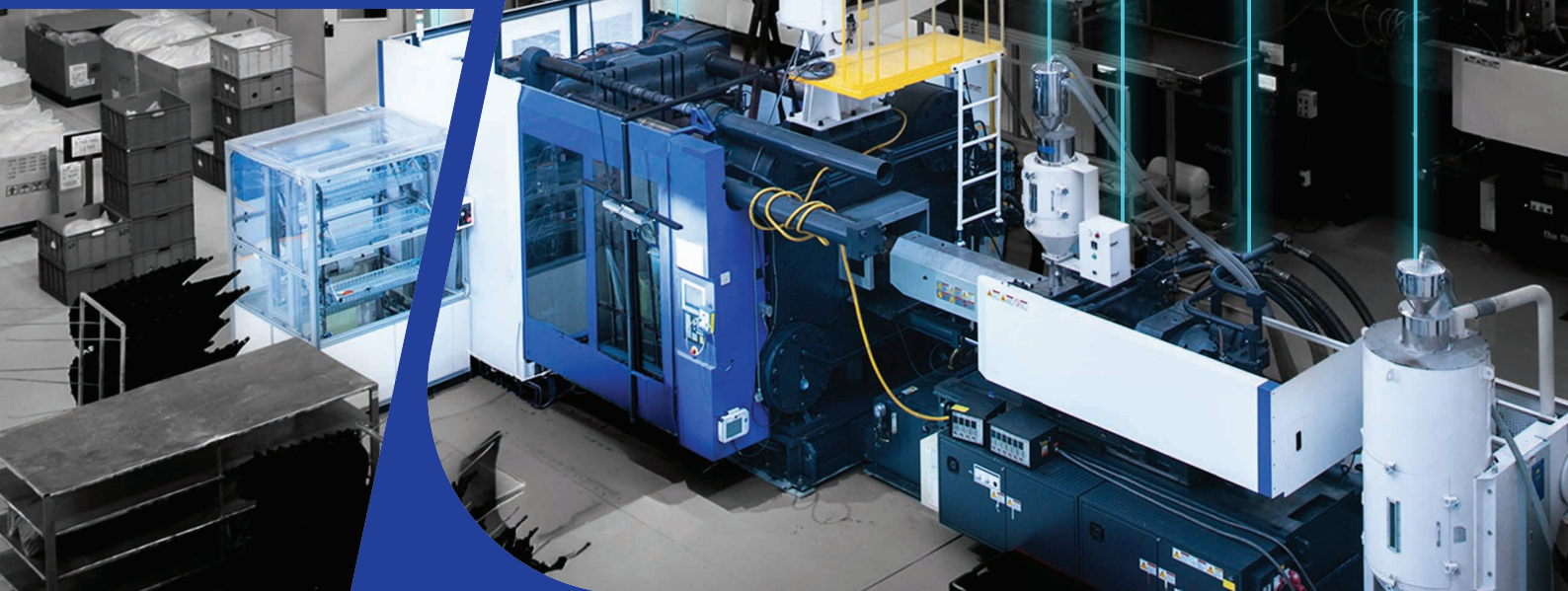


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TTTECH



FUTURE-PROOFING BROWNFIELD MACHINERY

Securely modernize existing machines at scale
for digital services and CRA readiness

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Legacy industrial equipment was not designed for modern connectivity, cloud integration, or rising cybersecurity requirements, leaving many manufacturers stuck with multi-vendor hardware of varying ages and security levels, outdated software stacks, and limited access to machine data.

Regulations tighten, and digital service demands grow. Companies must adopt scalable architectures, secure update processes, and hardware agnostic strategies to safely extend the life of existing assets and unlock new value from long running machine fleets to:

- Enhance the functionality and extend the lifetime of existing equipment that would be costly to replace.
- Provide digital services to customers and/or use them to increase efficiency and lower costs, e.g., through remote maintenance and service.
- Securely encapsulate legacy equipment and connect it to the Internet and digital services without having to redesign the machinery itself.

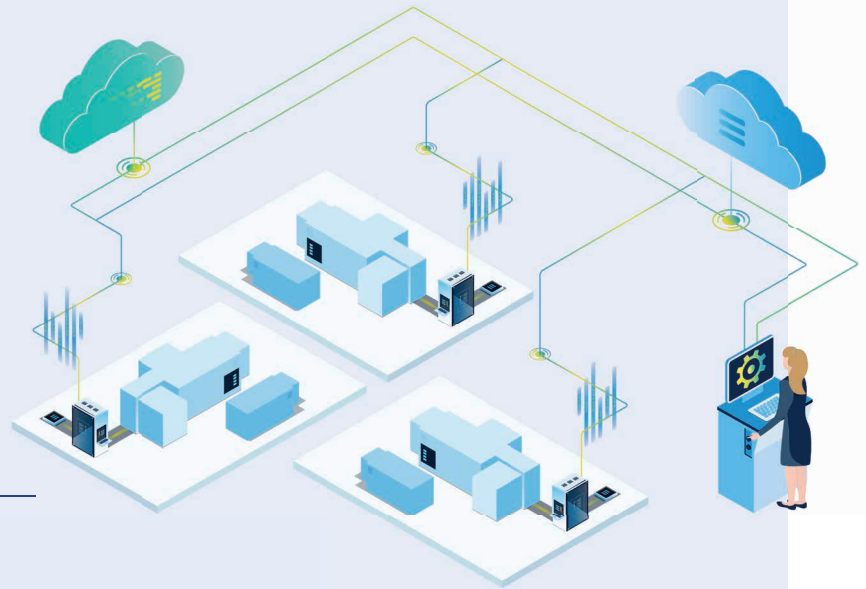
THE CHALLENGES

- **Integrating inflexible brownfield systems:** New digital services require real-time data processing and the ability to scale workloads as requirements grow. This demands future-proof computing platforms that can grow and adapt to changing demands, so you can update your legacy systems with software.
- **Connecting legacy hardware from different providers:** Hardware-agnostic platform solutions decouple machine functions from specific hardware, enabling free hardware choice and long-term future-proofing.
- **Ensuring cybersecurity for products with digital elements:** The Cyber Resilience Act (CRA) places high demands on products with digital components, and companies need to ensure that these requirements are met for their digital offering.
- **Handling upgrades and maintenance across the whole lifecycle:** The CRA requires products to be secure throughout their support period, which may last for 10, 20, or more years.
- **Mitigating increased regulatory pressure:** Machine builders and OEMs deal with increasing requirements. An IEC 62443-certified solution provides a standards-based and secure foundation for companies that allows them to focus on their own applications.
- **Modernizing brownfield assets is hindered by outdated software stacks:** Legacy software and the lack of secure remote update mechanisms often make it harder to implement digital services in brownfield machinery. Using a secure platform basis to encapsulate and connect legacy equipment provides an easy-to-implement solution.
- **Lacking access to machine data:** Predictive maintenance, analytics, and digital services require large amounts of data, as real-time collection is essential for processing and decision-making directly at the machine edge. Platform solutions with an (online) management system enable structured, secure data access.

THE SOLUTION

A future-proof solution combines hardware-independent architectures, modern software stacks, robust cybersecurity, and structured lifecycle management to support new digital applications, regulatory requirements, and ongoing system growth. With the right foundation, legacy machines can be securely integrated, updated, and expanded without disrupting operations.

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NERVE, THE IIOT PLATFORM FOR MACHINE BUILDERS

Nerve is a cloud-managed edge computing platform. It consists of node software that runs on devices at the edge on the plant floor and a management system that runs in the cloud or on premises. Full offline operation is possible, if Internet connectivity is not available or required.

- Nerve is hardware-independent, modular, and scalable.
- Nerve provides a secure basis for digital services and allows companies to focus on their own competences while extending their offering.

- Nerve allows users to securely access data, manage devices and deploy applications remotely.
- Nerve has received cybersecurity product certification according to IEC 62443-4-2 and thus provides a strong foundation for CRA-ready digital services.

WANT TO KNOW MORE?

Contact us for a free assessment of your brownfield machinery:



ABOUT TTTECH INDUSTRIAL

TTTECH Industrial combines transformative technologies with more than 20 years of hands-on experience in critical real-time systems, software, hardware, and safety engineering and supports machine builders and OEMs in making machines that are software-enabled, networkable, and updatable.

TTTECH Industrial serves the industrial and energy markets with its IIoT platform Nerve and customized safe and secure software and hardware engineering solutions. Nerve is a cloud-managed edge computing platform that enables real-time data access, secure software deployment, and centralized management of industrial machines. With its IEC 62443-4-2 certification, Nerve meets modern cybersecurity requirements and supports compliance with NIS2 and the Cyber Resilience Act (CRA).

TTTECH Industrial is part of TTTECH Group, a global group of high-tech companies with more than 1,100 employees and headquarters in Vienna, Austria.

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