

# The Asset Administration Shell (AAS) in action



## AAS Guide SPS 2023



Industrial Digital Twin Association e. V.

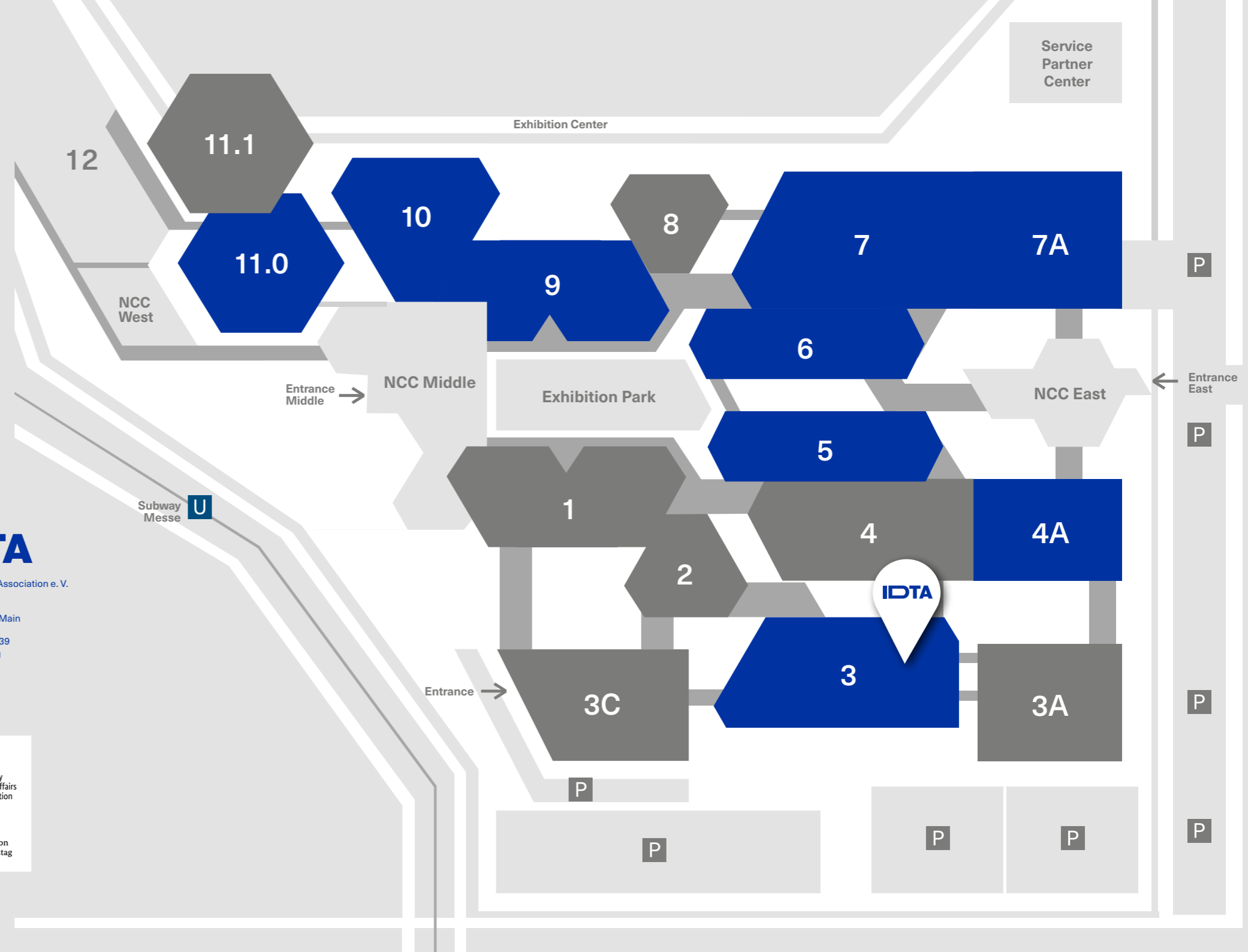
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# AAS exhibits



**zvei**  
electrifying ideas

**ZVEI-Show-Case PCF@Control Cabinet**  
A flexible, efficient and future-proof concept for the technical implementation of a digital product passport is presented and its feasibility is demonstrated using a control cabinet. With the concept of the Digital Product Passport for Industry 4.0 (DPP4.0), the industry is able to document and provide required product information. The DPP4.0 concept is based on two essential pillars: the digital nameplate (IEC61406) and the AAS (IEC63278).

[www.dpp40.eu](http://www.dpp40.eu) [Stefan Schork](mailto:Stefan.Schork)

**The Digital Twin of Software**  
With Industry 4.0 the amount of software in physical components such as control gear or edge devices rises. By using the Digital Twin with the "software nameplate", software on different components can be efficiently monitored to enable use-cases such as patch and update management.

Hall 3  
Booth 331

[www.zvei.de](http://www.zvei.de) [Stefan Schork](mailto:Stefan.Schork)

**IDTA**  
**Lifecycle Management for Smart Operations**  
The demonstrator, developed in collaboration between PTC, SICK, EPLAN, and TT-PSC, shows how Asset Health Monitoring, a guided parts replacement process, and a secure software update and patch process can be implemented solely based on the Digital Twin of a machine in AAS format. Since the GUI development and communication with the machine and component manufacturer AAS are exclusively built on the IoT platform ThingWorx, scalability to multiple facilities and sensors is ensured.

[Dr. Tobias Fürtjes](mailto:Dr.Tobias.Fuertjes) · [Manfred Haberer](mailto:Manfred.Haberer) · [Dieter Pesch](mailto:Dieter.Pesch) · [Kai Schulze](mailto:Kai.Schulze)

**Sustainability enabled by AAS – PCF on Connectivity+**  
The technology demonstrator "Sustainability enabled by AAS – PCF on Connectivity+", developed by HARTING, SAP and Siemens and enabled by IDTA, maps the topic of industrial sustainability via the product carbon footprint (PCF) using AAS. The demonstrator shows how the use and interpretation of AAS can achieve significant improvements in the data flows of complex product development and manufacturing processes, implement applications in a very short time and meet regulatory requirements, i.e. like EU Digital Product Passport.

Hall 3  
Booth 448

[industrialdigitaltwin.org/en](http://industrialdigitaltwin.org/en)

**LNI 4.0**  
**LNI 4.0 Edge Management Demonstrator**  
The Edge Management across vendors creates still a huge cost-problem. The LNI 4.0 demonstrator uses the AAS Digital Nameplate submodel (DNP) to solve this challenge. The DNP information model is used to collect information from 8 different vendors on the IP address-space and health condition of the edge systems of the demonstrator.

Hall 3  
Booth 448

[www.lni40.de](http://www.lni40.de) [Dominik Rohrmus](mailto:Dominik.Rohrmus) · [Anja Simon](mailto:Anja.Simon)

**Endress+Hauser**  
**Interoperable Digital Twins for the Process Industry**  
Demonstrators like the use cases "Automated as built" (NAMUR NE 176) and "Device Calibration" are enabled by using standardized Digital Twins based on the AAS in cross-vendor and cross-company scenarios and to improve efficiency by AAS based automated services. Key is the interoperability for all workflows and systems by use of the AAS.

Hall 4a  
Booth 145

[www.de.endress.com](http://www.de.endress.com)

**M&M**  
**AAS-Server on Intersystem IRIS Data Platform**  
The Demonstrator shows an AAS server implementation on InterSystems IRIS, a highly interoperable and performance-oriented Data Platform to build applications that connect data and application silos. The AAS server implemented based on IRIS by M&M Software, demonstrates how to interconnect data from various data silos of a company and provide them as Digital Twins as defined by the IDTA AAS-Specifications.

Hall 5  
Booth 360

[www.mm-software.com](http://www.mm-software.com) [Kristian Schatz](mailto:Kristian.Schatz)

**BCON<sup>2</sup>**  
**BCON<sup>2</sup> AAS Generator**  
BCON<sup>2</sup> has developed an AAS Generator that natively supports ECLASS. Generate AAS directly from the ECLASS Standard and describe your assets directly in your browser. The data can then be provided directly via the AAS API.

Hall 6  
Booth 221

[bcon2.com/en.html](http://bcon2.com/en.html)

**D&TS**  
**AAS: End-to-end master data creation and classification in PDM and ERP**  
From engineering to processing, material master data incl. ECLASS without media breaks with AAS

1. Direct product data transfer from the component manufacturer to the engineering process
2. Use of standardized material master data in AAS exchange format (Submodel Template: Creation and classification of materials in an ERP, PDM/PLM system)
3. Automated real-time transfer of basic data and classification to the leading system
4. Seamless integration into further processes along the value chain

Hall 6  
Booth 221

[www.dundts.com](http://www.dundts.com) [Paulo Ferreira](mailto:Paulo.Ferreira)

**ECLASS**  
**ECLASS Standard**  
In addition to the use for cross-enterprise process-data management and the application in engineering tools, since Release 13.0 the ECLASS Standard has extended its data model with new content for the creation of AAS submodels. This enables ECLASS users to describe an AAS in the ECLASS Standard. The new ECLASS Release 14.0 providing further AAS submodel templates will be published end of November 2023.

Hall 6  
Booth 221

[eclass.eu/en](http://eclass.eu/en)

**complement**  
**Complement's AAS Plattform**  
The deployment of Digital Twins should be a smooth process that does not require complex and expensive integration projects and works without media disruption. That's why this Digital Twin platform for the IDTA's AAS was developed with three key premises: Simplicity, Cost-Effectiveness and Scalability. With it, your entry into the Digital Twin cosmos will be smooth.

[Christian Günther](mailto:Christian.Gunther)

**twincases**  
Many use cases can be implemented with the Digital Twin. But which of them meet the needs of your customers, convince internal stakeholders and justify an investment? This is where the enabler product twincases comes in. twincases is a SaaS solution to demonstrate your products with real AAS. It allows to interactively experience use cases of the Digital Twin gaining insights on what is relevant for your customers and other stakeholders. This forms a valid basis for a future investment decision on the way to the Digital Twin.

Hall 6  
Booth 240

[www.complement.de](http://www.complement.de) [Rainer Pal](mailto:Rainer.Pal)

**MITSUBISHI ELECTRIC**  
**ICONICS AAS Nameplate Importer**  
Demonstration of automatic generation of standardized digital assets by importing the digital nameplates of selected Mitsubishi Electric products. Scanning the QR code on the product triggers the automatic generation of the Digital Twin of the product by retrieving the AAS data, creating classes, and populating them with properties. Additionally, the used software's digital nameplate will be discoverable via a QR code, which a customer can use for managing the software.

Hall 6  
Booth 248

[de.mitsubishielectric.com](http://de.mitsubishielectric.com) [Sebastian Creischer](mailto:Sebastian.Creischer)

**MHP**  
**AAS meets Industrial Metaverse**  
With a standardized data model approach and a clear interface description AAS facilitates data exchange between the Assets in the industrial metaverse.

Hall 6  
Booth 6-251L

[www.mhp.com](http://www.mhp.com) [Ronny Strobel](mailto:Ronny.Strobel) · [Andreas Fries](mailto:Andreas.Fries)

**TwinStore**  
**TwinStore – AAS Component Models for Virtual Commissioning**  
The component models available in the TwinStore enable simulation tool users to model and perform high-quality simulations for virtual design, validation, and commissioning. The component models available in the TwinStore are now in the tool-independent .aasx format, standardized according to the IDTA Submodel Provision of Simulation Models. The demonstrator shows the download of the component models from the AAS server and the use in the virtual commissioning tool ISG-virtuools.

Hall 6  
Booth 338

[www.twinstore.de](http://www.twinstore.de) [Denis Pfeifer](mailto:Denis.Pfeifer)

**ISW**  
**Stuttgarter Maschinenfabrik – the Adaptive Production of the Future**  
The Stuttgarter Maschinenfabrik is a demonstrator of the ISW to advance interdisciplinary research in the field of production technology. The focus here is in particular on consistency across several machines and process steps, digitization from drive technology to planning and the networking of all subsystems. A core technology to achieve this is the AAS for the organization and operation of adaptive production systems.

Hall 6  
Booth 340

[www.isw.uni-stuttgart.de](http://www.isw.uni-stuttgart.de) [Lars Klingel](mailto:Lars.Klingel)

**CONTACT Software**  
**Digital Twin "as maintained"**  
At the center of the live scenario is the intelligent nameplate of a rotary encoder, which makes all device-specific data available to customers online via a QR code. Every subsequent change to the configuration creates a new QR code and is displayed to the customer in the Digital Twin as an "as maintained" status. In this way, Kübler minimizes effort and errors on the part of the service teams and at the same time increases the lifespan of its products.

Hall 6  
Booth 348

[www.contact-software.com](http://www.contact-software.com)

**STAHL**  
**Digital Nameplate**  
Demonstration of digital nameplates in combination with AAS. Simulation of six real-world applications: information on firmware updates, remote access to management trays, automated return forms, digital maintenance manuals, follow-up products and the implementation of VDI 2770 for documentation.

Hall 7  
Booth 170

[demo-digital-twin.r-stahl.com](http://demo-digital-twin.r-stahl.com) [Roland Dunker](mailto:Roland.Dunker)

**bill-X**  
**B&R Golf Ball Catcher – powered by bill-X ActiveDB**  
Experience ActiveDB as the operating system for the Digital Twin in action at the SPS fair. Witness real-time predictions and visualizations of a golf ball's trajectory before it's even thrown. An impressive interplay of data intelligence and hardware showcasing the future of Industry 4.0.

Hall 7  
Booth 206

[www.bill-x.de](http://www.bill-x.de) [Thomas Gering](mailto:Thomas.Gering)

**WAGO**  
**AAS in Electrical Engineering & Maintenance**  
WAGO presents AAS for engineering and master data application. In a separated demonstrator, WAGO shows simplification possibilities with the help of AAS for maintenance applications.

Hall 7  
Booth 230

[www.wago.com](http://www.wago.com)

**Lenze**  
engineered to win  
**Lenze Digital Twin – the Central Hub of a Machine**  
The demonstrator shows how information from components and machines can be made transparent and usable across manufacturers with the help of AAS. Information about the machine, such as its topology, is initially generated in the engineering phase. This information is merged with process data in the operating phase. This enables uniform access to all relevant information for a wide range of applications. An asset management system is used as an example to highlight this.

Hall 7  
Booth 391

[www.lenze.de](http://www.lenze.de) [Denis Göllner](mailto:Denis.Göllner)

**rexroth**  
A Bosch Company  
**Information Hub | Scan any Rexroth product and access its Digital Twin**  
Leverage your company's business with solutions based on more than 200.000.000 Digital Product Twins and discover them on your own mobile device. Already today, Bosch Rexroth supplies productive solutions with their AAS-based Digital Product Twins. The Digital Service Assistant app gets you the right service support and data for any of your products – with a simple scan.

Hall 7  
Booth 450

[www.boschrexroth.com](http://www.boschrexroth.com) [digital.twin@boschrexroth.de](mailto:digital.twin@boschrexroth.de)

**XITASO**  
**Digital Nameplate and Carbon Footprint**  
At this demonstrator, Mnestix is used to show the standards-compliant implementation of relevant AAS use cases such as Digital Nameplate and Carbon Footprint. The Mnestix Viewer makes it easy to display all relevant AAS information on different devices.

Hall 7  
Booth 450

[www.xitaso.com](http://www.xitaso.com) [Christian Heinrich](mailto:Christian.Heinrich)

**ifm**  
**Multi Vendor Condition Monitoring via an AAS Infrastructure**  
ifm presents a multi vendor IIoT use case in the food and beverages and condition monitoring domains. Vertically, an integration of a multi vendor mix of field devices is enabled by the use of OI4 based connectivity. Horizontally, an AAS infrastructure allows for open exchange of device identification, health and calibration data between multiple cloud services. Benefits are: improved process transparency, reduced complexity and integration effort and no vendor lock-in.

Hall 7A  
Booth 302

[ifm.com](http://ifm.com) [Christoph Schneider](mailto:Christoph.Schneider)

**NEOCEPTION**  
**Neoception® Digital Twin Infrastructure**  
Currently data of companies is mostly buried in silos. Although there are a lot of use cases in the need of this data, it is not easily accessible. We show how we enable the mapping of proprietary data to a standardized format and how to create hundreds of Digital Twins with just a few rules – all on demand. With our demonstrator you can use an installation of our product and take the role of "content admin" in order to create your first on-demand Digital Twins with just a few of your own rules.

Hall 7A  
Booth 411

[www.neoception.com](http://www.neoception.com) [Andreas Wick](mailto:Andreas.Wick)

**PHENIX CONTACT**  
**Automated as Built**  
Experience how to perform an automatic proof of intrinsic safety products based on the AAS Nameplate.

**Beehyve**  
Experience how a Beehyve is automated with Phoenix Contact technology. The digital twin of the Beehyve can be explored live in our workshop area.

Hall 9  
Booth 310

[www.phoenixcontact.com](http://www.phoenixcontact.com) [Andreas Würger](mailto:Andreas.Würger)

**HARTING**  
Pushing Performance Since 1945  
**Digital Twin: Sustainability enabled by AAS – DPP and PCF on Connectivity+**  
The technology demonstrator "Sustainability enabled by AAS – PCF on Connectivity+", developed by HARTING, SAP and Siemens, maps the topic of industrial sustainability via the product carbon footprint (PCF) using AAS. The demonstrator shows how the use and interpretation of AAS can achieve significant improvements in the data flows of complex product development and manufacturing processes, implement applications in a very short time and meet regulatory requirements, i.e. like EU Digital Product Passport.

Hall 10  
Booth 130

[www.harting.com](http://www.harting.com) [Detlef Tenhagen](mailto:Detlef.Tenhagen)

**SIEMENS**  
**Sustainable Engineering & Efficient Change Management through AAS**  
The technology demonstrator "Sustainability enabled by AAS – PCF on Connectivity+", developed by HARTING, SAP and Siemens, maps the topic of industrial sustainability via the product carbon footprint (PCF) using AAS. The demonstrator shows how the use and interpretation of AAS can achieve significant improvements in the data flows of complex product development and manufacturing processes, implement applications in a very short time and meet regulatory requirements, i.e. like EU Digital Product Passport.

[Constantin Liepert](mailto:Constantin.Liepert)

**IE Platform / Industrial Information Hub (IIH)**  
In the Industrial Information Hub (IIH), all information is brought together, and made available via standardized interfaces. Overall, this helps to improve your data management and facilitates the integration of future plants and machines into existing structures. We demonstrate the usage of the IIH as an AAS repository that can function as the heart of use cases such as asset management, data connectivity to the PLC, data consolidation via OPC UA, use of automatically generated semantic data model, local creation of an asset model and its synchronization with Senseye – predictive maintenance Software.

[Ender Yuezbasioglu](mailto:Ender.Yuezbasioglu)

**Manufacturing-X – Digitalize the entire Manufacturing and Supply Chains**  
Learn more about Manufacturing-X and Siemens involvement in this German initiative to digitize the entire manufacturing and supply chains in industry. It aims at implementing the data space for Industry 4.0 across industries on a global scale. The goal is to enable digital innovations for greater resilience, sustainability and competitiveness.

Hall 11.0  
Booth 100

[www.siemens.de](http://www.siemens.de) (SPS)

# AAS Presentation Program



TUE 14.11.			
9:45 – 10:30	<b>DPP4.0 – The Digital Product Passport for Industrie 4.0</b>	Prof. Dr. Wegener (ZVEI, Siemens)	Technology Stage: Hall 3, 421
11:50 – 12:10	<b>Der smarte Steckverbinder (SmEC), ein Schritt zu mehr ökologischer Nachhaltigkeit</b>	Andreas Huhmann (HARTING)	Forum: Hall 6, 130
14:40 – 15:40	<b>From the Digital Twin via simulation to the real drive system</b>	Martin Hankel (Bosch Rexroth), Markus Kiele-Dunsche (Lenze), Dr. Falk Eckert (ZVEI), Priv.-Doz. Dr. Tassilo Schuster (Fraunhofer IIS), Jürgen Dlugosch (Baumüller)	Technology Stage: Hall 3, 421
15:00 – 15:20	<b>Datenlogistik @ Manufacturing X</b>	Dr. Christoph Kelzenberg (Phoenix Contact)	Forum 4.0: Hall 8, 410
16:20 – 16:40	<b>Was der Digitale Zwilling auf Basis der AAS für mittelständische Komponentenhersteller bedeuten kann – ein Beispiel aus der Praxis</b>	Christian Günther (Complement, Open Industrie 4.0 Alliance), Markus Weishaar (Dunkermotoren, Open Industrie 4.0 Alliance)	Forum 4.0: Hall 8, 410
WED 15.11.			
12:20 – 12:35	<b>Digital Data Chain and Asset Administration Shell in the Context of Digital Product Passport</b>	Karsten Schneider (Siemens)	Siemens: Hall 11, 100
17:10 – 17:30	<b>Bereitstellung des Product Carbon Footprints (PCF) im Wertschöpfungsnetzwerk mit Digitalen Zwillingen</b>	Dr.-Ing. Kristian Schatz (M&M Software)	Forum: Hall 6, 130
THU 16.11.			
12:10 – 13:10	<b>Software Nameplate – why software also needs a Digital Twin</b>	Prof. Dr.-Ing. habil. Martin Wollschlaeger (Technische Universität Dresden), Dr.-Ing. Andreas Graf Gatterburg (Hilscher Gesellschaft für Systemautomation), Yasin Bagceci (Rittal)	Technology Stage: Hall 3, 421
15:20 – 15:40	<b>Mit Orchestra AAS-Konzepte nahtlos in bestehende Systemwelten integrieren</b>	Markus Benndorff (soffico)	Forum 4.0: Hall 8, 410