Agenda

- 1.05 Release Plans
- New Post-1.05 Release Process
- Future Visions

OPC UA v1.05 Release - planned 2020-H2

▸ 1.04 Errata applied to 1.05 Parts

▸ 1.04 Amendments coalesced into 1.05 Parts

▸ Parts will release in batches
  ◦ First Batch: Parts 3,4,5,6,8

The 22 Parts of OPC UA v1.05

10000-1	OPC UA Specification, Part 1: Overview and Concepts	
10000-2	OPC UA Specification, Part 2: Security	
10000-3	OPC UA Specification, Part 3: Address Space Model	
10000-4	OPC UA Specification, Part 4: Services	
10000-5	OPC UA Specification, Part 5: Information Model	
10000-6	OPC UA Specification, Part 6: Mappings	
10000-7	OPC UA Specification, Part7: Profiles	
10000-8	OPC UA Specification, Part 8: DataAccess	
10000-9	OPC UA Specification, Part 9: Alarms and Conditions	
10000-10	OPC UA Specification, Part 10: Programs	
10000-11	OPC UA Specification, Part 11: Historical Access	
10000-12	OPC UA Specification, Part 12: Discovery and Global Services	
10000-13	OPC UA Specification, Part 13: Aggregates	
10000-14	OPC UA Specification, Part 14: PubSub	Including MQTTv5
10000-15	OPC UA Specification, Part 15: Safety	
10000-16	OPC UA Specification, Part 16: StateMachines	Annex B from Part 5 plus Amendment 2 (ChoiceStates and Guards)
10000-17	OPC UA Specification, Part 17: Alias Names	
10000-18	OPC UA Specification, Part 18: User Authorization	Annex F from Part 5
10000-19	OPC UA Specification, Part 19: Dictionary References	Amendment 5 plus MultiStateDictionaryEntryDiscreteType from FCG
10000-20	OPC UA Specification, Part 20: File Transfer	Amendment 9
10000-21	OPC UA Specification, Part 21: Device Provisioning	
10000-22	OPC UA Specification, Part 22: Base Network Model	

OPC

FOUNDATION

New Post-1.05 Release Process

▸ Eliminate Errata and Amendment docs.

▸ Introduce new Parts at any time.

▸ Update existing Parts (with point release) at any time.

▸ No changes to how version numbers get assigned and associated with nodeset versions.

▸ Simplified process will ensure online reference always matches the latest released versions of the UA Specification.

Future Vision
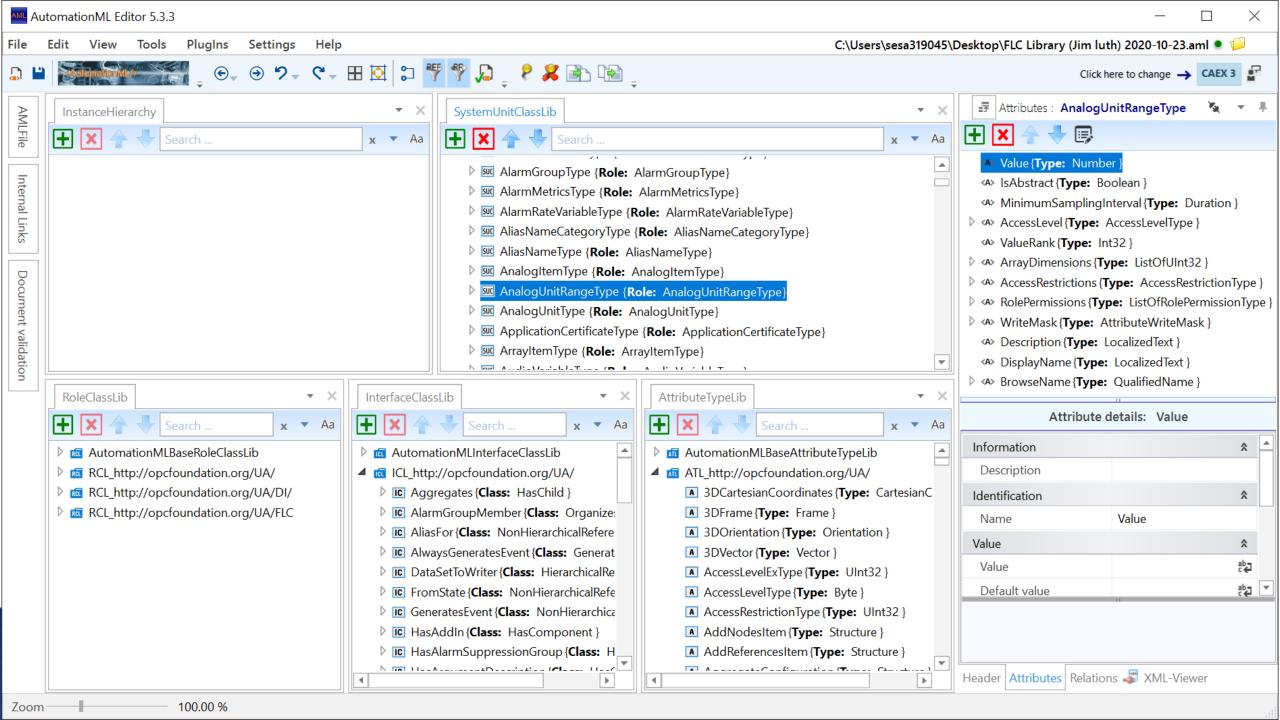## Make OPC UA Information Model useful outside of OPC UA

▶ Use cases:
- Offline Engineering
- UA Information Model Validation
- Cloud Library of OPC UA Information Models
- Industrie 4.0 Asset Administration Shell

Offline Engineering

- AutomationML is focused on tool exchange of engineering data throughout the Automation life cycle.

- FLC and OPA-S use AutomationML for offline configuration of OPC UA Information Models

- FLC Offline Engineering working group created a utility to convert NodeSet2 files into AutomationML libraries.

UA Information Model Validation

- ▶ UA Semantic Validation sub-group has tools to convert UA information models to OWL (Web Ontology Language)

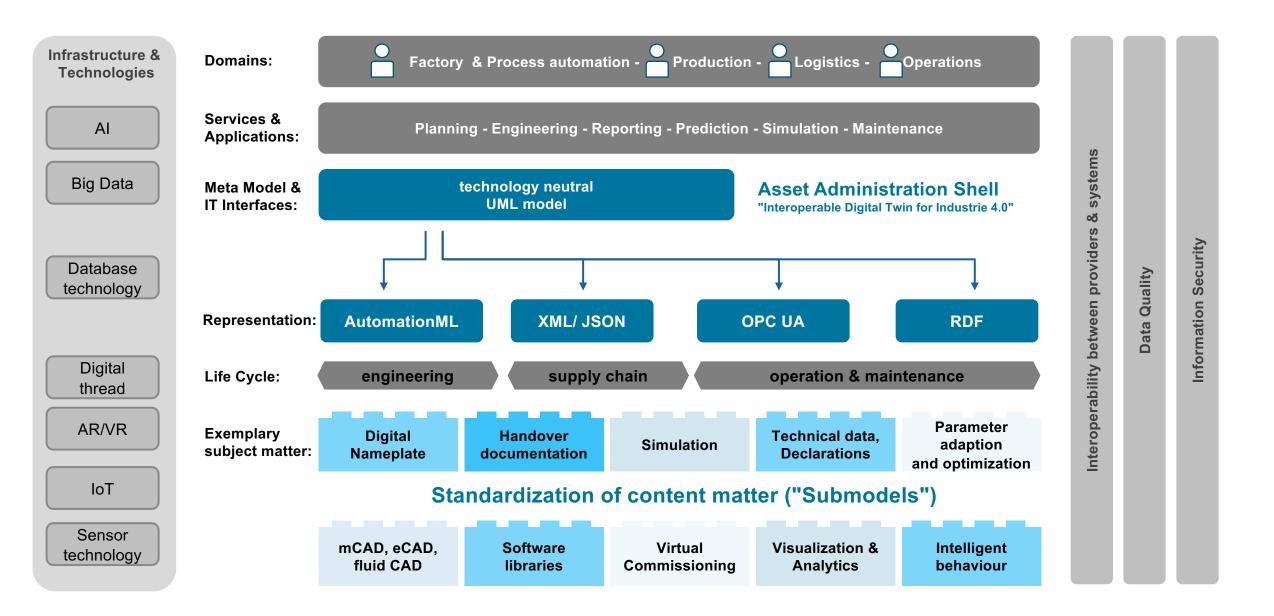- ▶ Allows use of standard tools e.g. SHACL (SHApes Constraint Language) to validate graph-based data.

Cloud Library of OPC UA Information Models

▶ JWG with CESMII (Clean Energy and Smart Manufacuring Innovation Institute)

▶ Creating a standard for a cloud-based database of UA info models

▶ RESTful interface – JSON payload

▶ Graph-based Query API (e.g. Sparkle, Gremlin, GQL …)

▶ Natural Language Query

Industrie 4.0 Asset Administration Shell

Infrastructure & Technologies				
AI	**Domains:**	Factory & Process automation - Production - Logistics - Operations		
Big Data	**Services & Applications:**	Planning - Engineering - Reporting - Prediction - Simulation - Maintenance		
Database technology	**Meta Model & IT Interfaces:**	technology neutral UML model	**Asset Administration Shell** "Interoperable Digital Twin for Industrie 4.0"	
Digital thread	**Representation:**	AutomationML · XML/ JSON · OPC UA · RDF		
AR/VR	**Life Cycle:**	engineering · supply chain · operation & maintenance		
IoT	**Exemplary subject matter:**	Digital Nameplate · Handover documentation · Simulation · Technical data, Declarations · Parameter adaption and optimization		
Sensor technology		**Standardization of content matter ("Submodels")**		
		mCAD, eCAD, fluid CAD · Software libraries · Virtual Commissioning · Visualization & Analytics · Intelligent behaviour		

Interoperability between providers & systems

Data Quality

Information Security

"The world is bigger than just OPC UA, but the value of OPC UA information models will extend outside of OPC UA"