

The Global Production Language as key for digitalization

OPC UA within VDMA



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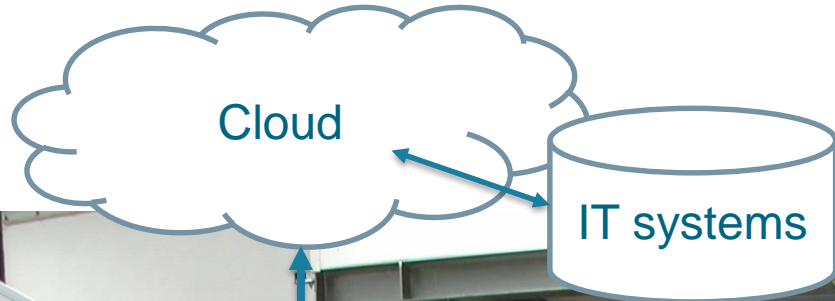
The VDMA



- » Mechanical Engineering Industry Association
- » The VDMA represents over 3,300 member companies in the engineering industry
- » The VDMA is structured in
 - 38 trade associations,
 - 6 regional subsidiaries,
 - Berlin, Brussels and foreign subsidiaries (Brazil, China, India, Japan, Russia, Austria)
 - Working groups and forums,
 - Departments and competence centers and
 - Companies and foundations.
- » The VDMA is host of several European and global sector committees



The VDMA represents the broad machine building / manufacturing industry.



Vertical and horizontal networking

Involved components

- » Robots
- » Industrial image processing
- » Gripper
- » Weighing Technology
 - On the conveyor belt
- » Electrical drive
 - In the robot
 - On the conveyor belt

OPC UA as a solution

OPC UA is the preferred standard (IEC 62541)

» **Open Platform Communication Unified Architecture**

Requirements for mechanical engineering are met:



Open source



Security



Various protocols



Semantic machine description

OPC UA

The uniform language for the industry is the success factor



Babylonian linguistic confusion

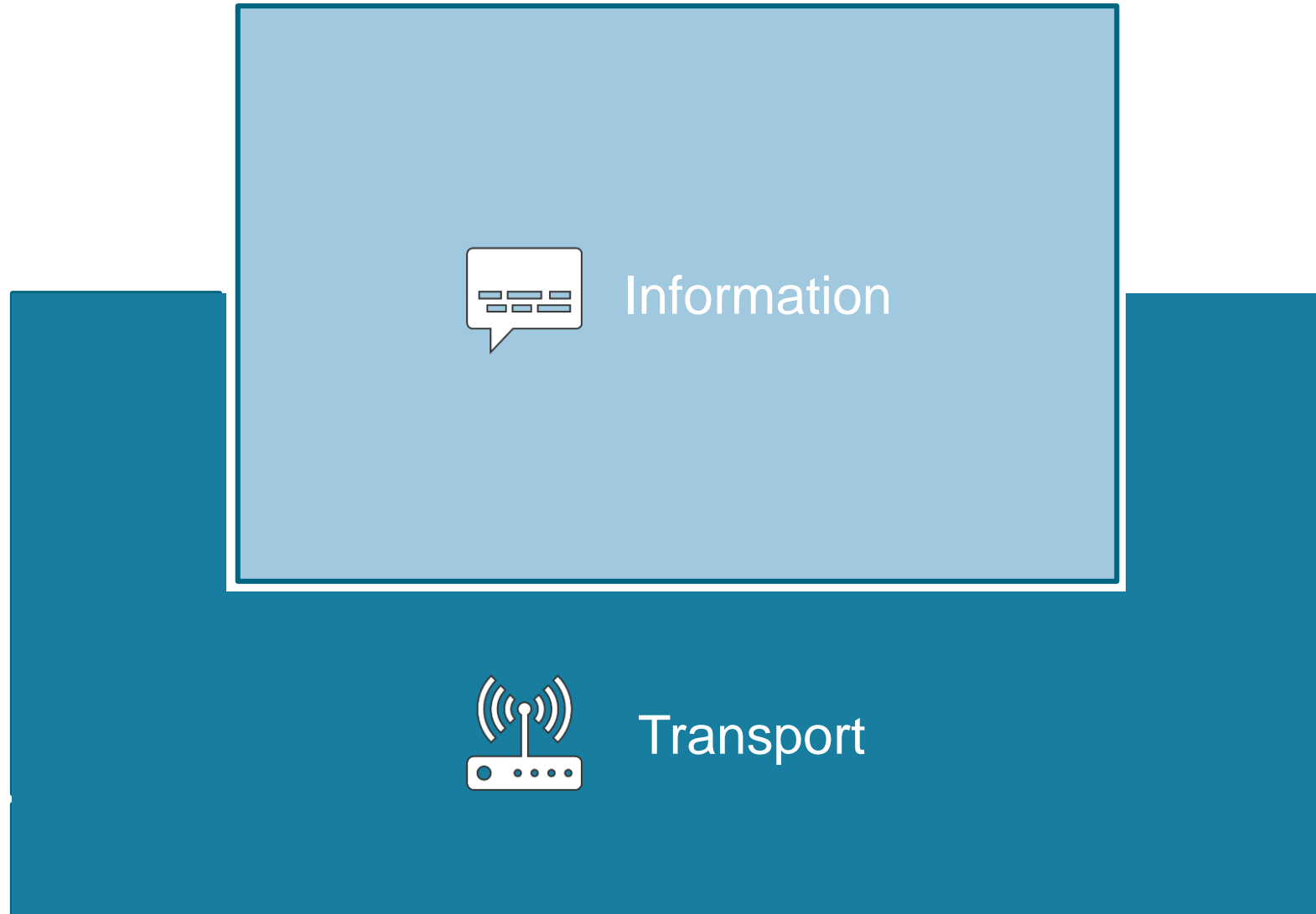
Rapid growth of new OPC UA CS working groups

- » More than 23 VDMA industries are involved
- » More than 25 VDMA sectors are in active (international) implementation
- » About 35 OPC UA CS working groups exist
- » Over 600 companies are involved
 - » ME, PA, ET, IT, Automotive, ...

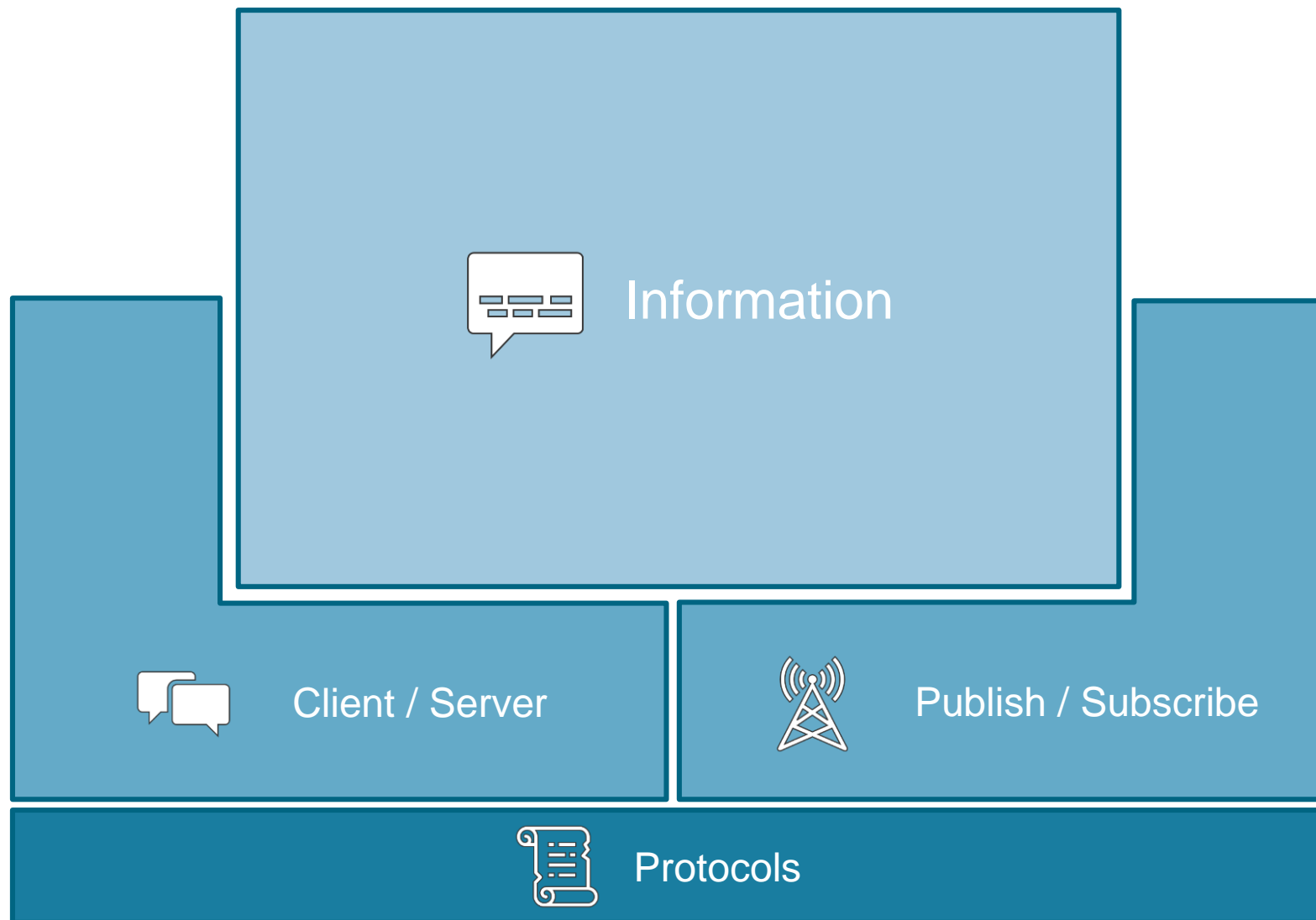
Defined language



The OPC UA technology

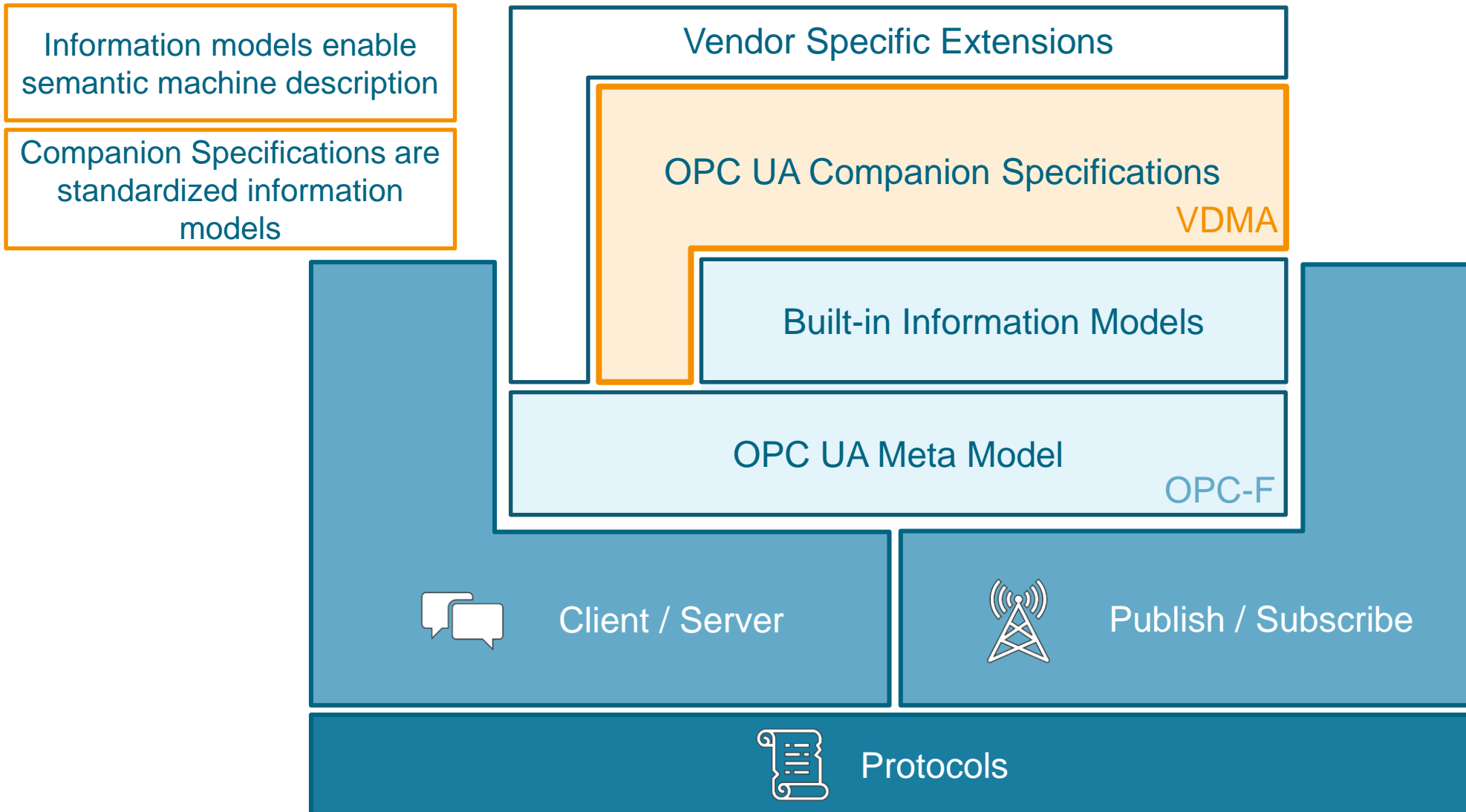


The OPC UA technology



OPC UA is not a protocol!

The OPC UA technology



Overview of OPC UA Working Groups at VDMA

Se

- » Additive Manufacture
- » Lasers and Laser
- » Melting Furnace
- » Printing and Paper
 - » Dryer
 - » Winding Mac
- » Surface Technolog
 - » Plasma-Surf
 - » Shot-Blastin
- » Textile Dying and F

Tremendous effort on OPC UA

- » More than 25 sectors in active development
- » More than 35 active working groups
- » More than 600 involved companies
 - » ME, PA, ET, IT, Automotive, ...

- » Material Supply
- » Textile Testing Devices

- » Pumps and Vacuum pumps
- » Robotics
- » Weihenstephaner Standards
- » Weighing Technology
- » Woodworking Machinery

DRAFT
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ologies

shinery

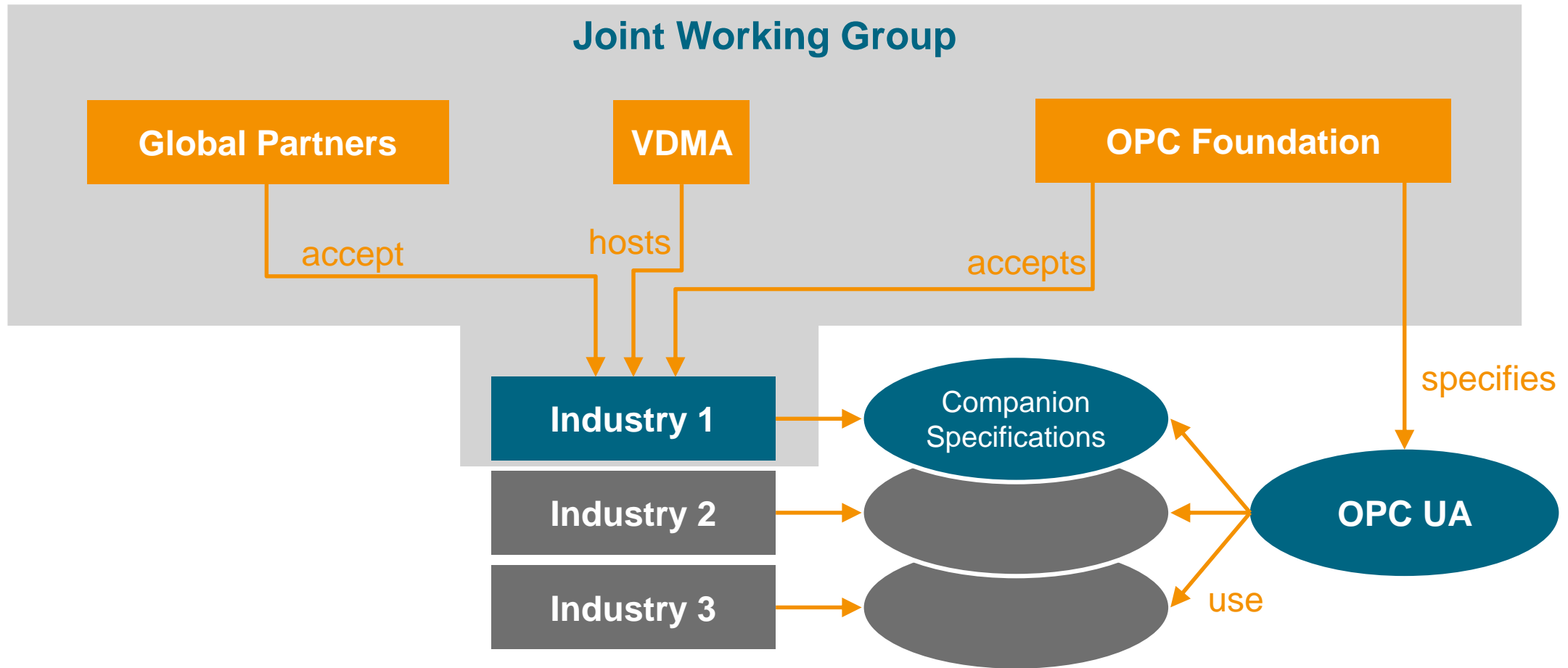
MES

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Harmonization – OPC UA for Machinery

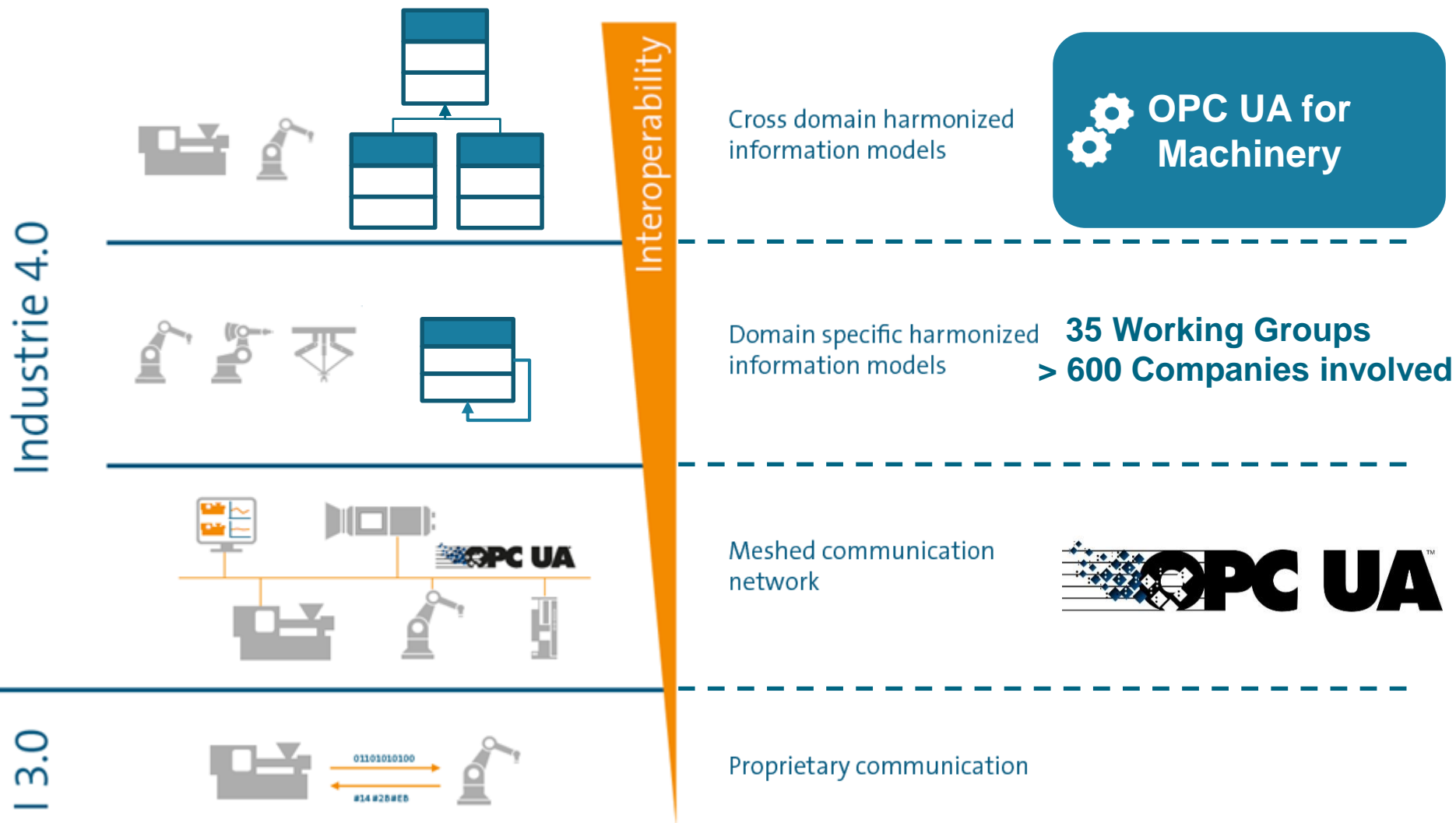
* Development = Working Group is registered at OPC Foundation as Joint Working Group.
 ** All these groups are continuing to work on the OPC UA standards.

Global Collaboration



OPC UA / umati

Up to the highest level of interoperability



Harmonization - OPC UA for Machinery

- Defines information model building blocks for the mechanical engineering sector



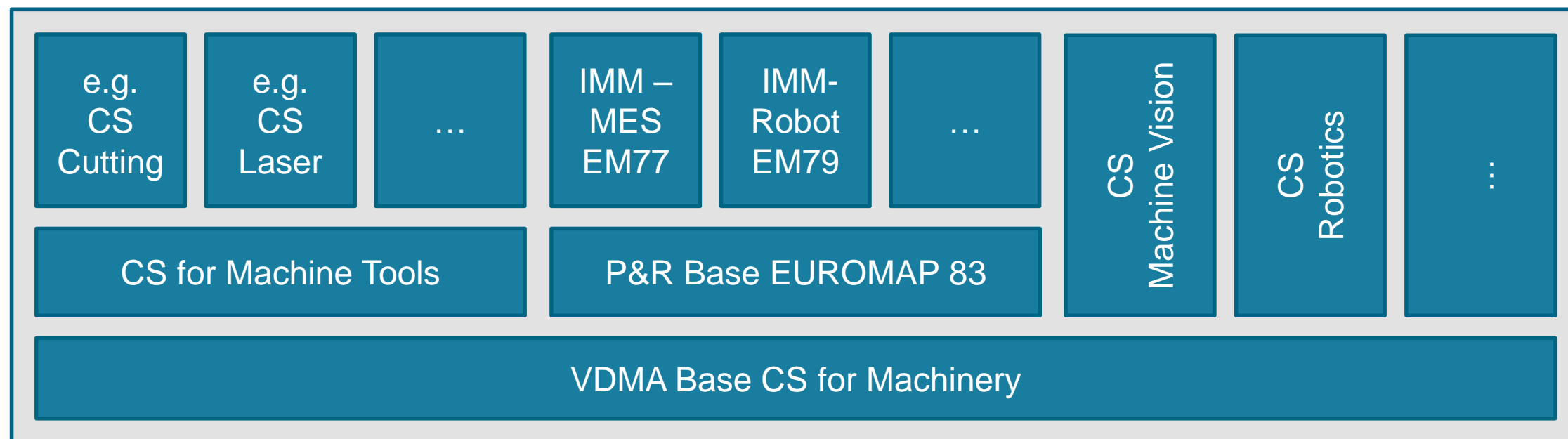
Published building blocks:

- Identification of machines/components
- Finding all machines and their components in a server



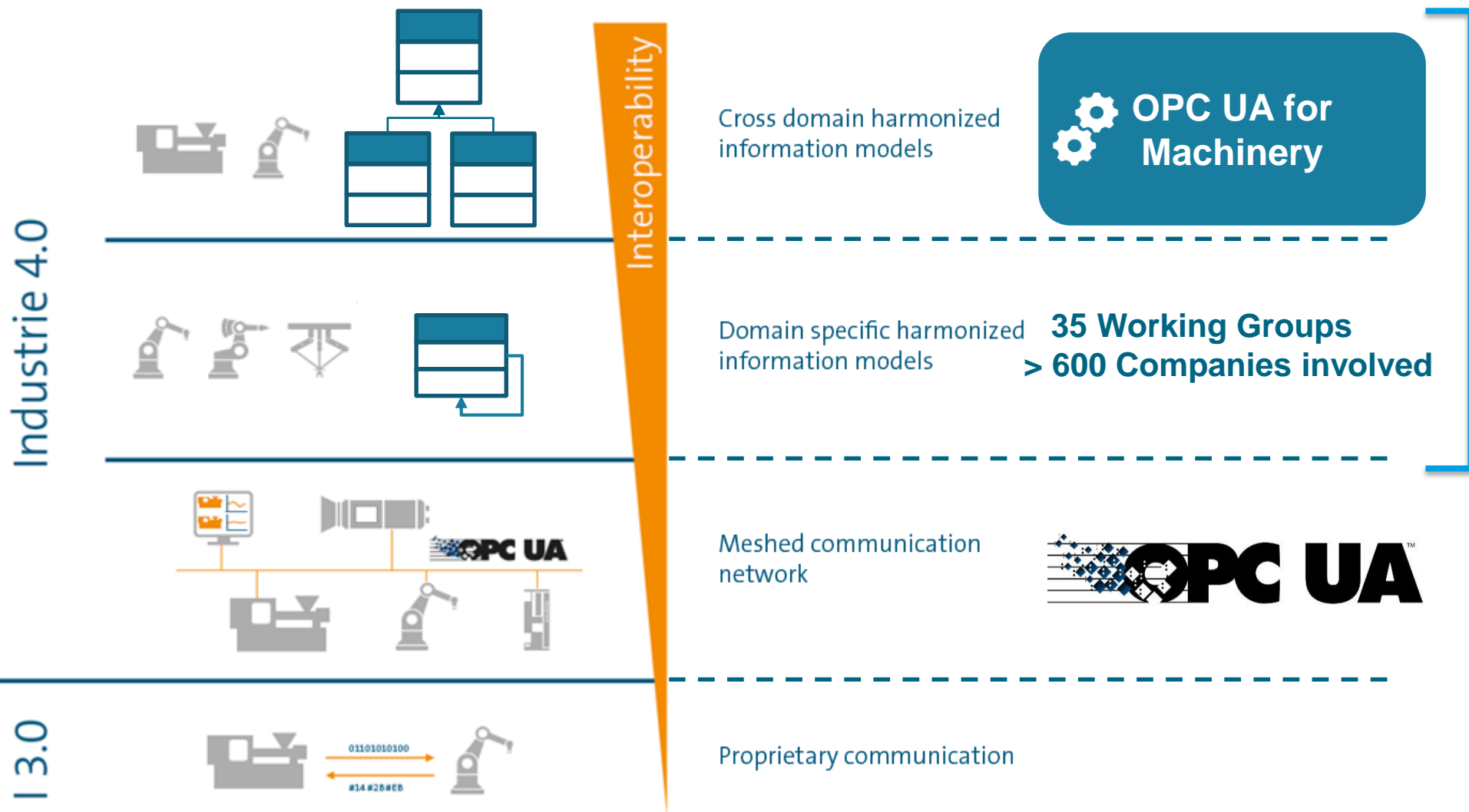
Planned building blocks :

- Machine States
- Job Management
- Result Transfer
- Energy Management



OPC UA / umati

Up to the highest level of interoperability



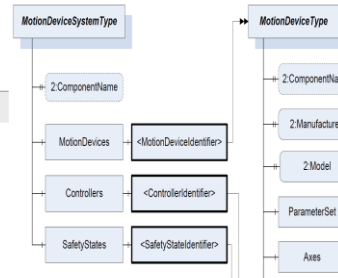
Plug and Play Powered by a Global Community



OPC 40010-1

OPC UA for Robotics
Part 1: Vertical Integration

Release 1.00



= semantic interoperability

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

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

Plug & play

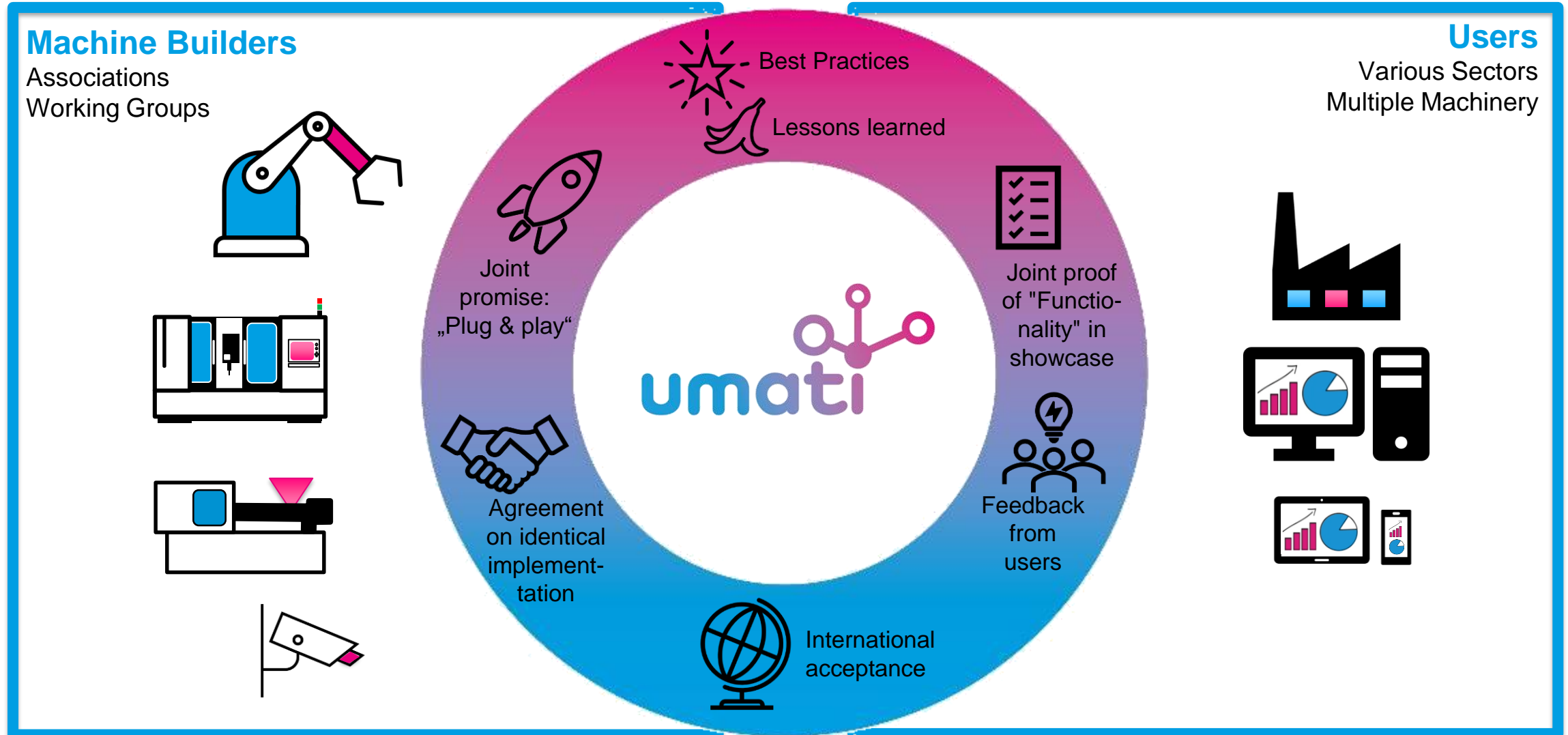
Identical Implementation
of Companion Specifications
for the machinery sector



Global community

Promoting the use
of common standards

Bringing Machine Builders and Users Together



The text "OPC UA" is displayed in a large, bold, blue, sans-serif font. It is centered within a white, 3D-rendered gear-like shape that has a metallic, greyish-blue rim. The gear is part of a larger, partially visible assembly of similar gears. The background behind the gear is white with faint, blue, abstract shapes.

More Information?
vdma.org/opc-ua