Dr. Alexander Broos, VDW
The Global Production Language Event
2020-11-10
**What is umati?**

*umati* is an alliance of companies from the machine building industries and software suppliers

- who work together to comprehensively bring a common interface concept based on OPC UA to the market (*ecosystem*)
- who jointly reach out to involve end customers and operators worldwide (*global community*)
- who provide a common user benefit (*plug & play*)
- who reliably prove this user benefit (*live demonstration, test, certification, label*)
- who jointly carry out marketing and public relations work for this purpose (*central organization*)
Solution (1)

Communication technology and basic functionalities universal with open options
→ **HOW to communicate**

„speak the same language“
Solution (1)

Communication technology and basic functionalities universal with open options
→ HOW to communicate
„speak the same language“

OPC UA for Robotics
Part 1: Vertical Integration

Companion Specifications defining contents for different applications
→ WHAT to communicate
„use the same dictionary“
Multitude of OPC UA activities within VDMA, the Mechanical Engineering Association

- Additive Manufacturing
- Agricultural Machinery
- Air Conditioning & Ventilation
- Air Pollution Control
- Automated Guided Vehicles
- Battery Production
- Building Control and Management
- Building Materials
- Ceramic Machinery
- Cleaning Systems
- Compressors, Compressed Air and Vacuum Technology
- Construction Equipment
- Continuous Conveyors
- Cranes
- Die & Mould
- Drying Technology
- Electronics, Micro & New Energy Production Technologies
- Electrical Automation
- Engines & Systems
- Fire Fighting Equipment
- Fluid Power
- Food Processing and Packaging Machinery
- Foundry Machinery
- Glass Machinery
- Hydro Power Plants
- Industrial Trucks
- Integrated Assembly Solutions
- Intralogistic Systems
- Lasers and Laser Systems for Material Processing
- Length Measurement Technology
- Lifts & Escalators
- Machine Tools and Manufacturing Systems
- Machine Vision
- Metallurgical Plants and Rolling Mills
- Micro Technologies
- Mining
- Photovoltaic Equipment
- Plastics & Rubber Machinery
- Power Transmission Engineering
- Precision Tools
- Printing & Paper Technology
- Process Plant & Equipment
- Productronic
- Pumps & Systems
- Refrigeration & Heat Pump Technology
- Robotics
- Security Systems
- Software & Digitalization
- Surface Technology
- Testing Technology
- Textile Care, Fabric and Leather Technology
- Textile Machinery
- Thermal Power Plants
- Thermo Process Technology
- Valves
- Waste Treatment & Recycling
- Weighing Technology
- Welding & Pressure Gas Equipment
- Wind Power Plants
- Woodworking Machinery

OPC UA CS released
Release Candidate
Joint Working Group with OPC Foundation
OPC UA CS in work
Aware of OPC UA
Multitude of OPC UA activities within VDMA, the Mechanical Engineering Association

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- Air Pollution Control
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- Electrical Automation
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- Fire Fighting Equipment
- Fluid Power
- Food Processing and
- Metallurgical Plants and Rolling Mills
- Micro Technologies
- Mining
- Photovoltaic Equipment
- Textile Care, Fabric and Leather Technology
- Textile Machinery
- Thermal Power Plants
- Thermo Process Technology
- Drying Technology
- Electronics, Micro & New Energy Production Technologies
- Machine Tools and Manufacturing Systems
- Machine Vision
- Software & Digitalization
- Surface Technology
- Testing Technology
- Development in future based on harmonized „OPC UA for machinery“ (OPC 40 001-1)
  - contents to be identical for all CSs
  - Part 1: machine identification
  - Published 09/2020

2020-11-10  umati  |  Connecting the World of Machinery  |  The Global Production Language Event
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Communication technology and basic functionalities universal with open options
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+  

Companion Specifications defining contents for different applications
→ **WHAT to communicate**

„use the same dictionary“

= semantic interoperability

„understand each other“
Solution (1)

Communication technology and basic functionalities universal with open options
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Companion Specifications defining contents for different applications
→ **WHAT to communicate**

„use the same dictionary“

= semantic interoperability

„understand each other“

**BUT**

→ Standardization leaves room for interpretation
→ not enough to penetrate the global market!
Solution (2): Plug and Play Powered by a Global Community

Communication technology and basic functionalities universal with open options → **HOW to communicate**

Companion Specifications defining contents for different applications → **WHAT to communicate**

= semantic interoperability
Solution (2):
Plug and Play Powered by a Global Community

Communication technology and basic functionalities universal with open options
→ **HOW to communicate**

![OPC UA](image)

![VDMA](image)

**OPC UA for Robotics**
Part 1: Vertical Integration
Release 2.00

Companion Specifications defining contents for different applications
→ **WHAT to communicate**

& = semantic interoperability

Plug & play
Identical Implementation of Companion Specifications for the machinery sector
Solution (2): Plug and Play Powered by a Global Community

Communication technology and basic functionalities universal with open options → **HOW to communicate**

Companion Specifications defining contents for different applications → **WHAT to communicate**

**Plug & play**
Identical Implementation of Companion Specifications for the machinery sector

**Global community**
Promoting the use of common standards

 semantic interoperability
Bringing Machine Builders and Users Together

Machine Builders
- Associations
- Working Groups

Best Practices
Lessons learned

Joint promise: „Plug & play“

Agreement on identical implementation

International acceptance

Users
- Various Sectors
- Multiple Machinery

Joint proof of "Functionality" in showcase

Feedback from users

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International acceptance
umati uses ("endorses") several OPC UA Companion Specifications (which can be used worldwide free of charge)

- umati integrates these CS into a common "framework", i.e. the communication specifications are standardized

- Communication specifications are set up on the OPC UA standard as far as possible. Where this is not possible because they do not yet exist or because they are not yet suitable for industrial use from the point of view of mechanical engineering, own specifications will be established (which can be replaced by more advanced standards at a later date)

- This does not affect the independent development of sector-specific standards, but will influence the necessary harmonisation in the medium term through feedback from the market
umati Partners Benefits

- Save cost and effort, improve their products, and are prepared for the future by using reliable, open interfaces that are approved by customers and the community.
- Prove the connectivity of their products through the umati logo.
- Have easier access to their customers.
- Benefit from market stimulation through strong marketing with high visibility.
- Be part of a global community for the industry by the industry.
- Have access to exclusive information and tools.
- Demonstrate the user experience „plug and play“ e.g. by taking part in demonstrations at trade fairs.
umati Resources for a Live Demonstration

- Provide an „user experience“ for data flow
- Have an open, common set-up to which interested participants can connect
- Demonstrate that „criss-cross connectivity“ can be realized even at trade show conditions
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EMO Hannover 2019
(world’s largest metalworking trade fair)
- 110 machine tools connected with
- 28 software services
- under trade show conditions
- based on OPC UA Client Server via VPN
- without any direct interaction between interacting partners
- stable connection with data hub
What’s next?

- No umati live demonstrations in 2020 up to now due to SARS-CoV2-Pandemic
- Next showcases foreseen:
  - „Virtual“ demonstration (December 2020)
  - METAV 2020 reloaded (Metalworking Machine Tool Show, Dusseldorf, Germany) in March 2021
  - Hannover Fair International in April 2021
- Integration of more technologies (plastics, robotics, woodworking, vision) in progress

**BE PART OF IT!**

The umati community is open for new partners.
Contact us at info@umati.org
Need more info…?

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