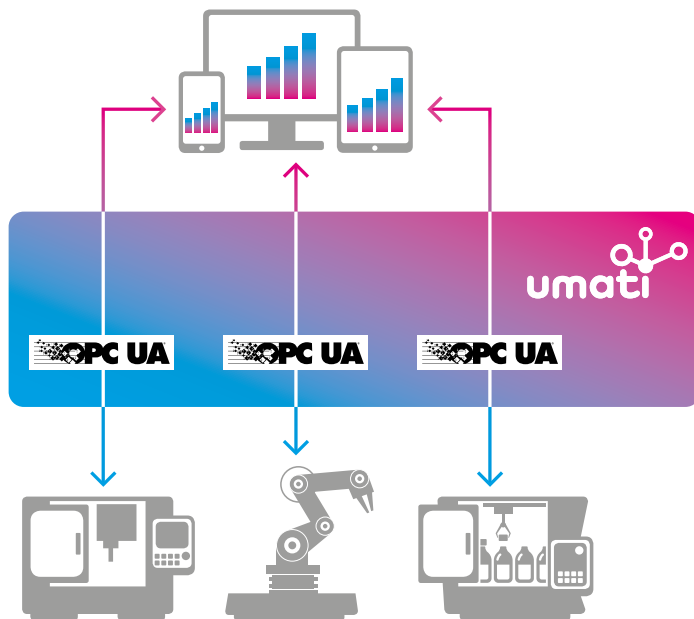


connecting the world  
of machinery

# the universal machine technology interface

Our promise:  
Make connectivity  
between machinery and  
software easy, secure  
and seamless – to help  
customers exploit added  
value from data.



**Connectivity is key** for all machinery in the 21st century. It means getting data in and out of devices and software systems – at best via open, standardized interfaces.

**umati is a global community** to bring a common interface concept based on OPC UA into the market, fostering the acceptance and implementation of these standards. umati started as an alliance of companies from the machine building industries.

**Our mission** is to provide and prove a common user benefit of true "plug and play" in the field of machinery.

umati relies on **OPC UA as the global interoperability standard**. Standardization work takes place in multiple "Joint Working Groups" with various sectors of machine building industries and the OPC Foundation. This guarantees consideration of individual needs for different technologies, maximum transparency and the support of a strong global community.

#### OPC UA and the OPC Foundation:

- provide a **framework for standardized communication** (**HOW** to communicate)
- **support standardization** of specific needs for various technologies (**WHAT** is to be communicated)
- make the standards **available worldwide with no license fee**.



#### How umati works:

several machines with OPC UA servers using Companion Specifications endorsed by umati, implemented according to umati guidelines, are connected to one IT system with an OPC UA client.





# umati makes data flow a user experience

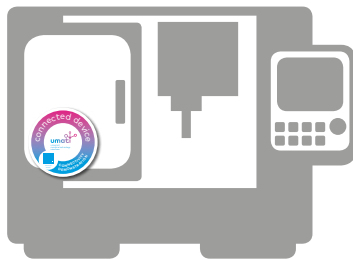
The umati live demonstration proves that connectivity across different machine technology is a promise come true.

## The umati live demonstration:

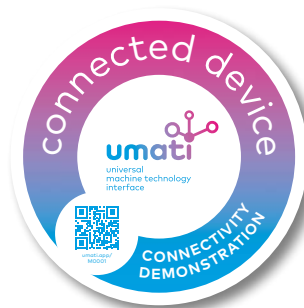
- provides an **"user experience"** for data flow
- has an **open, common set-up** to which participants can connect
- realizes **"criss-cross connectivity"** between machinery and multiple software applications even at trade show conditions

## The umati community benefits from:

-  a common infrastructure for **secure connection** during a trade show and beyond
-  a vendor-independent **dashboard** to display data for a "machine status monitoring" use case
-  **guidelines** to get connected – also applicable for testing and plug fests
-  comprehensive **marketing** (including design and templates) for all partners to create market impact towards customers and suppliers



1. Every connected machine features an umati sticker.



2. Scan the QR code or type the shortcut link to access the umati dashboard and see the live data stream from the machine.



3. Get an overview of all the connected machines at <https://umati.app>

How the umati live demonstration works:

# OPC UA 40501-1: machine monitoring and job overview

The **OPC UA 40501** series addresses uses cases and parameters specific for machine tools.

The scope is to create a common interface among machine tools of different technologies, manufacturers and model series.

The first part of the OPC UA Companion Specification for Machine Tools aims to provide the basics for such an interface. These allow for monitoring the machine tool and giving an overview of the jobs on it. This information is mostly technology neutral. The OPC UA for Machine Tools interface allows an exchange of information between a machine tool and software systems like MES, SCADA, ERP or data analytics systems.

It is the first specification inheriting the OPC 40001-1 UA for Machinery. Published 09/2020, it is the first OPC UA companion specification which is fully endorsed by the umati community. The implementation had been tested in parallel to developing the standard by the community. The umati demonstrator infrastructure was used to celebrate plug fests for testing and learning.

umati provides resources how to implement UA4MT in a unified way at [umati.org/dev](https://umati.org/dev) (GitHub)

## Contact

Joint Working Group Chairman: Mr. Götz Görisch  
VDW, German Machine Tool Builders' Association  
[g.goerisch@vdw.de](mailto:g.goerisch@vdw.de)



# OPC 40501 UA for machine tools

Part 1 covers these use cases:



Identify machines of **different manufacturers**



Overview if **production is running**



Overview of **parts** in a job



Overview of **runtimes** for a job



Overview of machine tool **state**



Overview of upcoming **manual activities**



Overview of **errors and warnings**



Providing information for **KPI calculations**



Providing an overview of **tool data**

**OPC 40501-1** and **VDMA 40501-1** was initiated by VDW, the German Machine Tool Builders' Association. It was created by a **Joint Working Group** between **VDW** and the **OPC Foundation**, comprising over 90 companies and almost 200 participants from all around the world.

The specification is available for free at the following repository:

[umati.org/ua4mt](https://umati.org/ua4mt)



[reference.opcfoundation.org/v104/MachineTool/v100/docs](https://reference.opcfoundation.org/v104/MachineTool/v100/docs)



# umati – a network of strong partners



## umati partners:

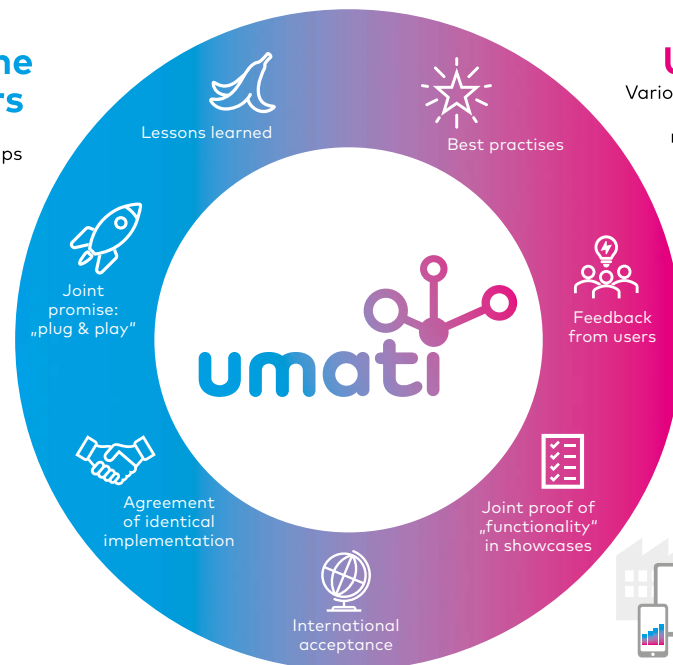
- prove the connectivity of their products through the **umati logo**
- have **easier access to their customers**
- benefit from **market stimulation** through strong marketing with high visibility
- demonstrate the user experience **"plug and play"** e.g. by taking part in demonstrations at trade fairs
- are part of a **global community** – for the industry by the industry
- have access to **exclusive** information and tools

The number of umati partners is growing continuously. To see who has already endorsed umati, please refer to:

[www.umati.org/partners](http://www.umati.org/partners)

## Machine builders

Associations  
working groups



## Users

Various sectors  
multiple  
machinery



umati brings together machine builders, software producers and users in a strong community. They share their experience to benefit from identical implementation of OPC UA standards.



umati is  
operated by

**VDMA – Mechanical Engineering  
Industry Association**  
[www.vdma.org](http://www.vdma.org)



**VDW – German Machine Tool  
Builders' Association**  
[www.vdw.de](http://www.vdw.de)

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[www.umati.org](http://www.umati.org)

