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Robotics

## VDMA OPC Robotics initiative: making industrial robots ready for the digital production

- **Part 1 of the OPC UA Robotics Companion Specification – Released.**
- **Standardization of the interface for Industrial Robots enables seamless communication.**

Frankfurt, 3 September 2019 – Industrial robots are the central components of digital and networked production. This makes it all the more important for them to be able to communicate with each other and other subsystems without any problems - regardless of the manufacturer. The VDMA OPC Robotics Initiative has now taken a major step in this direction. “With the newly published Part 1 of the OPC Robotics Companion Specification, we have laid an important foundation for the seamless integration of industrial robots into the ‘Industrial Internet of Things’ (IIoT). This was made possible by the intensive cooperation between the robot and control manufacturers. Further parts will follow which will enable a multitude of applications via OPC UA. Thus, I am proud to say that the robot is ready as the core component of the I4.0 automation world”, says Bernd Fiebiger, R&D Principal Developer and member of the Core Working Group which worked hard to release Part 1 of the OPC Robotics Companion Specification.

### The OPC UA Robotics companion specification part 1 – in a nutshell

Part 1 of the companion specification addresses primarily the two important use-cases namely, Asset Management and Condition Monitoring. The OPC Robotics information model provides vendor independent access to asset information of all integrated robot systems and their components. It also provides a comparison of the statuses and parameters over many installed systems which allows for the identification of anomalies. OPC Robotics stands

for a complete motion device system that includes a list of motion devices. Motion devices can be any existing robot type or even a future robot type, yet to be conceived (Figure 3).

A proof of concept demonstrator was developed where 9 vendors provide data defined by the OPC Robotics information model to a Microsoft Azure Dashboard (Figure 1).

### **VDMA OPC Robotics initiative – defining a standardized generic interface for industrial robots**

In February 2017, the VDMA OPC Robotics initiative kicked off the development of the OPC UA Robotics Companion specifications. OPC UA is not a communication protocol, but rather a communication technology. It is based on a service-oriented architecture and a server-client model. The added value lies in the development of a sector-specific information model for robotics, also referred to as a "Companion Specification". The access and administration of data was identified as the basis for future business models.

Before OPC Robotics there was no unified interface standard for robots. Users want one common standard for vendor independent access for information and more data should be usable in cloud applications as well as in high level manufacturing systems. Approximately 35 companies have been involved in the total working group, within which 14 companies formed the core working group for the creation of the information model (Figure 2). In total, 13 face-to-face two-day meetings, several web conferences of the working group now come to an end with the release of the OPC UA Robotics Companion Specification Part 1. It is now available for download at the OPC Foundation Website as well as on the VDMA Website.

Stefan Hoppe, President and Executive Director of the OPC Foundation commented: "Congratulations to the working group on the release of the OPC UA Robotics companion specification. As with all companion specifications, this release marks a welcome step toward OPC UA based I4.0 and IIoT interoperability and the broader OPC Foundation's vision. The collaboration of different groups such as robotics vendors, control manufacturers, automotive end users, integrators and others has contributed significantly to defining the Companion Specification for real-world requirements - so I'm looking forward to an equally impressive market acceptance".

**About VDMA Robotics**

*The VDMA represents over 3,200 mainly small and medium size member companies in the engineering industry, making it one of the largest and most important industrial associations in Europe. As a part of the VDMA Robotics + Automation Association, VDMA Robotics unites more than 80 members: companies offering industrial robots and components. The objective of this industry-driven platform is to support the robotics sector through a wide spectrum of activities and services. Current activities include statistics and the annual VDMA Robotics Market Survey, marketing services, public relations, trade fair policy, future radar, networking events and conferences. Find out more about VDMA Robotics at: [robotik.vdma.org](http://robotik.vdma.org)*

**About the OPC Foundation**

*The **OPC Foundation**, Scottsdale, AZ, USA, is the globally leading community for interoperability solutions based on the OPC communication specifications. OPC is an interoperability standard for the secure, reliable and platform-independent exchange of information. By defining an interface between client and server or between server and server varying use-cases can be covered. OPC technology is extensively used for integrating information in industrial automation and for facilitating data transfer from the smallest sensor into enterprise IT. The objective of the OPC certification program is to guarantee immediate operational readiness of OPC products in real-life applications. With over 700 member companies the OPC Foundation promotes globally training, awareness and adoption of the OPC specifications. Find out more about OPC Foundation: <https://opcfoundation.org/>*

**You can download the specification from any of the links below:**

<https://www.vdma.org/en/v2viewer/-/v2article/render/26810016>

<https://opcfoundation.org/developer-tools/specifications-opc-ua-information-models/opc-unified-architecture-for-robotics/>

Do you have any questions? Suprateek Banerjee, VDMA Robotics, will be happy to answer them:  
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**You can download the following figures here:**

<https://robotik.vdma.org/viewer/-/v2article/render/40528588>

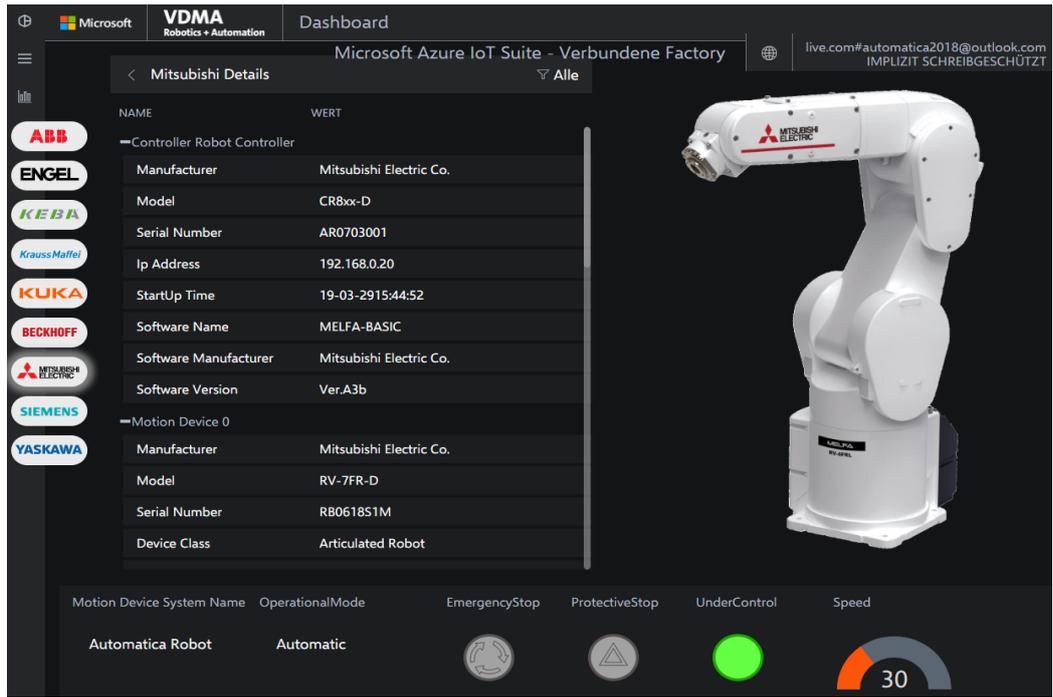


Figure 1 The OPC Robotics Demonstrator



Figure 2 Core Working Group Members of the VDMA OPC Robotics Initiative

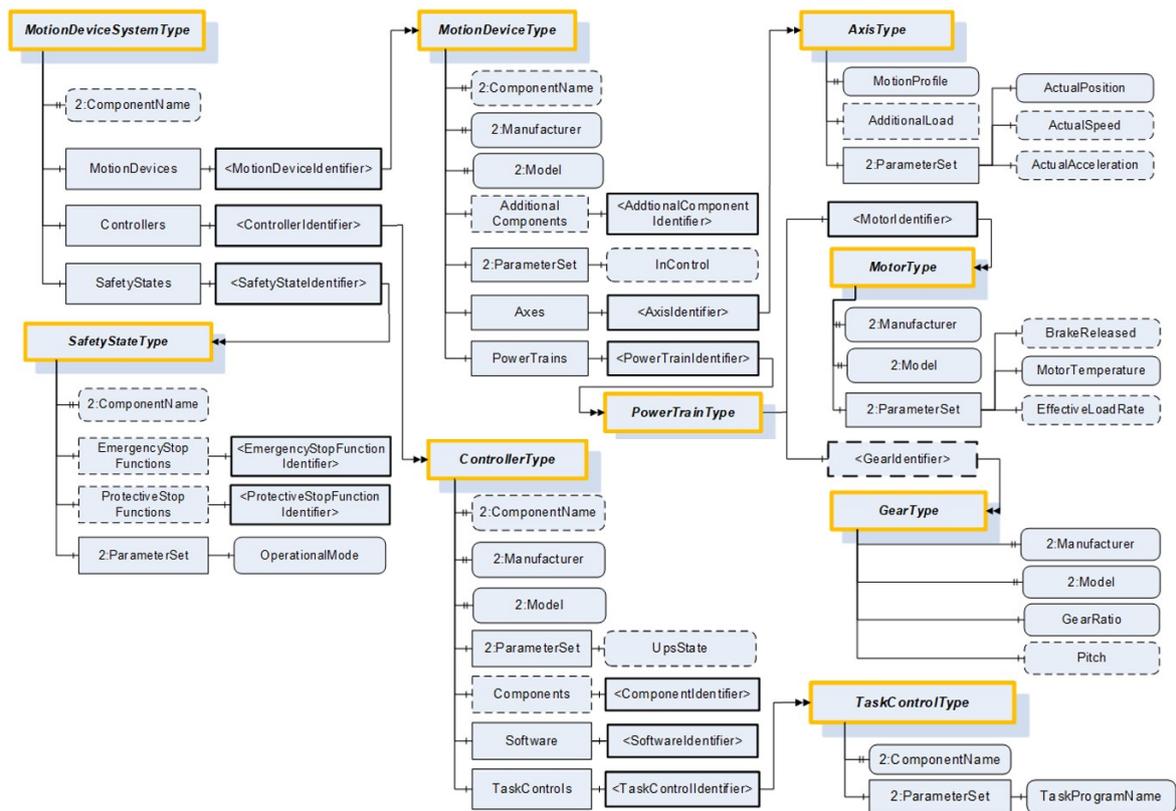


Figure 3 The OPC Robotics Information Model in a nutshell