

FROM A SENSE OF DISRUPTION to System Intelligence.

We've all been in this situation: **THE SYSTEM STOPS WORKING.**

All eyes turn to the error, and suddenly everyone's under pressure. Downtime means costs. Only afterward does it become clear what actually happened inside the machine.

Why? Because maintenance is usually carried out at fixed intervals, regardless of the actual condition. The system itself provides little insight into its internal state. Yet data has long been generated — sensor readings, operational information, and messages from control systems. They are stored, but the connections between them remain hidden.



We're familiar with this as well: **UNCONNECTED DATA.**

Data exists — in systems, in logs, in individual components. It's continuously generated during operation — quietly, steadily, and often unnoticed. The problem? It remains fragmented. A value here, a message there. Time stamps without context. States with no relation to one another. What is missing at this point is the connection between the data and the correlation of information that transforms individual signals into a reliable overall picture.

The result? Operating behavior begins to change, subtle deviations creep in unnoticed, and signs of wear appear only sporadically.

**The system is speaking – but no one is listening
to the bigger picture. How could they?**

DRIVEN BY PRINCIPLE. Worldwide.

Only during operation does it become clear how a system truly performs. Its valuable data reveals its behavior. Use this knowledge to ensure consistent and smooth operations. GMN supports you along this journey—as a reliable and trusted partner. That's a promise.



USA

GMN USA
181 Business Park Drive
Bristol, CT 06010

GERMANY

GMN Paul Müller Industrie GmbH & Co. KG
Äußere Bayreuther Str. 230
90411 Nuremberg

JAPAN

FUKUDA Corporation
11-2 Akashicho, Chuo-Ku -
Tokyo 104-0044

CHINA

Shanghai New Amigo
Co. Ltd.
108 Luo Yang Road, Ming
Hang Dist. • 201104
Shanghai

CONTACT

vertriebspi@gmn.de
+49 911-5691-686



www.gmn.de

DIGITAL SOLUTIONS



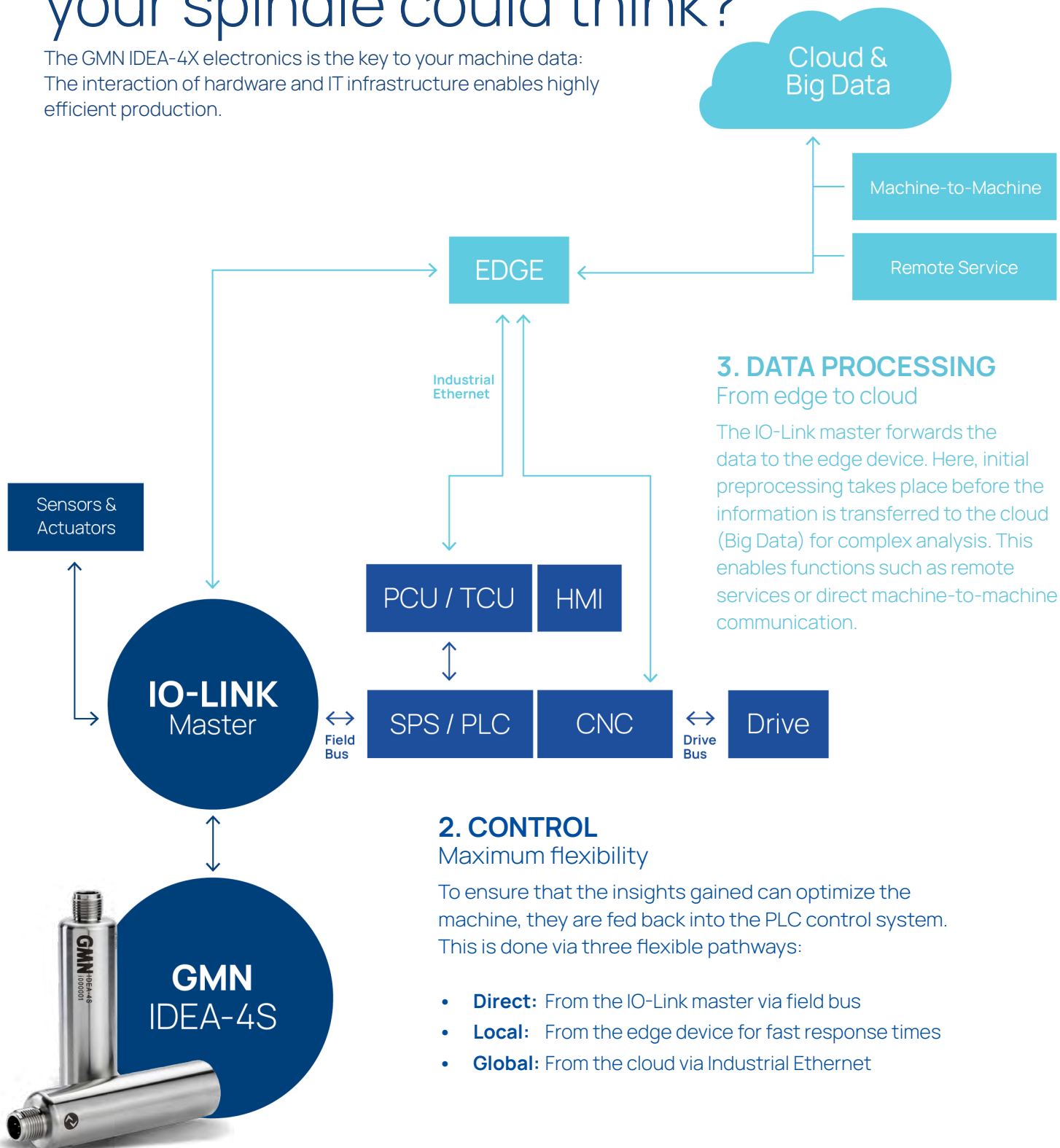
SYSTEM INTELLIGENCE

generated from ongoing operations

Seamless connectivity from physical motion to digital analysis—
simple, scalable, and evolvable.

WHAT IF your spindle could think?

The GMN IDEA-4X electronics is the key to your machine data:
The interaction of hardware and IT infrastructure enables highly efficient production.



1. THE BASIS

Precise data acquisition

The IDEA-4S electronics communicates directly with the IO-Link master via the standardized IO-Link protocol. The master serves as the central interface within the machine, to which additional sensors and actuators can be flexibly connected.

2. CONTROL

Maximum flexibility

To ensure that the insights gained can optimize the machine, they are fed back into the PLC control system. This is done via three flexible pathways:

- **Direct:** From the IO-Link master via field bus
- **Local:** From the edge device for fast response times
- **Global:** From the cloud via Industrial Ethernet

3. DATA PROCESSING

From edge to cloud

The IO-Link master forwards the data to the edge device. Here, initial preprocessing takes place before the information is transferred to the cloud (Big Data) for complex analysis. This enables functions such as remote services or direct machine-to-machine communication.

WE CONNECT what belongs together.

So your machine doesn't just deliver data, it delivers insights.

YOUR ADVANTAGE +

Seamless connectivity from physical movement to digital analysis – simple, scalable, and evolvable.

- **LIVE DATA TRANSPARENCY**
Make machine data instantly usable.
- **OPTIMIZED PROCESSES**
Direct feedback of data into the control system.
- **SCALABLE ECOSYSTEM**
Easily expandable via IO-Link master.
- **REMOTE READY**
Basis for remote maintenance and cloud analytics.



YOUR PATH

To data-driven production

1. Analysis >

We assess your existing infrastructure and available data.

2. Identification >

We identify potential, relevant signals, and correlations.

3. Implementation >

You receive a clear, integrated solution – including commissioning.

4. Support

We stay by your side – ensuring long-term understanding and operational reliability.



READY for the next Level?

The GMN IDEA-4X ecosystem doesn't just deliver data – it creates the digital identity of your machine.

DIGITAL TWIN & AAS

Through structured data provisioning, we establish the foundation for your digital twin. Thanks to the Asset Administration Shell (AAS), we ensure that your component speaks a standardized digital language and can be seamlessly integrated into Industry 4.0 environments.

DIGITAL PRODUCT PASSPORT - DPP

Easily meet upcoming regulatory requirements through digital documentation of lifecycle and material data – directly accessible via the IDEA-4S network.

THE THREE DIMENSIONS of an intelligent system

