

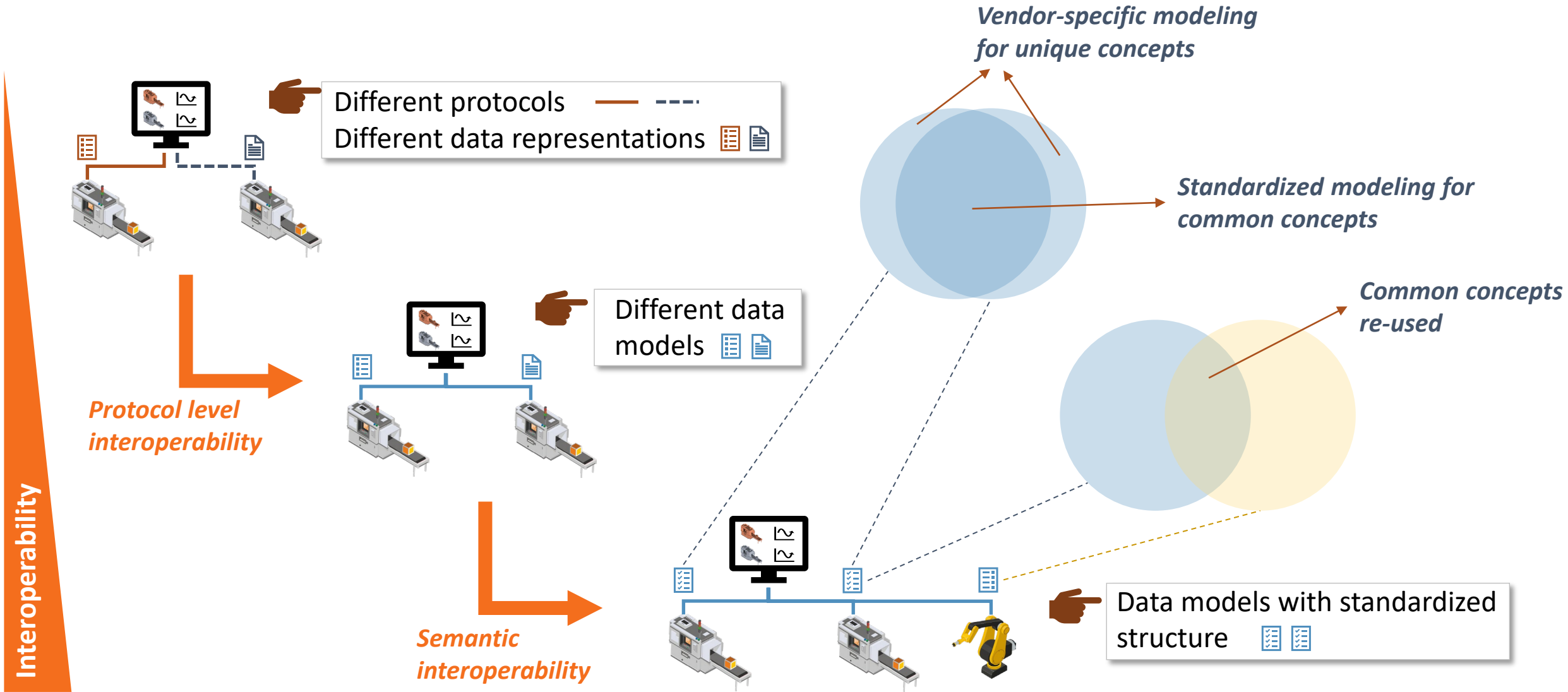


OPC UA Companion Specifications

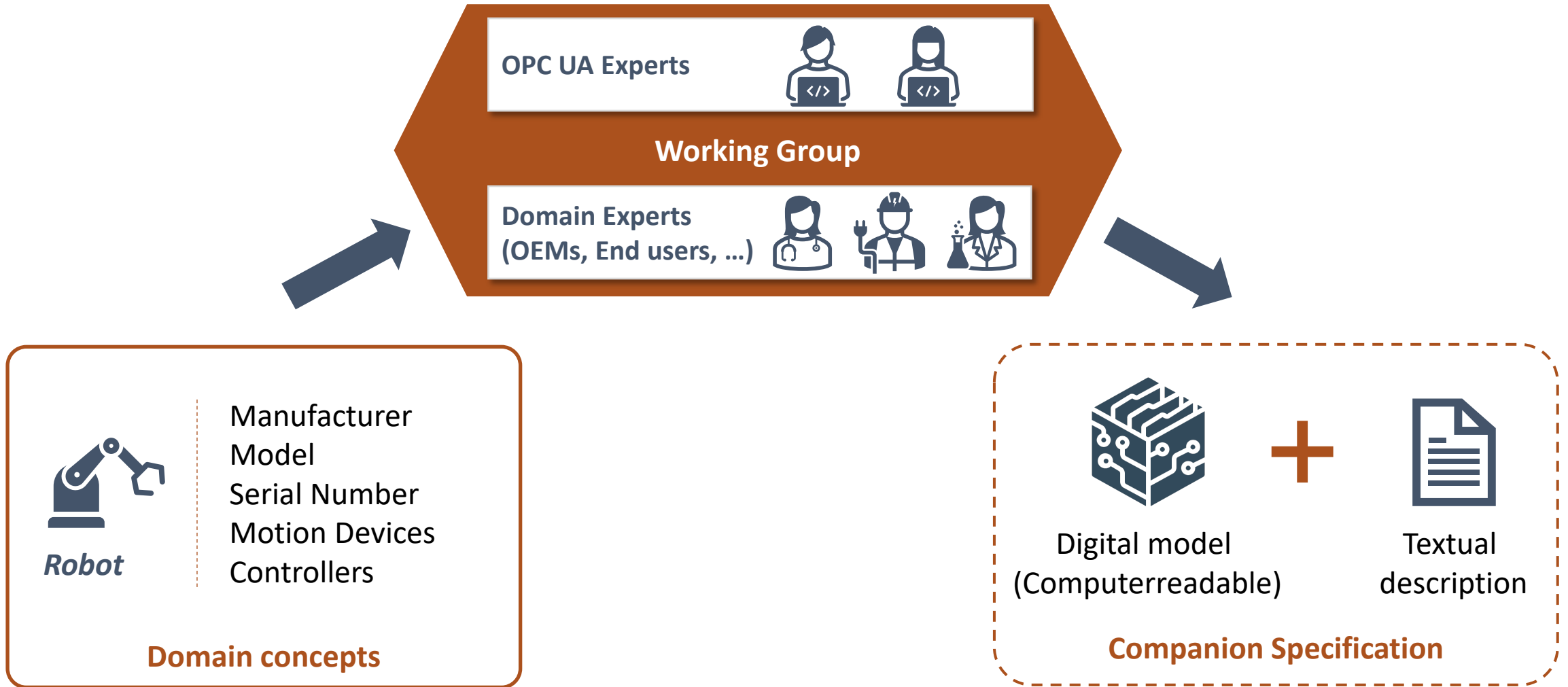
Fahad Golra, Agileo Automation



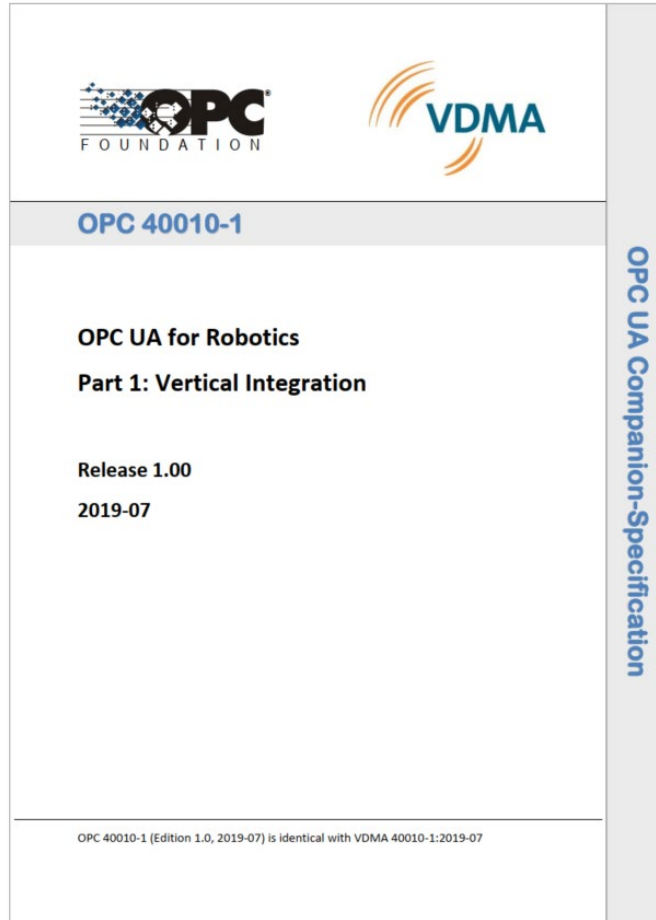
Multiple levels of interoperability



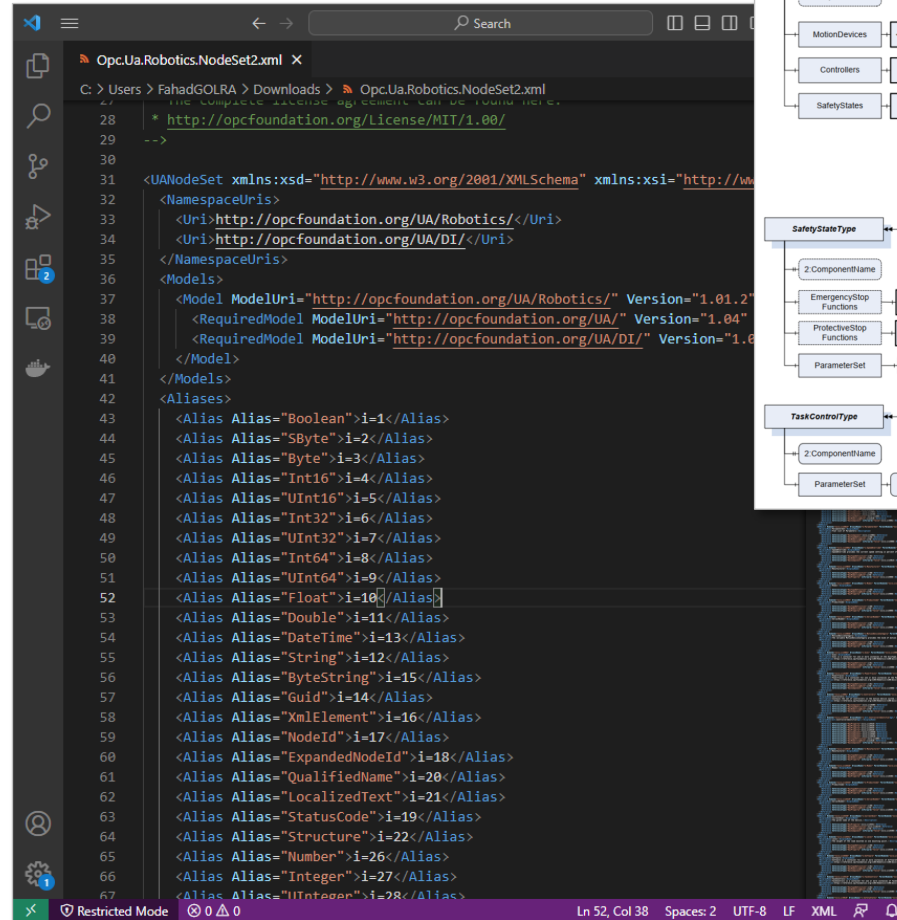
Development of a CS



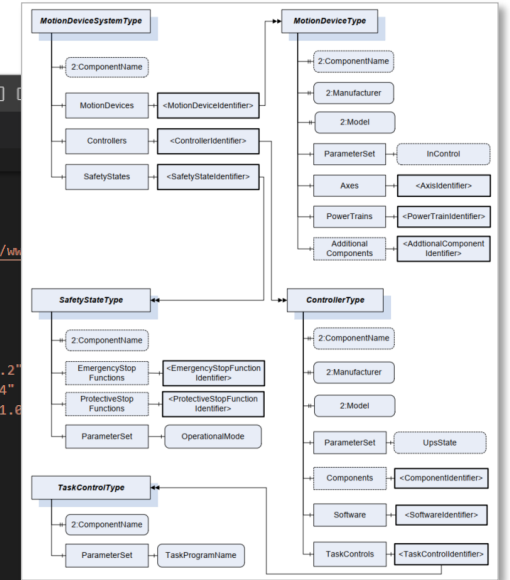
CS Example – Robotics



Textual specifications



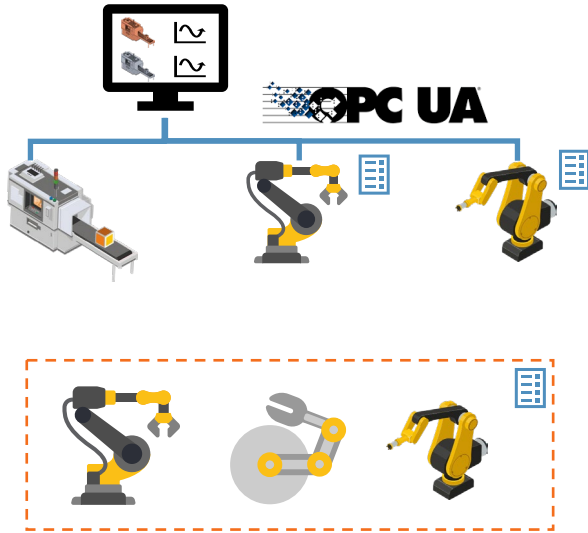
Digital model in nodeset file (XML)



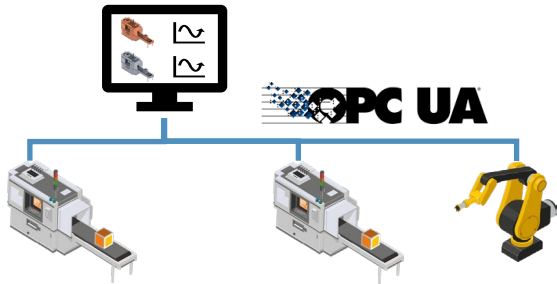
Graphical Notation

Interoperability with OPC UA

Interoperability



Companion specifications at multiple levels



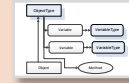
OPC UA communication network

Enterprise & Cloud

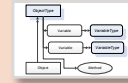
Industrial Automation

Devices, tools & Equipment

Asset Management



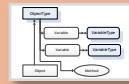
ISA-95 Job Control



Cloud Library API Definition



Process Automation Devices – PADIM



OPC UA for PackML



OPC UA for DEXPI P&ID



OPC UA for Robotics



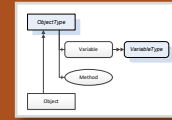
OPC UA for Weighing Tech.



OPC UA for CNC Systems



OPC Unified Architecture

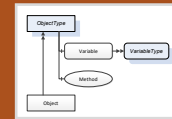


Data Access

Alarms & conditions

Information modeling (Objects/Types, Variables, ...)

OPC Unified Architecture



Data Access

Alarms & conditions

Information modeling (Objects/Types, Variables, ...)

Working Groups

- 71 different working groups
 - Joint -> 58
 - Internal -> 17
 - External -> 1

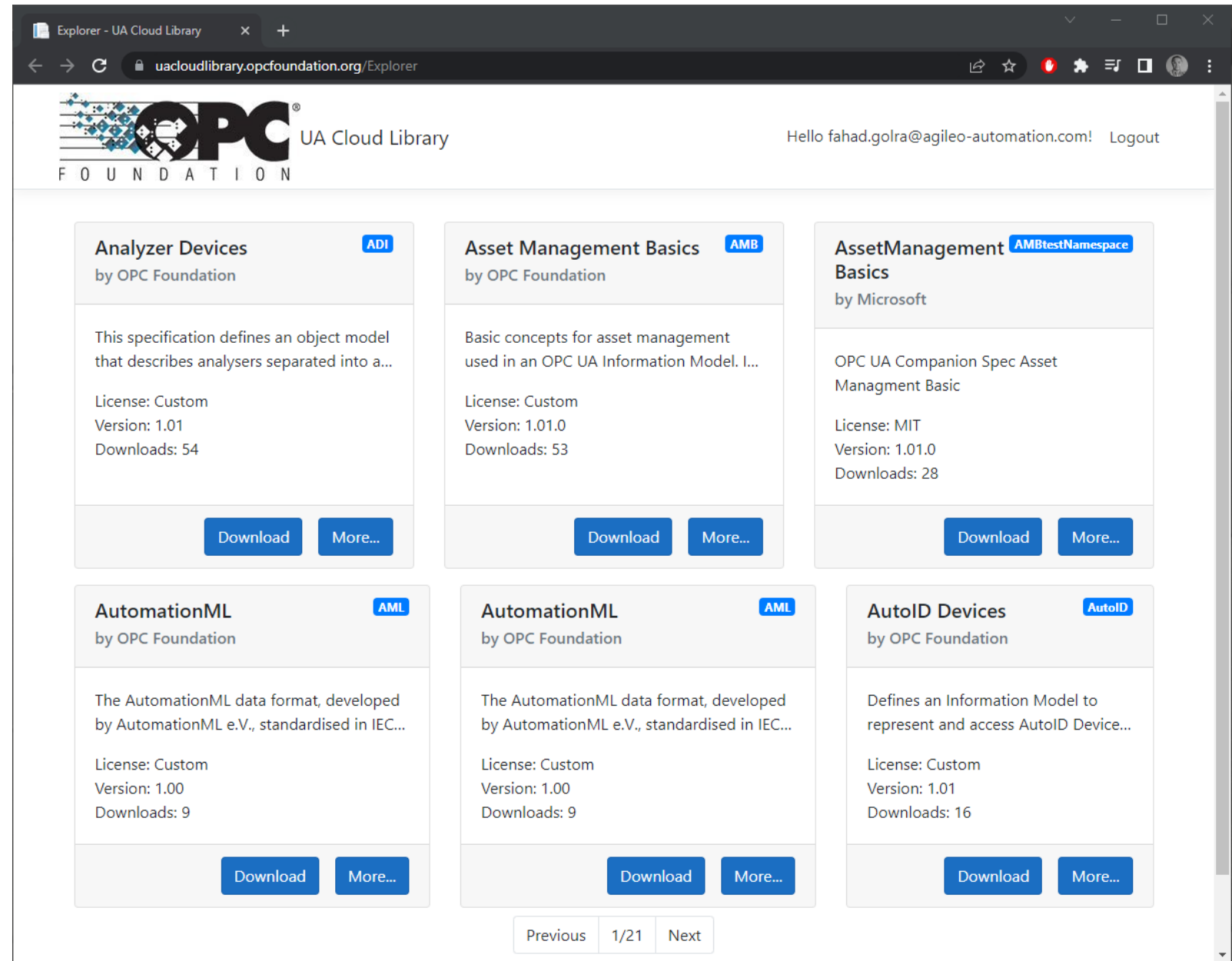
The screenshot shows the OPC Foundation website's 'List of Working Groups' page. The page has a blue header with navigation links: About, Membership, Products, Certification, Markets & Collaboration, Resources, and News & Events. Below the header is a blue banner with the title 'List of Working Groups' and a breadcrumb 'Home > Working Groups'. The main content area includes a filter section on the left with a search bar and three filter categories: Working Group Type (Internal, Joint, External), Status (Proposed, Active, Completed, Inactive), and Classification (Core UA Topics, Generic Models, Factory Automation). The main table lists working groups with columns for Name, Abstract, Partner Logo, Partner Org, and Chair. The table is currently displaying 50 records per page.

NAME	ABSTRACT	PARTNER LOGO	PARTNER ORG	CHAIR
Additive Manufacturing	The working group develops OPC UA Information Models for the industrial process chain of additive manufacturing ("AM") so that AM systems and other systems directly involved in the additive manufacturing process can be easily connected, configure...		VDMA	Martin Gehringer
Analyzer Devices - ADI	Develop specifications for analyzers irrespective of the underlying device protocols. Analyzer devices are comprised of one or more analyzer channels with a single address space which has its own configuration, status and control. Examples: Particle ...			Claude Lafond
Asset Management Basics	Defines common asset management models that can be used directly or as base for other companion specifications to refine those concepts for their domain specific needs.			Wolfgang Mahnke
Automatic Identification Devices - AutoID	Develop specifications for identification devices executing a scan, read or write process. Comprises barcode, OCR, 2D code, RFID, NFC, RTLS, sensors and mobile computing.		AIM – Association for Automatic Data Capture, Identification and Mobility	Bernd Wieseler
AutomationML model	Develop an OPC UA specification for AutomationML and an XML schema to describe OPC UA Servers and their communication parameters in an AutomationML file and to integrate UANodeSet address space XML files into AutomationML.	<AutomationML>	AutomationML e.v.	Miriam Schleipen
BACnet	Specify a gateway interface between the BACNET object model and OPC UA -> integration of building and industry automation.		BACnet Interest Group Europe e.v. (BIG-EU)	Frank Schubert
Carbon Capture and	The OPC UA CCS Working Group will develop several OPC UA Information Models for		VDMA, CESMII, OPC	Erich Barnstedt

www.opcfoundation.org -> About -> Working Groups -> List of Working Groups

UA Cloud Library

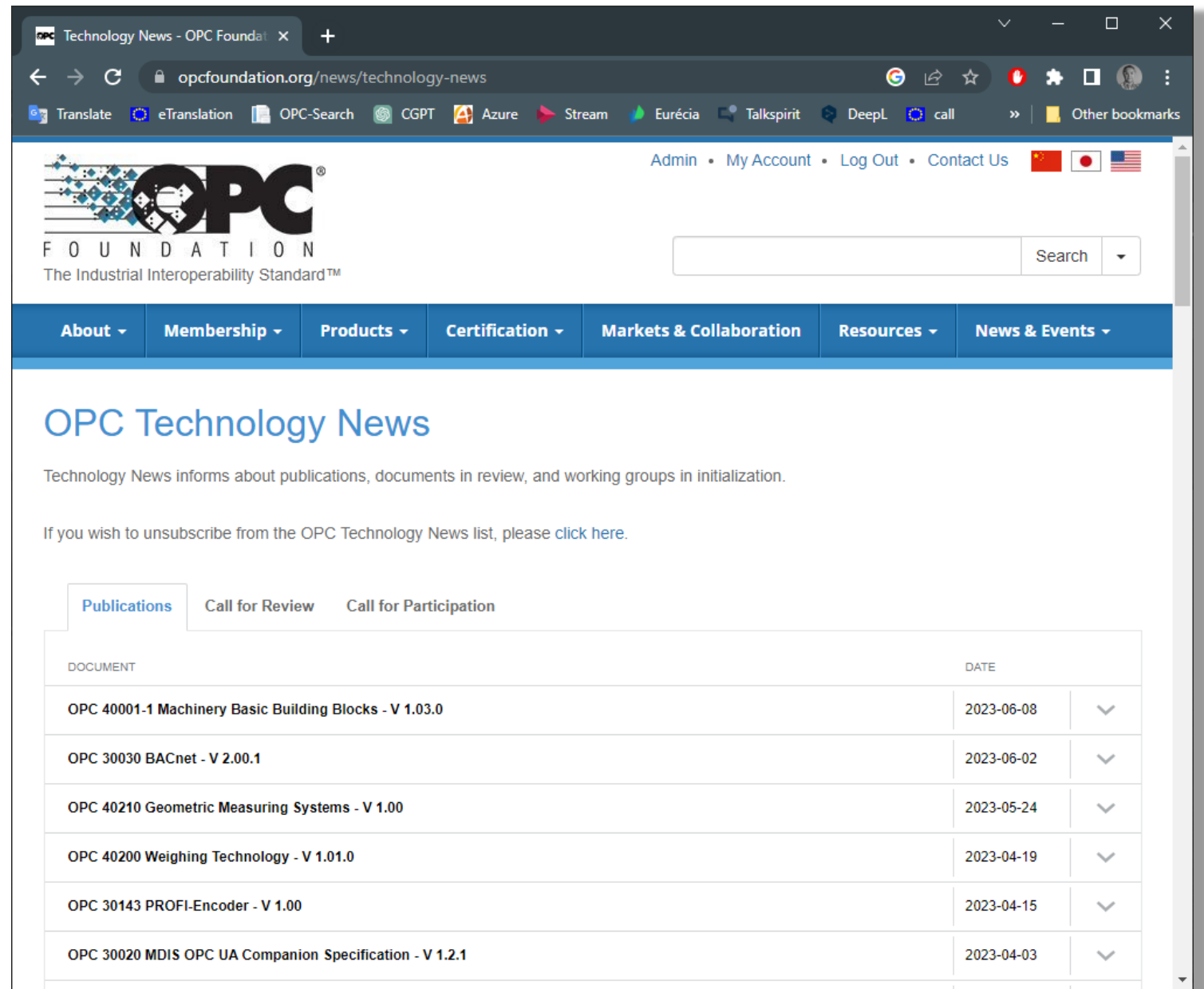
- A *query-able* online store of OPC UA CS information models.
- 126 OPC UA Information Models for the companion specifications available
- UA Cloud Library Explorer
- GraphQL Editor



<https://uacloudlibrary.opcfoundation.org>

Technology News

- Updates about the latest versions of CS
 - Subscription to the technology updates
- Call for review
 - Review the companion specifications before their release.
- Call for participation
 - Join the working groups



The screenshot shows the OPC Foundation Technology News website. The header includes the OPC Foundation logo and the tagline "The Industrial Interoperability Standard™". A navigation menu contains links for About, Membership, Products, Certification, Markets & Collaboration, Resources, and News & Events. The main content area is titled "OPC Technology News" and includes a sub-header "Technology News informs about publications, documents in review, and working groups in initialization." Below this, there is a link to unsubscribe from the OPC Technology News list. A tabbed interface shows "Publications" selected, displaying a table of documents.

DOCUMENT	DATE
OPC 40001-1 Machinery Basic Building Blocks - V 1.03.0	2023-06-08
OPC 30030 BACnet - V 2.00.1	2023-06-02
OPC 40210 Geometric Measuring Systems - V 1.00	2023-05-24
OPC 40200 Weighing Technology - V 1.01.0	2023-04-19
OPC 30143 PROFI-Encoder - V 1.00	2023-04-15
OPC 30020 MDIS OPC UA Companion Specification - V 1.2.1	2023-04-03

Spread of OPC UA Companion Specifications

Manufacturing mechanics

40001 - Machinery
40010 - Robotics - Vertical Integration
40020 - Cranes&Hoists - MotionDevicesSystemBase
40077 - PlasticsRubber – IM Machines to MES
40079 - PlasticsRubber – IM Machines to Robot
40082 - PlasticsRubber - Peripheral Devices
40083 - PlasticsRubber - General Types
40084 - PlasticsRubber - Extrusion
40086 - PlasticsRubber - Material Supply Systems
40100 - Machine Vision
40200 - Weighing Technology
40223 - Pumps and Vacuum pumps
40250 - Compressed Air Systems
40301 - Flat Glass Processing
40400 - UA for Powertrain
40444 - Textile Testing Devices
40451 - Tightening Systems
40501 - Machine Tools
40502 - CNC Systems
40540 - UA for Additive Manufacturing
40550 - Woodworking Machinery
40740 - Process Air Extraction and Filtration

Field Device Integration

30080 - FDI Specification
30090 - Field Device Tool

Field Communication

30100 - Sercos Devices
30110 - Powerlink
30120 - IO-Link Devices and IO-Link Masters
30130 - CSP+ForMachine . CCLink
30140 - PROFINET
30141 - PROFIenergy
30142 - PROFI-RemoteIO
30143 - PROFI-Encoder

Industrial Automation

30400 - Cloud Library
10020 - Analyzer Devices
30000 - PLC Model based on IEC 61131-3
30001 - PLC Client Function Blocks
30010 - AutoID Devices
30020 - MDIS OPC UA Companion Specification
30081 - Process Automation Devices - PADIM
10000-100 - Devices
10000-110 - Asset Management Basics
10000-120 - XML DataType Mapping
10000-200 - Industrial Automation - Basics
10000-210 - IA- Relative Spatial Location

Consumer Industries

30060 - Tobacco Machinery
30200 - Commercial Kitchen Equipment

Enterprise, Asset Management, Packaging

10030 - ISA-95 Common Object Model
10031 - ISA-95-4 Job Control
30050 - PackML - Packaging Control
30260 - Open-SCS Product Serialization
30261 - Open-SCS Job Orders
40600 - Weihenstephan Standards

Engineering Data

30040 - AutomationML
30250 - DEXPI P&ID

Energy Automation

10040 - IEC 61850 - Electrical Substation Automation

Building Automation

30030 - BACnet

Oil and Gas, Mining

40561 - Mining - Extraction
40562 - Mining - LoadingEquipment
40563 - Mining - TransportAndDumping
40564 - Mining - MineralProcessing
40565 - Mining - DevSupport
40566 - Mining - MonitoringAndSupervision
40567 - Mining - PELO Services
40569 - Mining - ACandUC

JWGs with VDMA

OPC UA serves as basis for the Global Production Language



- » Additive Manufacturing
- » Agricultural Machinery
- » Air Conditioning & Ventilation
- » Air Pollution Control
- » Automated Guided Vehicles
- » Battery Production
- » Building Control and Management
- » Building Materials
- » Ceramic Machinery
- » Cleaning Systems
- » Compressors, Compressed Air and Vacuum Technology
- » Construction Equipment
- » Continuous Conveyors
- » Cranes
- » Die & Mould
- » Drying Technology
- » Electrical Automation
- » Engines & Systems

- » Fire Fighting Equipment
- » Fluid Power
- » Food Processing and Packaging Machinery
- » Foundry Machinery
- » Glass Machinery
- » Hydro Power Plants
- » Industrial Trucks
- » Integrated Assembly Solutions
- » Intralogistic Systems
- » Lasers and Laser Systems for Material Processing
- » Length Measurement Technology
- » Lifts & Escalators
- » Machine Tools and Manufacturing Systems
- » Machine Vision
- » Metallurgical Plants and Rolling Mills

- » Micro Technologies
- » Mining
- » Photovoltaic Equipment
- » Plastics & Rubber Machinery
- » Power Transmission Engineering
- » Precision Tools
- » Printing & Paper Technology
- » Process Plant & Equipment
- » Productronic
- » Pumps & Systems
- » Refrigeration & Heat Pump Technology
- » Robotics
- » Security Systems
- » Software & Digitalization
- » Surface Technology
- » Testing Technology

- » Textile Care, Fabric and Leather Technology
- » Textile Machinery
- » Thermal Power Plants
- » Thermo Process Technology
- » Valves
- » Waste Treatment & Recycling
- » Weighing Technology
- » Welding & Pressure Gas Equipment
- » Wind Power Plants
- » Woodworking Machinery

- » OPC UA CS released
- » Release Candidate
- » Joint Working Group with OPC Foundation
- » OPC UA CS in work

Thank you.



Fahad Golra

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Agileo Automation

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Email: fahad.golra@agileo.com



CONTACT

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