

Unified Namespace over OPC UA

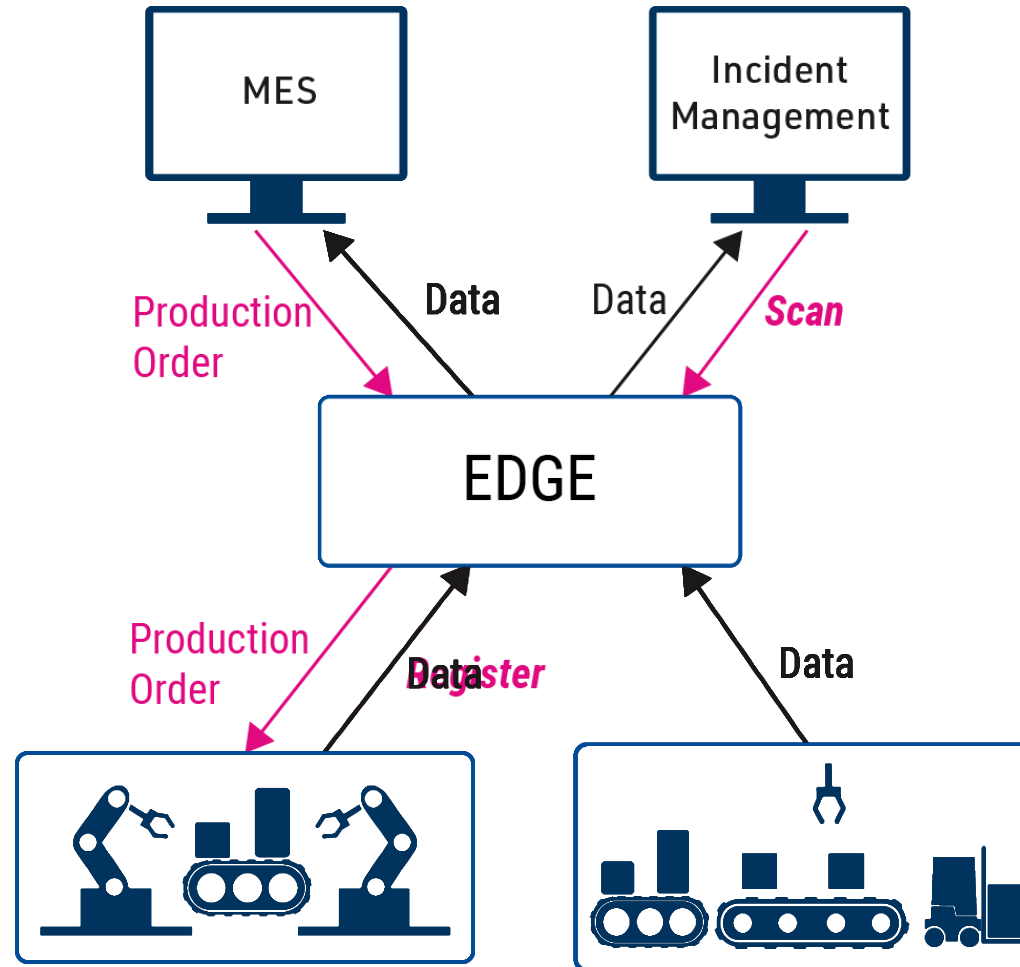
Pyry Grönholm
Prosys OPC





Vision

Our Vision of OT/IT integration





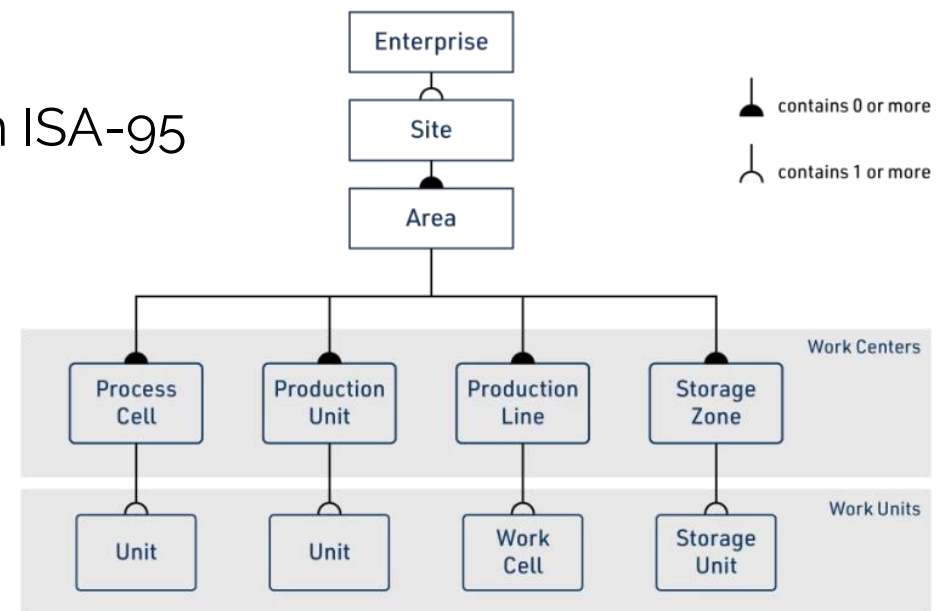
OPC UA and UNS

About OPC UA

- OPC UA is a global standard for Industrial Connectivity
 - OPC Foundation as a standardization body
 - Protocols available for Field Level, Industrial IT Level, and OT to Cloud level communication
- OPC UA main benefits
 - Cross-vendor compatibility at the system level
 - Security built in
 - Large adaptation among automation and industrial IT vendors
- OPC UA Client/Server main features
 - Request-Response with connection
 - Standardized payload and address space

What's UNS (Unified Name Space)

- Centralized Data Access
 - Provides a single, unified entry point for all applications consuming data
 - Data organized into a logical hierarchy (often ISA-95 based)
- Easy Integration
 - Vendor-independent concept for IT/OT convergence
 - MQTT topic tree represents enterprise data
- Challenge
 - No standard payload, different topic designs require application-specific interpretation



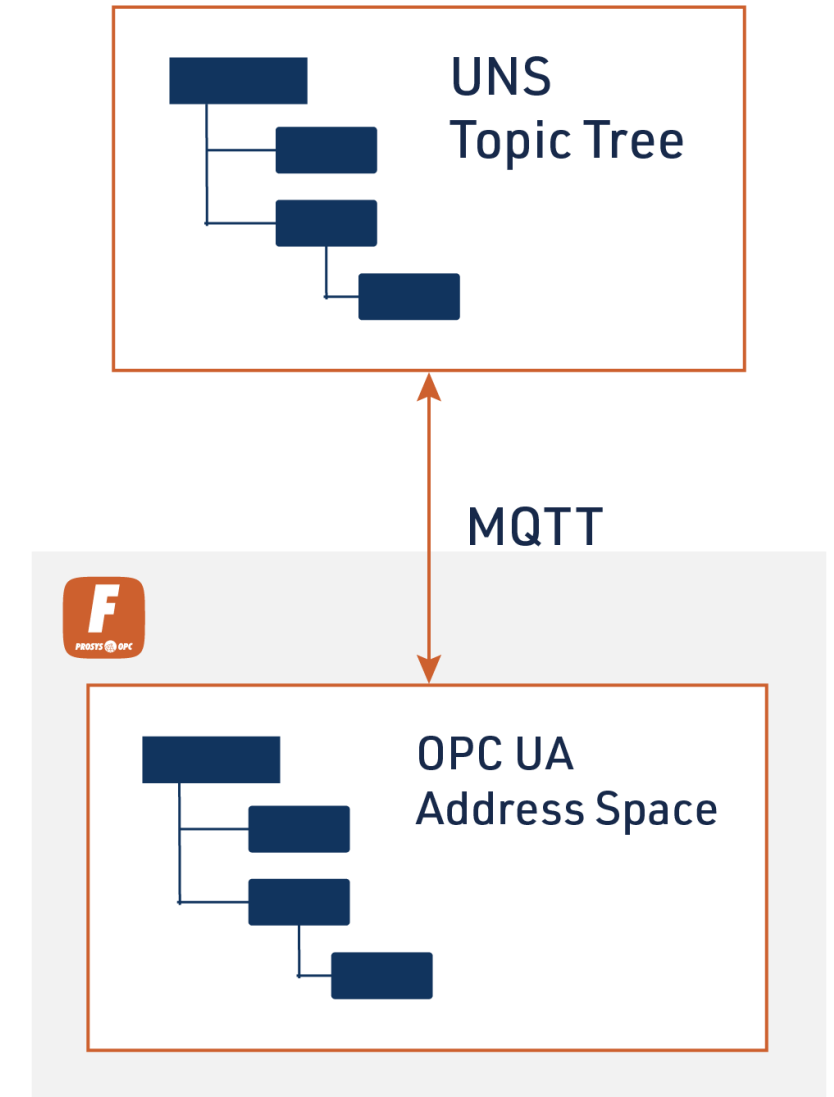
Real world MQTT/UNS Challenges

- The topic tree becomes a mess
 - Publishers don't or cannot follow the ISA-95 structure properly
- The variety of payload types, makes data hard to use
 - Different systems have different payload types
 - Not just: plain value, json, xml, binary, csv
 - No standard naming convention for the variables
- Retain messages are necessary to achieve real UNS
 - But destroys the superior performance of MQTT
- Missing meta-data makes AIs life hard
 - Meta data is crucial to unlock the value of AI



OPC UA to MQTT/UNS

- Centralized Data Model
 - OPC UA server aggregate factory data into a single standard information model
- From Address Space to Topic Tree
 - The OPC UA information model can be mapped to an MQTT topic tree, creating the Unified Namespace structure keeping topic tree clean.
- OPC UA Pub/Sub defines standard payload
- Metadata for AI from OPC UA information models
 - Cloud library
- Aggregating OPC UA servers per site generates a global vendor independent and scalable UNS



OPC UA as UNS

- **Aggregating OPC UA server is UNS as well!**

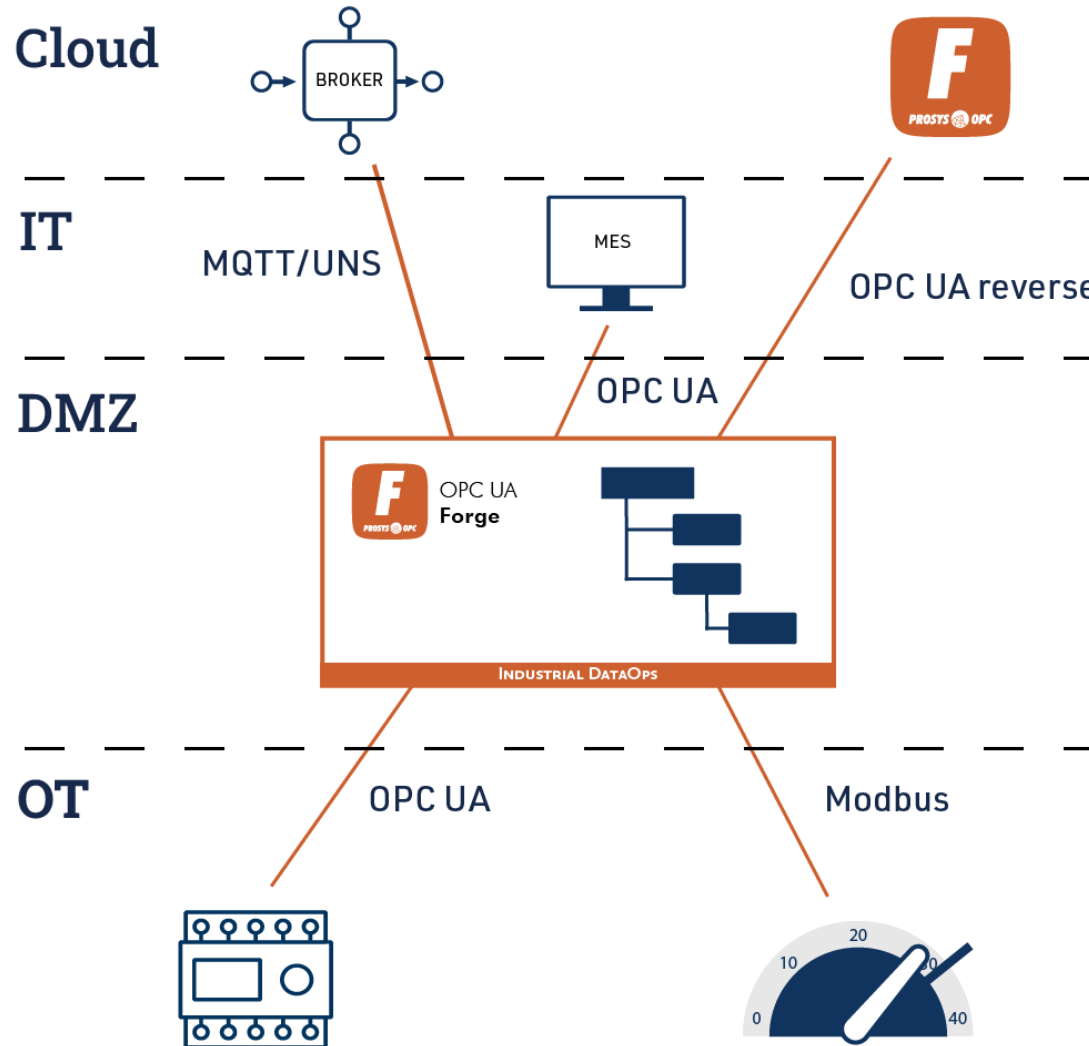
- Provides a single, unified entry point for all applications consuming data with meta data easily available
- Data organized into a logical hierarchy
- History & Events available, as well
- Easy Integration, standardized payload, standardized information model, standardized security etc.
- Vendor-independent
- Scales to any typical use case





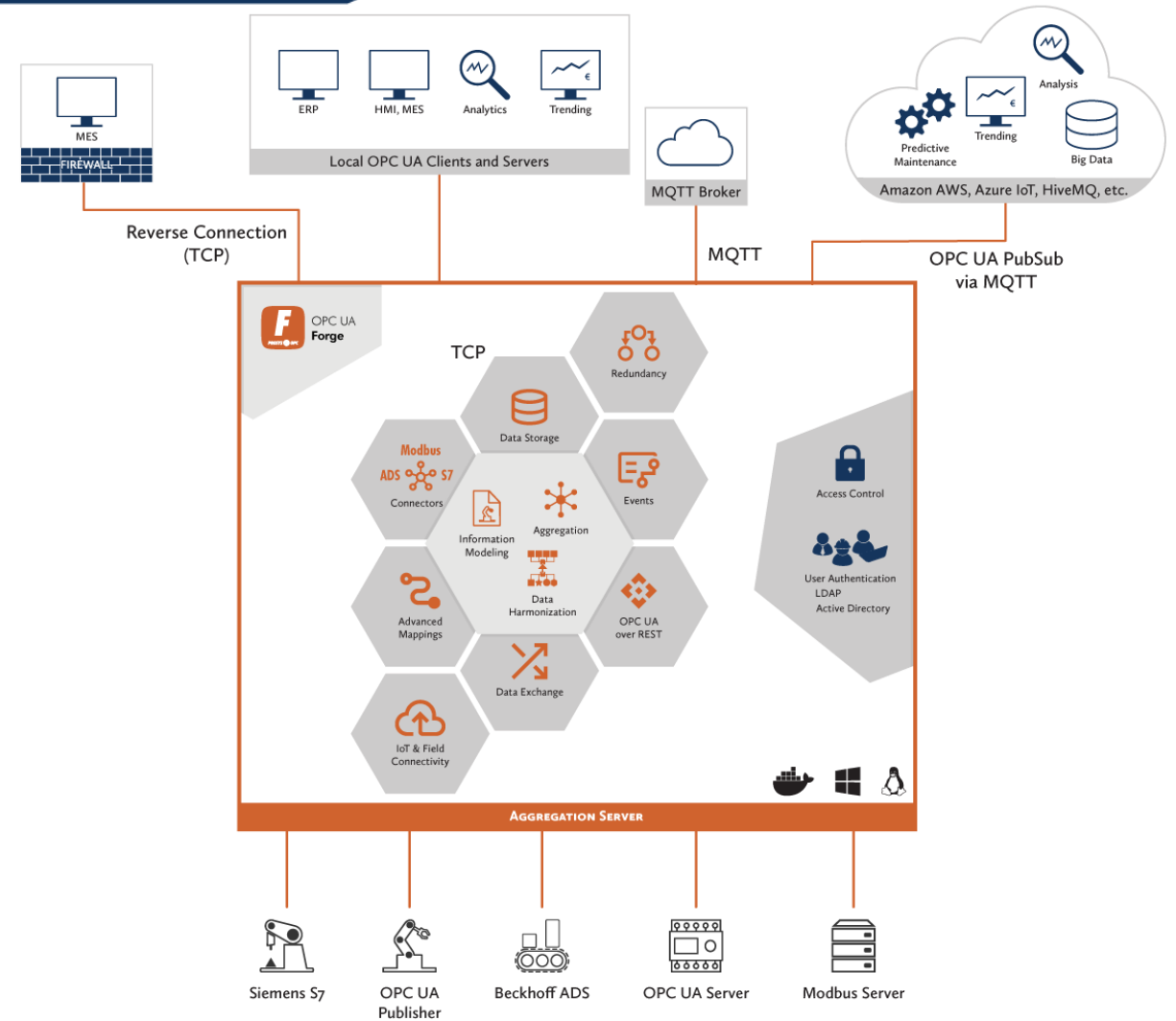
Forge solves the problems

Proven Real World Architecture



Prosys OPC UA Forge

- Edge application
- OPC UA Server as the core
- Variety of south- and northbound connectivity
- Business logic tools
- Windows, Linux, Container
- Web configurator
- OpenAPI REST API





Thank you for listening!

Contact:

Pyry Grönholm, CEO

Mobile: +358 44 2414343

Email: pyry@prosysopc.com