

# OPC Foundation General Assembly Meeting

Wed, Dec 04, 2019 at 16:00h - 17:00h CET/ 10:00 AM – 11:00 AM EST

- ▶ **Stefan Hoppe**                      **OPC Foundation Vision**
- ▶ **Michael Bryant**                **OPC Board Of Director's Election Results**
- ▶ **Jim Luth**                         **OPC Technology Overview**
- ▶ **Peter Lutz**                        **OPC Field Level Initiative**
- ▶ **Paul Hunkar**                      **OPC Certification**
- ▶ **Stefan Hoppe**                      **OPC World Activities / Collaborations**

# OPC Foundation

Organization – Vision – Members - Budget




**Stefan Hoppe**

**President & Executive Director OPC Foundation**

**[Stefan.hoppe@opcfoundation.org](mailto:Stefan.hoppe@opcfoundation.org)**

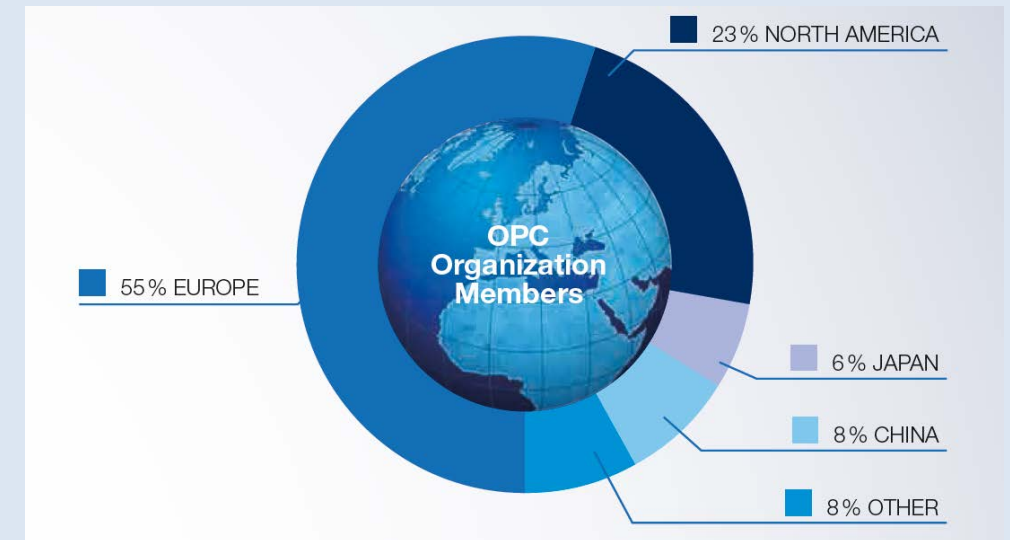
# OPC Foundation

<https://opcfoundation.org>

- ▶ Vision
  - Secure & reliable
  - Vendor, platform, and domain agnostic
  - Interoperability from sensor to enterprise and beyond
- ▶ Global Profile
  - Non-profit organization (founded 1995)
  - Companies from Automation & IT
  - Internationally recognized: OPC UA is IEC62541
- ▶ Deliverables
  - Specifications: openly available
- ▶  **GitHub** **is and code examples for faster, easier adoption**  
(**siC/C++, C# .NET Standard, Java**)
  - Certification: OPC Labs open to everyone
- ▶ Ecosystem with toolkits and education
- ▶ Modern IPR policy

## Organizational Overview

**Membership: 737 (Dec 03<sup>rd</sup>, 2019)**



## 2019 Board of Directors

Microsoft	Honeywell	Rockwell
SAP	Yokogawa	Schneider
Siemens	Mitsubishi	ABB
Beckhoff	Ascolab	

# OPC Foundation: New Class A members 2019

12.12.2018      636 members  
04.12.2019      737 members

→ 101 new members within 1 year !

**Special welcome to our 10 new class A members:**

Alstom Group  
Baumüller  
Foxconn Industrial Internet  
Makimo Milling Machine  
Murrelektronik  
NIKON Corp.  
Okuma Corp.  
Persistent Systems  
TÜV SÜD  
Weidmüller

# OPC Foundation: Foxconn Fii is 699th member

## Foxconn Industrial Internet: 699<sup>th</sup> member



**Brand Cheng**  
CEO Foxconn Fii

**Stefan Hoppe**  
OPC Foundation

Brand Cheng, CEO at Fii

“Fii has a strong track record of successfully contributing to and innovating OPC UA adoption use cases. For example, our industrial robots have built-in OPC UA server that provides real-time status and diagnostic/prognostic information to the Robot MicroCloud for intelligent operation management. The rich information content of each robot is organized using OPC UA's information model, facilitating data retrieval at different system/subsystem/module levels. Fii has developed a holistic communication infrastructure between industrial equipment and sensors to the cloud, and time-sensitive feedback control from the cloud back to equipment.”

# OPC Foundation – Budget 2019

<b>Total Income</b>	<b>\$ 5.000.000</b>
- Membership Dues	\$ 2.728.000
- Tradeshow, Sponsoring	\$ 460.000
- Workshop, Tools	\$ 161.000
- Income FLC	\$ 1.700.000

<b>Total Expenses</b>	<b>\$ 3.600.000</b>
- Program Services (Marketing, Technical, ..)	\$ 1.500.000
- Support Services (Global)	\$ 1.600.000
- FLC Services	\$ 500.000

<b>Total</b>	
Total Income	\$ 5.000.000
Total Expense	\$ 3.600.000
FLC Savings	\$ 1.200.000
<b>Net Income</b>	<b>\$ 200.000</b>

Numbers based on forecast.





# Result Board Election

**Michael Bryant**  
**Secretary OPC Foundation**  
[michael.bryant@opcfoundation.org](mailto:michael.bryant@opcfoundation.org)

# OPC Foundation Election

## OPC Board Members:

Russ Agrusa – ICONICS

Bernhard Eschermann, ABB

Stefan Hoppe – Beckhoff

Ziad Kaakani – Honeywell

Shinji Oda – Yokogawa

Jürgen Weinhofer, Rockwell Automation

Matthias Damm – ascolab

Thomas Hahn – Siemens

Fabrice Jadot, Schneider Electric

Veronika Schmid-Lutz – SAP

Matt Vasey – Microsoft

## Procedure:

- Each year the membership elects board members to serve a two-year term.
- On August 22, 2019, an email was sent to all Designated Representatives requesting nominations for four open board seats to be received by September 20, 2019.
- The OPC Foundation received five nominations.
- The ballot was sent to all Designated Representatives on November 1, 2019 with a deadline for voting of December 1, 2019



# OPC Foundation Election Results

**Elected to Board Seats for 2020 – 2021:**

- **Mr. Thomas Hahn, Siemens**
- **Mr. Ziad Kaakani, Honeywell**
- **Mr. Shinji Oda, Yokogawa**
- **Mr. Matt Vasey, Microsoft**

**Thanks to all members who voted.**

# OPC Foundation Board of Directors

## Presidents

1996 – 1998 David Rehbein

1998 – 2000 Dr. Gil Pareja

2000 – 2018 Thomas Burke

2018 – present Stefan Hoppe

## Board of Directors

Russ Agrusa

• ICONICS → Mitsubishi Electric

Matthias Damm

• ascolab

Thomas Hahn

• Siemens (Officer: Vice President)

Stefan Hoppe

• BECKHOFF (Officer: President)

Ziad Kaakani

• Honeywell (Officer: Treasurer)

Shinji Oda

• Yokogawa

Veronika Schmid-Lutz

• SAP (Officer: Chairwoman)

Matt Vasey

• Microsoft

Juergen Weinhofer

• Rockwell Automation

Bernhard Eschermann

• ABB

Fabrice Jadot

• Schneider Electric

Oct 2018 :Stefan Hoppe & Tom Burke





Designated Member Representatives  
nominate and elect Directors for 2 years

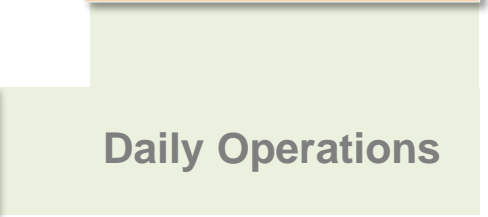
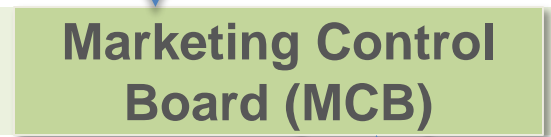
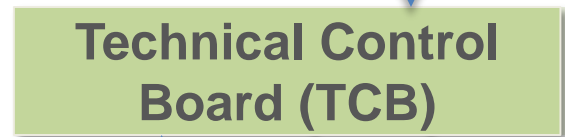
Report in  
Annual Meeting

Nominate candidates for election  
Extend / reduce number of seats



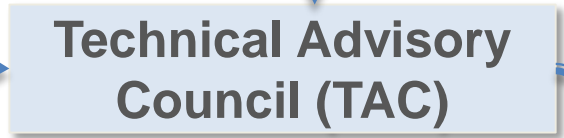
Elect

Report / Control



Report / Control

Report / Control



Report

N

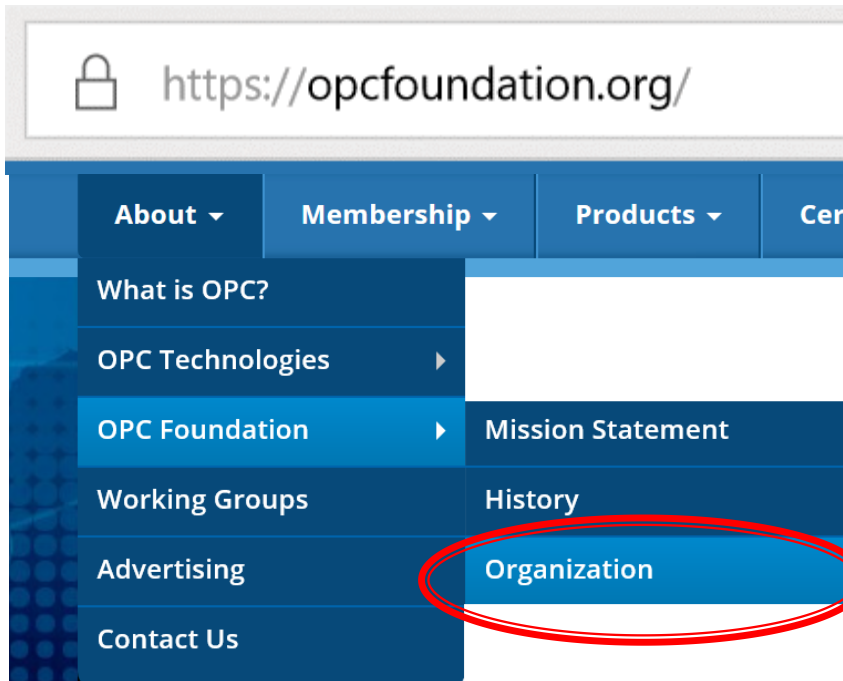


- Starts new working groups
- Review and release of specifications developed in technical working groups

Send member  
representatives to  
working groups and  
marketing teams

# OPC Foundation: Organization

Find more information here:



The OPC Foundation Organization includes:

- Board of Directors
- Officers
- Directors
- Control Boards (Technical & Marketing)
- Technical Advisory Council
- Technical Working Groups
- OPC Regional Associations

## Board of Directors

Russ Agrusa – Mitsubishi Electric  
Matthias Damm – ascolab  
Thomas Hahn – Siemens AG  
Stefan Hoppe – BECKHOFF  
Ziad Kaakani – Honeywell Process Solutions  
Shinji Oda – Yokogawa  
Veronika Schmid-Lutz – SAP  
Matt Vasey – Microsoft  
Bernhard Eschermann – ABB  
Fabrice Jadot – Schneider Electric  
Juergen Weinhofer – Rockwell Automation

## Officers

**President:** Stefan Hoppe – Beckhoff  
**Chairwoman of Board:** Veronika Schmid-Lutz – SAP  
**Vice President:** Thomas Hahn – Siemens AG  
**Treasurer:** Ziad Kaakani – Honeywell Process Solutions  
**Secretary:** Michael Bryant – OPC Foundation

## Directors:

**Director of Administration:** Michael Bryant  
**Technical Director:** Karl Deiretsbacher, OPC Foundation  
**Director of Compliance:** Paul Hunkar, DS Interoperability  
**Chief Technology Officer:** Jim Luth, Schneider-Electric  
**Principal Software and Security Architect:** Randy Armstrong, Sparhawk Software



# OPC UA Technology Overview

## GAM 2019



Jim Luth

Software Architect, Process Automation R&D

OPC Foundation CTO, UA Working Group Chairman, TAC Member, TCB Member

[Jim.Luth@SE.com](mailto:Jim.Luth@SE.com)

# Agenda

- ▶ 2019 Releases
- ▶ 2019 Release Candidates
- ▶ 2019 New working groups and sub-groups
- ▶ New online reference and document numbering
- ▶ Technology Roadmap

# OPC UA 1.04 Amendments Released 2019

**Amendment 6 – UADP Header Layouts:** Describes UADP header layouts which provide a reasonable set of header options which compromise between flexibility, interoperability and optimized support for different use cases.

**Amendment 7 – Interfaces and AddIns:** Enhances the UA type model to support interfaces and object aggregation.

**Amendment 11 – Spatial Types:** Adds types to Part 5 to represent multi-dimensional spatial types.

- ▶ Released Amendments are here:  
<https://opcfoundation.org/developer-tools/specifications-unified-architecture/errata-and-amendments/>

# OPC UA 1.04 Amendments Released 2019

**Amendment 1 – AnalogItem Types:** Enhances the UA DataAccess information model defined in Part 8 by adding additional sub-types of DataItem Type.

**Amendment 2 – ChoiceStates and Guards:** Enhances the UA information model for state machines defined in Annex B of Part 5 to include the concepts of ChoiceStates and Guards.

**Amendment 5 – Dictionary Reference:** Describes the basic infrastructure to reference from an OPC UA Information Model to external dictionaries like IEC Common Data Dictionary or eCI@ss.

- ▶ Released Amendments are here:  
<https://opcfoundation.org/developer-tools/specifications-unified-architecture/errata-and-amendments/>



# OPC UA for Device (DI)

- ▶ Version 1.02 released in April 2019
  - Clean-up and clarification on use
  - Extension of device model

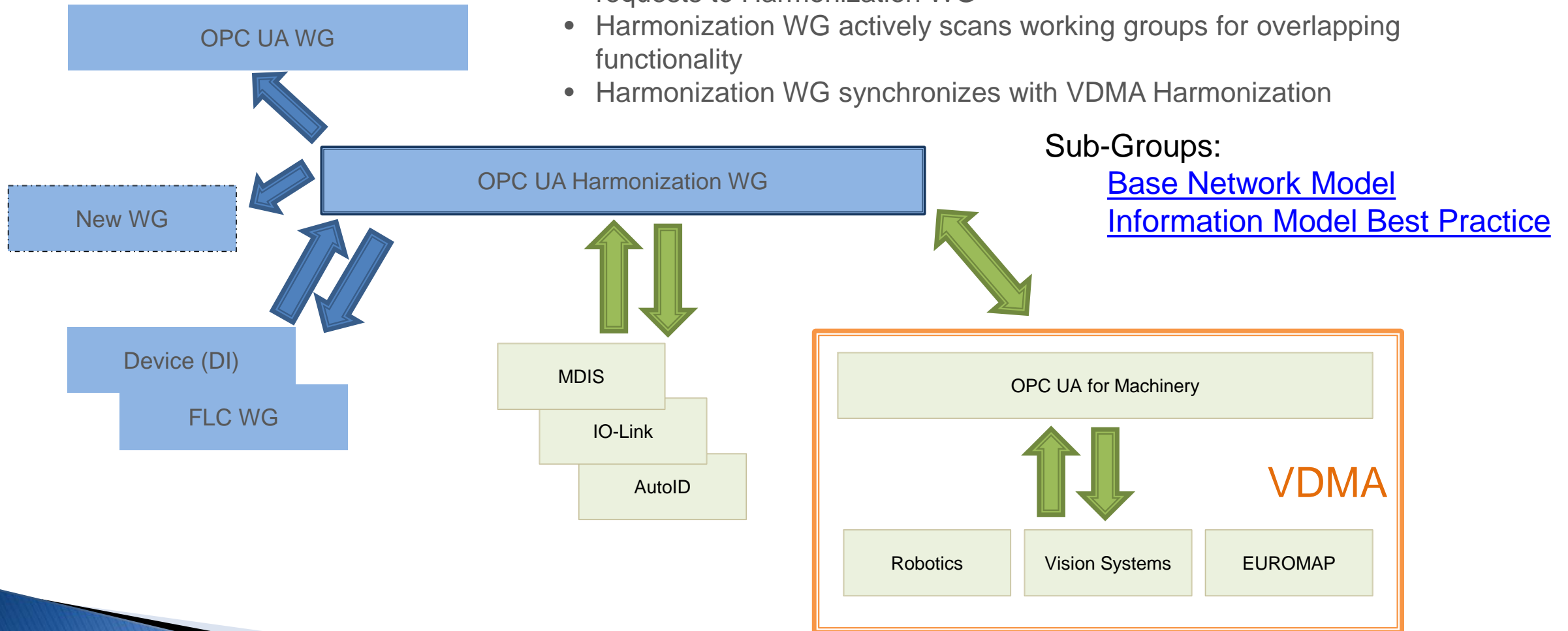
# 2019 Release Candidates

- ▶ OPC 10001-10 - Amendment 10: Engineering Units and Currency
- ▶ OPC 10000-19 - Part 19: Dictionary Reference
- ▶ OPC 10000-17 - UA Specification Part 17 - Alias Names
- ▶ OPC 10000-15 - UA Specification Part 15 - Safety

[Specification Release Candidates for Review](#)

# OPC UA Harmonization Working Group (NEW)

- Companion Working Groups (OPC F and JOINT) report common feature requests to Harmonization WG
- Harmonization WG actively scans working groups for overlapping functionality
- Harmonization WG synchronizes with VDMA Harmonization



# 2019 New working groups and sub-groups

## ▶ **OPC UA Semantic Validation Sub-Group**

- Analyze and enhance machine readable version of OPC UA information models
- Automatic validation of models during specification phase
- Automatic creation of test cases and test scripts

# UA Working Group Organization

- ▶ Weekly web meeting (11:00 AM – 1:00 PM ET)
- ▶ Four-day face-to-face meeting every quarter
- ▶ Sub-groups
  - Security – [Randy.Armstrong@opcfoundation.org](mailto:Randy.Armstrong@opcfoundation.org)
  - Pub/Sub Prototyping – [Matthias.Damm@ascolab.com](mailto:Matthias.Damm@ascolab.com)
  - TSN – [Alexander.Ziegler@siemens.com](mailto:Alexander.Ziegler@siemens.com)
  - Semantic Validation - [Mathias.Maurmaier@siemens.com](mailto:Mathias.Maurmaier@siemens.com)
- ▶ Email [Jim.Luth@SE.com](mailto:Jim.Luth@SE.com) to join the main group or any subgroup.

# OPC UA Specification Numbering and Online Reference

New specification numbering schema

- All OPC UA specifications including companion specifications get a five digit number assigned
- Unique reference to specification across translations

Published

- Online **Searchable** specification reference  
<https://reference.opcfoundation.org>
- Type dictionary
  - All OPC UA specifications
  - All joint Information models

## Published Information Models

### OPC UA Specifications

Model	Specification
<a href="#">Core</a>	<a href="#">OPC 10000-1 - Part 1: Overview and Concepts</a>
<a href="#">Core</a>	<a href="#">OPC 10000-2 - Part 2: Security Model</a>
<a href="#">Core</a>	<a href="#">OPC 10000-3 - Part 3: Address Space Model</a>
<a href="#">Core</a>	<a href="#">OPC 10000-4 - Part 4: Services</a>
<a href="#">Core</a>	<a href="#">OPC 10000-5 - Part 5: Data Access</a>

### Joint Companion Specifications

Model	Specification
<a href="#">DI</a>	<a href="#">OPC 10000-100 - Part 100: Device Information Model</a>
<a href="#">ADI</a>	<a href="#">OPC 10020 - UA for Analyzer Devices</a>
<a href="#">ISA-95</a>	<a href="#">OPC 10030 - UA for ISA-S95</a>
<a href="#">PLCopen</a>	<a href="#">OPC 30000 - UA for Programmable Logic Controller</a>
<a href="#">AutoID</a>	<a href="#">OPC 30010 - UA for AutoID Devices</a>
<a href="#">AutomationML</a>	<a href="#">OPC 30040 - UA for AutomationML</a>
<a href="#">PackML</a>	<a href="#">OPC 30050 - UA for PackML (OMAC)</a>
<a href="#">TMC</a>	<a href="#">OPC 30060 - UA for Tobacco machinery (TMC)</a>

# OPC UA Roadmap

- ▶ Deterministic UA: Mappings to TSN
- ▶ Cloud-Relay
- ▶ Topic-based PubSub
- ▶ Relate with established semantic models
- ▶ Transactions
- ▶ MetaData in the Cloud
- ▶ Deterministic communication using 5G

<https://opcfoundation.org/about/opc-technologies/opc-ua/opcua-roadmap/>

# OPC UA Field Level Communications Initiative - Update

OPC Foundation General Assembly  
December 4, 2019

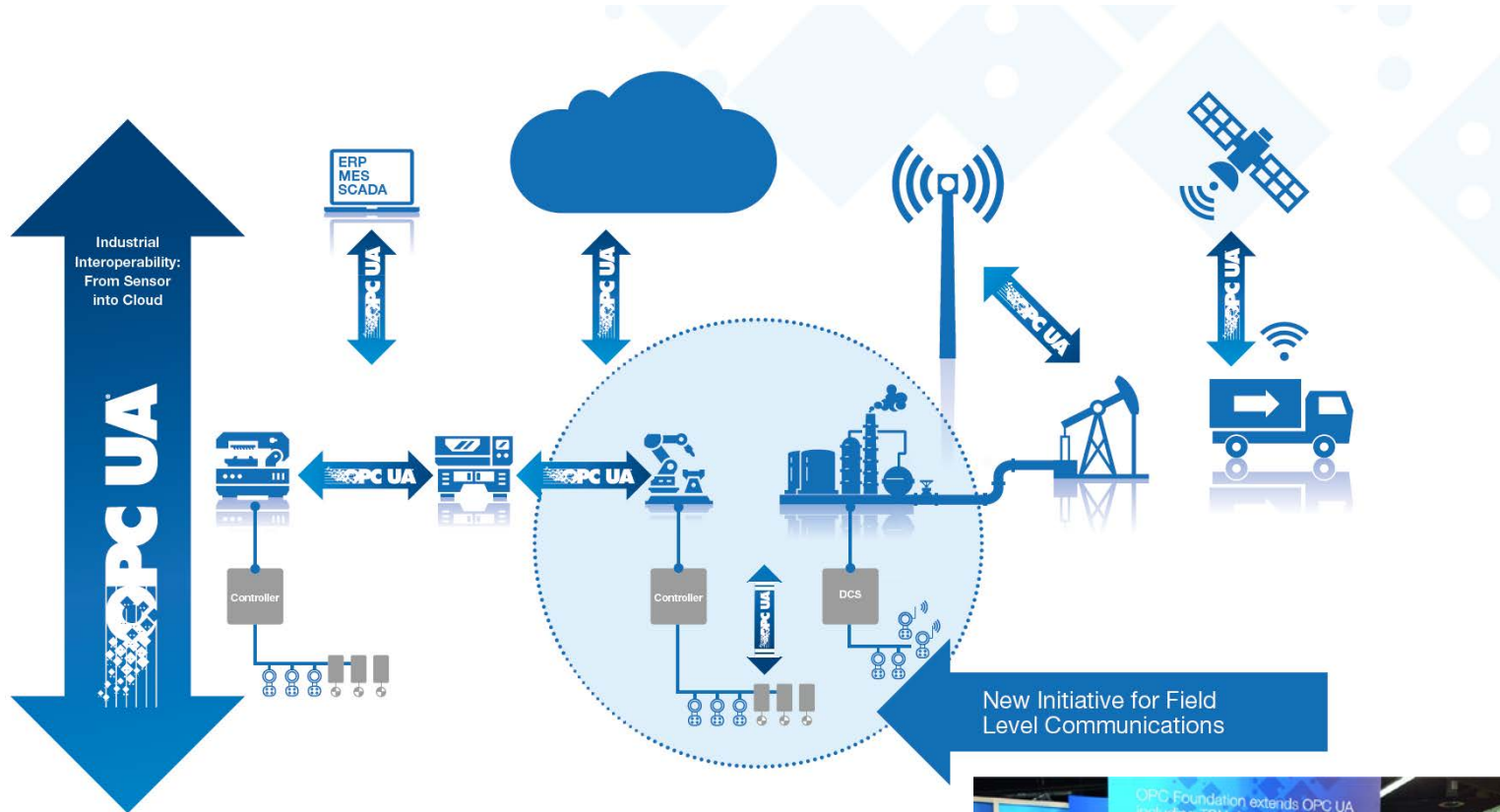
Peter Lutz, Director FLC, OPC Foundation





# OPC-F “Field Level Communications Initiative”

## Extending OPC UA including TSN down to field level



OPCF Press Conference SPS 2018  
Overcrowded!

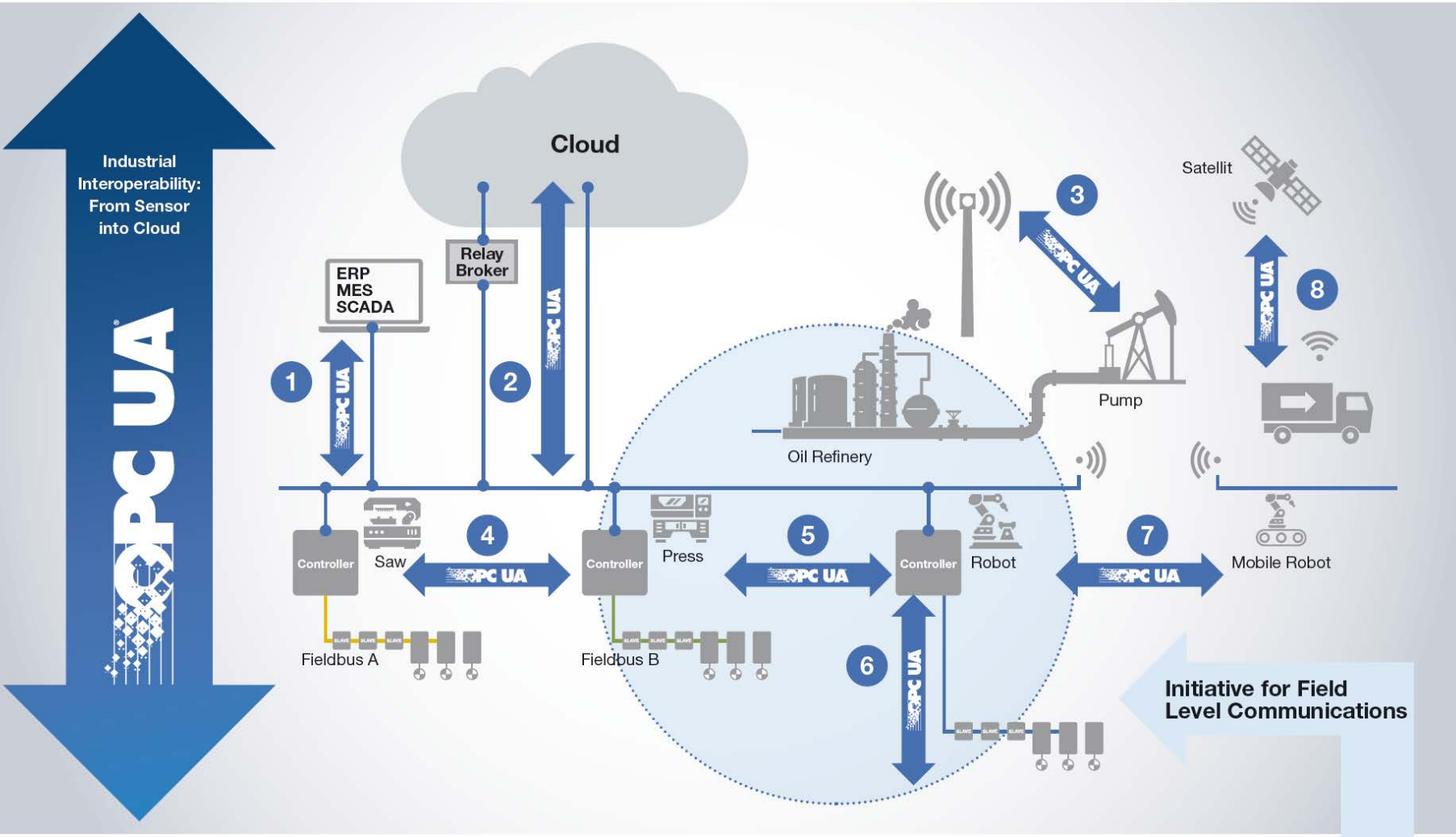


# FLC Steering Committee

- ▶ Initial members (November 2018): 23, two new members: Murrelektronik (D) and Festo (D)



# OPC Unified Architecture – from Sensor to Cloud



- 1 IT / OT Communication
- 2 Cloud Integration
- 3 Secure Remote Access
- 4 Local OT Communication
- 5 Controller to Controller
- 6 Controller to Field Device
- 7 Wireless Integration (5G)
- 8 Future Ready

# Activity report

## FLC INITIATIVE OF THE OPC FOUNDATION

### FLC Steering Committee

(exclusive for 25 FLC SC member companies)

- ▶ 81 members from 25 companies
- ▶ Steering committee + 6 sub groups
- ▶ 9 F2F meetings / 92 webmeetings

#### ▶ Work in progress:

- creation of user stories for FA/PA
- derivation of **user requirements**
  
- definition of boundary conditions
- definition of roadmap & milestones

### FLC Working Group

(open for all OPC F member companies)

- ▶ 215 members from 45 companies
- ▶ 4 working groups / sub groups
- ▶ 6 F2F meetings / 79 webmeetings

#### ▶ Work in progress:

- elaboration of technical concepts based on **technical requirements**
  
- elaboration of **specifications**

# Roadmap Field Level Communications Initiative (1)

	Specification Version V1	Specification Version V2
<b>Use Cases (main focus)</b>	Controller-to-Controller (C2C)	Controller-to-Controller (C2C) Controller-to-Device (C2D)
<b>Communication Models</b>	Peer-to-Peer	Peer-to-Peer I/O Style & Autonomous Publisher
<b>PubSub Mechanisms</b>	Single-/Multi-Subscriber Uni-/Multicast	Single-/Multi-Subscriber Uni-/Multicast
<b>Transport Protocols</b>	Ethernet (non-TSN, via UDP) Ethernet TSN (direct layer 2 mapping)	Ethernet (non-TSN, via UDP) Ethernet TSN (direct layer 2 mapping)
<b>Diagnostics</b>	Basic (device & network)	Extended (device & network) Application alarms
<b>Device Information Model</b>	Discoverable Identity & capabilities (for controllers)	Discoverable Identity & capabilities (for controllers and devices)

# Roadmap Field Level Communications Initiative (2)

	Specification Version V1	Specification Version V2
<b>Use Cases (main focus)</b>	Controller-to-Controller (C2C)	Controller-to-Controller (C2C) Controller-to-Device (C2D)
<b>Safety</b>	Client-Server & PubSub	Client-Server & PubSub Parametrization
<b>Security</b>	Adoption of existing OPC UA Security mechanisms	Adoption of existing OPC Security mechanisms + extensions (if needed)
<b>Configuration</b>	Online & Offline Shallow TSN Configuration	Online & Offline Deep TSN Configuration
<b>Conformance Testing</b>	Test plan for controllers	Test plan for controllers & devices
<b>Timeline</b>	Release candidate (April 2020)	



# Certification

## General Assembly Update

Paul Hunkar  
*Director of Compliance & Certification*  
*[Paul.Hunkar@OPCFoundation.org](mailto:Paul.Hunkar@OPCFoundation.org)*

# Certification Program Update

- ▶ Interoperability events
- ▶ Test Labs
- ▶ Companion Specification
- ▶ Test Tools
- ▶ Website



# Interoperability (IOP) Events

- ▶ Three Interoperability events held by OPC Foundation annually
  - USA, Japan, Germany (2 weeks)

## IOP Workshop Coordinator

- Alexander Allmendinger



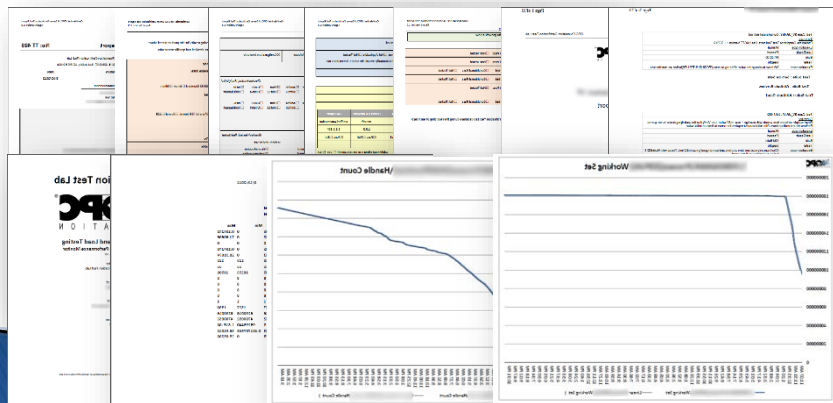
## Information Model IOPs

- ▶ MDIS
- ▶ O-PAS



# Certification Update

- ▶ Two Certification labs doing well
  - European Test Lab
    - Goeppingen, Germany
  - China Test Lab
    - Beijing, China
- ▶ Information Model testing
  - Companion Specification
  - Mandating Certification



Certification Testing Laboratory Presents to  
**TechnipFMC, Inc.**

## Award of OPC Certification

TechnipFMC UCOS OPC UA Server

Certified OPC Profiles:  
OPC UACTT 1.03-340.380  
Embedded UA Server Profile  
MDIS Base Function Server Facet

*for successfully demonstrating OPC Excellence in Compliance, Interoperability and Robustness in the OPC Foundation European Certification Lab for Product listed above.*

Version: 1.0.0.1023  
OPC Spec Version: 1.03  
Presented on: 12/21/2018  
Expires: 12/31/2021  
Serial Number: 1812CE00B3

Follow the QR-Code for the complete list of the certified facets for this product.



Follow this link for more information



**Paul Hunkar**  
Director of Compliance & Certification



**Stefan Hoppe**  
President

*The reproduction of this official certificate is strictly prohibited without prior written consent from the OPC Foundation Certification Test Lab*



# Companion Specification : Profiles

- ▶ Template documents
- ▶ Profiles / Conformance Units

## 13. Profiles and ConformanceUnits

*Profiles and ConformanceUnits* break functionality into testable groups. All companion specification shall include at least one *Profile/Facet*. If there are any groupings of functionality that not all *Servers/Client* would implement then multiple *Profile/Facet* are Uncouraged. A *ConformanceUnit* should describe a testable unit. A single *ConformanceUnit* is tested as a unit so all items covered by it must be support or the *ConformanceUnit* will fail. *ConformanceUnits* can be included in multiple *Profiles*, thus they are declared in their own table.

### OPC UA Profiles

Following are the currently defined profiles, arranged according to their application category.

- Server Category
  - Facets
    - Core Characteristics
    - Data Access
    - Event Access
    - Alarm & Condition
    - Generic Features
    - Redundancy
    - Historical Access
    - Aggregates
      - Programs Model
      - Query
  - FullFeatured
    - Nano Embedded Device 2017 Server Profile
    - Micro Embedded Device 2017 Server Profile
    - Embedded 2017 UA Server Profile
    - Standard 2017 UA Server Profile**
      - Enhanced DataChange Subscription 2017
      - User Token - X509 Certificate Server Facet
      - Embedded 2017 UA Server Profile
      - Global Discovery Server 2017 Profile
      - Global Discovery and Certificate Mgmt 2017
  - Client Category
    - Facets
      - Core Characteristics
      - Data Access

### "Standard 2017 UA Server Profile" Profile

Description	This Profile is a FullFeatured Profile that defines a minimum set of functionality required for PC based OPC UA servers. Compared to the embedded profiles, the Profile requires higher limits for Sessions, Subscriptions and Monitored Items. It also requires support of diagnostic information. This profile supersedes the "Standard UA Server Profile".
URI	http://opcfoundation.org/UA-Profile/Server/StandardUA2017

This page lists the conformance units of the selected profile with their name and description. Conformance units that are inherited via included Profiles are not listed by default. Use the following radio buttons to change this default behaviour.

- Show only explicitly included conformance units
- Show also conformance units from included profiles
- Show all existing conformance units
- Show relationship of Conformance Units with Units and Profiles for Clients / Servers

Address Space Model					
Include	Name	Opt.	Description	From Profile	Test Cases
<input checked="" type="checkbox"/>	Address Space Base	<input type="checkbox"/>	Support the NodeClasses with their Attributes and References as defined in Part 3. This includes for instance: Object, ObjectType, Variable, VariableType, References and DataType.	Core 2017 Server Facet	<a href="#">Open</a>
<input checked="" type="checkbox"/>	Address Space Dictionary Entries	<input checked="" type="checkbox"/>	Support external dictionaries by relating OPC UA Nodes to dictionary entries using the HasDictionaryEntry ReferenceType.	Core 2017 Server Facet	<a href="#">Open</a>
<input checked="" type="checkbox"/>	Address Space Atomicity	<input type="checkbox"/>	Support setting the NonatomicRead and NonatomicWrite flags in the AccessLevelEx Attribute for Variable Nodes to indicate whether Read or Write operations can be performed in atomic manner. If the flags are set to '1', atomicity cannot be assured.	Core 2017 Server Facet	<a href="#">Open</a>
<input checked="" type="checkbox"/>	Address Space Full Array Only	<input type="checkbox"/>	Support setting the WriteFullArrayOnly flag in the AccessLevelEx Attribute for Variable Nodes of non-scalar data types to indicate whether write operations for an array can be performed with an IndexRange.	Core 2017 Server Facet	<a href="#">Open</a>

... or Profile. A Facet is a grouping of functionality that ... a running Server or Client. A Profile is all inclusive, in ... al functionality would be required to have a running

... specification to assure uniqueness of string identifiers. ... ance units and is included in URIs and URLs defined in

... wise camel case. ... trademark casing.

# Companion Specification: Test Case Definition

The image shows two overlapping Excel windows. The background window displays a project progress summary for 'MDIS Valve - Server', listing various conformance units and their completion status. The foreground window shows a detailed test case table for 'Valve Object Operations - Defeatable Close Interlock'.

Valve Object Operations - Defeatable Close Interlock			TestCase	TestRequirements	ExpectedResults	Service Result	Operation Results	Reviewed	SpecLink	Comments
CT	No	Step								
Y	1		For each instance of ValveObjectType found, Follow HasComponent references and verify the existence of optional variable (1)DefeatableCloseInterlock. For any found verify that atleast one inverse InterlockFor reference to an instance of InterlockVariableType exists		Browse requests are successful. Zero or more listed optional reference targets are found. If any are found they contain at least one additional reference as specified	Good	Good	Y	MDIS Spec->Table 28 figure 15	If one of these variable is present then it must contain at least one hasInterlockInformation reference (inverse of InterlockFor) to an instance of InterlockVariableType that is also referenced by this Object with a HasInterlock reference.
Y	2		For each instance of ValveObjectType found, Follow HasInterlock references and verify existence of atleast one Variable that is of (1)InterlockVariableType. For any InterlockVariable type instance found verify that they contain at least one InterlockFor reference to one of the previous flags.		Browse requests are successful. One listed OptionalPlaceholder reference targets are found. Target has a reference to one of the optional variables.	Good	Good	Y	MDIS Spec->Table 28 figure 15	An interlockvariable type instance might have more than one InterlockFor reference and the reference may point to variable that are not part of the given object. The only requirement is that they have at least one interlockFor reference to one of the variables optional variable from previous test.
N	3		Read the valve DefeatableCloseInterlock variable and all of the associated instance of InterlockVariableType.	One defeatable close interlock is set	DefeatableCloseInterlock is true. And at least one of the associated InterlockVariableType instance is also true.	Good	Good	Y	MDIS Spec->Table 28 figure 15	
N	4		Run a valve move command to close the valve. Ensure the OverrideInterlocks boolean is false in the Move method.	Test 1	Valve does not close, fault is set and an appropriate fault code is provided.	Good	Good	Y	MDIS Spec->Table 28 figure 15	
N	5		Run a valve move command to close the valve. Ensure the OverrideInterlocks boolean is true in the Move method.		Valve Closes, the fault is cleared and an appropriate fault code is reset.	Good	Good	Y	MDIS Spec->Table 28 figure 15	
N	6		Set an instance of an InterlockVariableType	For instance of InterlockVariableType that are referenced by more than object	All linked DefeatableCloseInterlock variable are set	Good	Good	Y	MDIS Spec->Table 28 figure 15	
N	7		Subscribe for defeatableCloseInterlock (queue larger than 1). Toggle one of the interlockVariable type instance to true. Toggle the next instance to true, clear the	For DefeatableCloseInterlock that references more than one InterlockVariableType	Ensure that the DefeatableCloseInterlock is set to true and remains true for all changes to interlock	Good	Good	Y	MDIS Spec->Table 28 figure 15	

Multiple Companion Specification working on certification



# Compliance Test Tool (CTT)

- ▶ Released [1.03.390 CTT](#)
  - Enhancements for Information Model testing
  - Better security test
  - Performance improvements
- ▶ Script development (for Companion Specification)
- ▶ Beta for 1.04 & History/Aggregate testing

Test Case	Timestamp	Message
Debug Run1	2017-11-24 16:17:41.482	
beforeTest.js	2017-11-24 16:17:41.482	
Address Space Model	2017-11-24 16:17:45.506	Define ConformanceUnits for various features of the OPC UA AddressSpace. rent or historical Attribute values. s that deal with the representation and use of automation data as specified  it Discovery Methods are invoked and return only after completion (successful or unsuccessful). its and Events. Each MonitoredItem identifies the item to be monitored and  that are specified in Part 6 of the OPC UA specification. rofiled. the Client. igh the AddressSpace or through a View as subset of the AddressSpace.

```
1  /* Test prepared by Alexander Allmendinger; alexander.allmendinger@opofoundation.org
2  Description: Check all configured object instances and verify the Fault variable is initially False (not set).*/
3
4  function BaseFault_001() {
5      var result = true;
6
7      if (ObjectsA.length == 0) addError("No Objects are configured in the settings. Please check the settings of the CTT project.");
8      for (i = 0; i < ObjectsA.length; i++) {
9          var FaultComponent = GetSpecifiedComponent(ObjectsA[i], "Fault");
10         // Fault Component as item
11         if (FaultComponent != undefined || FaultComponent != null) {
12             if (ReadHelper.Execute({ NodesToRead: FaultComponent })) {
13                 print("\tGet Fault determined: Value = " + FaultComponent.Value.Value);
14                 if (FaultComponent.Value.Value == true) {
15                     addError("Fault component for current Object (NodeId:" + ObjectsA[i].NodeId + ") is set!");
16                     result = false;
17                 }
18                 else {
19                     addLog("Fault component for current Object (NodeId:" + ObjectsA[i].NodeId + ") is not set.");
20                 }
21             }
22         }
23         else {
24             addError("Specified Node does not have an Fault component. (NodeId=" + ObjectsA[i].NodeId + ")");
25         }
26     }
27     return result;
28 }
29
30 Test.Execute({ Procedure: BaseFault_001 });
```

Products » OneSubsea opcuasrv

## OneSubsea opcuasrv

Member: [OneSubsea GmbH](#)

Product website: [www.onesubsea.slb.com/control-systems/topside-cont...](http://www.onesubsea.slb.com/control-systems/topside-cont...)

The OneSubsea standard MCS software provides the interface for the DCS to control and monitor the subsea control equipment as well as OneSubsea topside equipment. It is also a main task of the MCS to provide the maintenance interface for OneSubsea subsea controls equipment.

The OneSubsea opcuasrv provides an interface for OPC UA clients to the OneSubsea MCS. The interface of the MCS (or SPCU) to the DCS is realized through a redundant connection and supports the latest MDIS profile 1.02.

SUBSCRIBE NEWSLETTER

BECOME A MEMBER

### Newest Members

[NoLimit GmbH](#)  
[UNH InterOperability Laboratory](#)  
[Fédération des Industries Mécaniques](#)  
[One-Way Automation Inc.](#)  
[Open Source Automation](#)  
[Development Lab \(OSADL\) eG](#)

### Certified Products

[Pro-face BLUE](#)  
[EcoStruxure Operator Terminal Expert](#)  
[open62541 Server SDK](#)  
[ICE-COM](#)

### Twitter Timeline



Just published: See [@OPCFoundation](#) events 2020 <https://t.co/PNuEuttiZF> Why not become a sponsor?

RT [@heidepriem\\_seb](#): Next collaborative workshop on the next generation international standard for wired field level communications [#OPCUA...](#)

Dr. Dominik Rohmus, CTO [@LNI40](#) explaining TSN testbed as base technology for [#opcua](#) deterministic industrial netwo... <https://t.co/sjqUVYefiV>

# Certification Website

- ▶ Improved Product Listings
  - End users
- ▶ Updated Certification pages
  - Help vendors understand
    - Certification Requirements
    - Testing Process
- ▶ CTT Purchase for Logo members

1905CE00B9				
<b>Certified Profile:</b>	Embedded UA Server		<b>Certificate Number:</b>	1905CE00B9
<b>Additional Facets:</b>	Data Access Server Method Server		<b>Certification Date:</b>	05/21/2019
<b>Security Policies:</b>	SecurityPolicy - Basic128Rsa15 SecurityPolicy - Basic256		<b>Expiration:</b>	05/31/2022
<b>User Identity Tokens:</b>	User Token - User Name Password Server User Token - X509 Certificate Server		<b>CTT Version:</b>	1.03.341.389
			<b>Product Name:</b>	OneSubsea opcuasrv
			<b>Product Version:</b>	1.2.0
			<b>Product MD5 Hash:</b>	5b3c108bccba9 2defd5c17dcf5c 41053
<b>Companion Facets:</b>	MDIS Solution MDIS Instrument Out Model Server MDIS Discrete Out Model Server MDIS Digital Out Model MDIS Redundancy			

Back

# Certification Targets

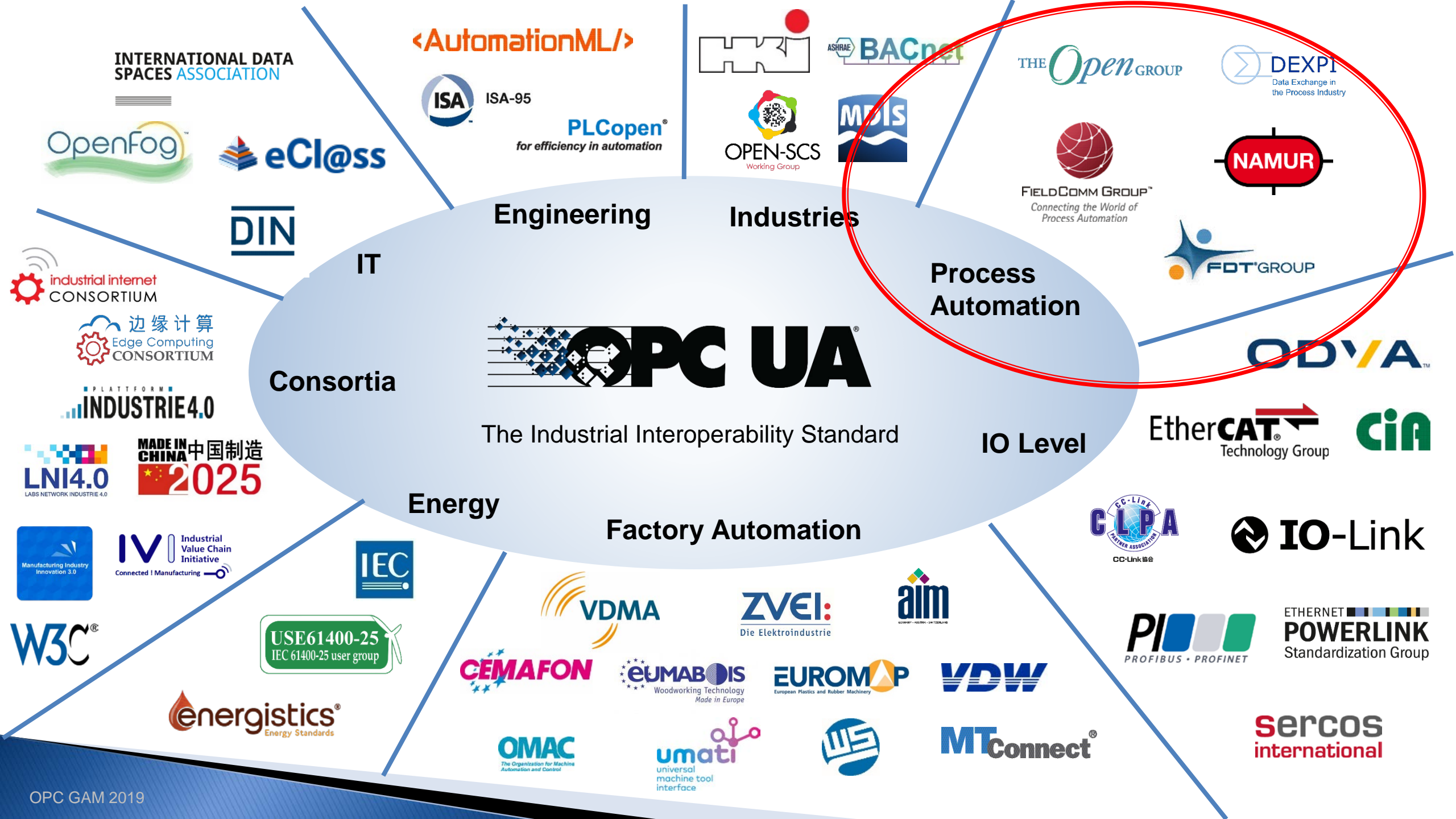
- ▶ Additional CTT updates
  - Alarm & Conditions
  - Pub / Sub
- ▶ Enhance Certification and Testing for new OPC released functionality
  - AliasNames
  - Security Additions
  - .....
- ▶ Work with FLC on Certification
- ▶ Continue Companion Specification Certification



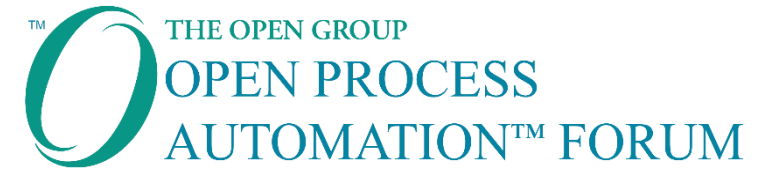
# Collaborations & Activities

Stefan Hoppe  
President OPC Foundation





# Open Process Automation Forum



- ▶ Open Process Automation Forum (is part of The Open Group)

[www.opengroup.org](http://www.opengroup.org)

- ▶ The Open Group is a non-profit, global consortium for IT standards

- ▶ ExxonMobil selected The Open Group

- ▶ <https://www.opengroup.org/open-group-open-process-automation-forum-launches-o-pas-standard-1>



~ New reference architecture Standard developed to ensure the security, interoperability and scalability of process control systems ~

**San Francisco, California – February 5<sup>th</sup>, 2019:** Today at the ARC Industry Forum event in Florida, [The Open Group](#), the vendor-neutral technology consortium, has announced the launch of its new [O-PAS™ Standard, Version 1.0](#), a preliminary standard of The Open Group. Developed by [The Open Group Open Process Automation™ Forum \(OPAF\)](#), the standard will provide a vendor-neutral reference architecture to enable the construction of scalable, reliable, interoperable and secure process automation systems.

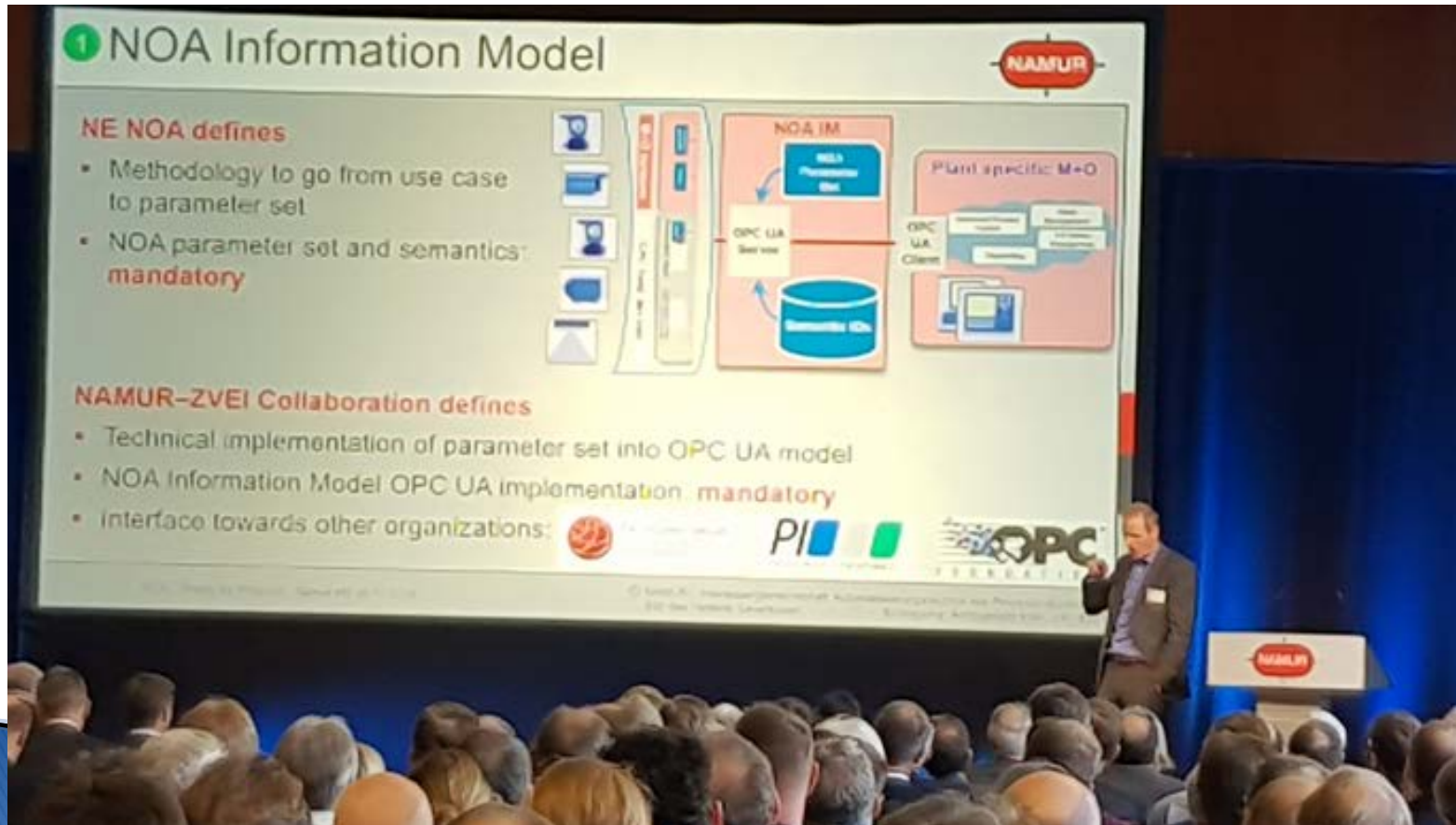
The O-PAS Standard, Version 1.0, is focused on meeting the minimum standard and specification requirements for federated process automation systems, using an open and interoperable reference architecture. A key tenet of the Standard is to adopt 'fit-for-purpose' industry standards that exist in the marketplace today. As a result, the Standard will incorporate a variety of functional elements that are already provided by multiple vendors, including:

- Security: ANSI/ISA 62443 (adopted by IEC as IEC 62443)
- Connectivity: OPC UA
- Systems Management: DMTF Redfish



# Process Automation: OPC UA mandatory for NOA

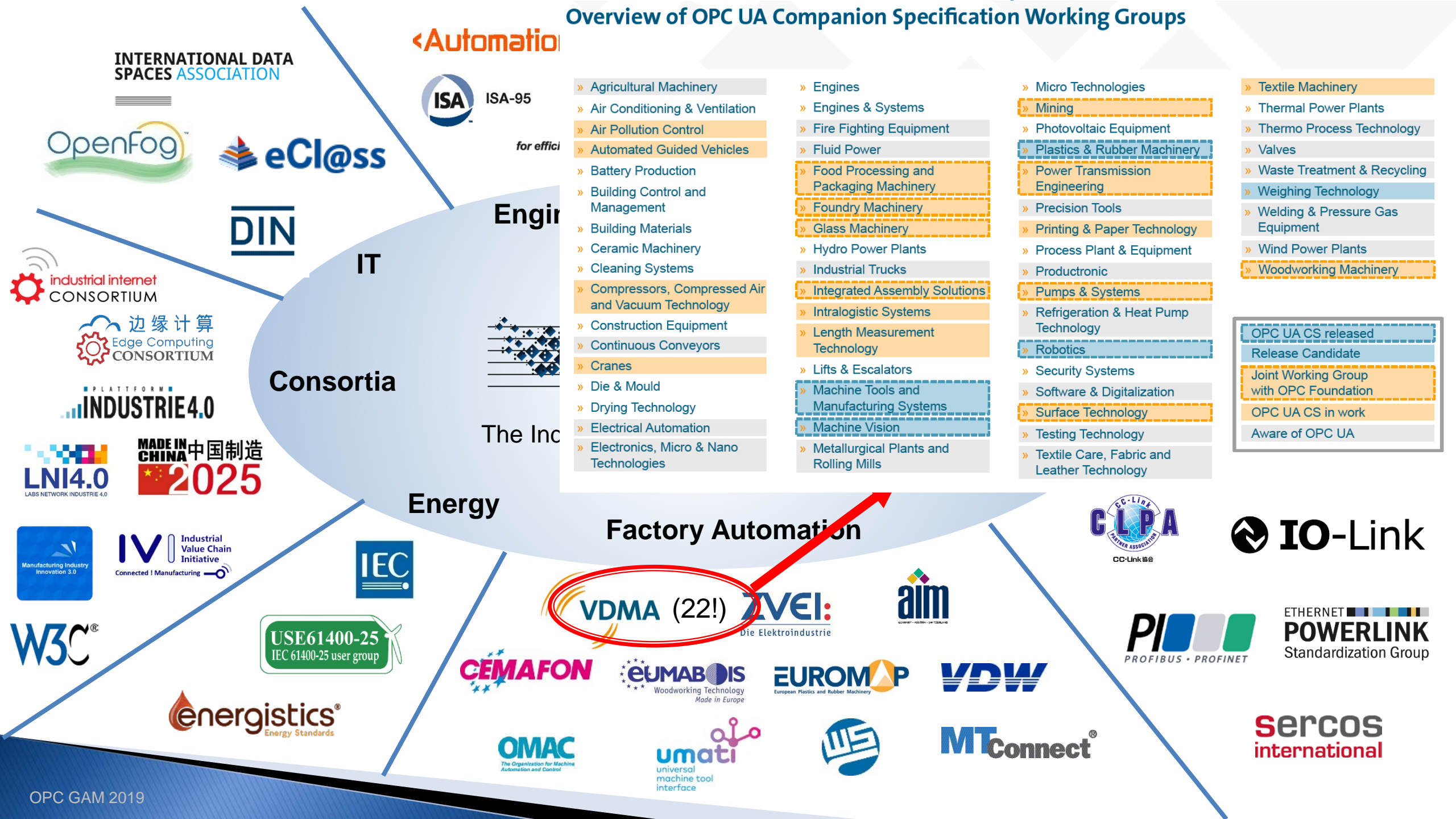
- ▶ NAMUR is an international user association of automation technology in process industries  
<https://www.namur.net/en.html>
- ▶ The NAMUR Open Architecture (NOA) concept offers possibilities to enable innovative solutions for new and existing plants: **“NOA Information Model OPC UA implementation mandatory”**



More information about NOA:  
<https://www.namur.net/en/focus-topics/namur-open-architecture/>



# Overview of OPC UA Companion Specification Working Groups



## Automation



for effici

- » 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
- » Electronics, Micro & Nano Technologies

- » Engines
- » 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
- » 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
Aware of OPC UA

**Consortia**

IT

Engin

The Inc

Energy

Factory Automation

INTERNATIONAL DATA SPACES ASSOCIATION

Openfog

eCl@ss

DIN

industrial internet CONSORTIUM

边缘计算 Edge Computing CONSORTIUM

PLATFORM INDUSTRIE 4.0

LNI 4.0 LABS NETWORK INDUSTRIE 4.0

MADE IN CHINA 中国制造 2025

IV Industrial Value Chain Initiative Connected | Manufacturing

IEC

USE61400-25 IEC 61400-25 user group

energistics Energy Standards

W3C

OMAC The Organization for Machine Automation and Control

umati universal machine tool interface

VDMA (22!)

ZVEI: Die Elektroindustrie

aim

C-Link PARTNER ASSOCIATION CC-Link 协会

CEMAFON

EUMABOIS Woodworking Technology Made in Europe

EUROMAP European Plastics and Rubber Machinery

VDW

MT Connect

IO-Link

ETHERNET POWERLINK Standardization Group

PI PROFIBUS • PROFINET

sercos international

## Overview of OPC UA in the VDMA organizations



- » 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
- » Electronics, Micro & Nano Technologies

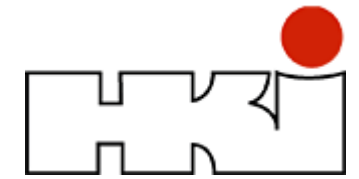
- » Engines
- » Engines & Systems
- » Fire Fighting Equipment
- » Fluid Power
- » Food Processing and Packaging Machinery
- » Foundry Machinery
- » Glass Machinery
- » Hydro Power Plants
- » Industrial Trucks
- » Integrated Assembly Solutions
- » Intralogistic Systems
- » Length Measurement Technology
- » 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

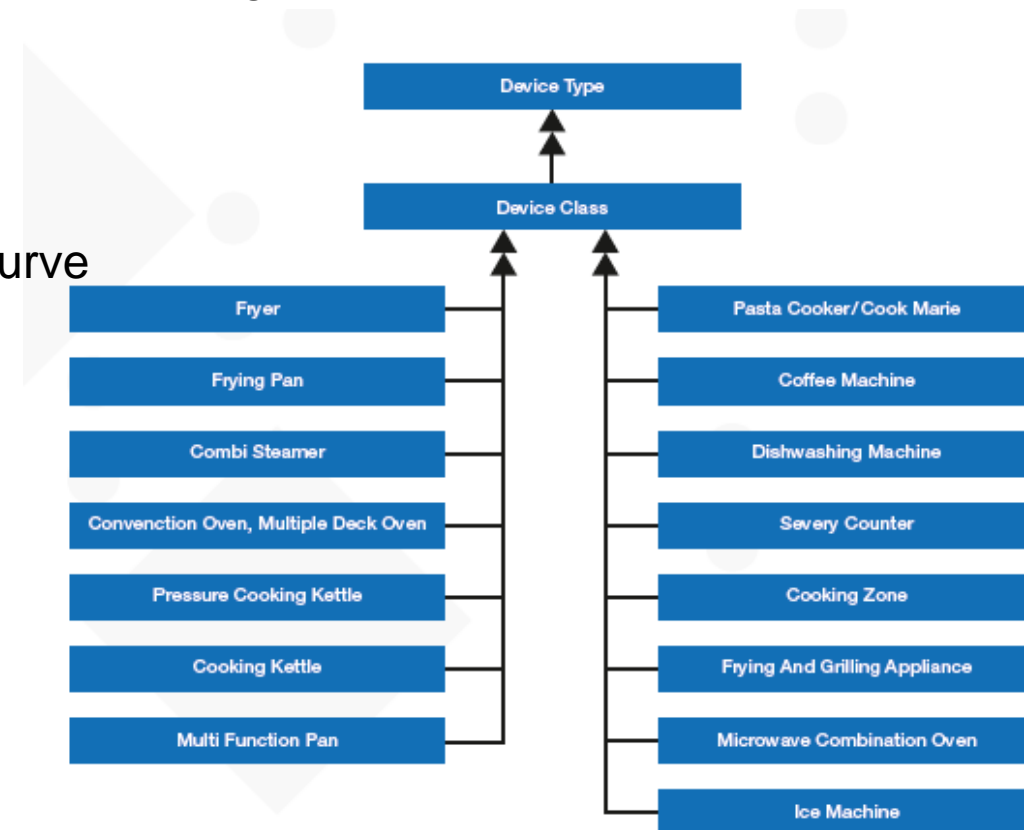
- » Textile Machinery
- » Thermal Power Plants
- » Thermo Process Technology
- » Valves
- » Waste Treatment & Recycling
- » Weighing Technology
- » Welding & Pressure Gas Equipment
- » Wind Power Plants
- » Woodworking Machinery

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

# OPC UA for Industrial Kitchen equipment



- The HKI Industrial Association for House, Heating and Kitchen Technology represents the interests of manufacturers of commercial kitchen equipment as well as those of domestic heating and cooking appliances
- Under the umbrella of the HKI Industrial Association about 50 different companies have worked together to develop a uniform and standardized communication interface for catering equipment.
- This results in a multitude of application possibilities that bring added value for the operator of industrial kitchens like:
  - Documentation and archiving of time and temperature curve
  - Monitoring and visualization of processes
  - Transmission of error and alarm function
  - Remote service





## Double tank frying station

- Capacity easily more than 30 kg/h French fries
- Innovative KCI 4.0 - Control system
- Capacitive touch screen
- Automatic lifting and lowering device for the frying basket
- Integrated fat filtration system
- 18 fully automatic frying programs for various products
- Communication Interface in accordance to DIN Spec 18898 OPC UA



# OPCF joint working group (JWG) – Definition, Criteria, How-to



Public documentation for joint working groups

<https://opcfoundation.org/about/working-groups/joint-working-groups/>

- Definition / Criteria / How to create
- Levels of adoption (specification / adoption / certification)
- List of existing groups: What / Who / Contact / Version
- Link to Release
- Traffic lamp for : Implemented / IP tested / Certified

A “joint companion specification” is not a technology of the OPC Foundation.

**OPC Foundation Joint Working Groups**

**Introduction**

OPC UA is a series of specifications providing multivendor multiplatform secure reliable information integration interoperability from the embedded world to the cloud. Key parts of OPC UA is about information modelling, and is the foundation providing a complete infrastructure to facilitate other organizations complex data modeling leveraging the OPC UA infrastructure to take advantage of the seamless interoperability.

The modelling capabilities of OPC UA are the fundamental components necessary for semantic interoperability. An increasing number of organizations created standard OPC UA information models for specific domains and/or are currently under development. These OPC UA information models are described in what is known as OPC UA companion specifications.

OPC UA companion standards address use cases and with that increase the applicability and adoption of the OPC UA technology in different verticals.

See <https://opcfoundation.org/developer-tools/specifications-unified-architecture> for released companion specifications.

The OPC Foundation has been providing support to other consortiums and standard organizations to develop the OPC UA companion specifications via an infrastructure known as joint working groups (JWG).

A “Joint Working Group (JWG)” is a working group formed between an organization (subsequently called “cooperating organization”) and the OPC Foundation. The goal of the JWG is the development of an OPC UA companion standard for use cases defined by the cooperating organization, with a compliance testing strategy to insure compliant implementations of the OPC UA companion standard.

Version 2019-02-11

Title	Active	Abstract	Contacts	Version	Status	Status Date	Implemented	IOP tested	Certification	Key Words
<b>Generic Device Models (Controller, Field Device, Process Device)</b>										
OPC Foundation: UA for Devices (DI)	Y	generic representation of devices, e.g. Field devices, controllers, robots, machine tools	Matthias Damm, chair	V1.00	Released	Dec-09				physical device, software component, functional grouping
				V1.01	Released	Jul-12				
				V1.02	Release Candidate	Jan-19				
OPC Foundation: Analyzer Devices (ADI)	Y	A unified view of analysers irrespective of the underlying device protocols. Analyzer devices are comprised of one or more analyser channels with a single address space which has its own configuration, status and control. Examples: Particle Size Monitor, Acoustic Spectrometer, Gas Chromatograph	<AskOPC>	V1.00	Released	Oct-09				
				V1.00	Released	Jan-15				
UA for 61131-3 (PLCopen)	Y	Control program, tasks, controller variables, structured data, function blocks	Stefan Hoppe, chair	V1.00	Released	March-10				PLC, Controller, Automation
				V1.01			In work			
UA Client FunctionBlocks (PLCopen)	Y	PLC controller initiates UA communication. Controller-Controller, Controller-MES, ...		V1.00	Released	Apr-14				
				V1.01	Released	Sep-16				
UA for Autoid Devices (Autoid)	Y	Identification device executing a scan, read or write process. Comprises barcode, OCR, 2D code, RFID,	info@AIM-D.de	V1.00	Released	Apr-16				



# 2019 News: Joint Working Group (JWG)

- JWG news in 2019
  - Version 1.02 of OPC UA for Devices is available as ReleaseCandidate
  - OPC Foundation & IIC Liaison Workshop February 14th, 2019 in Raleigh (NC) USA
  - Kick-Off VDW & OPCF WG “umati OPC UA JWG” February 22nd, 2019
  - Kick-Off VDMA & OPCF JWG “End-of-Arm Tools (EoAT)” February 21, 2019
  - Release Candidate (RC): OPC UA Commercial Kitchen Equipment – V1.02”
  - Kick-Off VDMA & OPCF JWG “Surface Technologies” April 1<sup>st</sup>, 2019
  - Kick-Off VDMA & OPCF JWG “Glass Industries” April 29<sup>th</sup>, 2019
  - Kick-Off VDMA & OPCF JWG “Plastics and Rubber Machinery” April 30<sup>st</sup>, 2019
  - OPCF “OPC UA Harmonization Working Group” June 19<sup>th</sup>, 2019
  - OPC UA Interoperability Workshops (IOP) Europe in July 2019
  - Release Candidate (RC): OPC UA Companion Specification for Machine Vision
  - Kick-Off - WCI & OPCF JWG “UA for ISA100 Wireless” July 10<sup>th</sup>, 2019
  - Kick-Off – WS & OPCF JWG “UA for Weihenstephan Standards” July 28<sup>th</sup>, 2019
  - Kick-Off - EUMABOIS & OPCF JWG “Woodworking Machines” Sept 30<sup>th</sup>, 2019
  - Released: OPC UA for Robotics
  - Released: OPC UA for Machine Vision
  - Released: OPC UA for Machine Tools
  - Release Candidate (RC) OPC UA Safety – Part 15 (availability soon)

# OPC Foundation: Library of Description of Industrial Things



OPC UA Companion Specs

... description of data, interfaces,  
features, behavior,

... a description of a thing.

OPC UA Companion Specifications:

"The OPC Foundation will become the world library  
for descriptions of industrial things."



# OPC-F: Activities 2019

- 23. – 24.01.2019 Lisbon The Oil & Gas Summit
- 04. – 07.02.2019 Orlando ARC Forum
- 26. – 28.02.2019 Nuremberg Embedded World
- 04. – 07.03.2019 Houston ABB Customer World
- 05. – 08.03.2019 Lyon Smart Industries Lyon
- 06. – 08-03.2019 San Diego Industry of Things World
- 14. – 15.03.2019 Redmond OPC Board Meeting
- 27. – 29.03.2019 Seoul Smart Factory Expo + Automation World
- 01. – 05.04.2019 Hanover Hannover Messe
- 01. – 03.04.2019 Pittsburgh Manufacturing & Technology 2019
- 08. – 11.04.2019 Chicago Automate
- 10. – 11.04.2019 Lyon Sido (IoT – AI – Robotics)
- 08. – 12.04.2019 San Francisco OSIsoft PI World San Francisco 2019
- 18.04.2019 Beijing OPC Day Beijing sponsored by Microsoft
- 25.04.2019 Austin FCG End Customer Event
- 06. – 09.05.2019 Houston OTC Offshore Technology Conference
- 07. – 09.05.2019 "Fundamentals of Industrial Automation, Instrumentation, and Controls"
- 13. – 16.05.2019 CA IoT World



# OPC-F: Activities 2019

- 09.05.2019 Beijing OPC China Roadshow Tour
- 11.05.2019 Guangzhou OPC China Roadshow Tour
- 14. – 15.05.2019 Chicago Automation Conference
- 20. – 23.05.2019 Austin NI Week
- 09-14.06.2019 Dallas Honeywell User Group
- 21. – 22.05.2019 Sitges ARC Industry Forum Europe 2019
- 23.05.2019 Dongguan OPC China Roadshow Tour
- 27.05.2019 Shenzhen OPC China Roadshow Tour
- 04-06.06.2019 Johannesburg Africa Automation Fair
- 18. – 19.06.2019 Chicago Industrial IoT
- 19. – 20.06.2019 Amsterdam IoT Tech Expo
- 25. – 27.06.2019 San Jose Sensors Expo & Conference
- 01. – 02.07.2019 Berlin Security of Things World USA
- 09.07.2019 Tokyo ARC Industry Forum Japan 2019
- 03.07 Shanghai OPC Day Shanghai hosted by Huawei, China
- 04.07 Nagoya OPC Day Nagoya hosted by Mitsubishi, Japan
- 05.07 Seoul OPC Day Seoul, Korea
- 08.07 Taipei OPC Day Taipei, Taiwan hosted by Microsoft
- 09.07 Shenzhen OPC Day Shenzhen hosted by Foxconn, China
- 10.07 Singapore OPC Day Singapore sponsored by Beckhoff
- 11. – 12.07.2019 Singapore Industry of Things World Asia
- 01.09.2019 Chicago Smart Industry



# OPC-F: Activities 2019

- 11. – 12.09.2019 Louisville Digital Industry USA (by Hanover Fairs USA)
- 15. – 17.09.2019 Berlin Industry of Things World Europe
- 16. – 21.09.2019 Hannover EMO
- 17. – 21.09.2019 Shanghai IAS
- 18.09.2019 Shanghai OPC China Roadshow Tour
- 23. – 25.09.2019 Las Vegas PackExpo
- 30.09. – 01.10.2019 San Diego Security of Things World USA
- 02.10.2019 Bologna OPC Day Europe
- 08.10.2019 Chicago OPC Road Show
- 09.10.2019 Detroit OPC Day Automotive
- 10.10.2019 Toronto OPC Road Show
- 15.10.2019 Philadelphia OPC Road Show
- 22.10.2019 Greenville OPC Road Show
- 22. – 24.10.2019 Singapore Industrial Transformation ASIA-PACIFIC
- 24.10.2019 Houston OPC Road Show
- 29. – 30.10.2019 Darmstadt RFID & Wireless IoT tomorrow
- 05.11.2019 Oslo OPC Day Norway
- 06.11.2019 Helsinki OPC Day Finland
- 07. – 08.11.2019 Boston Industry of Things USA East
- 06.11.2019 Boston OPC Road Show
- 15.11.2019 Paris OPC Day France
- 26. – 28.11.2019 Nuremberg SPS IPC Drives
- 12.12.2019 Tokyo OPC Day Japan



# Seminar Tours North America & Asia 2019

OPC UA: Industrial Interoperability for IIoT and Industrie4.0  
From Sensor to Cloud

OPC Seminar Tour 2019

[More Details](#)

HOSTED BY:



BECKHOFF



Microsoft



SPONSORED BY:



REDMOND

CHICAGO

TORONTO

DETROIT

BOSTON

PHILADELPHIA

PALO ALTO

GREENVILLE

AUSTIN

HOUSTON

OPC UA: Industrial Interoperability for IIoT and Industrie4.0 – From Sensor to Cloud

OPC Seminar Tour 2019

[More Details](#)

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SEOUL

NAGOYA

SHANGHAI

TAIPEI

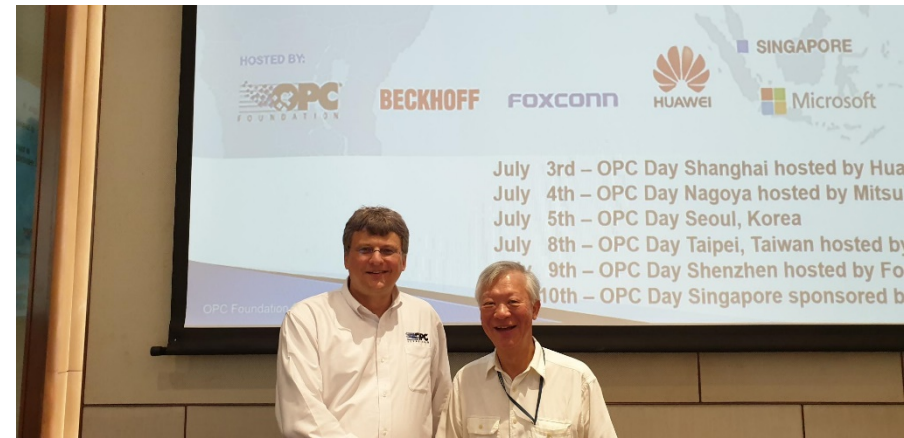
SHENZHEN

SINGAPORE

- Oct 8th : OPC Chicago hosted by Microsoft
- Oct 9th : OPC UA Day Automotive Detroit
- Oct 10th : OPC Day Toronto sponsored by Beckhoff
- Oct 15th : OPC Day Philadelphia
- Oct 22nd : OPC Day Greenville
- Oct 24th : OPC Day Houston
- Nov 6th : OPC Day Boston/Burlington hosted by Microsoft

- July 3rd – OPC Day Shanghai hosted by Huawei, China
- July 4th – OPC Day Nagoya hosted by Mitsubishi, Japan
- July 5th – OPC Day Seoul, Korea
- July 8th – OPC Day Taipei, Taiwan hosted by Microsoft
- July 9th – OPC Day Shenzhen hosted by Foxconn, China
- July 10th – OPC Day Singapore sponsored by Beckhoff

# Impressions – Asia with HIGH interest



**OPC Day Shenzhen hosted by Foxconn Fii, China**

**OPC Day Nagoya hosted by Mitsubishi, Japan**



**OPC Day Taipei, Taiwan hosted by Microsoft**

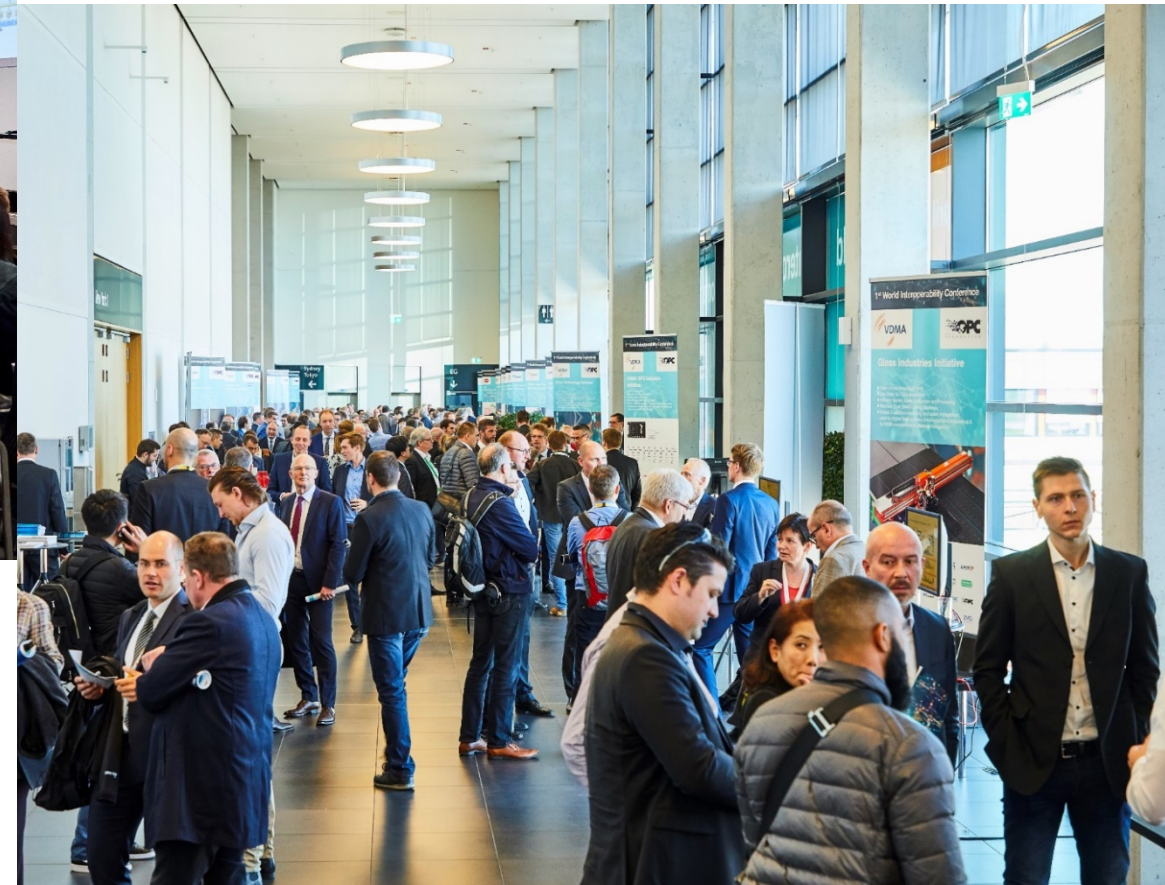


# Impressions – Modeling is key: Interoperability Conference



Interoperability Conference World 2019:

- 32 Groups – 332 participants
- Chance to learn about collaboration and modeling, for networking
- Conference No. 2: on Monday April 20th, 2020



## Presenting Organizations





# Impressions – End users hosting OPC conference days

- Organizers
  - AIDA: Audi, BMW, Porsche, Volkswagen
  - OPC Foundation
  - VDMA
- Hosted by Volkswagen in Wolfsburg
- 306 participants
- 19 sponsors



9:00–16:30 Uhr  
Volkswagen  
Mobile Life Campus  
(AutoUNI)  
Hermann-Münch-Str. 1  
38440 Wolfsburg  
Germany

**OPC UA**  
The Industrial Interoperability Standard

Veranstaltung

Ausrichter: Volkswagen, Audi, BMW, Mercedes-Benz, Porsche, Opel

AIDA: Automobilindustrie Deutscher Automobilhersteller

VDMA: Fabrik Automation

OPC FOUNDATION: Industrielle Interoperabilität

Marktplatz

BECKHOFF, COPAGATA, Fraunhofer, HHS, ICONICS, Leuze electronic, Microsoft, PHOENIX CONTACT, PI, INDUSTRIE 4.0, PROSYS, SAP, SIEMENS, softing, Automation, Volkswagen

# Impressions: OPC-F at Automate, Chicago 08-11.April 2019

OPC Foundation booth

- Booth: 9153 (size: 20ft \* 30ft)

- 4 partner pods:
  - ICONICS, Kepware, Utthunga
  - Microsoft Dashboard for Robotics
- Topics
  - OPC UA and FLC initiative
  - Robotic information model
  - PLCopen OPC UA activities



# Recap: OPC Foundation at SPS 2014 Press Conference

- ▶ At the request of the OPC Board, Stefan Hoppe is now active worldwide for the OPC Foundation. Thomas Burke says, “Stefan Hoppe has joined the OPC Foundation as an important catalyst and organizational accelerant for this important role as THE technical and marketing evangelist. Stefan will be assuming many roles as he drives and provides the necessary leadership to enable OPC to be widely accepted and an integral part of everything related to the Internet of things and Industrie 4.0, by collaborating with numerous organizations.”
- ▶ Stefan Hoppe responds supportively to these goals, “I am happy about the additional adaptation: Mitsubishi, National Instruments, and IBH Softec now offer their products with an OPC UA interface and with C-Labs a first cloud-relay is available.

**But the real goal should be this: OPC UA becomes the worldwide accepted standard for the industrial IoT in the next 3-5 years.**

The interoperability standard coming from the world of automation will influence the IT world”.

**MISSION COMPLETE**

# OPCF Marketing - Summary

- ▶ Major trade shows
  - Big booths, bigger each year, more sponsors, press conferences, presentations
  - Tactical marketing: Increased participation in local events and smaller trade shows (E-World, Embedded, etc.)
  - Regional tactics: Automate, IMTS (US), Singapore (ITAP)
- ▶ Press Releases to announce specification releases and other highlights
- ▶ Each 6-10 Seminar Tours in regions (US, Asia)
  
- ▶ Web
- ▶ Newsletter: 4 per year
- ▶ “Monthly Newsletter”: ~ 12 to the OPC data base
- ▶ Social Media:
  - Twitter, LinkedIn (for events), YouTube: (Nearly) all collaborations groups - all technologies
  - New: OPCF Podcast
- ▶ Magazine articles – combined with print advertising
- ▶ Brochures (5 languages today)

# OPCF Marketing - Upcoming

## ▶ Additional Marketing tactics

- New: OPC Foundation goes Podcast
  - Series of topics (like list of articles) – streamed via Spotify and iTunes, 1 per month
- Series of articles to explain OPC UA to address specific NA – but use it in general also
  - Plan for 25 articles, approved by MCB
- Series of Webinars (based on the list of articles): All collaboration partners & technology
- OPC UAcademics
  - Platform for slides, papers for lessons, practical work
  - Strategic analysis of target topics (mechanical and electrical engineering, computer science, ...)
  - Strategic analysis of target countries and their Universities

# Information:

- ▶ New edition v10 : “Interoperability for Industrie 4.0 and the Internet of Things”  
<https://opcfoundation.org/resources/brochures/>

Edition „2020“: Extended with

- ▶ New: OPC History
- ▶ Updated: UA Technology article like PubSub integrated into OPC UA
- ▶ New: FLC (2 pages)
- ▶ New: Collaborations (released once)

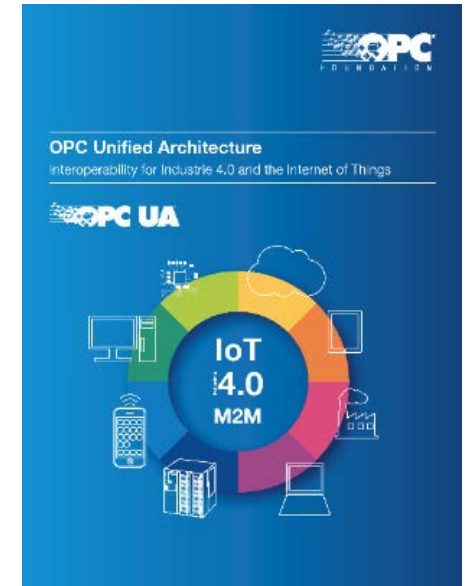
- ▶ OPC goes Podcast  
<https://opcfoundation.org/podcast/>

- ▶ iTunes / Spotify  
Search for „OPC Foundation“

iTunes <https://apple.co/2CzTGsL>  
Spotify <https://spoti.fi/2Kax46k>



Updated !



# Call for action / Events 2020

- Events 2020 are online listed  
<https://opcfoundation.org/news-events/events/>
- Demo wall  
Your device is not on the wall? (means no reaction from your company...)  
PDF Call for sponsor:  
<https://opcfoundation.org/about/advertising/>
- Sponsor at Seminar Tour  
Act as sponsor on seminar tours?  
<https://opcfoundation.org/about/advertising/>
- Any questions on sponsoring?  
Feel free and ask! [office@opcfoundation.org](mailto:office@opcfoundation.org)



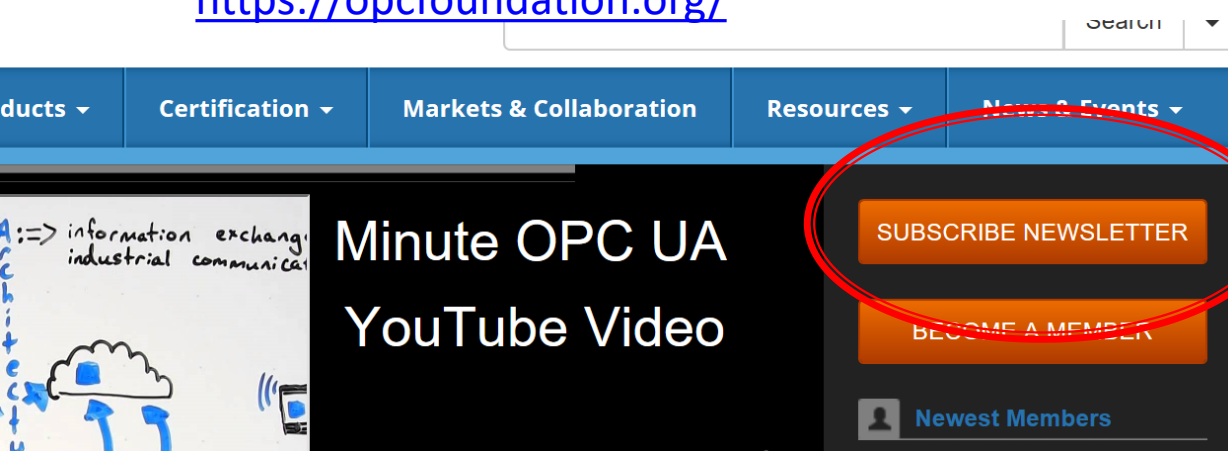
# Thank you!

Questions?



... send email to  
[Stefan.hoppe@opcfoundation.org](mailto:Stefan.hoppe@opcfoundation.org)

Looking for more information?  
<https://opcfoundation.org/>



The screenshot shows the OPC Foundation website's navigation menu with the following items: Products, Certification, Markets & Collaboration, Resources, and News & Events. Below the menu is a search bar. In the sidebar, there are three orange buttons: 'SUBSCRIBE NEWSLETTER' (circled in red), 'BECOME A MEMBER', and 'Newest Members'.

Minute OPC UA  
YouTube Video

