

INTERNAL USE ONLY

JUNE 2020

Communication Drivers Roadmap 2020

Alvaro Martinez – Product Manager

AVEVA **IGNITE** DIGITAL
STRONGER BOLDER TOGETHER

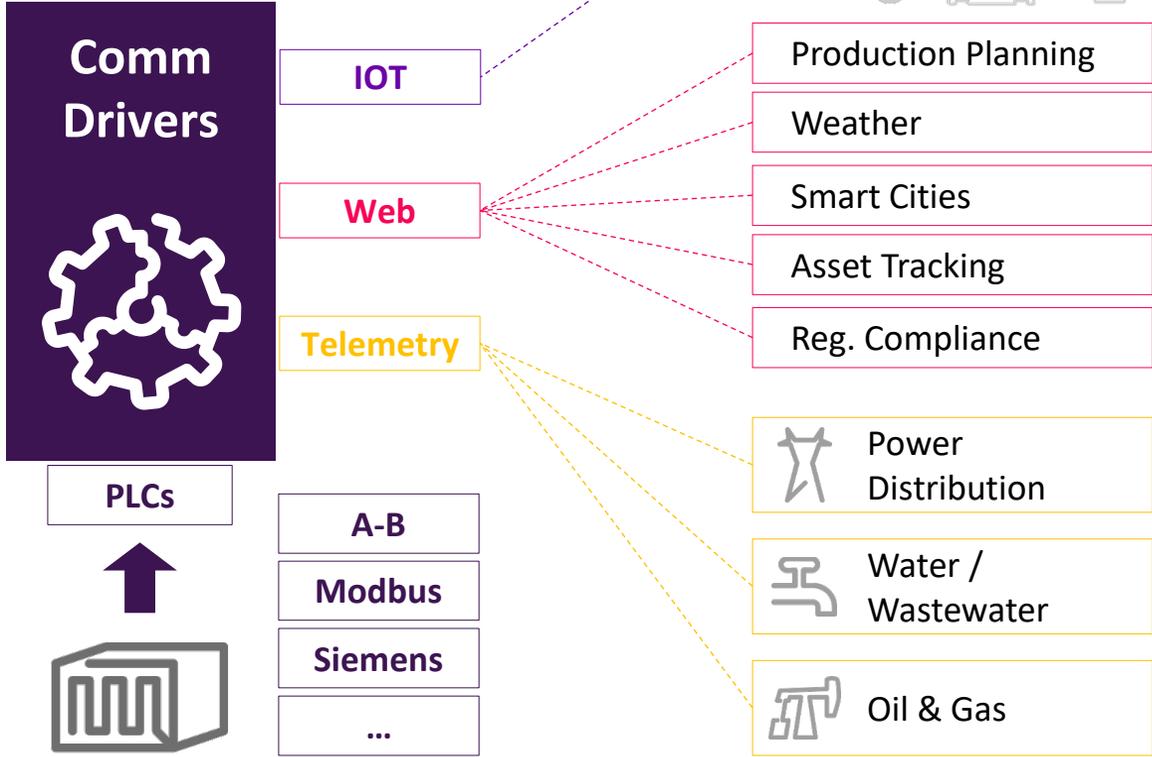


01 We speak “PLCs”

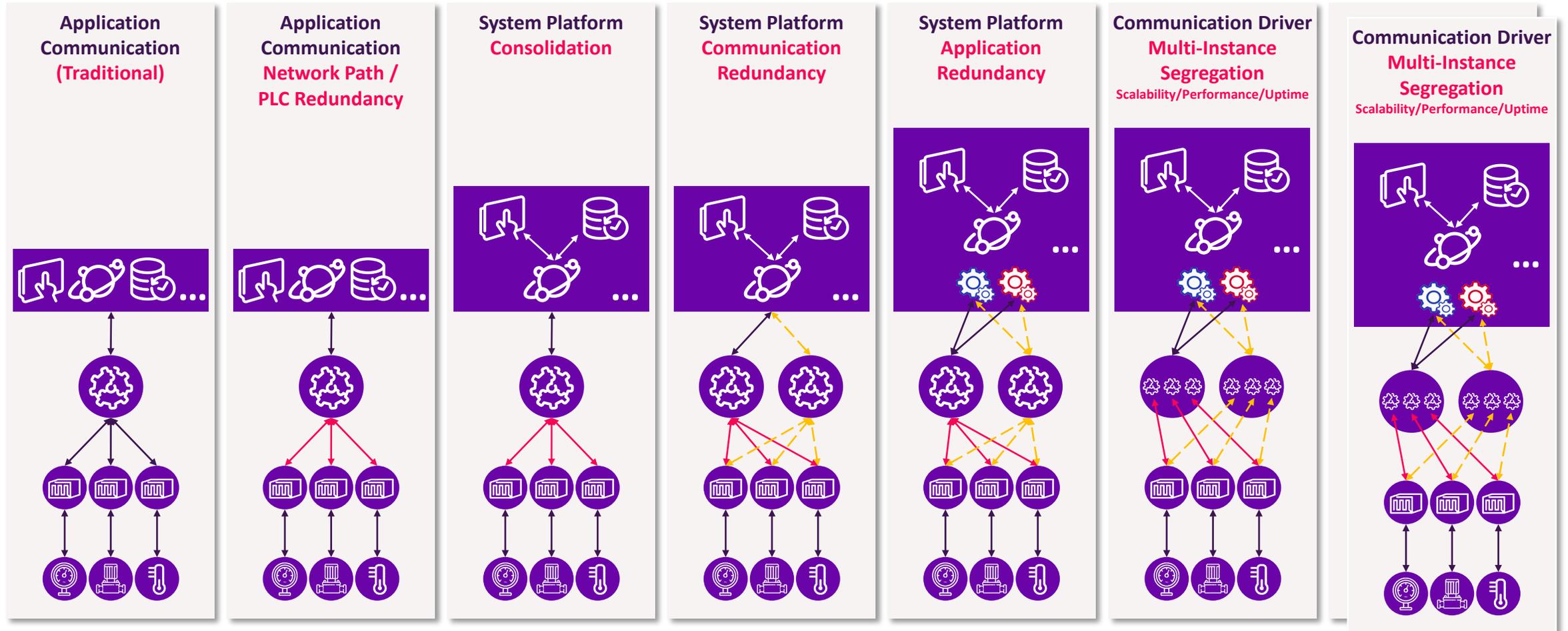
02 We speak “IOT”

03 We speak “Web”

04 We speak “Telemetry”



Communications Strategies – Maximizing Uptime



Engineering Efficiency - Auto-Build

• Applications Automatically Build themselves Dynamically!



- ✓ Automatically Map PLC strategy
- ✓ Simple Structures
- ✓ Contained Structures
- ✓ User-Defined Strings
- ✓ Add-On Instructions
- ✓ No configuration required



A-B



Siemens



What's New in 2020

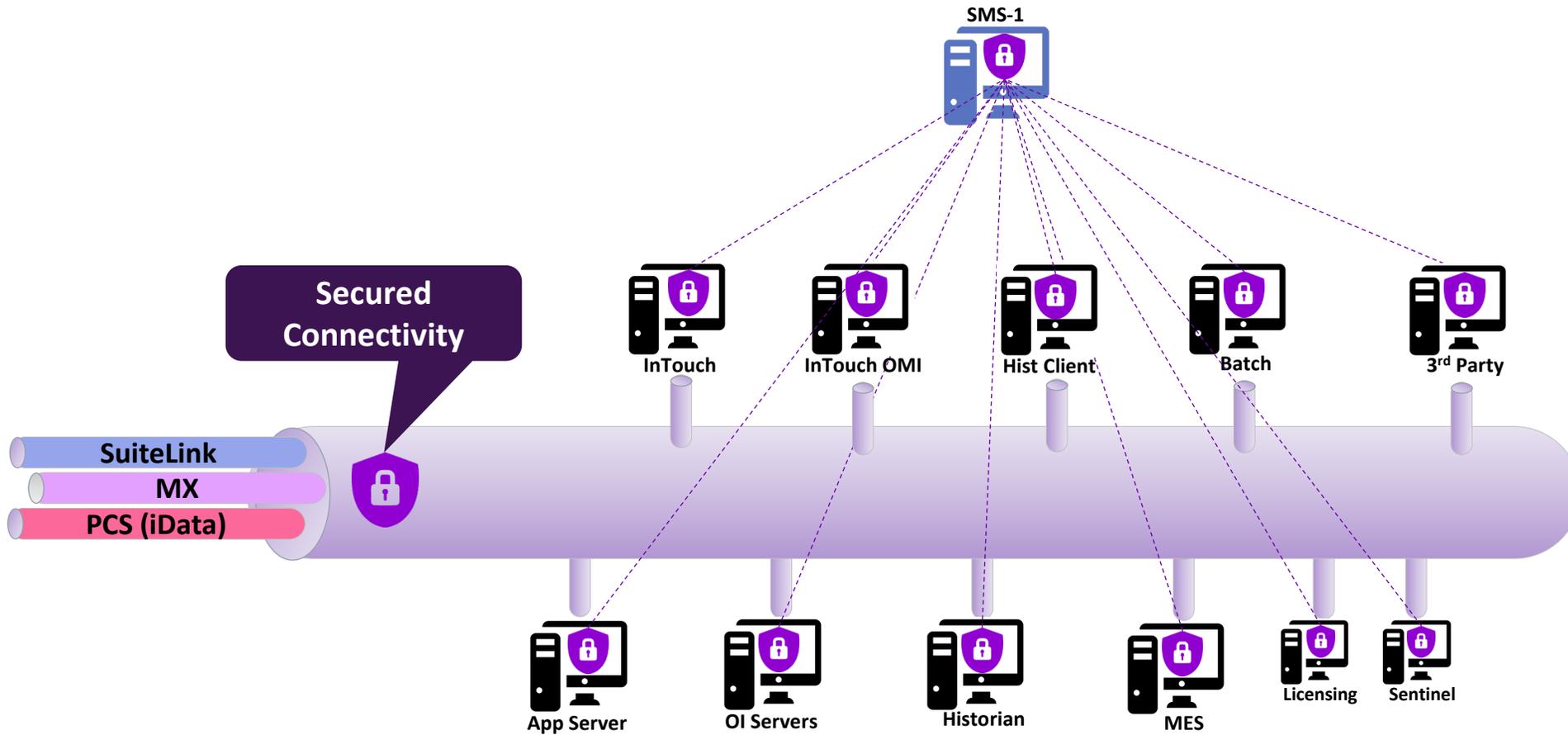
OPC UA Server

01

AVEVA

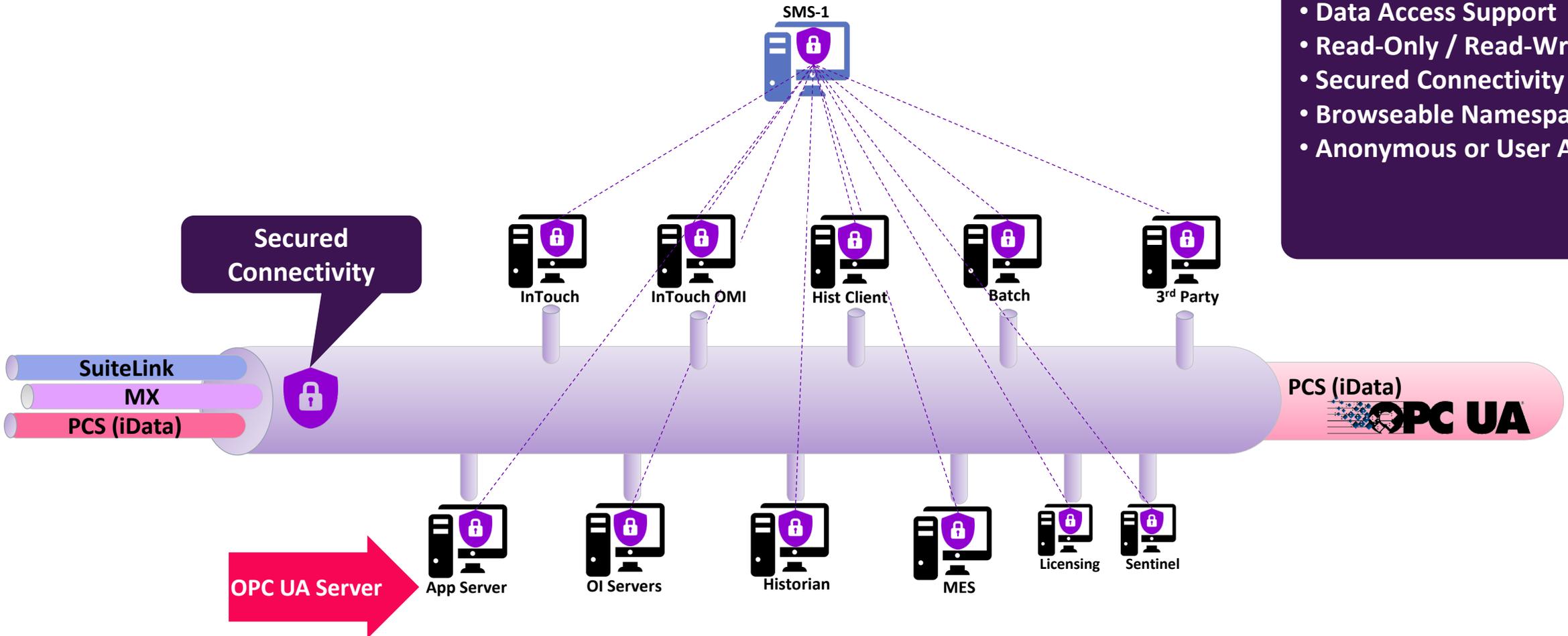
WSP 2017 U3

Secured Communication (SMS Introduction)



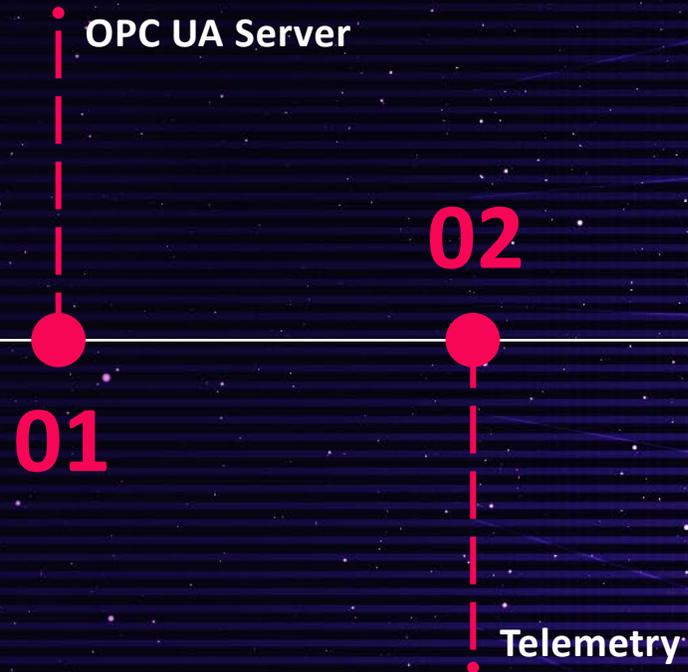
WSP 2020

OPC UA Server compliance



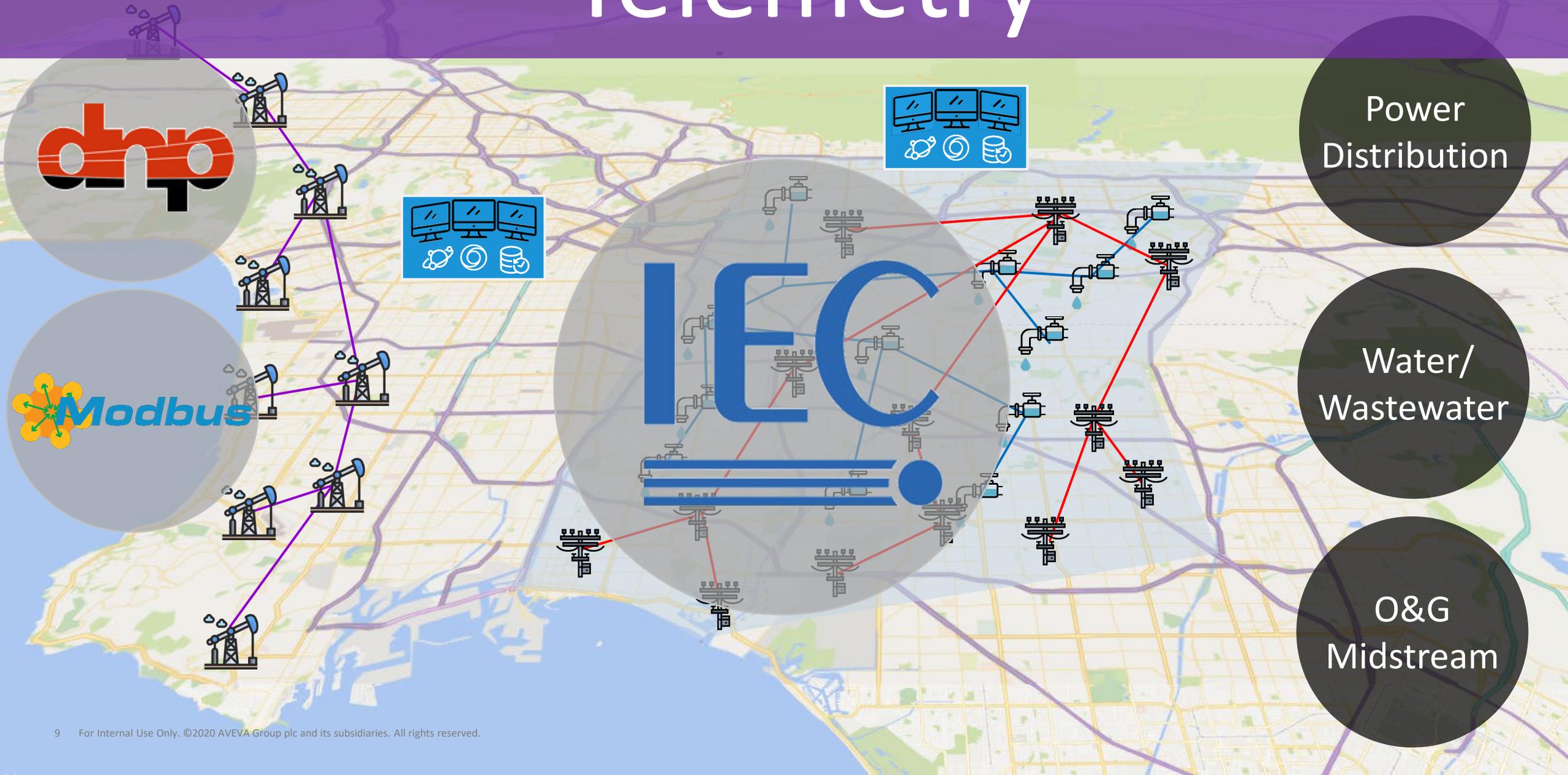
- OPC UA Server**
- Data Access Support
 - Read-Only / Read-Write
 - Secured Connectivity
 - Browseable Namespace
 - Anonymous or User Access

What's New in 2020



AVEVA

Telemetry



Power
Distribution

Water/
Wastewater

O&G
Midstream



Telemetry Server is...

OI SERVERS

Supervisory Communications
(Expected to be connected)

Live Data
(Real-time data updates from device)

Continuous Data Streams
(Fast refresh from device)

LAN Connection (Mostly)
(Local Network)

No Scheduling
(Always connected)

TELEMETRY SERVER

Telemetry Communications
(Intermittent Comms Links)

Late Data (Mostly)
(Device reports based on need)

Buffered Data
(Device stores data locally and then forwards)

WAN Connection (Mostly)
(Network / Radio)

Connection Scheduling
(Schedule updates from many devices)

Walkthrough Starter Sample Projects

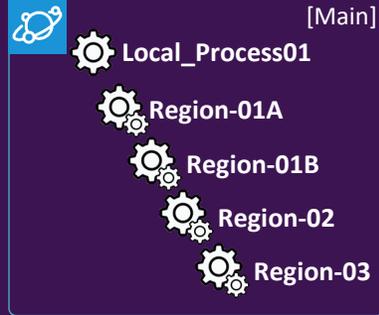
AVEVA



Walkthrough Naturally Integrated

AVEVA

Node01



Node01

[Main]

[Main]

Direct References from Objects

Leverage PCS Comms

(Platform Common Services)

Telem_Server_Node01:Region01.01A.Pump_Pressure

Region-01A



Region-01B



Region-02



Region-03



Application Server Integration

Static Object Reference Syntax

(Reference Created in Telemetry Server)

Telem_Server_<PCS_Name>:<Full Group Path Name>.<PointName>

Telem_Server_ATS001:Region01.01A.Pump_Pressure

Dynamic Object Reference Syntax

(Generate Telemetry Server Tags dynamically)

Telem_Server_<PCS_Name>:%<GroupName.OutstationName>;<PointType>;<SyntaxSpecificItems>;[<PointName>]

Telem_Server_ATS001:%Region01.01A.Outstation01;DI;2;[Pump_Running]

IMPORTANT!

Syntax is Case Sensitive



Connectivity Hub

This page lists all OI, DA and other connectivity ap button to view the Tech Notes and FAQs related to

Important: Since Windows regards downloaded fi access Properties, then click **Unblock**.

Looking for product downloads? Click [HERE](#).

Looking for product bundles, Industry Applicat

Filters Apply Reset

Telemetry

Products

- Select All
- Citect
- SimSci
- Wonderware

Document Type

- Select All
- Documentation
- Installation Guide
- Other
- Readme
- User Guide

Date Range

Start Date

End Date

Contents

- Welcome to Telemetry Server
- Legal Information
- Safety Information
- Getting Started
- Operator Reference
 - Configurator
 - Working with Application Server
 - Introduction
 - Configuring a Telemetry Server - A
 - Dynamic Data References
 - Static Data References
 - Buffered Data
 - Running Telemetry Server with Win
 - Core Reference
 - Driver Reference
 - System Administration

Static Data References

Static data references are used when the points/tags already exist in Telemetry Server. The Static data reference syntax is as follows:

Telem_Server_<NodeName>:<Full Group Path Name>.<PointName>

Where

- **<NodeName>** is by default the name of the computer node where the Telemetry Server instance is installed. You can customize the "NodeName" field in Telemetry Server to accommodate for redundancy scenarios.
- **<Full Group Path Name>** is the full hierarchical name of the group levels where the point is configured. If the point is configure in Group02, and Group02 belongs to Group01, the <Full Group Path Name> is "Group01.Group02".
- **<PointName>** is the actual name of the point in Telemetry server.

NOTE: Static data reference syntax is common to all protocols in Telemetry Server. Dynamic data reference syntax varies by protocol.

Static Data Reference Syntax Example:

Telem_Server_Node12:Group01.Group02.Tank_Level

- Working with Application Server
 - Introduction
 - Configuring a Telemetry Server - Application Server Connection
 - Dynamic Data References
 - Static Data References**
 - Buffered Data
 - Running Telemetry Server with WinPlatform and App Engine

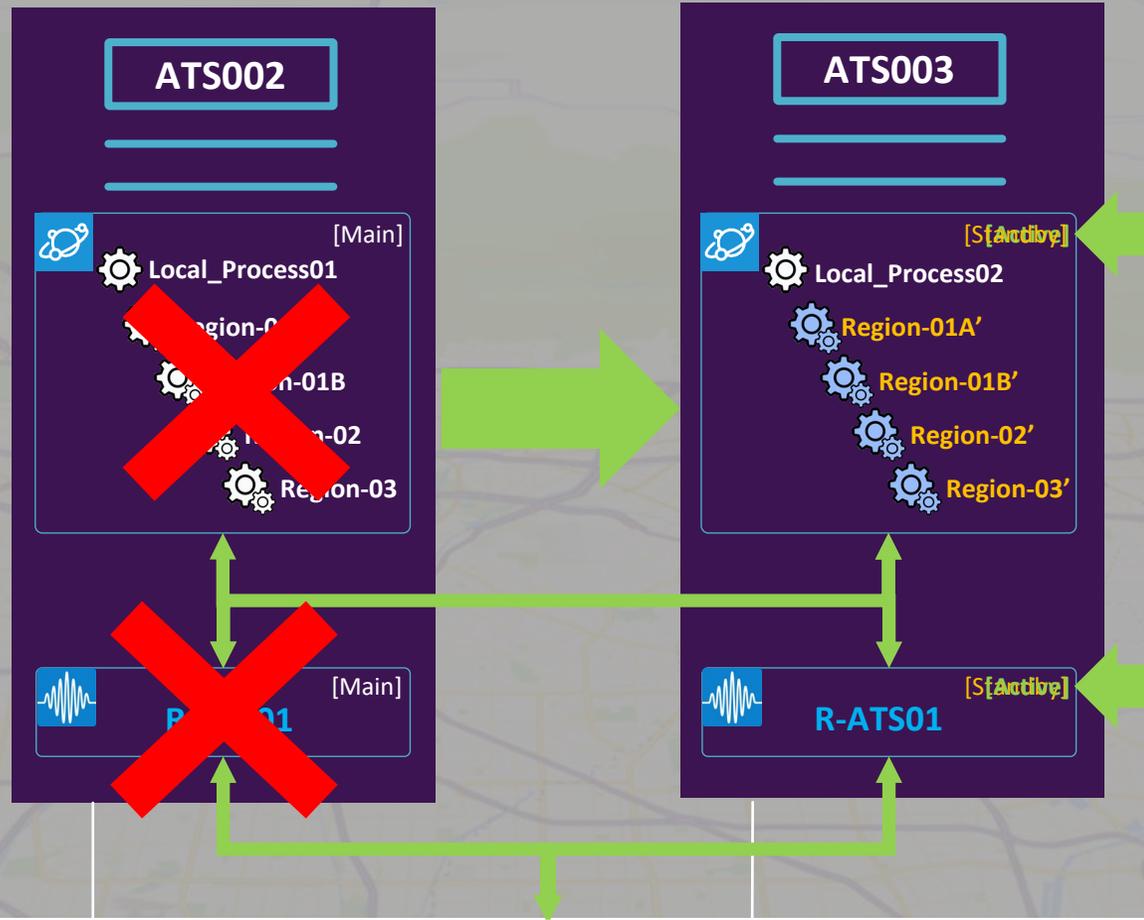
AVEVA Telemetry Server Installation Guide

12 Nov 2019
Version: 2019 | Product Line: Wonderware



Walkthrough Fault Tolerance and Buffered Data Backfill

AVEVA



Region-01A



Region-01B



Region-02



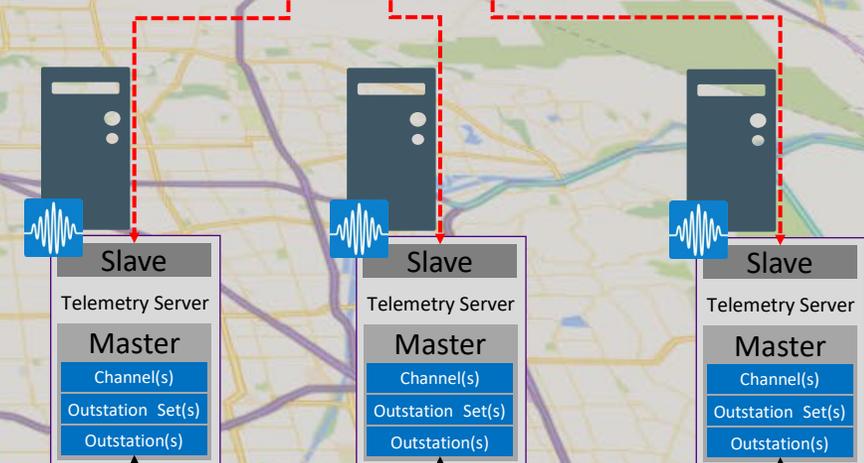
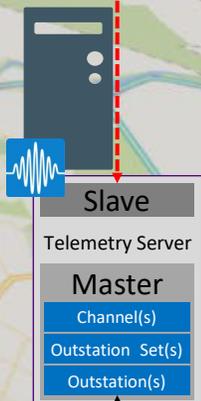
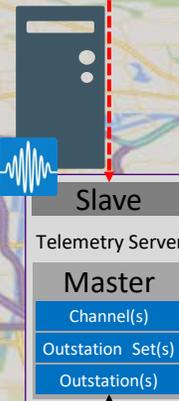
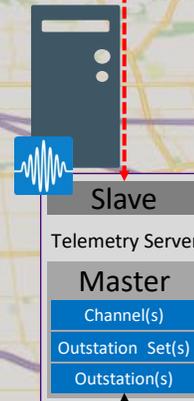
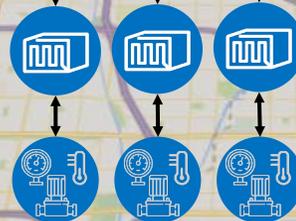
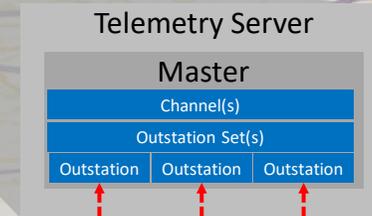
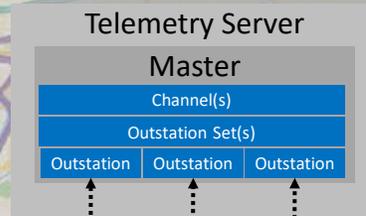
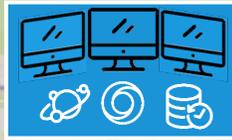
Region-03

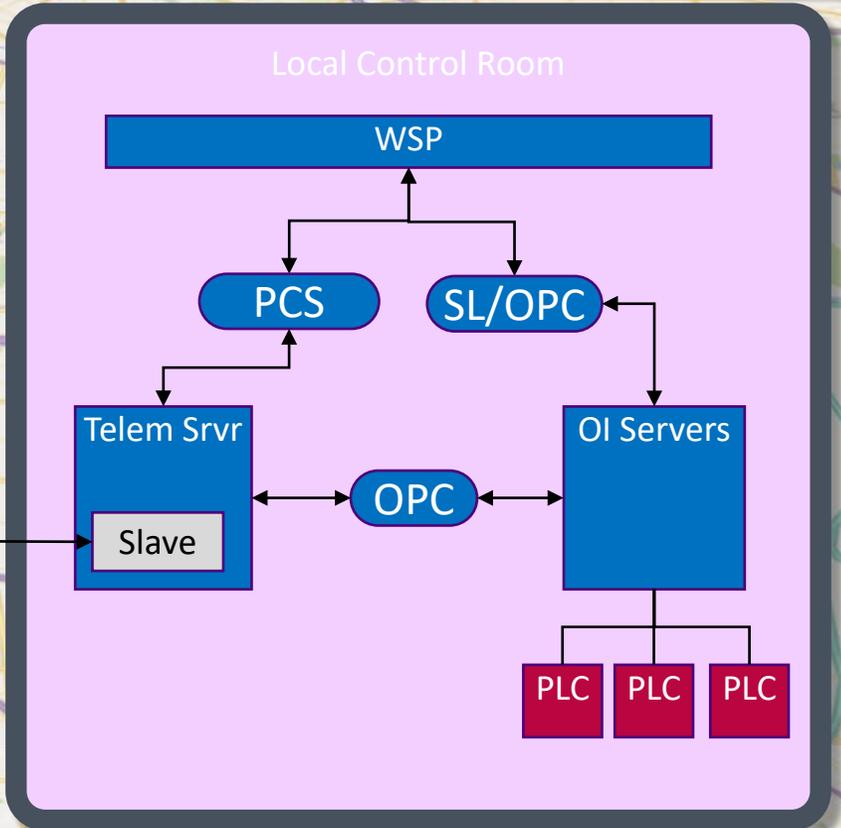
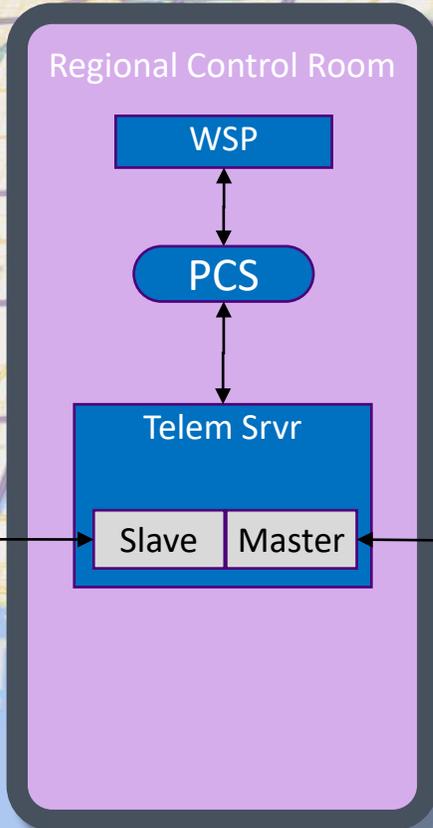
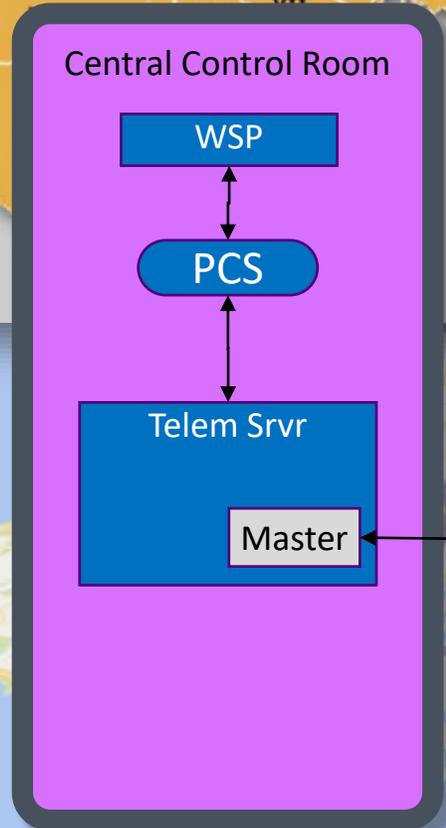
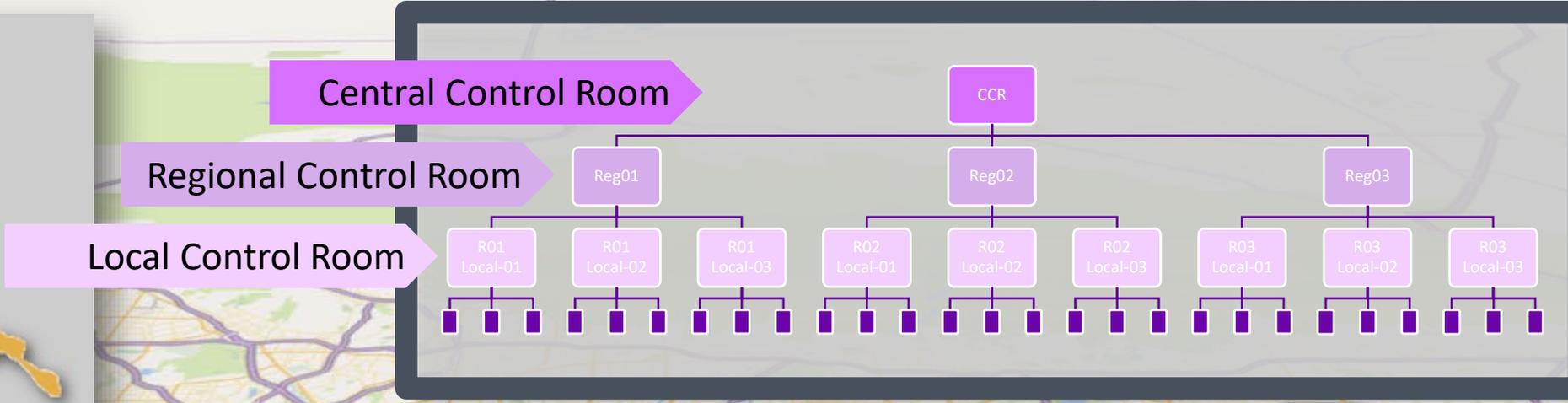
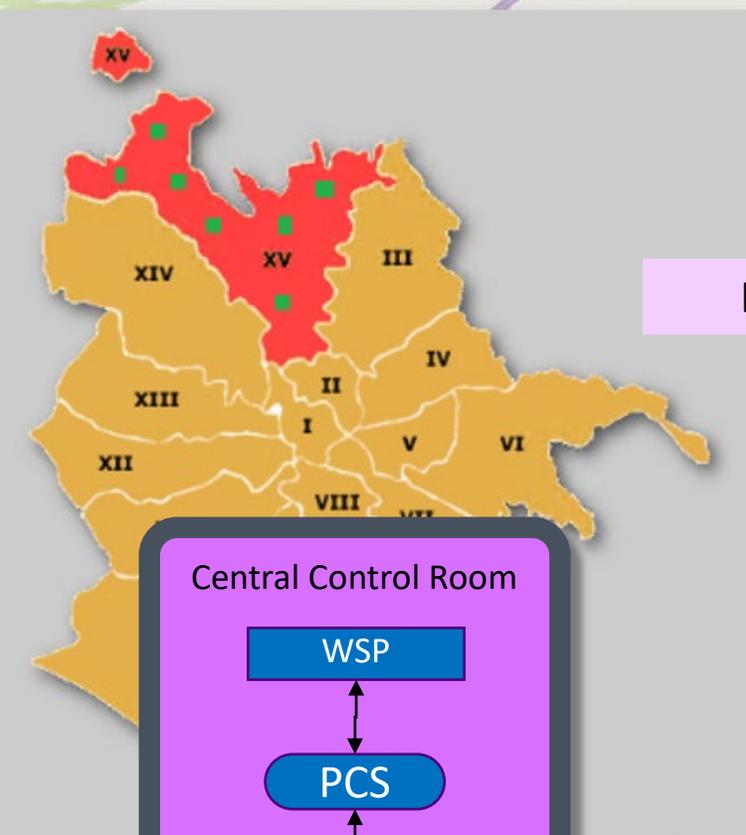


Walkthrough Tiered Architectures (Master / Slave)

AVEVA

AVEVA™ Telemetry Server







Engineering Efficiency Templates

AVEVA

AVEVA Telemetry Server

PROTOCOLS SUPPORTED

- **DNP3**
 - Master and Slave Support
 - Level 2 & 3 Support
 - DNP3 is the IEEE Standard 1815-2012 standard
- **Modbus**
 - Modbus RTU protocol
 - Modbus TCP protocol
 - Modbus ASCII protocol
- **IEC 60870**
 - IEC 60870-5-101 (Serial Communications)
 - IEC 60870-5-104 (TCP/IP Communications)

COMMUNICATIONS FEATURES

- Independent Ethernet Communications
- Round-Robin Polling Ethernet Communications
- On-Demand Ethernet (Scheduled)
- Configurable Interval Polling
- Configurable Polling Offsets
- Configurable Escalation
- Automatic Dial-Up Configuration
- On-Demand Dial-Up (Scheduled) Configuration
- Multiple Schedule Management
- Dual redundant communication paths
- PSTN fallback

COMMUNICATIONS MEDIA SUPPORT

- TCP/IP
- UDP/IP
- Ethernet via Radio
- Ethernet to Serial
- Serial (RS 232 / RS 485)
- Dial-Up (Modem)

DATA CAPTURE

- Polling Engine
- Integrity Polling (DNP3 Class 0, 1, 2, 3)
- Class Polling
- Point Type Polling
- Low Bandwidth Optimization
- DNP3 Buffered Events and Data Support
- DNP3 Time Synchronization with RTU
- Unsolicited messaging support

FAULT TOLERANCE

- Telemetry Server Dual and Triple Redundancy
- Leverage Platform Common Services (PCS) for automatic communications discovery and reconnection

APPLICATION MANAGEMENT

- Configuration Management of Connectivity Protocols
- Flexible Organization (Configurable Grouping)
- Templates Support
 - Manage common configurations
 - Propagate changes to instances
 - Lock parameters to templates

PROJECT BACKUPS

EXPORT/IMPORT OF APPLICATION CONFIGURATION

SECURITY

- Secured by default
- Built-In Customizable Application Security
- Configurable Users and Groups
- OS security Integration
- Active Directory and LDAP Integration
- Customizable permissions

APPLICATION SERVER INTEGRATION

- Native communication leveraging Platform Common Services (PCS)
- Static & Dynamic reference syntax support
- Remote tag (point) creation from Application Server
- PCS redundancy support
- Buffered Data Support



YouTube Playlist

AVEVA

AVEVA Telemetry Server Commu x +

youtube.com/playlist?list=PLJq4rR8tWINwq7R5KLZYDmDnv3fGH9ohF

YouTube Search SIGN IN

Home Trending Subscriptions Library History

Introducing



AVEVA Telemetry Server Communication Drivers

7 videos • 429 views • Last updated on Oct 29, 2019

AVEVA Telemetry Server provides a suite of communication drivers including DNP3, IEC 60870, and Modbus providing connectivity to devices such as remote terminal units (RTUs), which are typically geographically distributed in nature. Typical industry verticals include power distribution, water / waste water, and oil and gas midstream.

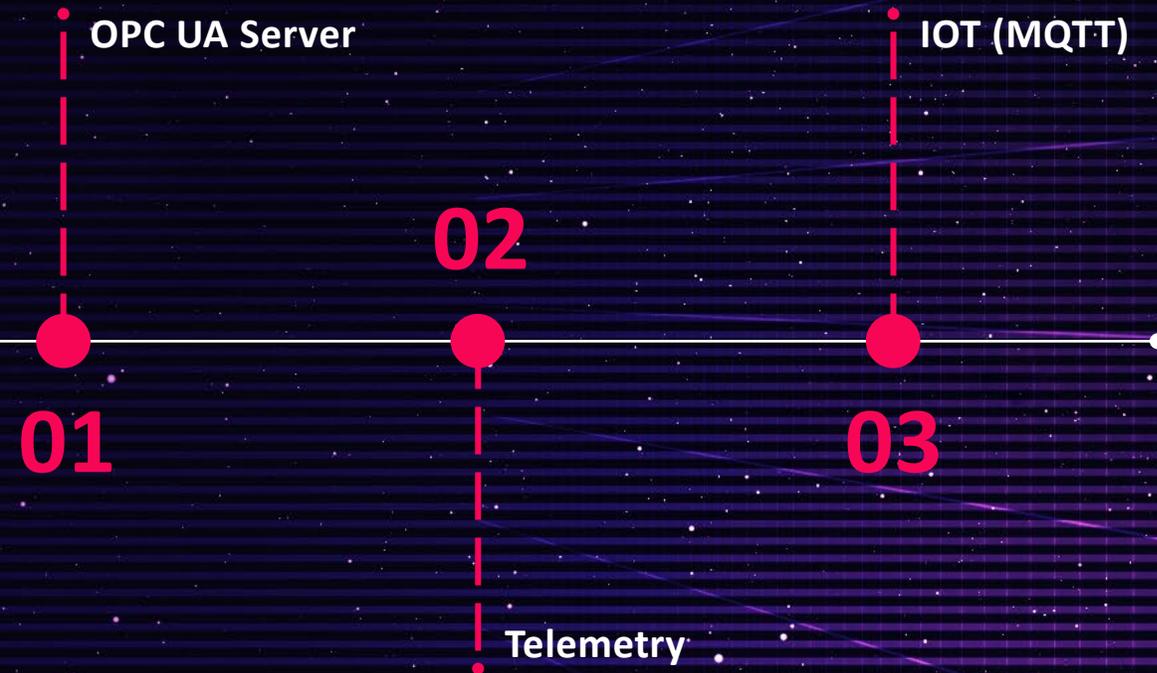
Wonderware HMI SCADA **SUBSCRIBE**

- 1 **Introducing AVEVA Telemetry Server - Introduction to Communication Drivers for DNP3, IEC60870 and**
Wonderware HMI SCADA 1:29
- 2 **AVEVA Telemetry Server - Installation, Licensing, and Initialization**
Wonderware HMI SCADA 6:21
- 3 **AVEVA Telemetry Server - Starter Samples Overview**
Wonderware HMI SCADA 7:03
- 4 **AVEVA Telemetry Server - Basic Configuration of a Master Station (DNP3, IEC 60870, Modbus)**
Wonderware HMI SCADA 6:58
- 5 **AVEVA Telemetry Server - Application Server Reference Syntax**
Wonderware HMI SCADA 8:23
- 6 **AVEVA Telemetry Server - Working with Templates**
Wonderware HMI SCADA 14:14

AVEVA Telemetry Server - Redundant Pair

<https://www.youtube.com/playlist?list=PLJq4rR8tWINwq7R5KLZYDmDnv3fGH9ohF>

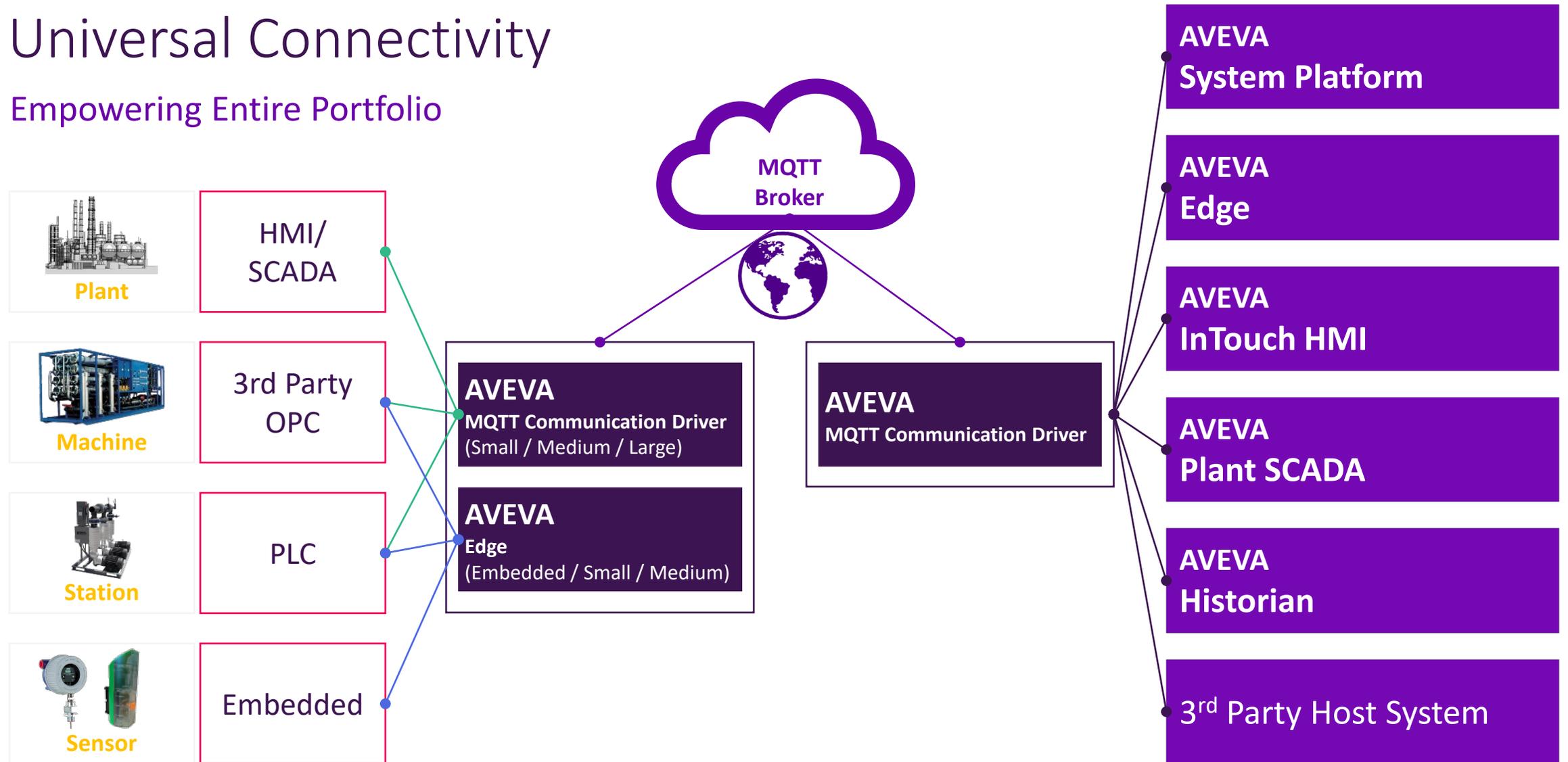
What's New in 2020



AVEVA

Universal Connectivity

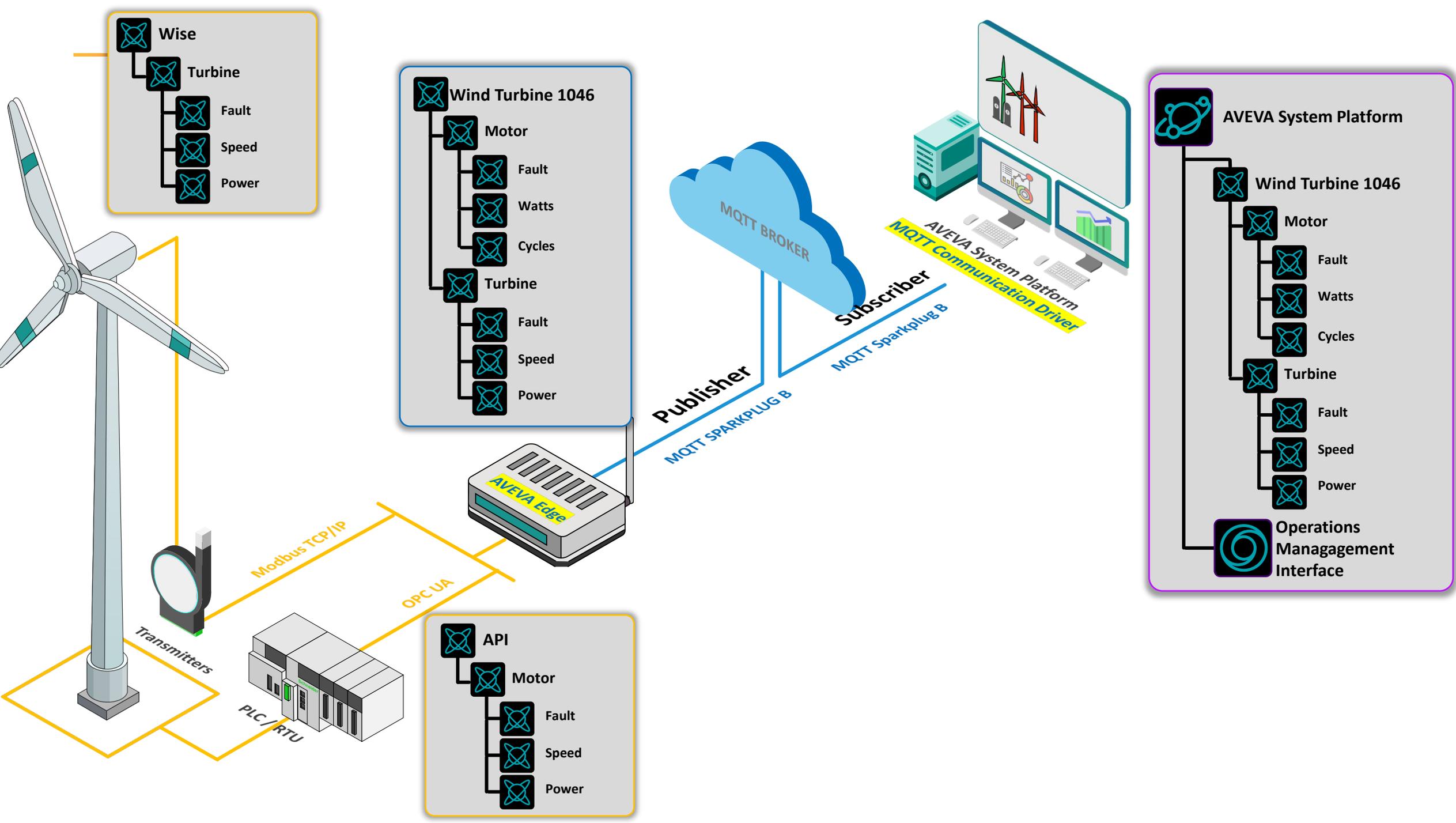
Empowering Entire Portfolio



AVEVA MQTT Enhancements

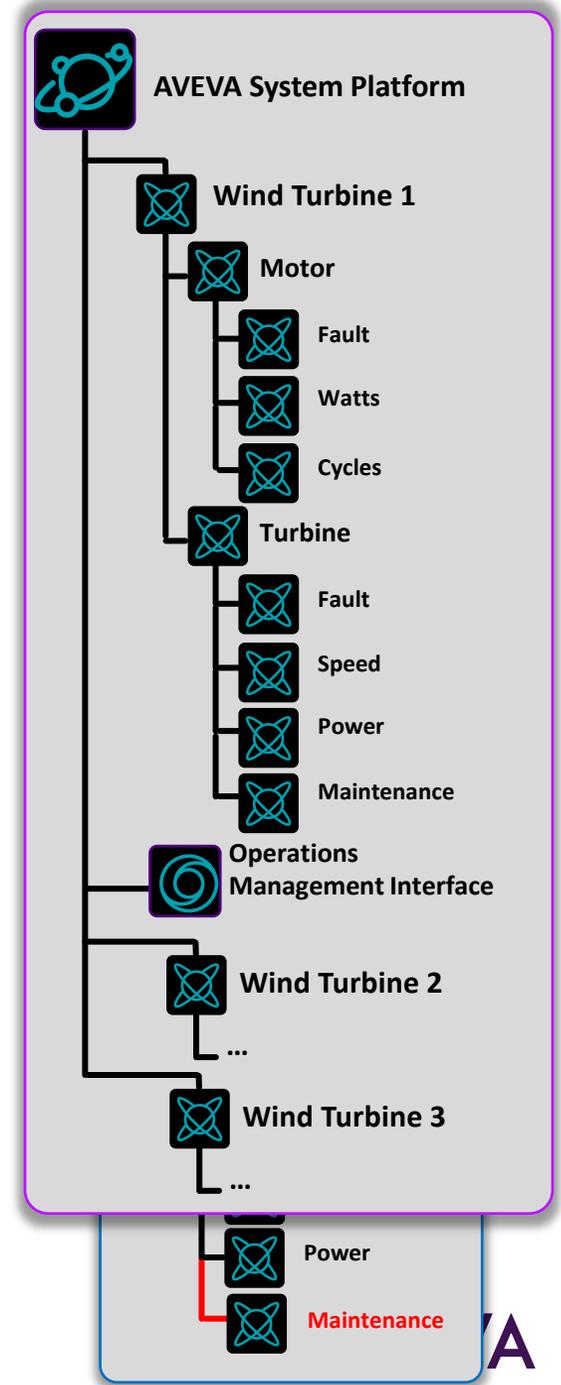
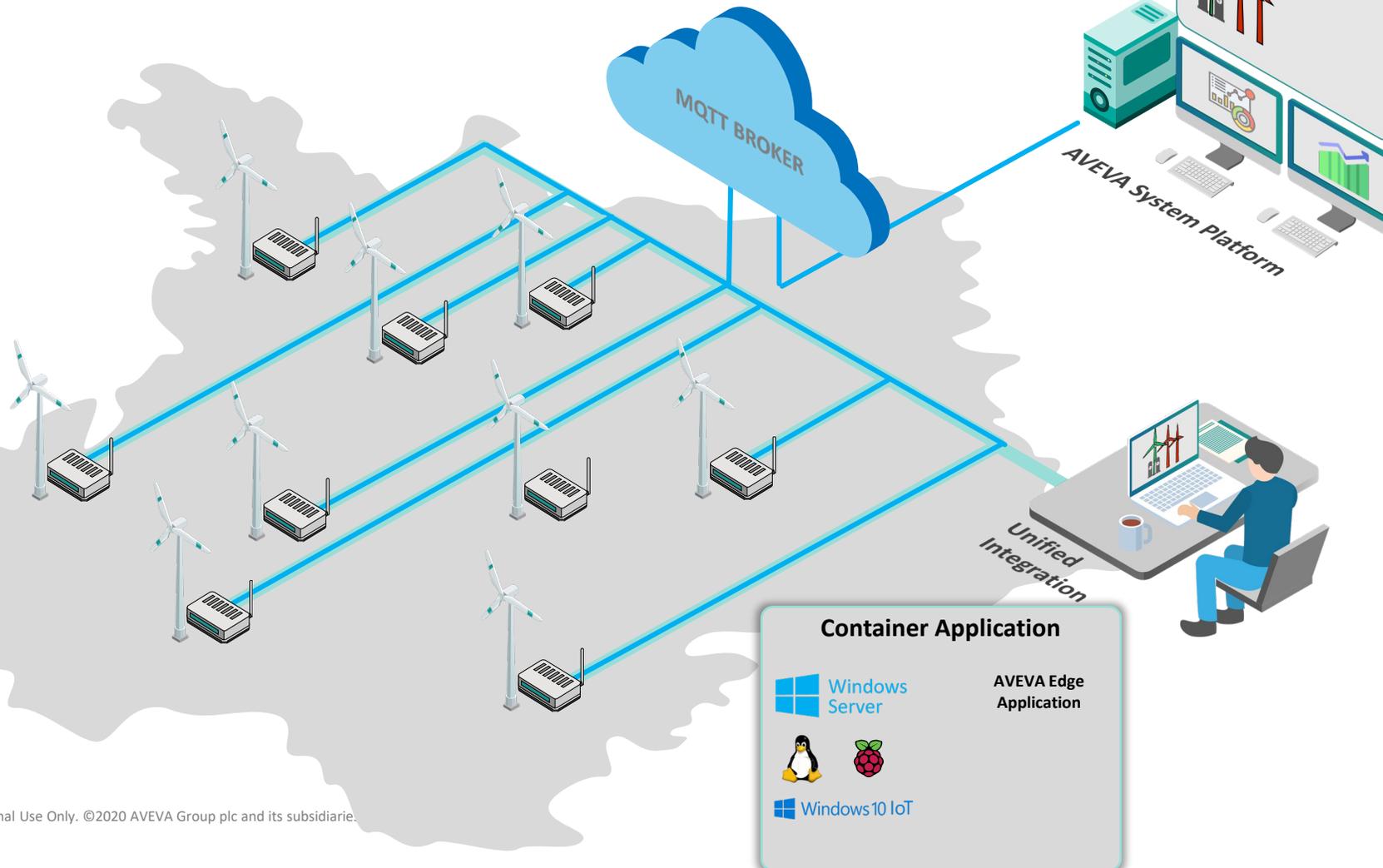
(Eclipse Foundation – MQTT Sparkplug Specification)

AVEVA

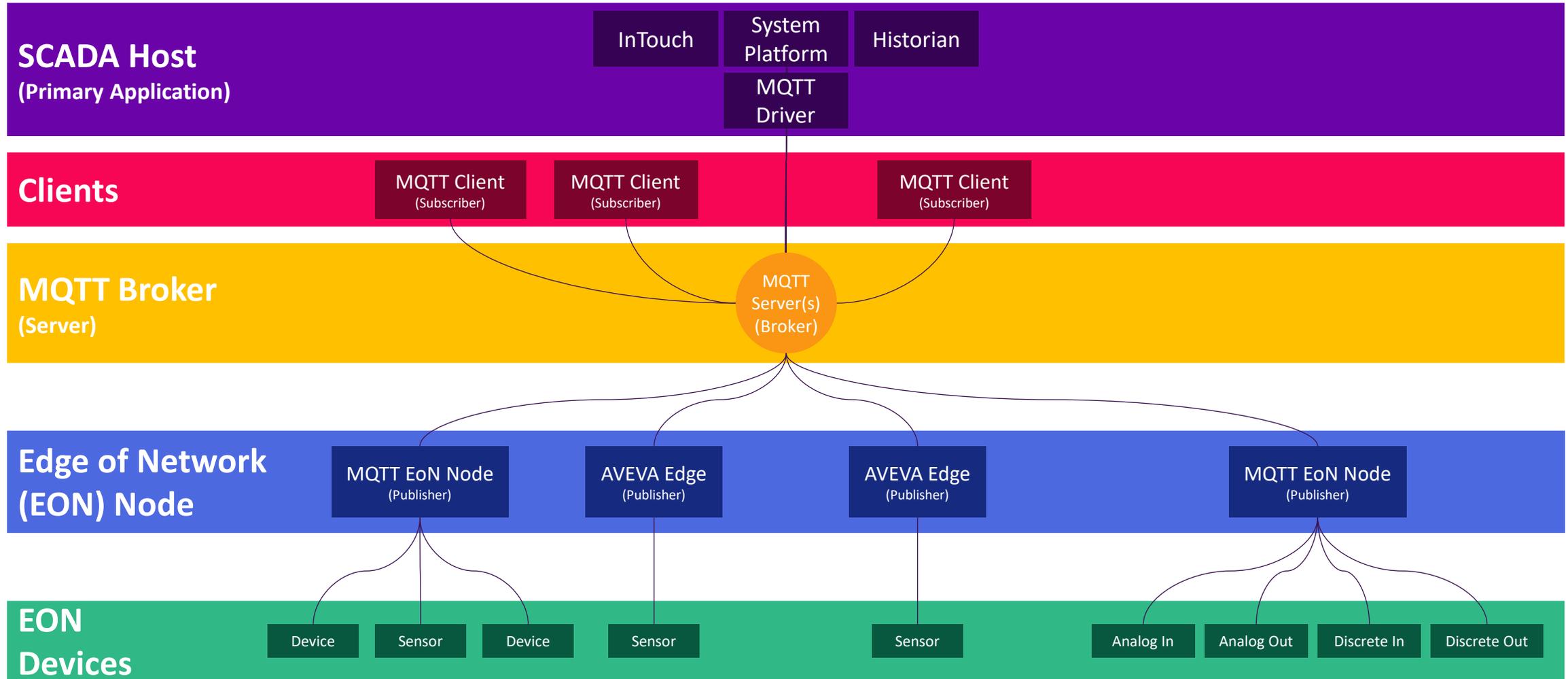


MQTT Network

Centralized Management of Sites



MQTT Protocol – Industrial Architecture Topology



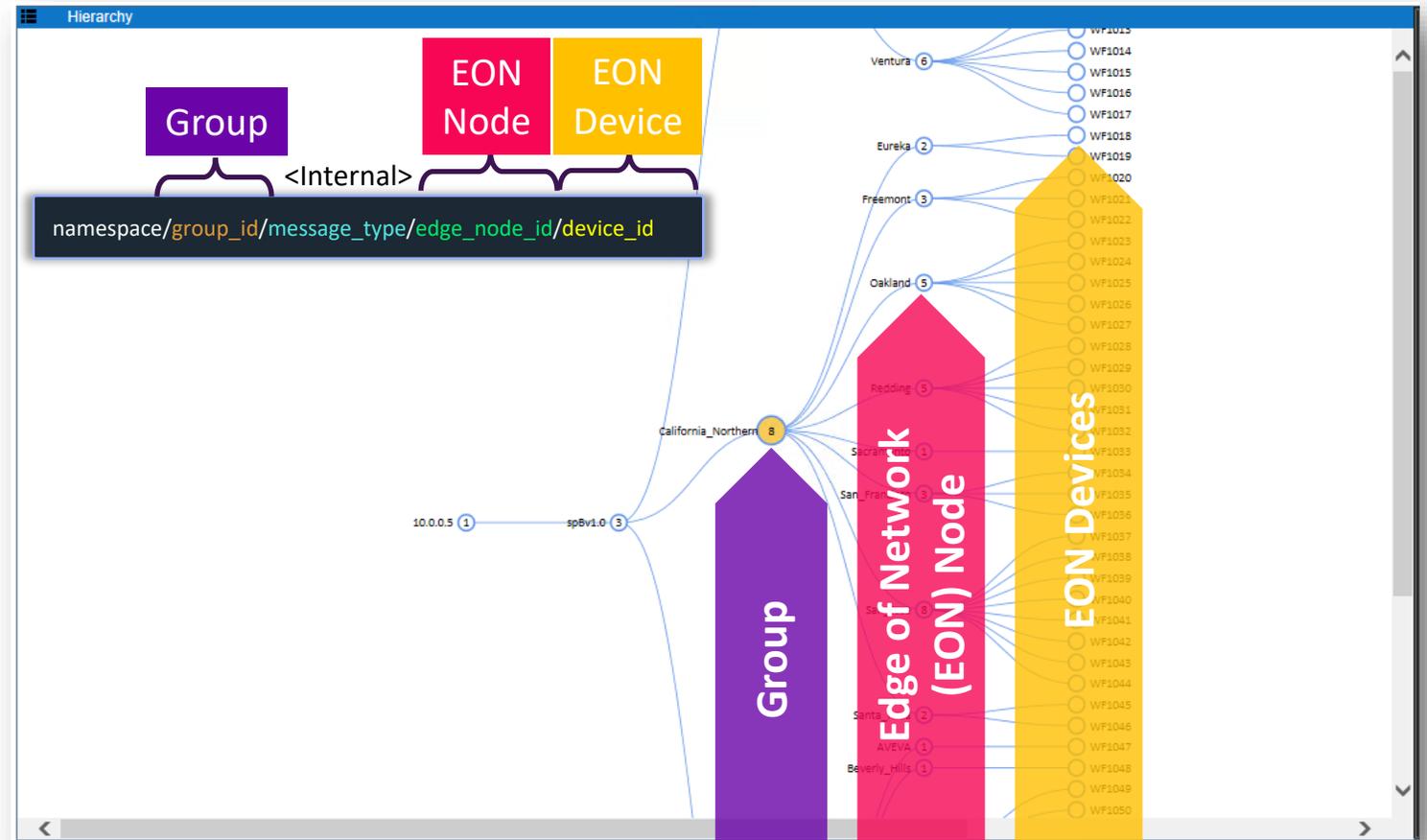
MQTT Sparkplug B Specification Support

Industrial Standardization – 3 Main Objectives



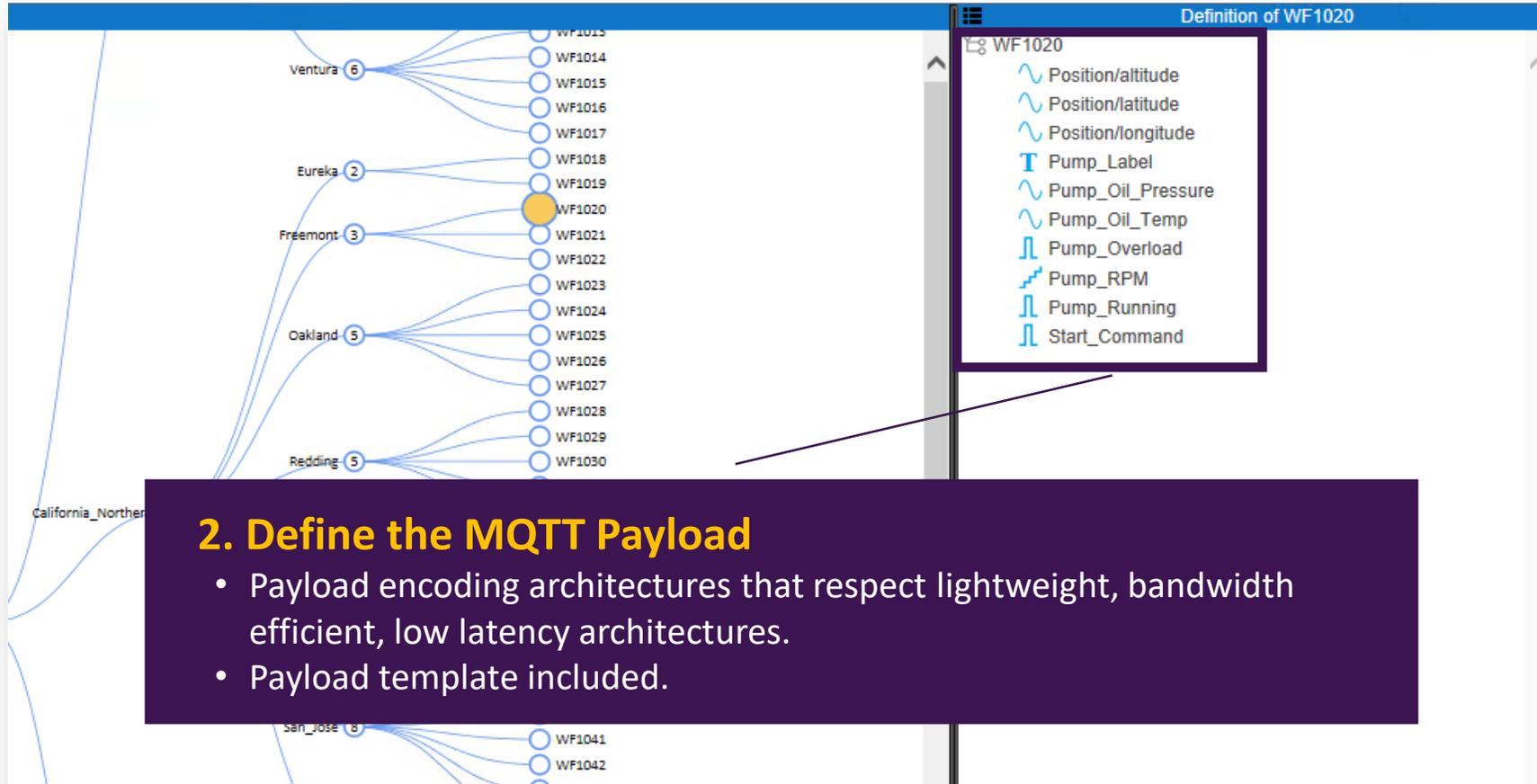
1. Topic Namespace Standardization

- Topic Namespace optimized for the SCADA/IIoT solution sector.



MQTT Sparkplug B Specification Support

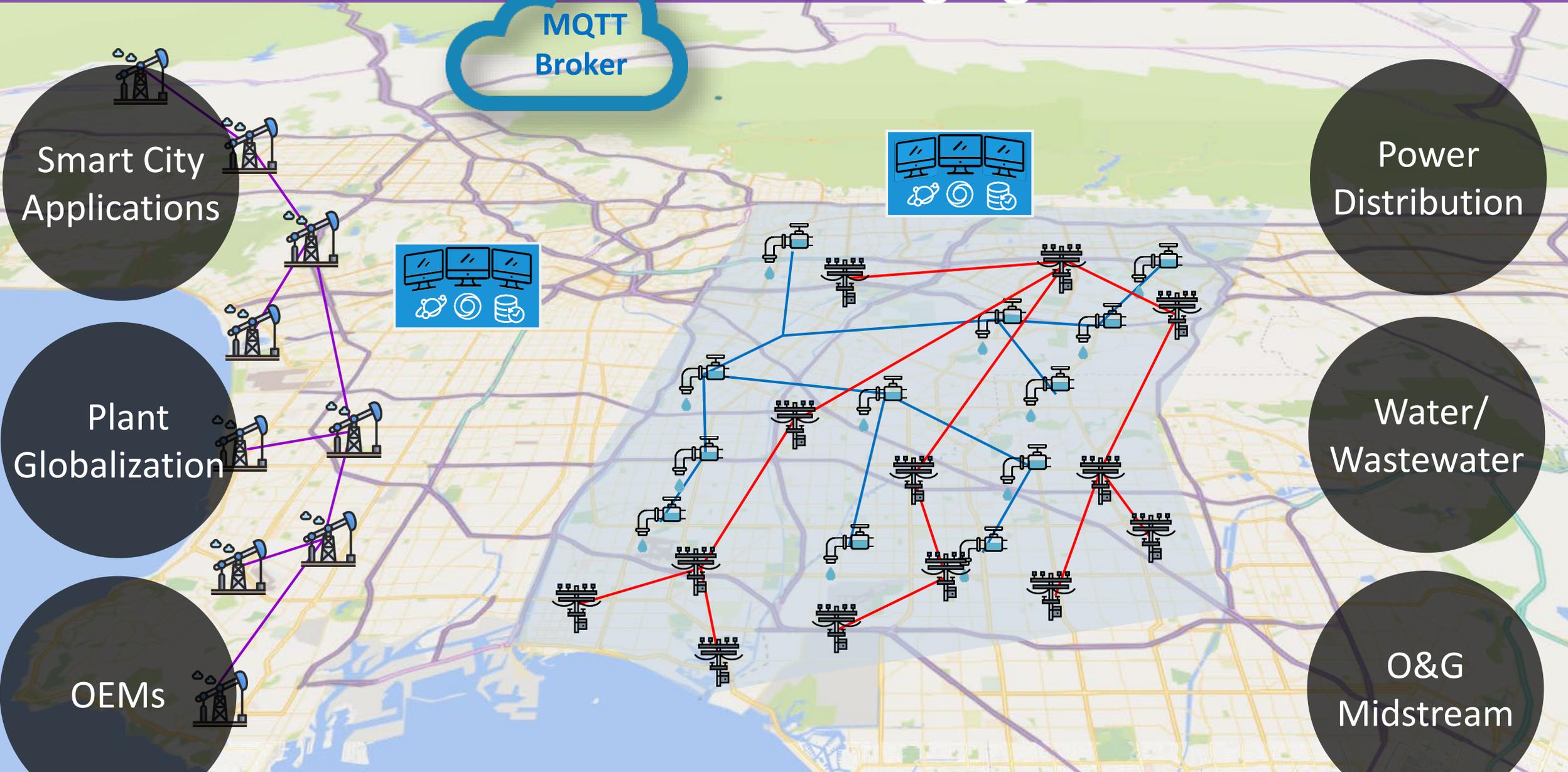
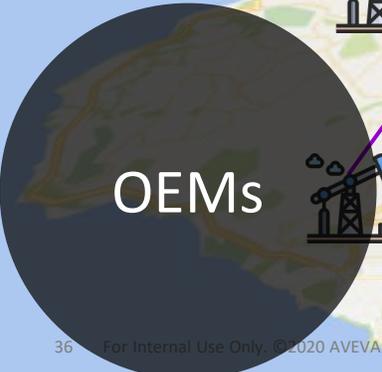
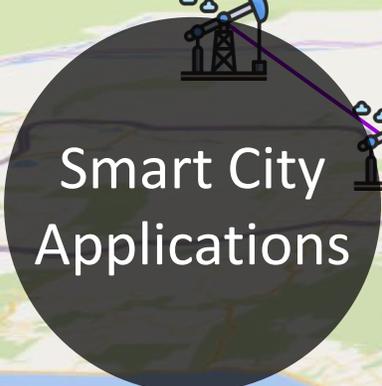
Industrial Standardization – 3 Main Objectives



2. Define the MQTT Payload

- Payload encoding architectures that respect lightweight, bandwidth efficient, low latency architectures.
- Payload template included.

Industries Leveraging IoT





Commercial Offerings

AVEVA

Commercial Offerings

Node01	Node01	Node01	Node01 [Main] [Standby]
<p>UNLICENSED</p>	<p>STANDARD LICENSE</p>	<p>PROFESSIONAL LICENSE</p>	<p>PREMIER LICENSE</p>
<ul style="list-style-type: none"> Any OI Server connection <ul style="list-style-type: none"> up to 32 tags OI Gateway legacy connections <ul style="list-style-type: none"> SuiteLink OPC OPC UA InTouch Archestra (MX) <p>Note: The EULA specifies that the Gateway must coexist with other AVEVA software to comply with the “unlicensed” usage.</p> 	<ul style="list-style-type: none"> Any OI Server connection <ul style="list-style-type: none"> No tag limit (Driver capacity practical limits) OI Gateway legacy connections <ul style="list-style-type: none"> MQTT Plug-in <p>Note: Starting 2020, it is recommended to use the stand-alone MQTT driver instead of the Gateway Plug-In... Will be deprecated in the future.</p> 	<ul style="list-style-type: none"> All Standard functionality Multi-Instance – (cloned instance) of an OI Server type. Allows for improved single node scalability and robustness to multiple PLC connections Multi-Version – combination of OI Server with legacy (DAServer DI Objects) drivers of the same type in the same node AutoBuild – Automatically mirror PLC hierarchy in Application Server <ul style="list-style-type: none"> Available only for ABCIP (Logix) and SIDirect (S7-1200/S7-1500) 	<ul style="list-style-type: none"> All Professional functionality Telemetry Server <ul style="list-style-type: none"> DNP3 IEC 60870 Modbus RTU Redundant Pair – (cloned instance) of an OI Server type. Allows for improved single node scalability and robustness to multiple PLC connections

This presentation may include predictions, estimates, intentions, beliefs and other statements that are or may be construed as being forward-looking. While these forward-looking statements represent our current judgment on what the future holds, they are subject to risks and uncertainties that could result in actual outcomes differing materially from those projected in these statements. No statement contained herein constitutes a commitment by AVEVA to perform any particular action or to deliver any particular product or product features. Readers are cautioned not to place undue reliance on these forward-looking statements, which reflect our opinions only as of the date of this presentation.

The Company shall not be obliged to disclose any revision to these forward-looking statements to reflect events or circumstances occurring after the date on which they are made or to reflect the occurrence of future events.

 [linkedin.com/company/aveva](https://www.linkedin.com/company/aveva)

 [@avevagroup](https://twitter.com/avevagroup)

ABOUT AVEVA

AVEVA is a global leader in engineering and industrial software driving digital transformation across the entire asset and operational life cycle of capital-intensive industries.

The company's engineering, planning and operations, asset performance, and monitoring and control solutions deliver proven results to over 16,000 customers across the globe. Its customers are supported by the largest industrial software ecosystem, including 4,200 partners and 5,700 certified developers. AVEVA is headquartered in Cambridge, UK, with over 4,400 employees at 80 locations in over 40 countries.

[aveva.com](https://www.aveva.com)