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
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
- Tools and code examples for faster, easier adoption (C/C++, C# .NET Standard, Java)
- Certification: OPC Labs open to everyone

Ecosystem with toolkits and education
- Modern IPR policy

Organizational Overview

Membership: 737 (Dec 03rd, 2019)

2019 Board of Directors
Microsoft Honeywell Rockwell
SAP Yokogawa Schneider
Siemens Mitsubishi ABB
Beckhoff Ascolab ABB

https://opcfoundation.org
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
- Murrelektronic
- NIKON Corp.
- Okuma Corp.
- Persistent Systems
- TÜV SÜD
- Weidmüller
“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

<table>
<thead>
<tr>
<th>Total Income</th>
<th>$ 5,000,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Membership Dues</td>
<td>$ 2,728,000</td>
</tr>
<tr>
<td>- Tradeshow, Sponsoring</td>
<td>$ 460,000</td>
</tr>
<tr>
<td>- Workshop, Tools</td>
<td>$ 161,000</td>
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<tr>
<td>- Income FLC</td>
<td>$ 1,700,000</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Total Expenses</th>
<th>$ 3,600,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Program Services (Marketing, Technical, ..)</td>
<td>$ 1,500,000</td>
</tr>
<tr>
<td>- Support Services (Global)</td>
<td>$ 1,600,000</td>
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<tr>
<td>- FLC Services</td>
<td>$ 500,000</td>
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</table>

<table>
<thead>
<tr>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>Total Income</td>
<td>$ 5,000,000</td>
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<tr>
<td>Total Expense</td>
<td>$ 3,600,000</td>
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<tr>
<td>FLC Savings</td>
<td>$ 1,200,000</td>
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<tr>
<td>Net Income</td>
<td>$ 200,000</td>
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</tbody>
</table>

Numbers based on forecast.
Result Board Election

Michael Bryant
Secretary OPC Foundation
michael.bryant@opcfoundation.org
OPC Foundation Election

OPC Board Members:

- Russ Agrusa – ICONICS
- Matthias Damm – ascolab
- Bernhard Eschermann, ABB
- Thomas Hahn – Siemens
- Stefan Hoppe – Beckhoff
- Fabrice Jadot, Schneider Electric
- Ziad Kaakani – Honeywell
- Veronika Schmid-Lutz – SAP
- Shinji Oda – Yokogawa
- Matt Vasey – Microsoft
- Jürgen Weinhofer, Rockwell Automation

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

<table>
<thead>
<tr>
<th>Years</th>
<th>Name</th>
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<tbody>
<tr>
<td>1996 – 1998</td>
<td>David Rehbein</td>
</tr>
<tr>
<td>1998 – 2000</td>
<td>Dr. Gil Pareja</td>
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<tr>
<td>2000 – 2018</td>
<td>Thomas Burke</td>
</tr>
<tr>
<td>2018 – present</td>
<td>Stefan Hoppe</td>
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</tbody>
</table>

### Board of Directors

<table>
<thead>
<tr>
<th>Name</th>
<th>Company</th>
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</thead>
<tbody>
<tr>
<td>Russ Agrusa</td>
<td>ICONICS → Mitsubishi Electric</td>
</tr>
<tr>
<td>Matthias Damm</td>
<td>ascolab</td>
</tr>
<tr>
<td>Thomas Hahn</td>
<td>Siemens (Officer: Vice President)</td>
</tr>
<tr>
<td>Stefan Hoppe</td>
<td>BECKHOFF (Officer: President)</td>
</tr>
<tr>
<td>Ziad Kaakani</td>
<td>Honeywell (Officer: Treasurer)</td>
</tr>
<tr>
<td>Shinji Oda</td>
<td>Yokogawa</td>
</tr>
<tr>
<td>Veronika Schmid-Lutz</td>
<td>SAP (Officer: Chairwoman)</td>
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<tr>
<td>Matt Vasey</td>
<td>Microsoft</td>
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<tr>
<td>Juergen Weinhofer</td>
<td>Rockwell Automation</td>
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<tr>
<td>Bernhard Eschermann</td>
<td>ABB</td>
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<tr>
<td>Fabrice Jadot</td>
<td>Schneider Electric</td>
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</tbody>
</table>

Oct 2018 : Stefan Hoppe & Tom Burke
Voting Members
- Corporate Members
- End-User Members

Other Members
- Non-Voting Members
- Logo Members

Designated Member Representatives
nominate and elect Directors for 2 years

Board of Directors
Nominate candidates for election
Extend / reduce number of seats

Officers
Elect

Technical Control Board (TCB)
Marketing Control Board (MCB)

Technical Advisory Council (TAC)

Regional Marketing Teams

Technical Working Groups

Daily Operations

Send member representatives to working groups and marketing teams

1

Report / Control

Report / Control

Report / Control

• Starts new working groups
• Review and release of specifications developed in technical working groups
OPC Foundation: Organization

Find more information here:

https://opcfoundation.org/

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 Vassey – Microsoft
Bernhard Eschermann – ABB
Fabrice Jadot – Schneider Electric
Juergen Weinhofen – 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 Deibelbacher, OPC Foundation
Director of Compliance: Paul Hunkar, DS Interoperability
Chief Technology Officer: Jim Luth, Schneider-Electric
Principal Software and Security Architect: Randy Armstrong, Spathawk 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
Agenda

- 2019 Releases
- 2019 Release Candidates
- 2019 New working groups and sub-groups
- New online reference and document numbering
- Technology Roadmap
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/
Amendment 1 – AnalogItem Types: Enhances the UA DataAccess information model defined in Part 8 by adding additional sub-types of DataItemType.

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 eCl@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: EngineeringUnits and Currency
- OPC 10000-19 - Part 19: Dictionary Reference
- OPC 10000-17 - UA Specification Part 17 - Alias Names

Specification Release Candidates for Review
• 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

Sub-Groups:
- Base Network Model
- Information Model Best Practice

OPC UA Harmonization WG

Sub-Groups:
- MDIS
- IO-Link
- AutoID

VDMA
- Robotics
- Vision Systems
- EUROMAP

OPC UA for Machinery
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
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
- Pub/Sub Prototyping – Matthias.Damm@ascolab.com
- TSN – Alexander.Ziegler@siemens.com
- Semantic Validation - Mathias.Maurmaier@siemens.com

Email Jim.Luth@SE.com to join the main group or any subgroup.
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
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
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
Use Cases (main focus)
- Controller-to-Controller (C2C)
- Controller-to-Device (C2D)

Communication Models
- Peer-to-Peer
- I/O Style & Autonomous Publisher

PubSub Mechanisms
- Single-/Multi-Subscriber
- Uni-/Multicast

Transport Protocols
- Ethernet (non-TSN, via UDP)
- Ethernet TSN (direct layer 2 mapping)

Diagnostics
- Basic (device & network)
- Extended (device & network) Application alarms

Device Information Model
- Discoverable Identity & capabilities (for controllers)
- Discoverable Identity & capabilities (for controllers and devices)
# Roadmap Field Level Communications Initiative (2)

<table>
<thead>
<tr>
<th></th>
<th>Specification Version V1</th>
<th>Specification Version V2</th>
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</thead>
<tbody>
<tr>
<td><strong>Use Cases</strong></td>
<td>Controller-to-Controller (C2C)</td>
<td>Controller-to-Controller (C2C) Controller-to-Device (C2D)</td>
</tr>
<tr>
<td><strong>Safety</strong></td>
<td>Client-Server &amp; PubSub</td>
<td>Client-Server &amp; PubSub Parametrization</td>
</tr>
<tr>
<td><strong>Security</strong></td>
<td>Adoption of existing OPC UA Security mechanisms</td>
<td>Adoption of existing OPC Security mechanisms + extensions (if needed)</td>
</tr>
<tr>
<td><strong>Configuration</strong></td>
<td>Online &amp; Offline</td>
<td>Online &amp; Offline</td>
</tr>
<tr>
<td></td>
<td>Shallow TSN Configuration</td>
<td>Deep TSN Configuration</td>
</tr>
<tr>
<td><strong>Conformance Testing</strong></td>
<td>Test plan for controllers</td>
<td>Test plan for controllers &amp; devices</td>
</tr>
<tr>
<td><strong>Timeline</strong></td>
<td>Release candidate (April 2020)</td>
<td></td>
</tr>
</tbody>
</table>
Certification
General Assembly Update

Paul Hunkar
Director of Compliance & Certification
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
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.

- **Profiles**
  - A Profile is all inclusive, in that the Profile is implemented no additional functionality would be required to have a running application.
  - The name of the Profile should end with **Facet** or **Profile**.

- **Facets**
  - A Facet is a grouping of functionality that must also be paired with other Facets to create a running Server or Client. A Profile is all inclusive, in that a running application does not require additional functionality.

- **ConformanceUnits**
  - A 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.

- **Short Names**
  - A short name is required for each companion specification to assure uniqueness of string identifiers. It precedes the name of profiles and conformance units and is included in URIs and URLs defined in a companion specification. A short name is all caps if an acronym, otherwise camel case. Exception if the short name is a trademark. Use trademark casing.
Companion Specification: Test Case Definition

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
Certification Website

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

OneSubsea opquasrv

Member: OneSubsea GmbH
Product website: www.onesubsea.sib.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 opquasrv 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.

1905CE0089

Certified Profile: Embedded UA Server
Additional Policies: Data Access Server
User Identity Tokens: User Token - User Name
Certificate Number: 1905CE0089
Certification Date: 05/21/2019
Expiration: 05/31/2022
CTT Version: 1.93.341.309
Product Name: OneSubsea opquasrv
Product Version: 1.2.0
Product MD5 Hash: 5b3c108bc9b4c4c6d91c17104af4d553c3d6e41053

Companion Facets: 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](https://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](https://www.opengroup.org/open-group-open-process-automation-forum-launches-o-pas-standard-1)

San Francisco, California – February 5th, 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](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/](https://www.namur.net/en/focus-topics/namur-open-architecture/)
## Overview of OPC UA in the VDMA organizations

<table>
<thead>
<tr>
<th>Category</th>
<th>Subcategories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Machinery</td>
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<tr>
<td>Air Conditioning &amp; Ventilation</td>
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<tr>
<td>Air Pollution Control</td>
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<tr>
<td>Automated Guided Vehicles</td>
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<td>Battery Production</td>
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<td>Building Control and Management</td>
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<td>Building Materials</td>
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<td>Ceramic Machinery</td>
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<td>Cleaning Systems</td>
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<td>Compressors, Compressed Air and Vacuum Technology</td>
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<td>Construction Equipment</td>
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<td>Continuous Conveyors</td>
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<td>Cranes</td>
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<td>Die &amp; Mould</td>
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<td>Drying Technology</td>
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<td>Electrical Automation</td>
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<td>Electronics, Micro &amp; Nano Technologies</td>
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<td>Engines</td>
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<td>Engines &amp; Systems</td>
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<td>Fire Fighting Equipment</td>
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<td>Fluid Power</td>
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<td>Food Processing and Packaging Machinery</td>
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<td>Foundry Machinery</td>
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<td>Glass Machinery</td>
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<td>Hydro Power Plants</td>
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<td>Industrial Trucks</td>
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<td>Integrated Assembly Solutions</td>
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<td>Intralogistic Systems</td>
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<td>Length Measurement Technology</td>
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<td>Lifts &amp; Escalators</td>
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<td>Machine Tools and Manufacturing Systems</td>
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<td>Machine Vision</td>
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<td>Metallurgical Plants and Rolling Mills</td>
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<td>Micro Technologies</td>
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<td>Mining</td>
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<td>Photovoltaic Equipment</td>
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<td>Plastic &amp; Rubber Machinery</td>
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<td>Power Transmission Engineering</td>
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<td>Precision Tools</td>
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<td>Printing &amp; Paper Technology</td>
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<tr>
<td>Process Plant &amp; Equipment</td>
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<td>Pumps &amp; Systems</td>
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<td>Refrigeration &amp; Heat Pump Technology</td>
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<td>Robotics</td>
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<td>Security Systems</td>
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<tr>
<td>Software &amp; Digitalization</td>
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<tr>
<td>Surface Technology</td>
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<tr>
<td>Testing Technology</td>
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<tr>
<td>Textile Care, Fabric and Leather Technology</td>
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<tr>
<td>Textile Machinery</td>
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<tr>
<td>Thermal Power Plants</td>
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<tr>
<td>Thermo Process Technology</td>
<td></td>
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<tr>
<td>Valves</td>
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<td>Waste Treatment &amp; Recycling</td>
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<td>Woodworking Machinery</td>
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<td>Construction Equipment</td>
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<td>Continuous Conveyors</td>
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<td>Cranes</td>
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<td>Die &amp; Mould</td>
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<td>Drying Technology</td>
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<td>Electrical Automation</td>
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<td>Electronics, Micro &amp; Nano Technologies</td>
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<td>Engines</td>
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<td>Fire Fighting Equipment</td>
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<td>Fluid Power</td>
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<td>Food Processing and Packaging Machinery</td>
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<td>Foundry Machinery</td>
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<td>Glass Machinery</td>
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<td>Hydro Power Plants</td>
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<td>Industrial Trucks</td>
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<td>Integrated Assembly Solutions</td>
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<td>Length Measurement Technology</td>
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<td>Lifts &amp; Escalators</td>
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<td>Machine Tools and Manufacturing Systems</td>
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<td>Machine Vision</td>
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<td>Metallurgical Plants and Rolling Mills</td>
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<td>Mining</td>
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<td>Photovoltaic Equipment</td>
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<td>Plastic &amp; Rubber Machinery</td>
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<td>Power Transmission Engineering</td>
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<td>Precision Tools</td>
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<td>Printing &amp; Paper Technology</td>
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<td>Process Plant &amp; Equipment</td>
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<td>Productronic</td>
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<td>Pumps &amp; Systems</td>
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<td>Refrigeration &amp; Heat Pump Technology</td>
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<td>Robotics</td>
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<td>Security Systems</td>
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<td>Software &amp; Digitalization</td>
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<td>Surface Technology</td>
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<td>Testing Technology</td>
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<td>Textile Care, Fabric and Leather Technology</td>
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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.
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 1st, 2019
  - Kick-Off VDMA & OPCF JWG “Glass Industries” April 29th, 2019
  - Kick-Off VDMA & OPCF JWG “Plastics and Rubber Machinery” April 30th, 2019
  - OPCF “OPC UA Harmonization Working Group” June 19th, 2019
  - OPC UA Interoperability Workshops (IOP) Europe in July 2019
  - Kick-Off - WCI & OPCF JWG “UA for ISA100 Wireless” July 10th, 2019
  - Kick-Off – WS & OPCF JWG “UA for Weihenstephan Standards” July 28th, 2019
  - Kick-Off - EUMABOIS & OPCF JWG “Woodworking Machines” Sept 30th, 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 Specifications:

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

OPC UA Companion Specs

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

... a description of a thing.
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
- 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 & Wiresless 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 Seminar Tour 2019

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 Nagoya hosted by Mitsubishi, Japan

OPC Day Shenzhen hosted by Foxconn Fii, China

OPC Day Taipei, Taiwan hosted by Microsoft
Impressions – **Modeling is key**: 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
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
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”.
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, LinkIn (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/](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/](https://opcfoundation.org/podcast/)

- iTunes / Spotify
  Search for „OPC Foundation“
  - iTunes [https://apple.co/2CzTGsL](https://apple.co/2CzTGsL)
  - Spotify [https://spoti.fi/2Kax46k](https://spoti.fi/2Kax46k)
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
Thank you!

Questions?

... send email to Stefan.hoppe@opcfoundation.org

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