



INDUSTRY EXPERTISE
IN AUTOMATION
AND ELECTRONICS

HEITEC is an innovative maker of automation solutions and electronics for a wide range of industries. We offer solutions, products, and services that help optimize production, and we've been very successful in developing software, electronics, and the associated mechanical systems for the transition to Industrie 4.0. HEITEC has grown vigorously over the past few years. It now has a workforce of more than 1,000 employees. With more than 20 locations, we're never far from our clients.

Our services include consulting and development, testing and commissioning, servicing, and more. We bundle our capabilities in five Business Units.

Our classic Automation division develops software for networked production systems, enabling machine and system builders to enhance their clients' production processes.

Our Production Systems division builds complete systems, including machinery, robotics, drive technology, and software. It also tests and commissions them.

Our Measurement and Testing Technology division's work includes integrating image processing systems for quality assurance into the production process, as well as hardware-in-the-loop testing systems for electronic components.

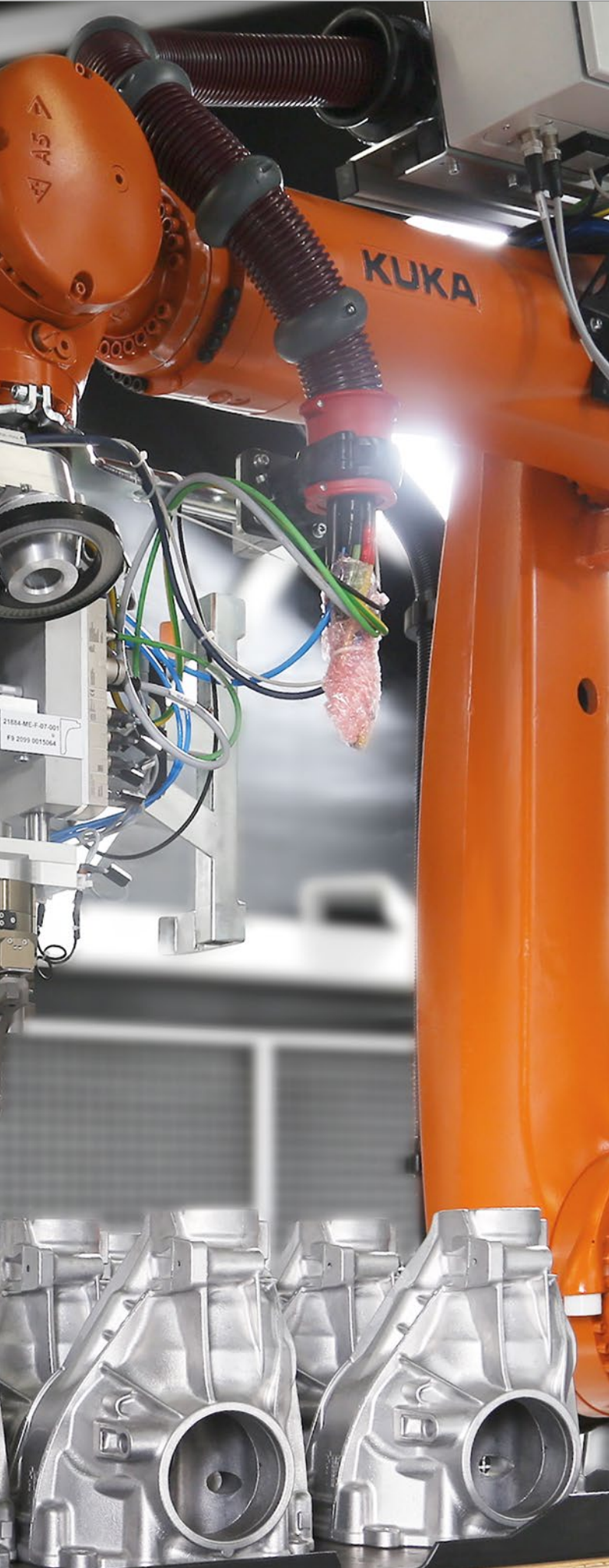
Our Energy Technology divisions provide medium- and low-voltage switching systems, along with instrumentation and control technology, to supply the power for production.

And our Electronics unit develops and produces customized, embedded complete systems that include not only processor engineering and communications technology but also actuator and sensor engineering and graphical user interfaces.

All told, our solutions and services cover the entire value chain in production.



HEITEC 4.0 GETS PRODUCTION NETWORKED FASTER



HEITEC 4.0

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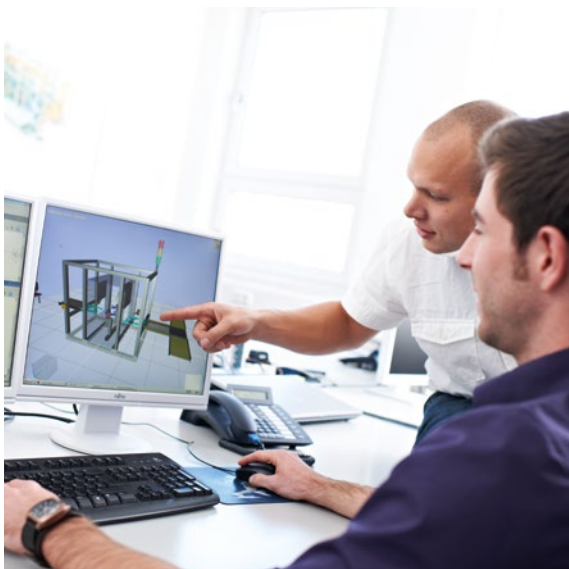
Innovation always breaks the rules. Today this creative disruption derives from the concept of Industrie 4.0, which aims to eliminate the rigid association of one production unit to one product and to replace it with flexible, networked production systems.

The core idea is the "Internet of Things," in which people, machines, and products are extensively networked together. This lays the foundation for a wide range of new services and products that enable machines and processes to plan and optimize themselves autonomously. Formerly rigid production structures get broken up, and machines and processes adapt continuously to new production tasks. But this presupposes an extensive

expansion of machine-to-machine communication, with partially automated responses from the system.

As experts in automation and information technology, HEITEC has developed a portfolio of solutions to get production networked faster – whether in digital system and process planning, virtual commissioning, or monitoring equipment and production processes with special embedded systems. These solutions provide the groundwork for building up an intelligent factory with adaptive machines and systems and decentralized process control.

This is how HEITEC supports its clients in a more rapid transition to Industrie 4.0.



Digital Engineering HeiVM

- › Digital system and process planning
- › Virtual commissioning
- › Digital twin

Advantages:

- › Shorter commissioning times
- › Less downtime
- › Higher software quality for problem-free production
- › Faster, easier employee initiation thanks to training on virtual models
- › Substantially lower cost, higher productivity



Horizontal and vertical IT integration HeiTPM

- › Flexible connection of ERP systems to systems on the shop floor
- › Intelligent machine-to-machine communication
- › Up-to-date human-machine interfaces
- › Interdepartmental information flows

Advantages:

- › Fast, flexible integration into different IT environments
- › Reliable planning, thanks to real-time data from production
- › Quicker preparation, optimization, and completion of production orders

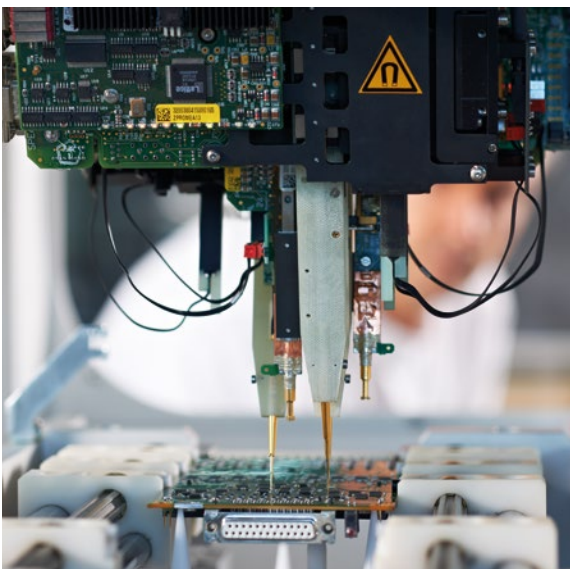


Data Monitoring and Analytics HeiTPM

- › Data gathered and converted to information objects via gateways
- › Long-term storage and analysis of information objects
- › Individualized mobile monitoring
- › Design and implementation of modern machine operation concepts

Advantages:

- › Extensive transparency in the production process, with process data visualized
- › Compliance with quality processes and assurance of quality standards
- › Saves time and money with simple, optimized maintenance
- › Higher productivity with simpler, faster preparation, optimization, and completion of production orders
- › Reliable business planning based on real-time data from production

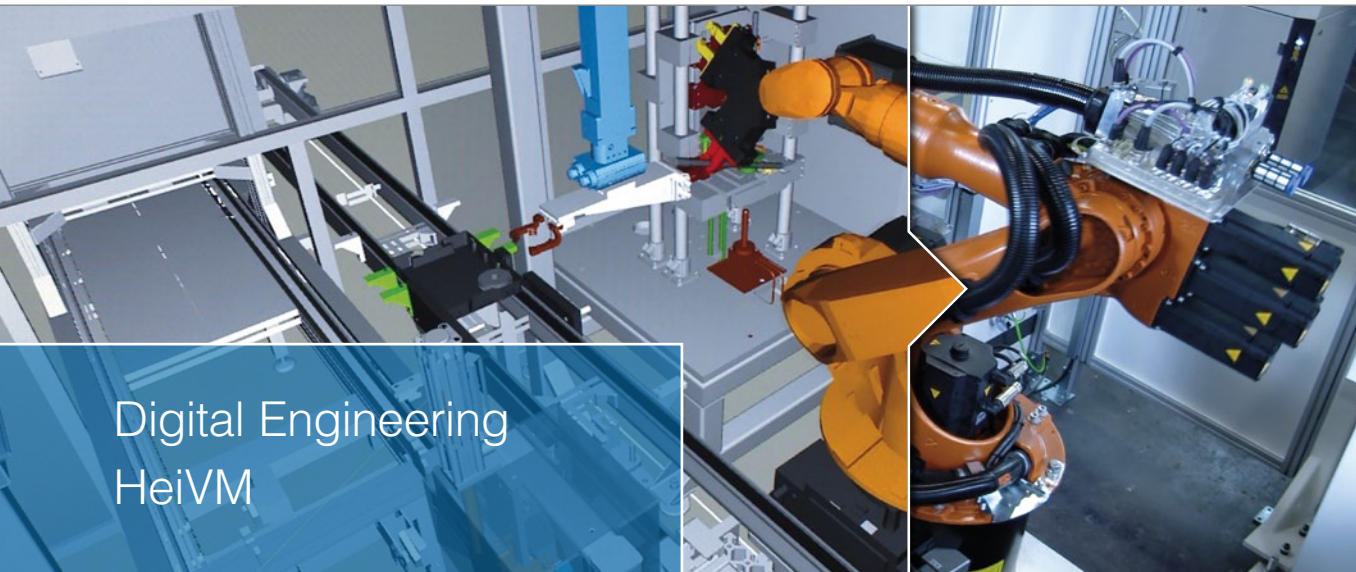


Embedded systems for decentralized intelligence

- › Non-standard components for automation
- › Decentralization of "intelligence"

Advantages:

- › Optimized machine design
- › Optimized use of materials and components
- › Lower costs, higher productivity



Digital Engineering HeiVM

One important driver of increased productivity in building a system is software-based support for engineering processes with virtual models of machines, systems, robot applications, and material flows. Extensive libraries of virtual components – presses, robots, conveyor belts, automation systems, sensors, or actuators – make processes easier to model. That makes it possible to test automation concepts not just

in terms of functionality but in real-time behavior, so that process sequences can be optimized. The concept of real commissioning on a virtual model enables the simulation of all present and future operating sequences within the appropriate production environment in real time, and to control them with the original automation software.

Our broad development base

- › **Virtual systems**
- › **Virtual machines**
- › **Material flow**
- › **Robot applications**
- › **Offline software qualification**
- › **Support/service**
- › **Resource qualification**

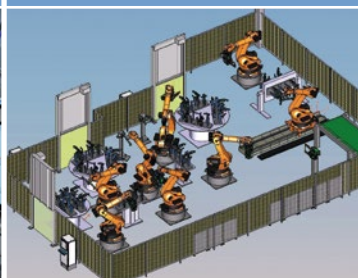
Plant Simulation

An event simulation tool that makes it possible to build digital models of logistics systems



Process Simulate

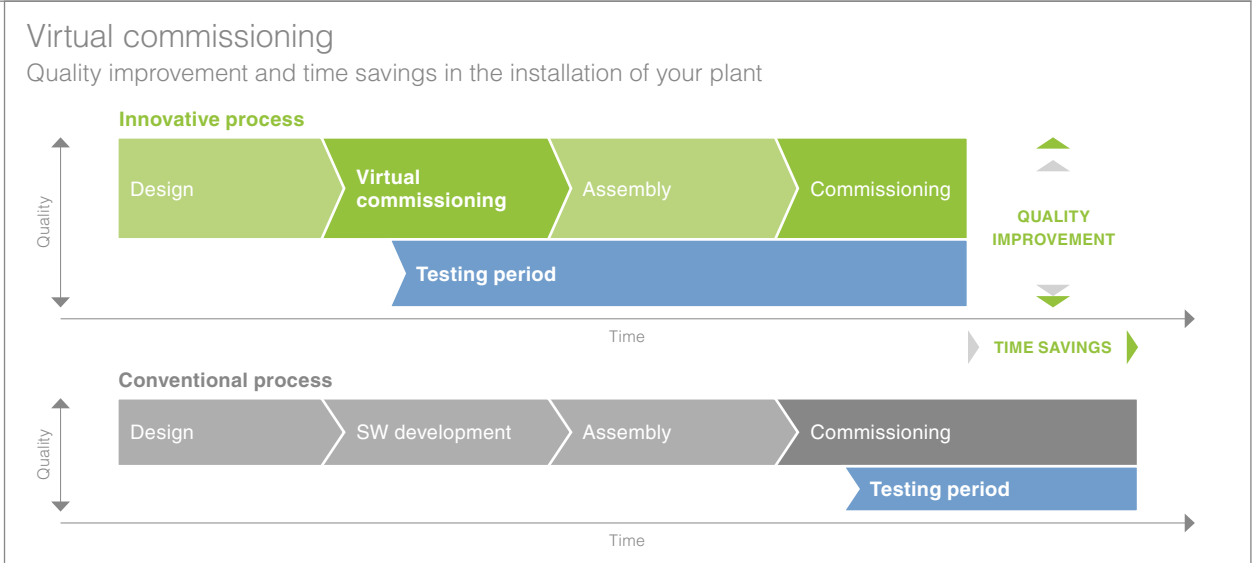
A tool for the virtual validation of assembly concepts before production starts



Process Designer

3D modeling of assembly processes and lines, along with analysis and management of production processes





This yields higher delivery quality of software solutions for automation and drives, and allows plant operators to detect design faults and process errors early. Parallelized processes significantly minimize project duration.

When the virtual system is extended into logistics, material flows can be simulated and system software can be adjusted to the actual equipment layout and work processes. That makes it easier to commission

robots and conveyor equipment and to test alternative options for solutions.

Digital engineering allows project processing time to be cut by about 15 percent and commissioning time by 50 to 80 percent. When designing machines being built for the first time, it can easily reduce processing time by four to six weeks. Future expansions or modifications can be planned and tested while the system is still in operation.

THE DIGITAL FACTORY

VINCENT/EMELI	WinMOD	VIRTUOS	Machineering
Software for planning, visualization, simulation and validation of production plans	Real-time software to test software and to train operating and maintenance personnel on virtual machines	An engineering solution for operating real controls on a virtual machine or system, especially in drive technology and in the NC sector	3D visualization tools, from PLC simulation to HIL control connections, that can be adapted to individual needs



Customized Solutions

Integrated automation solutions

Solution capabilities

HEITEC 4.0 – Digitalization in engineering

Consulting, planning & project execution

Planning and consulting capabilities	Engineering for planning:	Software engineering	Electrical engineering
<ul style="list-style-type: none"> › Digital planning › Simulation › Engineering methods 	<ul style="list-style-type: none"> › New systems › Updates/retrofits › Virtual modeling 	<ul style="list-style-type: none"> › IT and data handling › MES and process instrumentation and control › Controller software (PLC) › Drive technology (drives, motion) 	<ul style="list-style-type: none"> › Design › Project management › Commissioning management

▶ **NEW SYSTEMS AND MACHINES**

▶ **RETROFITS – RENOVATING MACHINES**

HEITEC is your solution partner for projects that call for expertise in one or more of these specialties. We make mechatronic components, systems, and complete units from a single source. Each of these may involve very different combinations of software, mechanical components, and electronics.

For your challenging tasks, HEITEC keeps some 300 automation engineers and technicians (electrical engineering, information technology, mechatronics) available at a variety of sites.

Careful attention to the customer’s needs is an important component of successful, innovative project work.

In addition to a broad base of specialized skills, a project’s success relies in particular on flexibility and dynamism in its execution. Our engineers and technicians will advise you in choosing the right products, and will plan and document possible alternative solutions so you can compare their advantages and disadvantages.

If you like, we can also serve as a general contractor, incorporating measuring equipment, I&C equipment, and motion control systems into complete systems. We always look at your application from your viewpoint, and supply the optimal solution for your needs in your unique industrial environment.



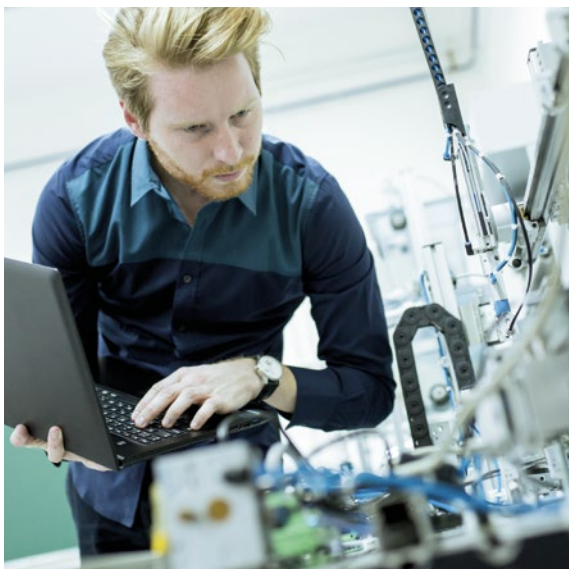
Visualization	Robotics	Switching system production	Commissioning
<ul style="list-style-type: none"> › SCADA › HMI › Diagnostics › Reports 	<ul style="list-style-type: none"> › Robot simulation › Robot programming offline/online 	<ul style="list-style-type: none"> › Setup › Cabling › Testing › Assembly › Supervised installation 	<ul style="list-style-type: none"> › Virtual › Real-life
			Training and support

AND SYSTEMS ► **MODULAR EXPANSIONS OF MACHINES AND SYSTEMS**



New Systems, Retrofits, System Expansions

Innovative engineering in planning and design of automation solutions is the foundation for any successful project. That's why HEITEC supports you with customized solutions. They're based on a precise requirements analysis that considers all relevant factors, like use location, function, and the state of the art. Our engineers draw on that analysis to develop precisely the solution you need. They define the level of system integration to fit your needs.



Our all-around services in automation include consulting, planning, and design for industrial solutions in electrical engineering, automation, mechatronics, and information processing. And if you wish, we can also cover these as a general contractor, for such diverse projects as incorporating MSR technology, vertical and horizontal integration, and motion control applications.

Besides equipping new systems, updating existing systems with retrofits is also a field of growing importance.

In this context HEITEC works primarily in special machines and machine tools as well as warehouse logistics and the production-related aspects of production operations. We provide customized solutions, whether at the control level with actuator and sensor engineering and intelligent drive technology, or at the technical process control level with process visualization and optimization – or in connecting to the ERP level, for example with SAP. Our subsidiary HEISAB offers support in these projects from more than 30 SAP specialists.

An important productivity driver in systems retrofits is software-based support for engineering processes with virtual models of machines, systems, robot applications, and material flows.

This makes it possible to develop and test procedures on machine components more efficiently, irrespective of the degree of completion of the machine or system. In reconfiguring existing systems, HEITEC runs desk tests on the automation software so that it can be downloaded to the system with no errors and the least possible disruption of the production process.



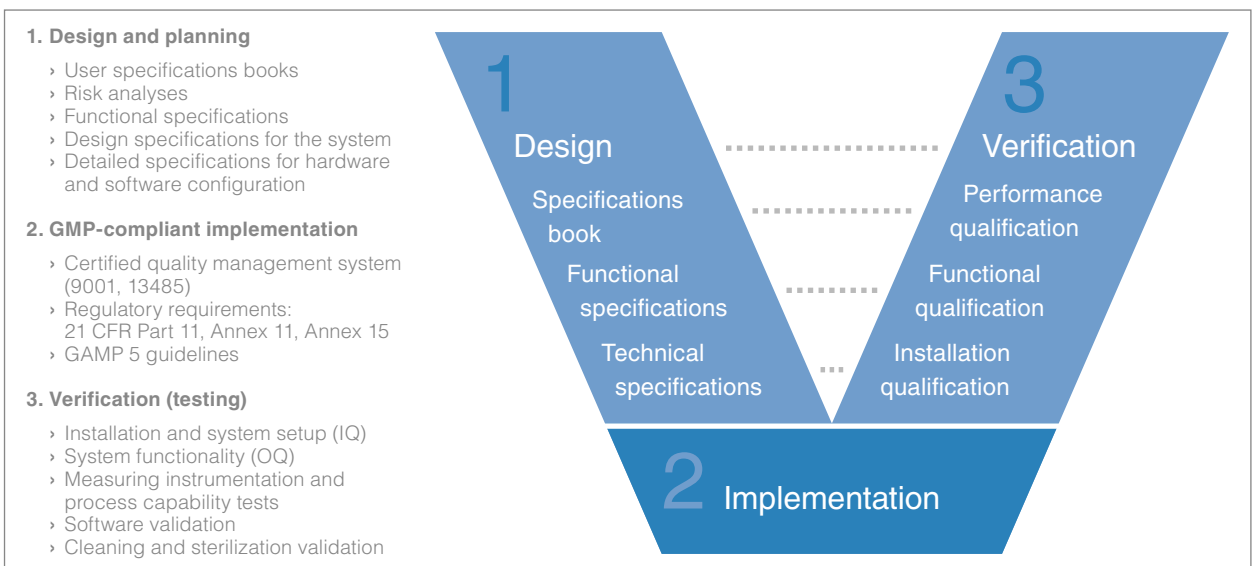
Verification, Validation, Qualification

As a manufacturer or a manufacturer’s supplier in a regulated environment, you’re faced with a large number of requirements set by law. The paramount goal of any legal regulation is to protect the user by ensuring the quality and safety of manufactured products.

HEITEC assists and supports you with an all-around approach – from consulting and employee training through design and planning to implementation and execution. Our fully trained and experienced employees in each relevant sector can help in every phase of your project. Our systematically risk-based approach assures high quality and safety for your products. It also ensures efficient project execution and regulatory compliance.

Our approach is based on a concept individually

tailored to your needs, enabling you to meet all the regulatory requirements that apply to you. In the execution phase, we work with you to determine the risk-relevant components and functions, so as to keep the qualification and validation process as lean as possible. That enables us to adapt the ongoing course of the procedure precisely to your needs. The time consumed by your project is shortened, saving you time and money. Then on this basis, and specifically for you, we prepare the necessary design and detail specifications for your products and production systems. In tests customized to your products, we ensure that the results comply with legal and other quality requirements. This time-tested, well-structured approach cuts your time to market and ensures that your project will be a success.

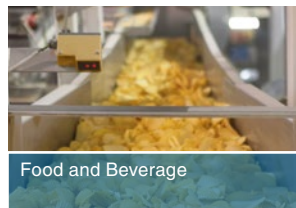
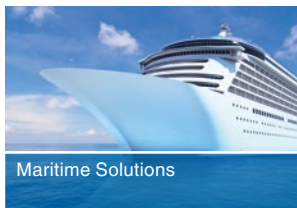


Specific solutions for demanding markets

Our customers come from an extremely wide range of demanding industries and many diverse applications. Industry specialists on our teams help us to understand your specific needs and regulatory requirements and to reflect them in our solutions.

A variety of certifications document our capability in developing and producing the associated components and systems.

Industry Expertise



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