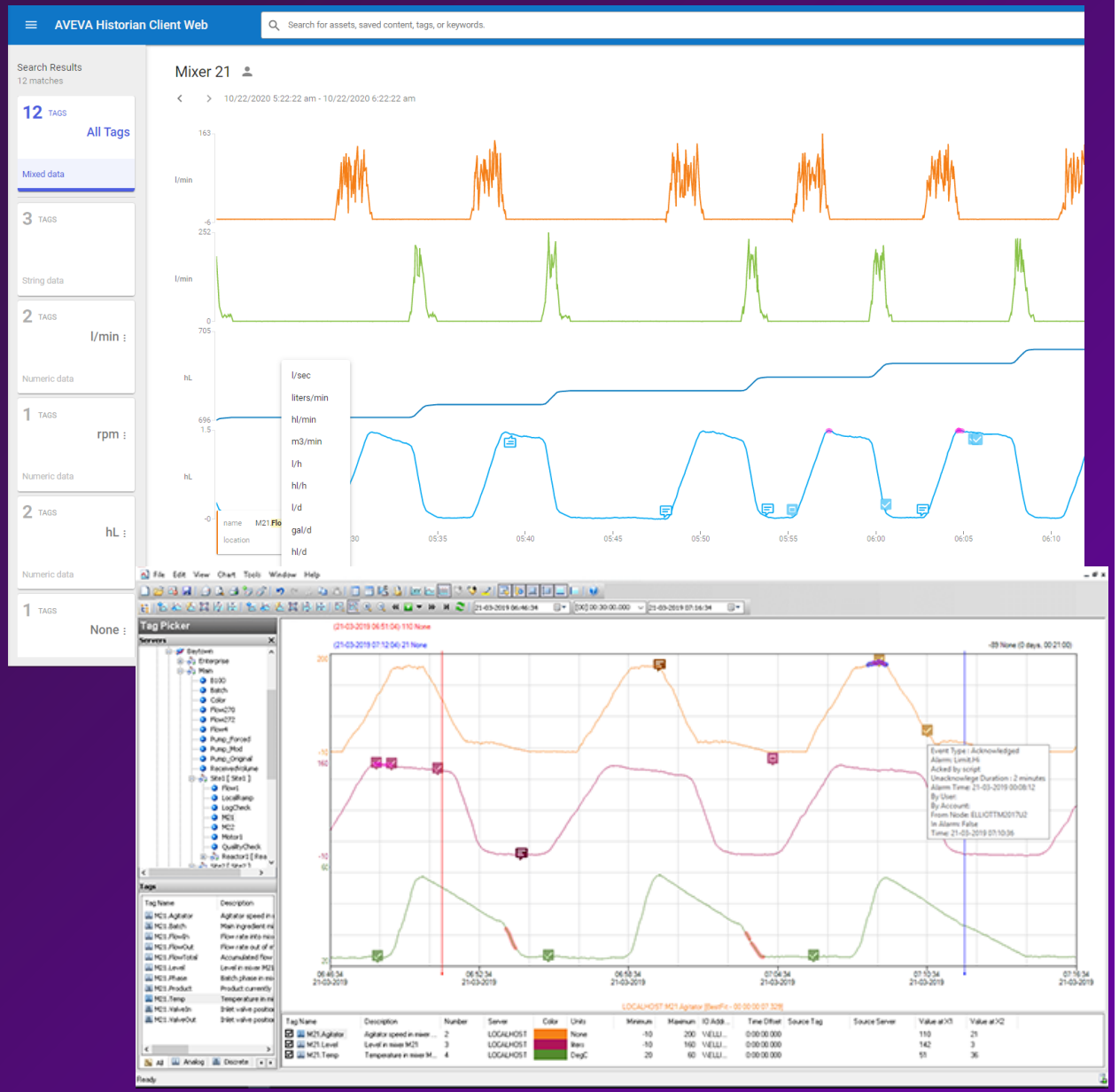

AVEVA Historian and Clients

Process control support

Key functions:

Web based clients

Storge server has built in web server for client access with no installation required.

Time series storage/retrieval

Capable of storing and retrieving 100’s of thousands of tags at high fidelity.

Alarm/event storage/retrieval

Manage multiple AVEVA development projects simultaneously.

Various analysis tools

Desktop trending analysis, Excel add-ins and flexible query authoring tools.

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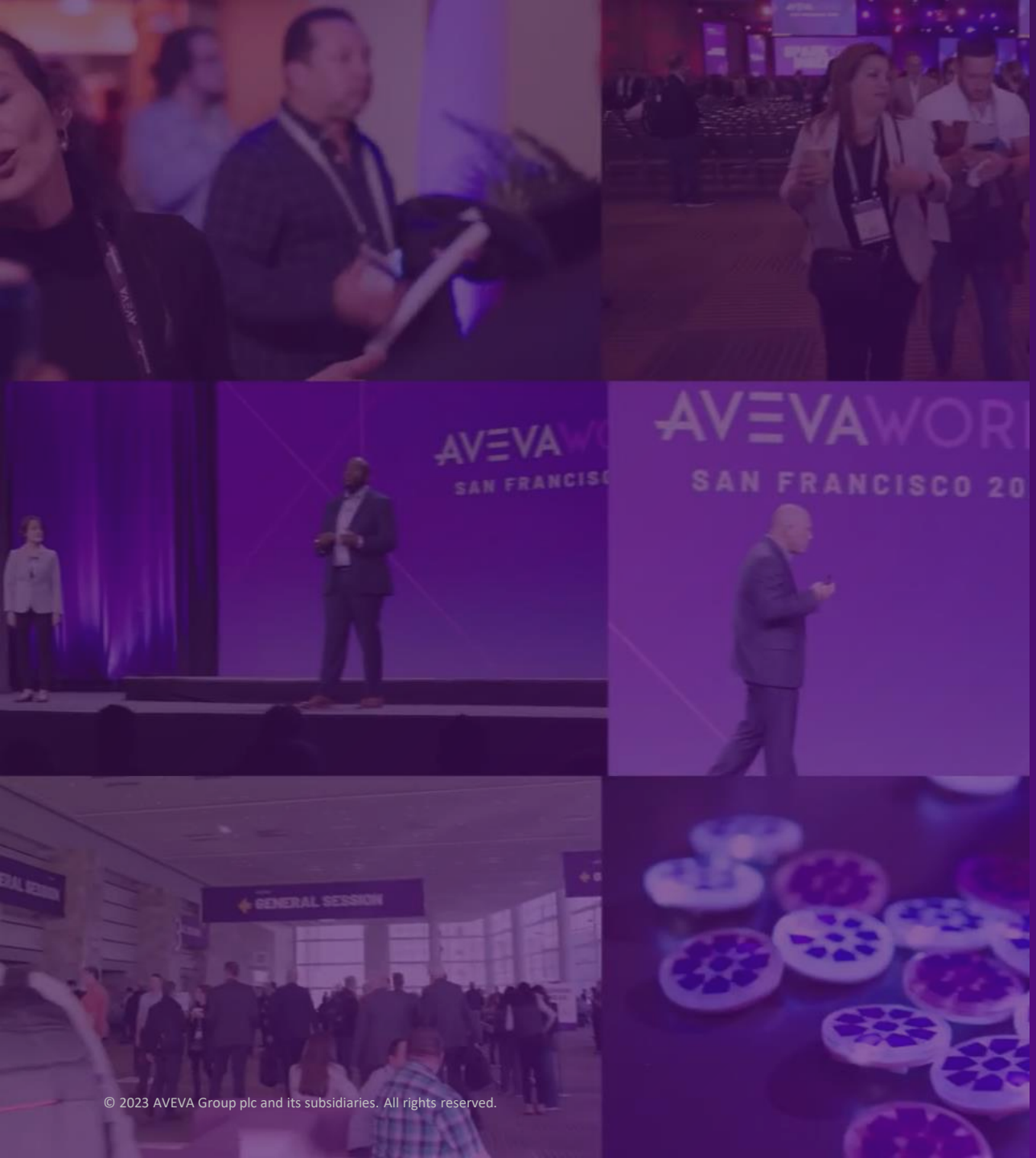

Check out these sessions:

The power of expressions in AVEVA Insight & AVEVA Historian

Track: Operations Control geek| Tomorrow

Using PI System for aggregated analysis of HMI/SCADA data

Track: HMI/SCADA user | Thursday

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AVEVA Development Studio

AVEVA Operations Control access

Key functions:

Software downloads

Access full product downloads, licenses, and any maintenance releases

Extensions access

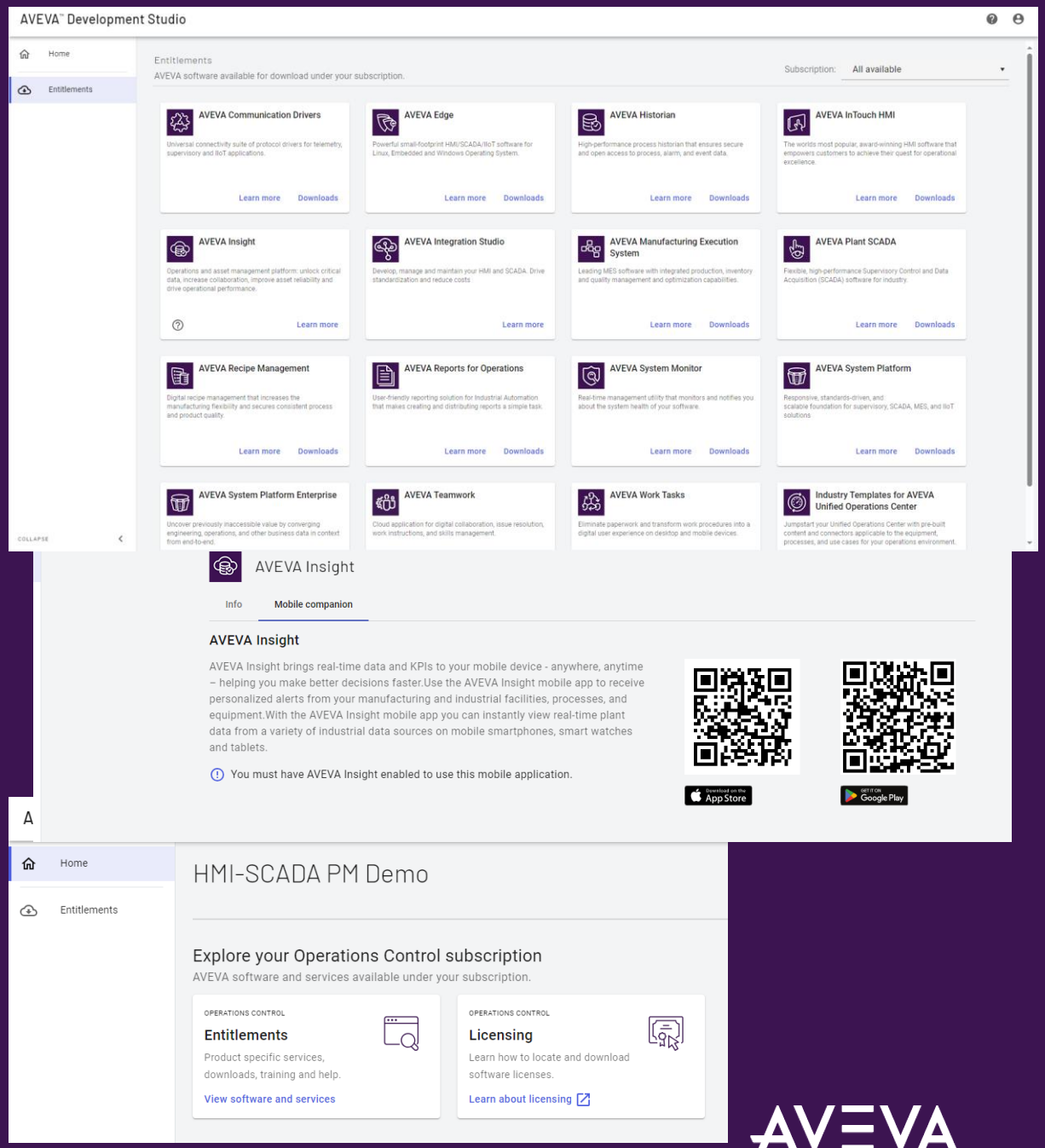
Access any exclusive symbols , widgets, apps, templates or other extension content

SaaS access and provisioning

All software as a server aspects of AVEVA Operations Control accessible in one place

Mobile apps access

Obtain the associated iOS or Android apps that accompany your AVEVA Operations Control package



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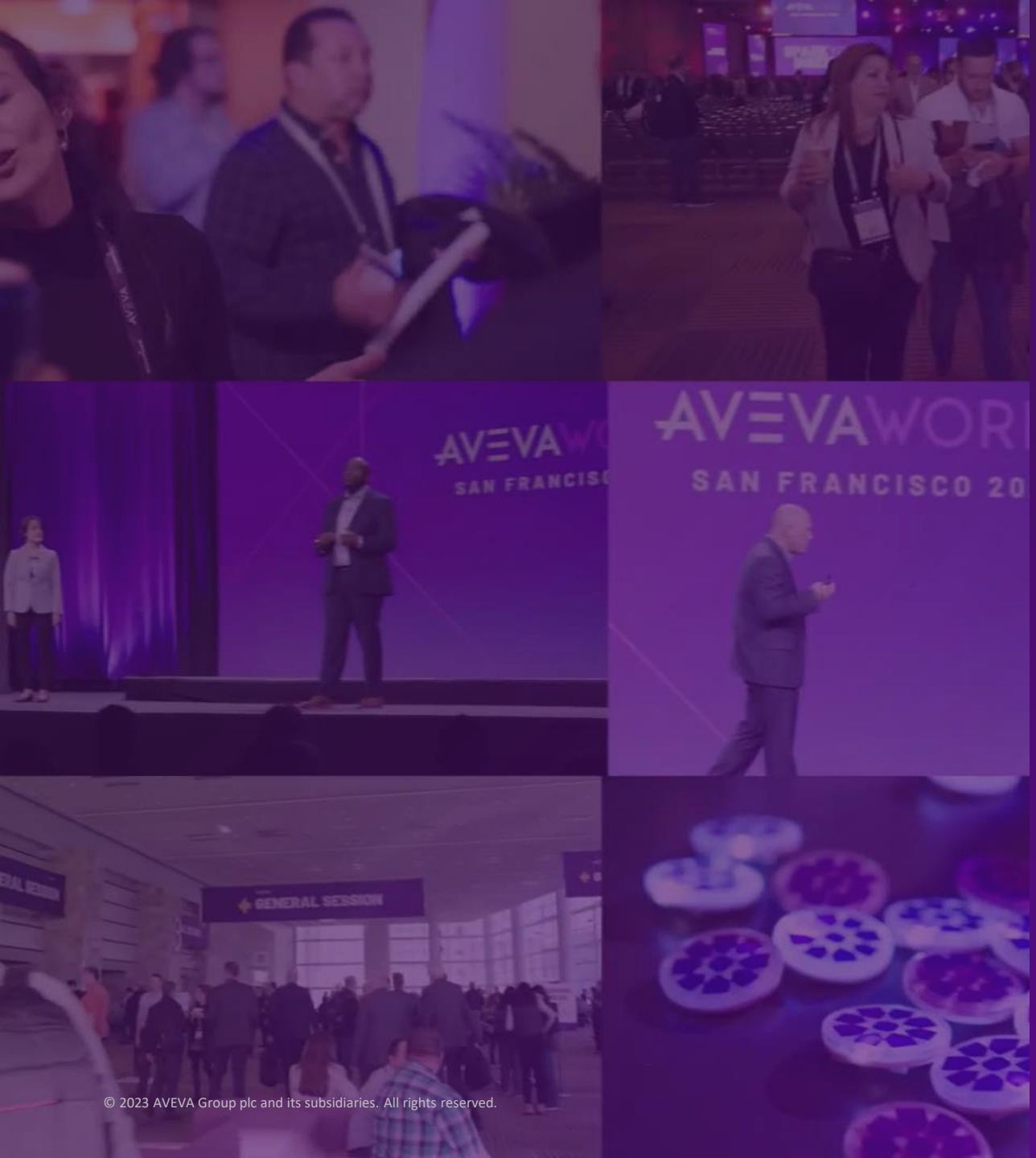

Check out these sessions:

Extending operations control with the cloud - AVEVA Development Studio & AVEVA Integration Studio

Track: HMI/SCADA user | Thursday

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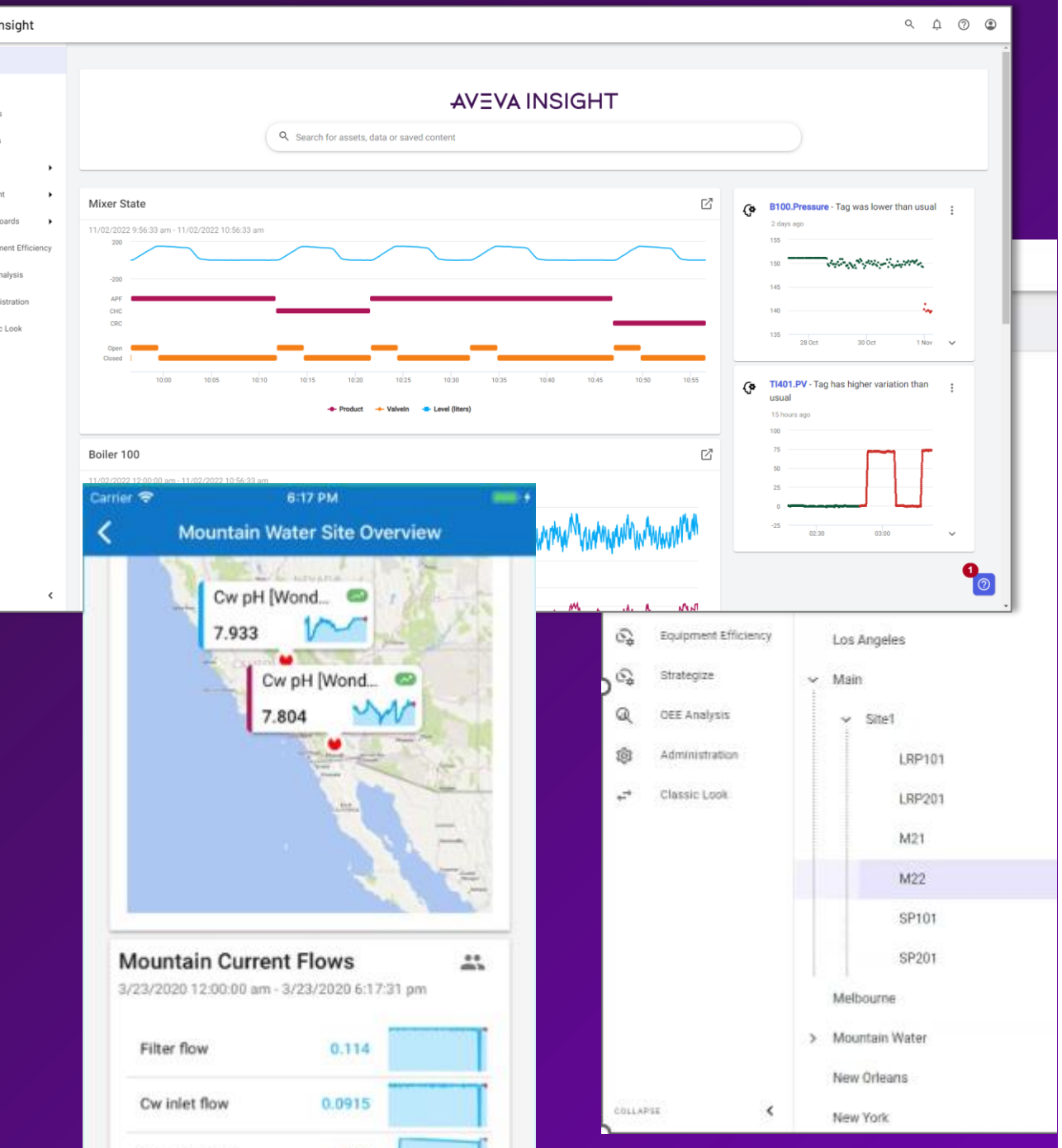


AVEVA Insight

Organizational empowerment

Key functions:

Data access

Secure access from any location or device.

Ease of use

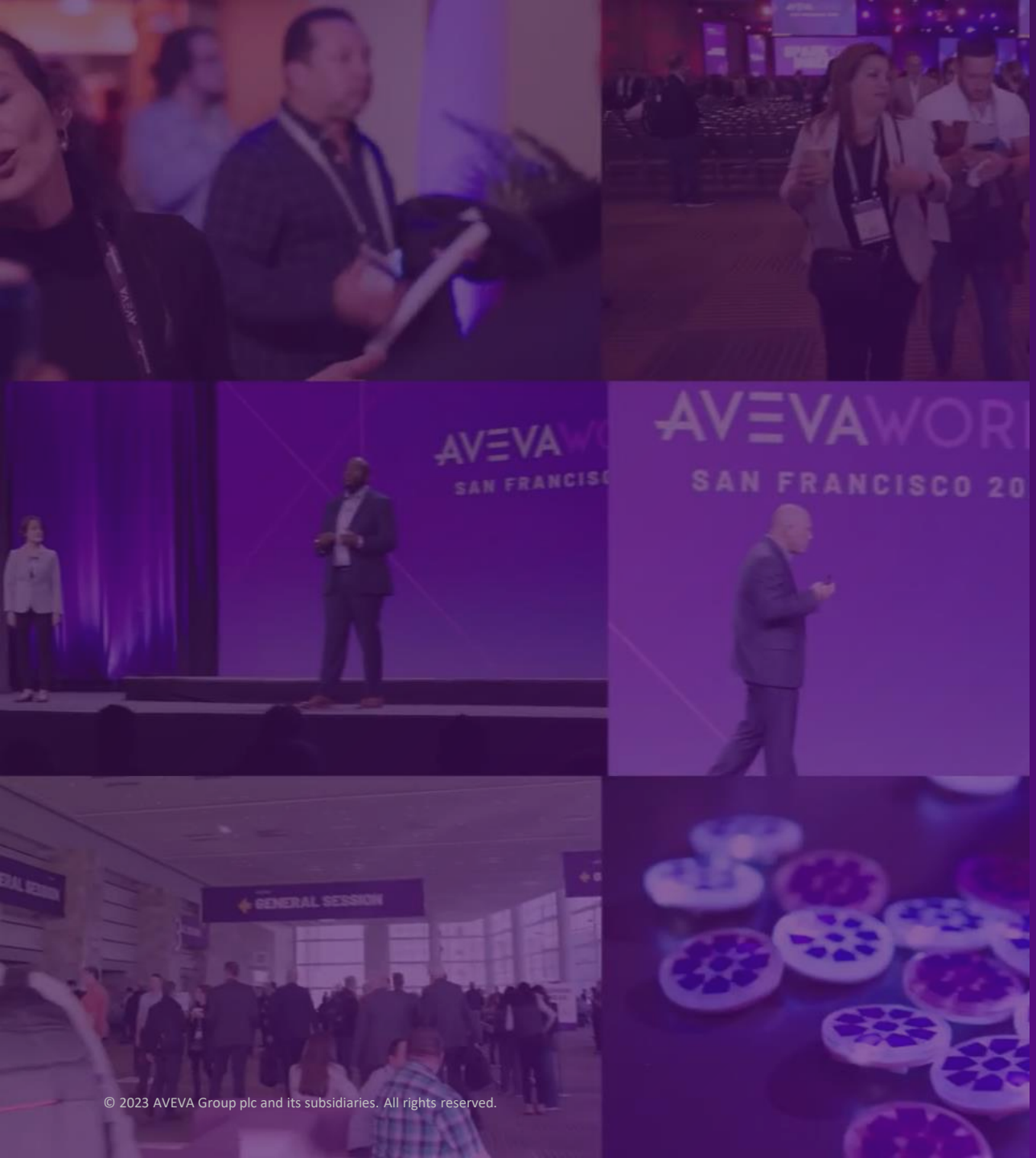
Search-based navigation, time-series charts, process graphics, geolocation, and customizable dashboards.

Performance analysis

Utilization and efficiency analysis, condition management, and alerts and notifications.

Anomaly detection

Automated analytics using unsupervised machine learning.



Check out these sessions:

Strategies for getting information from the control network

Track: HMI/SCADA user | Tomorrow

Extending operations control with the cloud - AVEVA Insight

Track: HMI/SCADA user | Tomorrow

The power of expressions in AVEVA Insight & AVEVA Historian

Track: Operations Control Geek | Tomorrow

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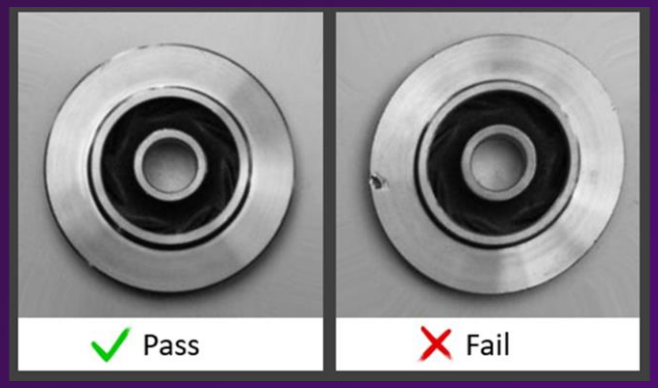
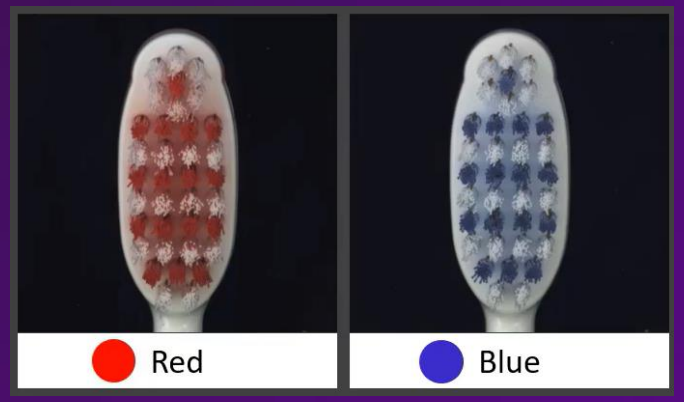
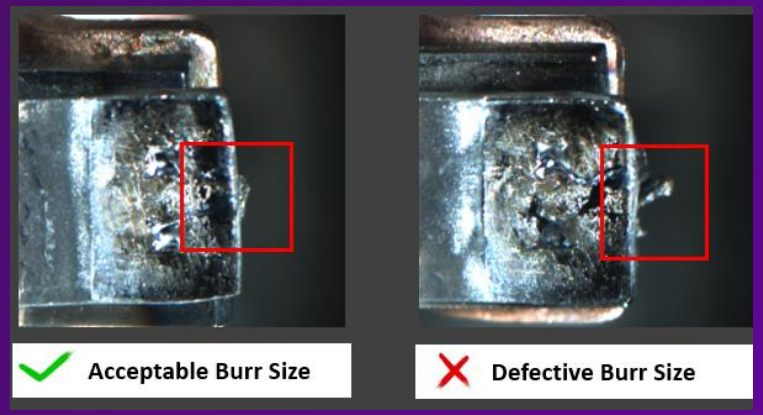


Anomaly Detection



Discrete State Detection



User Defined Pipelines

Vision AI Assistant

Key functions:

Camera integration

Use cameras as instruments for improved automation

Situational awareness

Enable greater situational awareness by focusing operator attention on alerted issues

Notifications

Publish notification through AVEVA Operations Management Interface (OMI) and Insight

Easy Setup

Setup and train analytical models for anomaly and discrete detection

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Check out these sessions:

Deploying Vision AI Assistant for anomaly detection in HMI/SCADA and AVEVA Insight

Track: Operations Control Geek | Tomorrow

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Vision: common data source management

A unified data source management feature across the portfolio

Edge | Supervisory | UOC | Ops Exec

Attributes | Methods | Events | Models

Common data source management

Expanding beyond traditional device integration

Control systems & sensors

MQTT.ORG
OPC UA
IEC
SIMA S7 SIEMENS
A-B QUALITY
OMRON
EMERSON
MELSEC iQ-R series
Schneider Electric

Autonomous systems

TAUROB
Boston Dynamics

Software and services

{RESTful API}
Microsoft SQL Server
Power Automate
Microsoft Graph API
Limble CMMS
sftp

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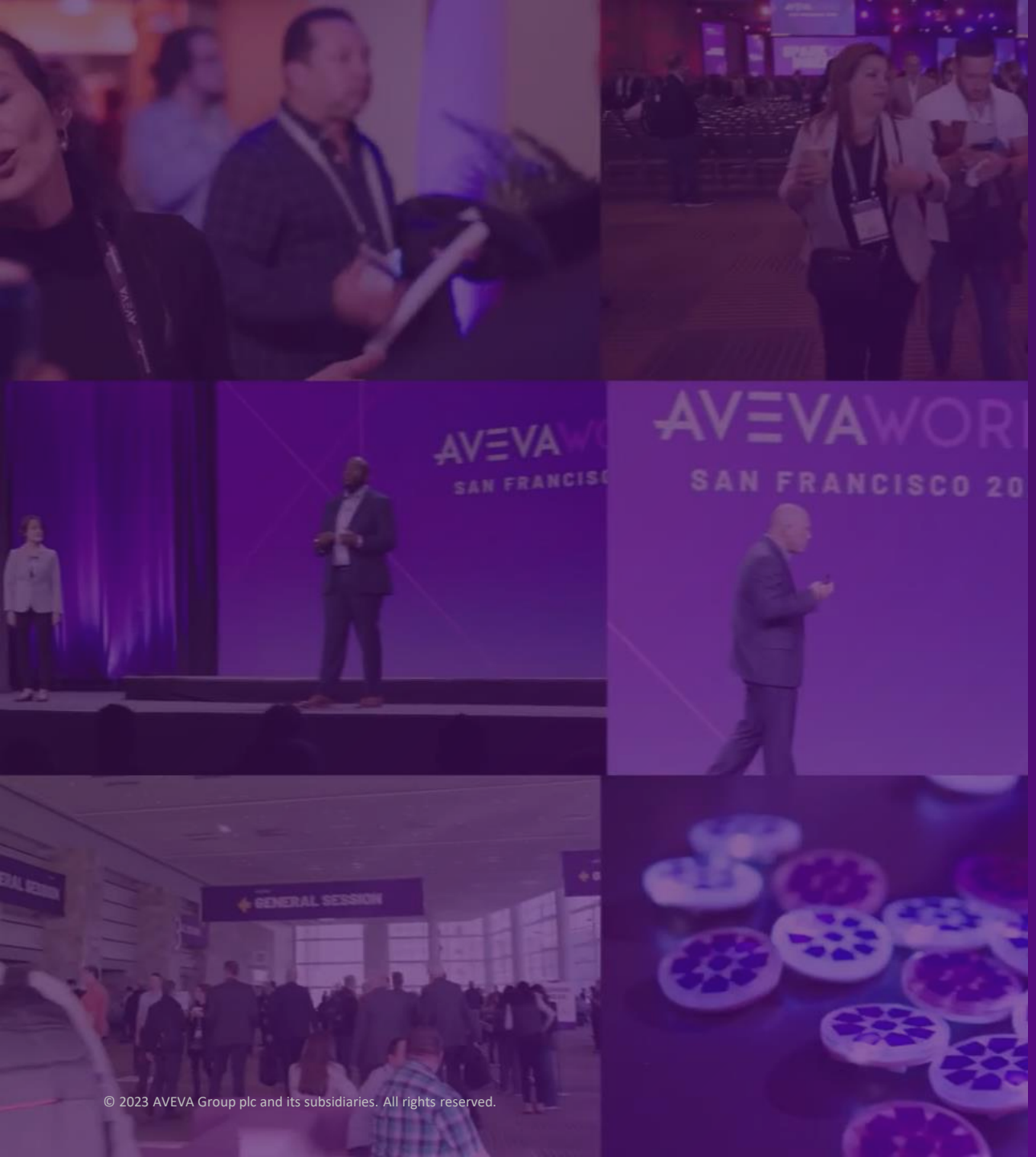

Check out these sessions:

Leveraging MQTT for edge to cloud - best practices and troubleshooting

Track: Operations Control Geek | Tomorrow

Getting the most out of OPC UA

Track: Operations Control Geek | Thursday

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Cybersecurity

Four A's of security

Authenticated

Gained after authenticated login (Identity of the logged-in user is now known)

Authorized

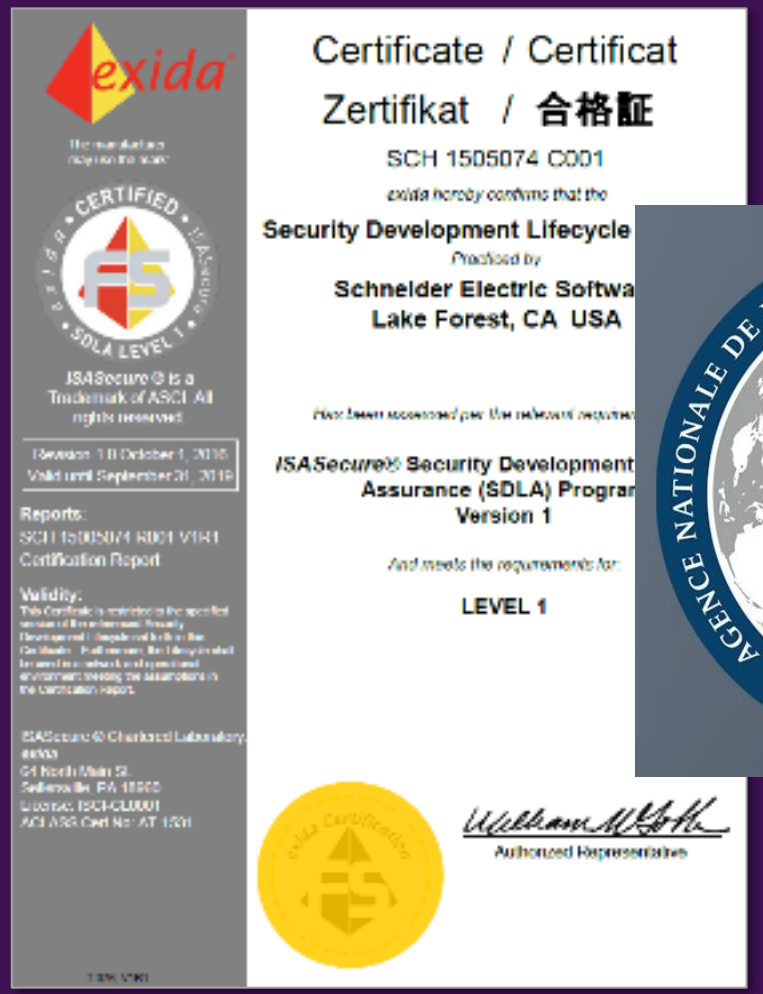
Confirmed that the logged-in user is permitted to write. When demanded by the write target

Approved

Write is verified by an authenticated verifier, separate from the authenticated writer. When demanded by the write target

Archived

Action recorded into a 21 CFR Part 11 log, by the write target



ISASecure®

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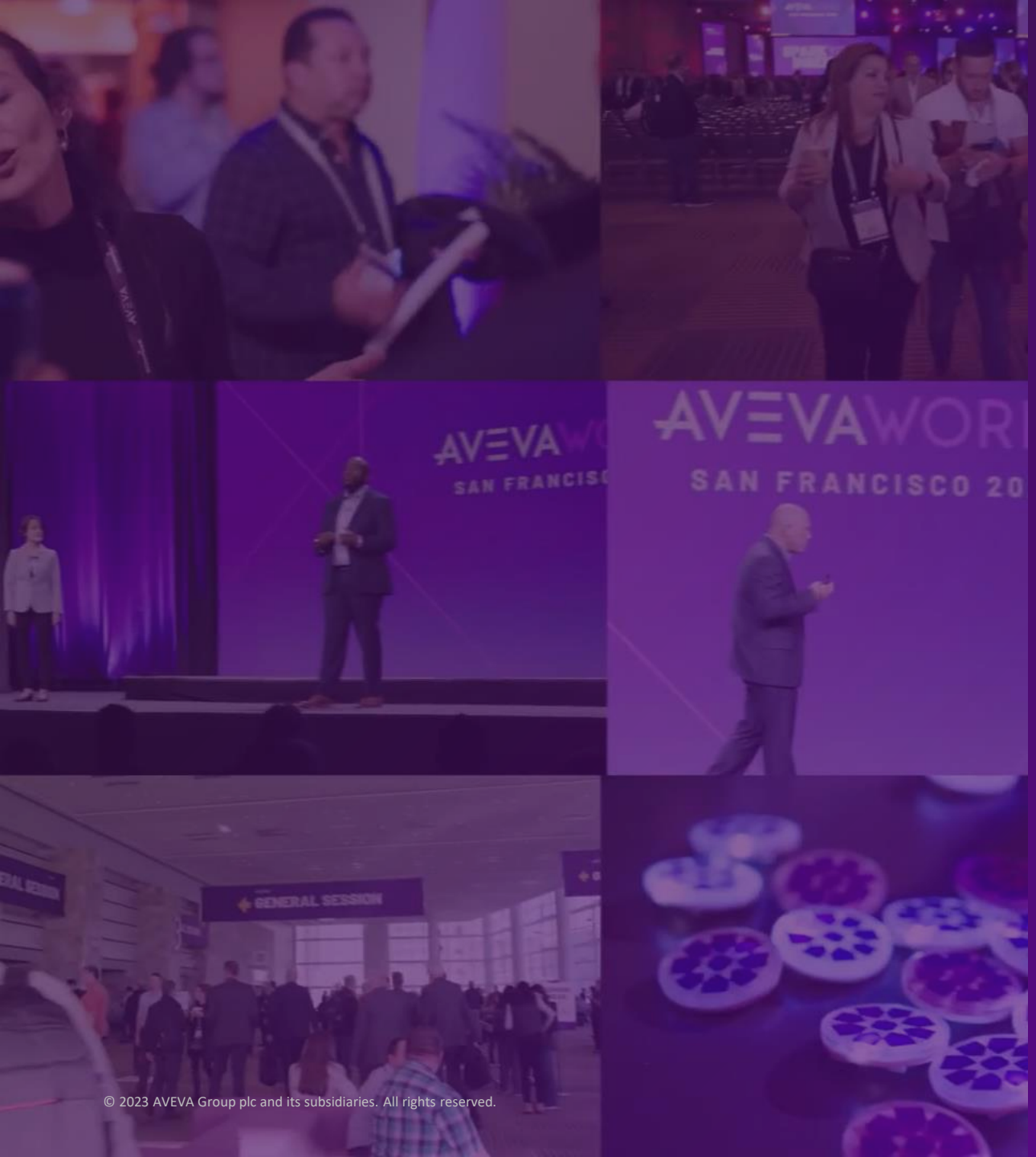

Check out these sessions:

Cybersecurity best practices with AVEVA System Platform

Track: Operations Control Geek | Tomorrow

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Where do they differ?

Edge vs Supervisory philosophy

	EDGE/HMI	SUPERVISORY/SCADA
Namespace	Replicate field / edge driven	Normalize through standards
Developer	Controls engineer	SCADA engineer
Core User	Field operator / near-term	Control room operator / medium-term
Scope	Department / process cell / local	Site / multi-site / distributed
Footprint	IIoT / panel / industrial PC	Industrial PC / server / cloud
Availability	Isolated / autonomous	Redundancy / fault tolerance / disaster recovery

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AVEVA Operations Control - Edge

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AVEVA Edge

Reporting and analysis

Key functions:

Complete HMI solution on Windows & Linux

Web process visualization, communications drivers, alarming, business logic/scripts

Delivering on the vision - IoTView

Visualization performance

Supporting Industry 4.0 initiatives

MQTT SparkPlug B publishing

PYTHON scripting language support

18 drivers supported on Linux – largest library in the industry!

Versatile footprint

Scale from minimal embedded devices to server class hardware

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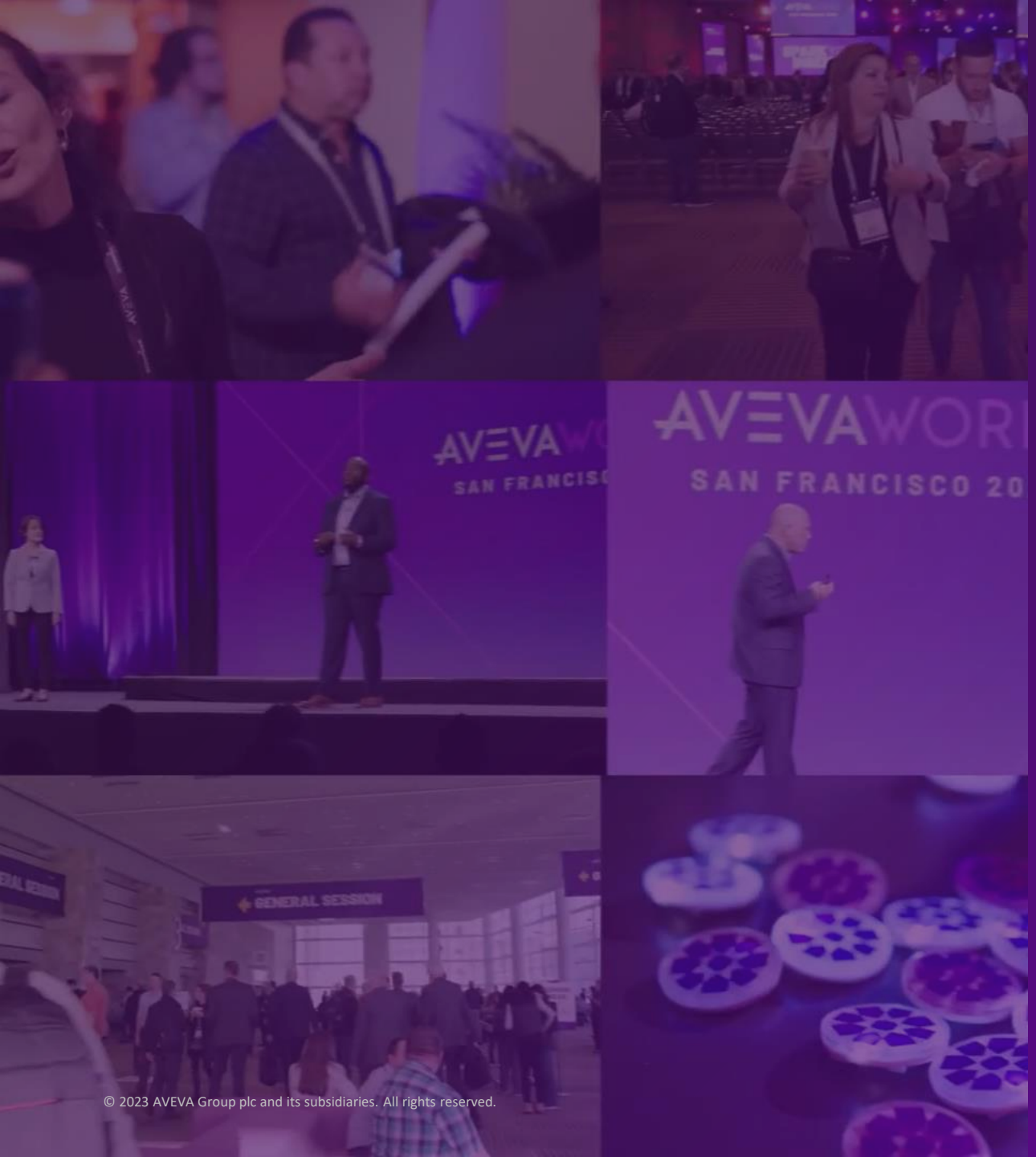

Check out these sessions:

Building HMI and IIoT solutions with Linux devices

Track: Operations Control Geek | Today

What's coming in 2023 R2 for operations control - edge

Track: HMI/SCADA user | Thursday

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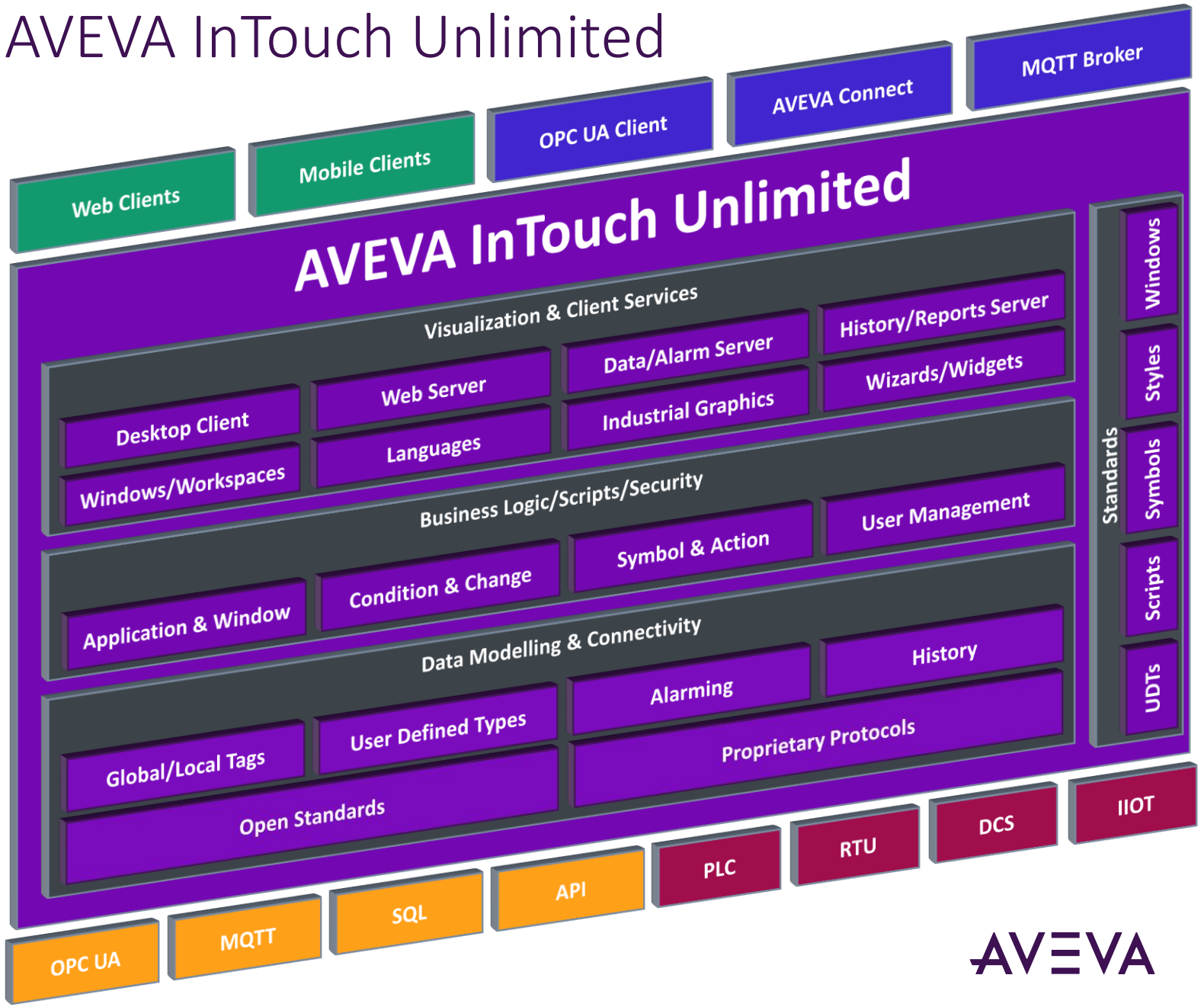
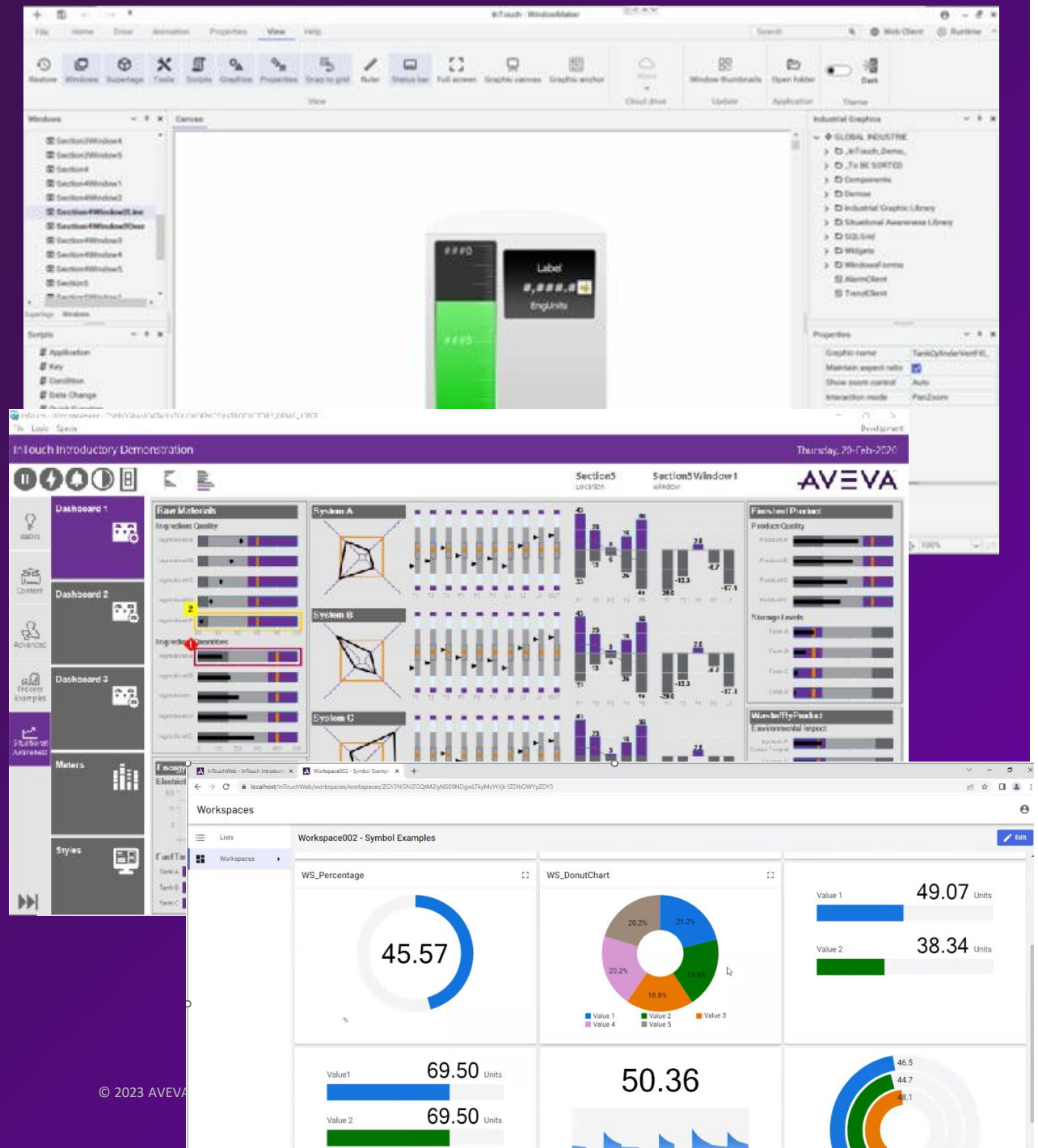
AVEVA InTouch Unlimited





AVEVA InTouch

Organizational empowerment

Key functions:

Increased tag dictionary capacity

Tag limits are a thing of the past and field structures are easily reproduced with UDTs

Legendary ease of use

Complete modernization of the UI/UX configuration experience continues to get better.

Native web server

Deliver process visualization to virtually any device

Self-service content

Now operators can build and share content without use of any configuration tools

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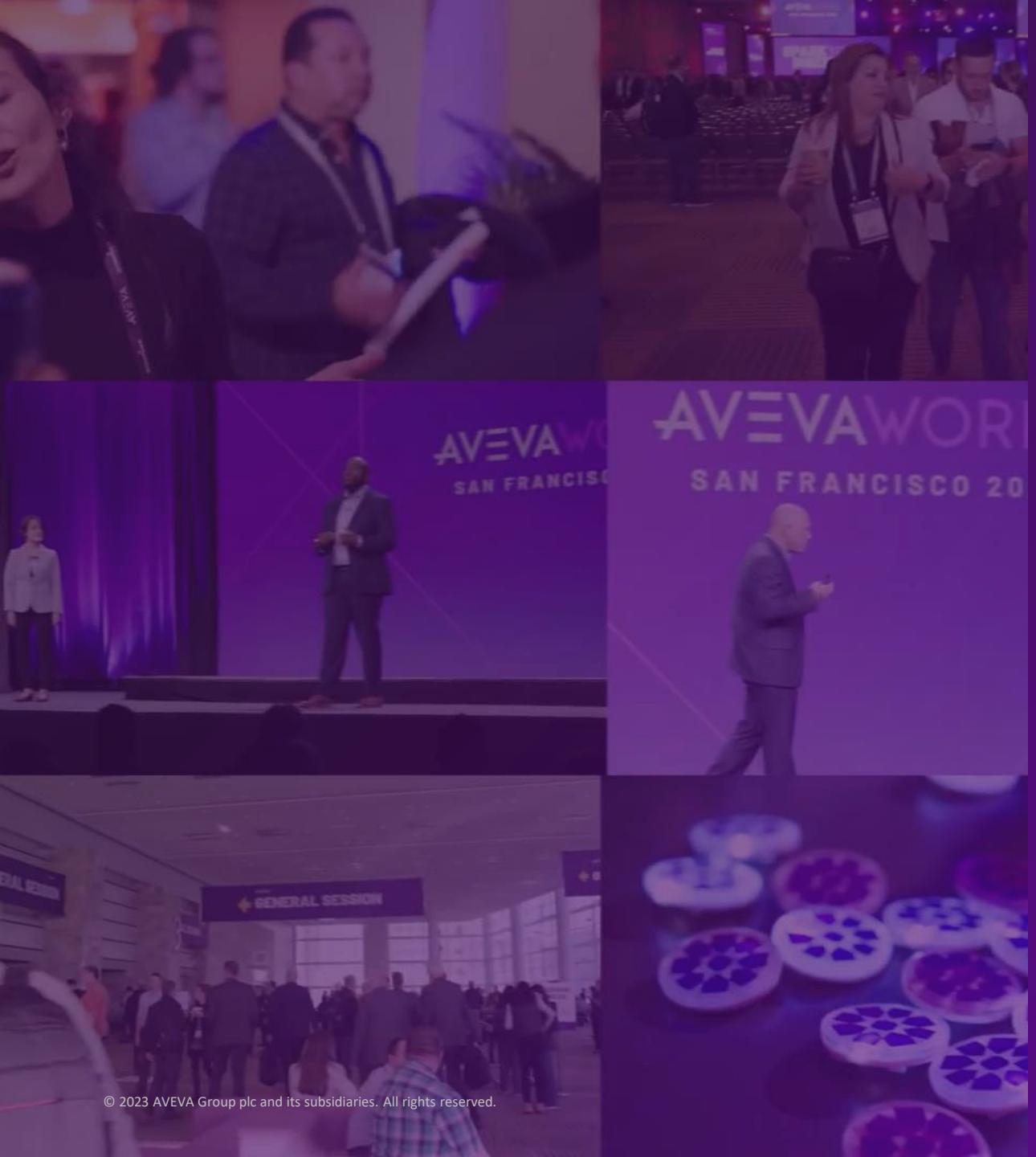

Check out these sessions:

Promoting digital health of the process by enabling decisions with the AVEVA InTouch HMI web client

Track: HMI/SCADA user | Today

How to apply user defined types in AVEVA InTouch HMI

Track: Operations Control Geek | Tomorrow

Designing AVEVA InTouch HMI applications for web clients

Track: HMI/SCADA user | Thursday

What's coming in 2023 R2 for operations control - edge

Track: HMI/SCADA user | Thursday

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AVEVA Operations Control - Supervisory

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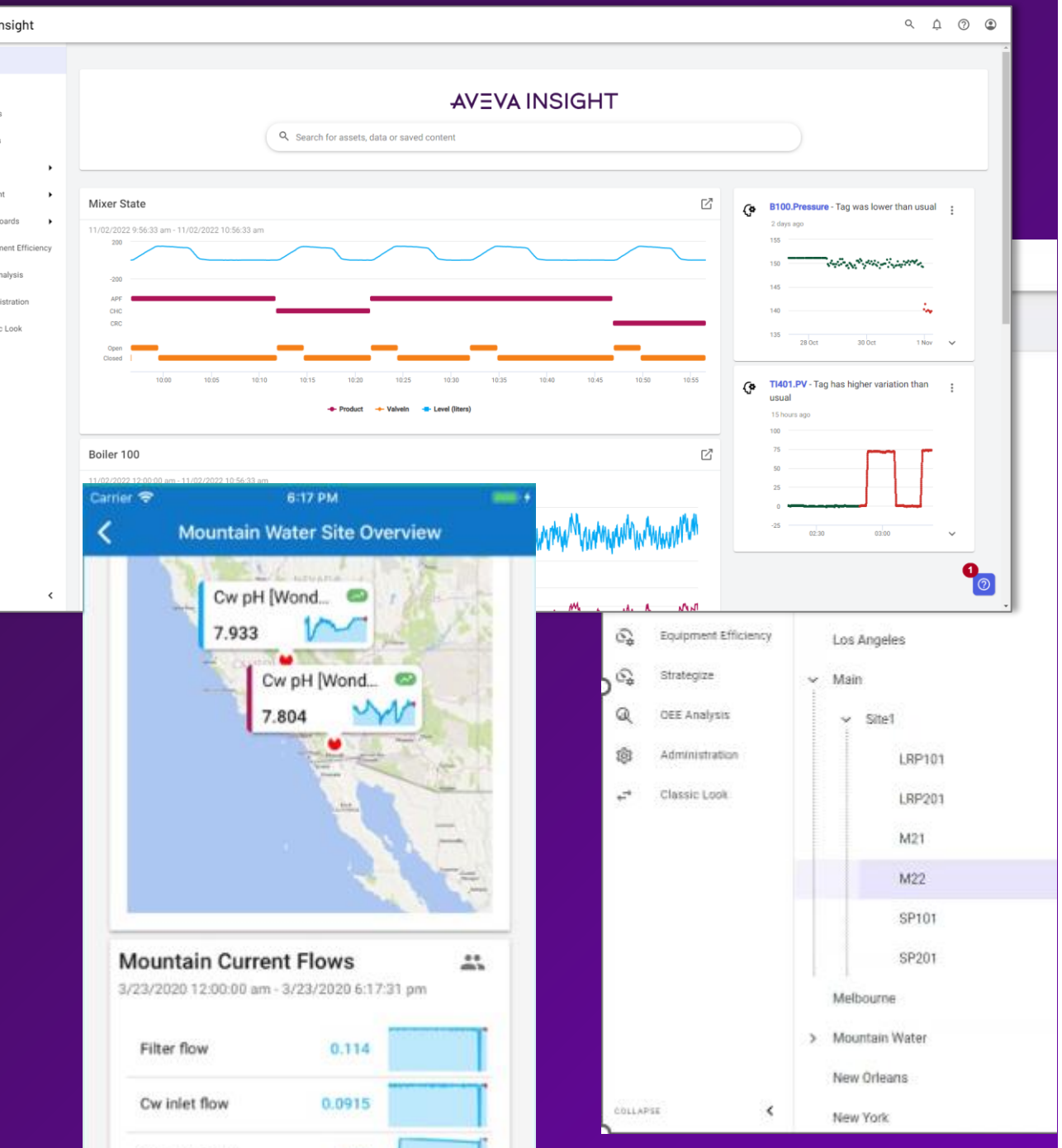


AVEVA Plant SCADA

Organizational empowerment

Key functions:

Data access

Secure access from any location or device.

Ease of use

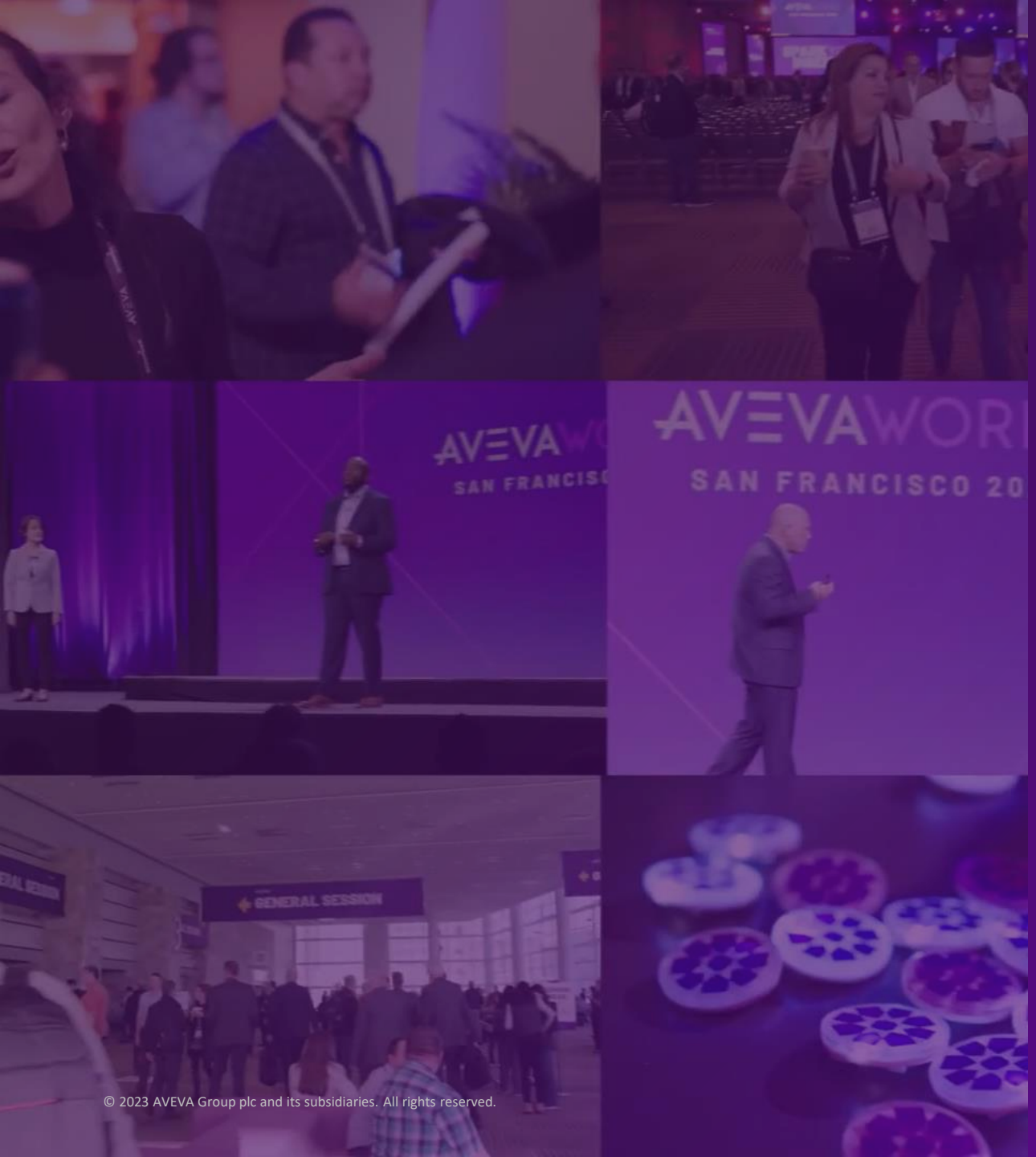
Search-based navigation, time-series charts, process graphics, geolocation, and customizable dashboards.

Performance analysis

Utilization and efficiency analysis, condition management, and alerts and notifications.

Anomaly detection

Automated analytics using unsupervised machine learning.



Check out these sessions:

How to leverage Industrial Graphics in your applications

Track: Operations Control Geek | Today

Standardizing Rio Tinto Iron Ore mine operations

Track: HMI/SCADA user | Tomorrow

What's coming in 2023 R2 for operations control - supervisory

Track: HMI/SCADA user | Thursday

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AVEVA System Platform

Reporting and analysis

Key functions:

OMI web client

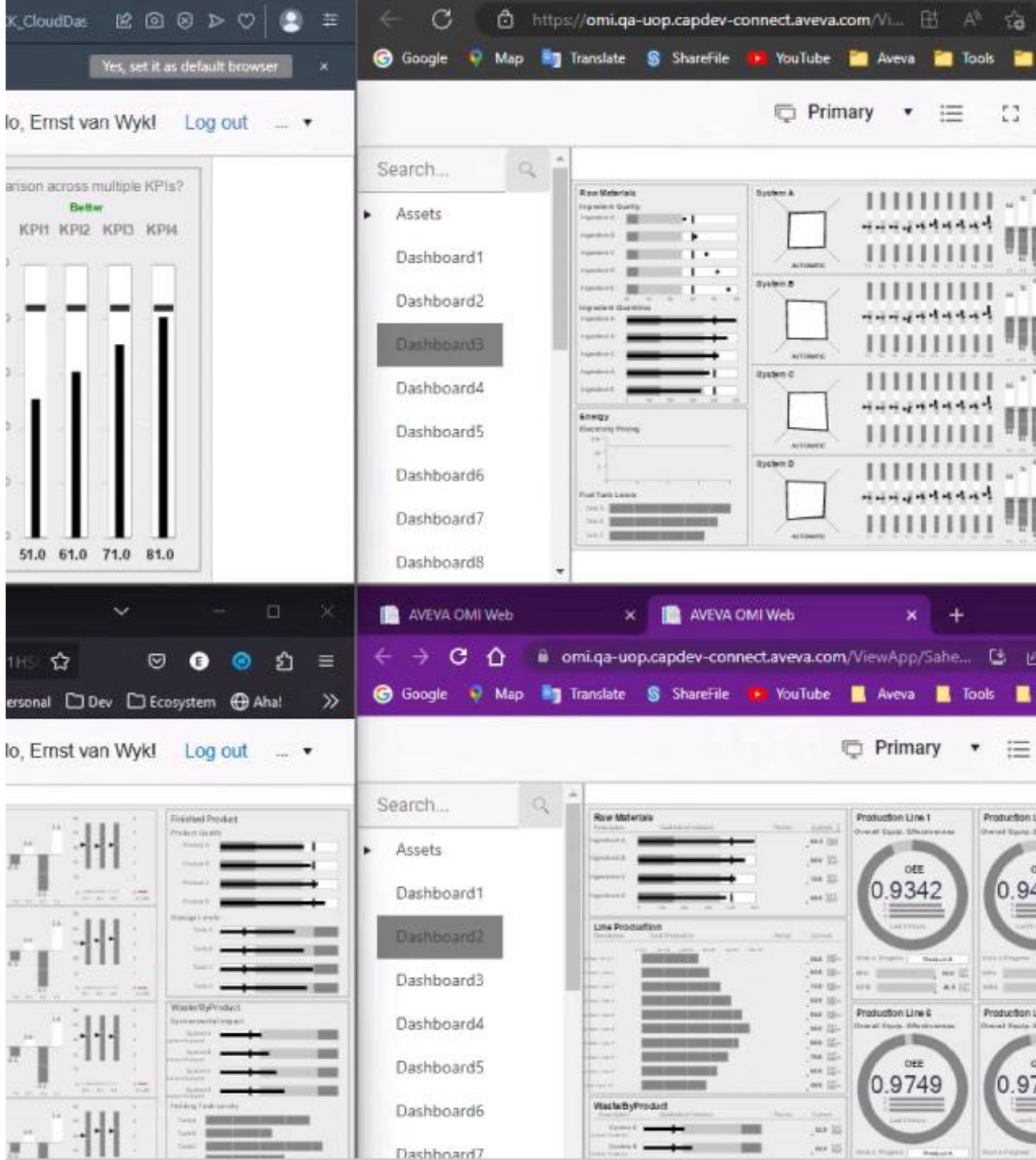
A new era in process visualization is delivered through the only platform agnostic operations management interface

Dynamically create content

The new EmbedContent() method allows content to be generated on the fly at runtime and further extends the data driven vision for AVEVA process visualization

Unparalleled scalability and performance

Thin clients will download and run all visual application on demand minimizing all server loading



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Check out these sessions:

AVEVA System Platform migration and upgrading best practices

Track: Operations Control Geek | Tomorrow

Insights from the updated AVEVA System Platform deployment guide

Track: Operations Control Geek | Tomorrow

Advanced HMI design using Operations Management Interface (OMI)

Track: HMI/SCADA user | Tomorrow

Unleash your engineering agility with EcoStruxure Automation Expert

Track: HMI/SCADA user | Tomorrow

What's coming in 2023 R2 for operations control - supervisory

Track: HMI/SCADA user | Thursday

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AVEVA Operations Control 2023 R2

Facilitating better decision making

- AVEVA Operations Control is the first and only hybrid SaaS solution serving the needs of industrial operations from edge to enterprise.
- A new era in industrial visualization designed for fantastic visual experience, unrestricted device portability, blazing performance, unprecedented scalability, and data driven configuration.
- Ushers in a new era in industrial software expectations delivered through the world's only completely architectural independent commercial model designed to empower users.
- Expands on our commitment to openness with significant advances in Python, MQTT, and OPC UA.

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Questions?

Please wait for the microphone.

State your name and company.

Please remember to…

Navigate to this session in the mobile app to complete the survey.

Thank you!

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AVEVA

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Over 20,000 enterprises in over 100 countries rely on AVEVA to help them deliver life's essentials: safe and reliable energy, food, medicines, infrastructure and more. By connecting people with trusted information and AI-enriched insights, AVEVA enables teams to engineer efficiently and optimize operations, driving growth and sustainability.

Named as one of the world's most innovative companies, AVEVA supports customers with open solutions and the expertise of more than 6,400 employees, 5,000 partners and 5,700 certified developers. The company is headquartered in Cambridge, UK.

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