

# aiut



We innovate technology



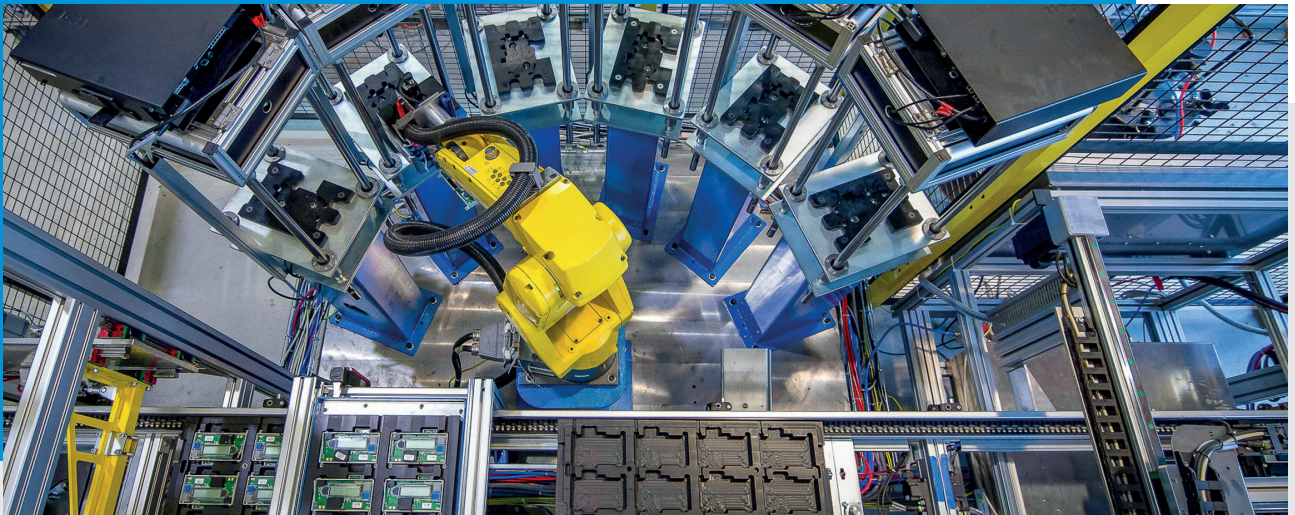




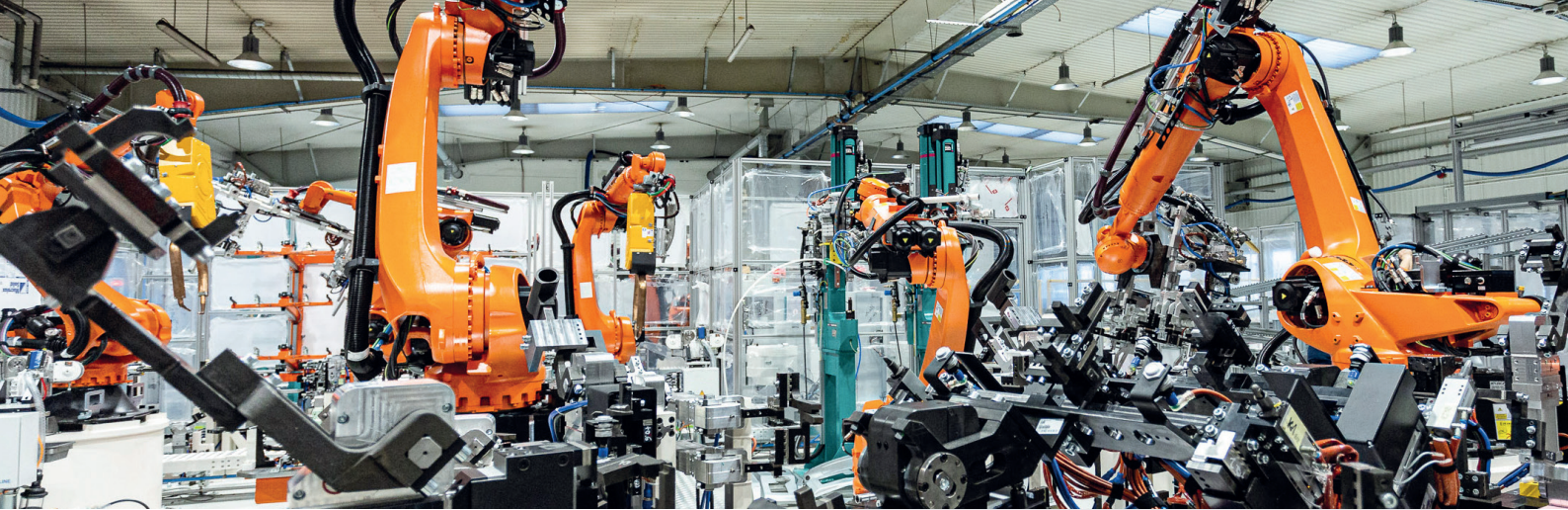
# **We are one of the leading integrator systems for the industry.**

**For over 30 years, AIUT has been supplying the global market with technologically advanced solutions in automation and robotization of production processes, IT, and the industrial Internet of Things (IIoT).**

Thanks to the high competence of our engineering teams, we carry out comprehensive projects for customers from all over the world.



- ▶ **Over 30 years of experience (est. 1991)**
- ▶ **More than 600 qualified engineers of various specializations**
- ▶ **Over 3500 large projects in more than 70 countries**
- ▶ **Tailor-made solutions**
- ▶ **Customization as a standard**



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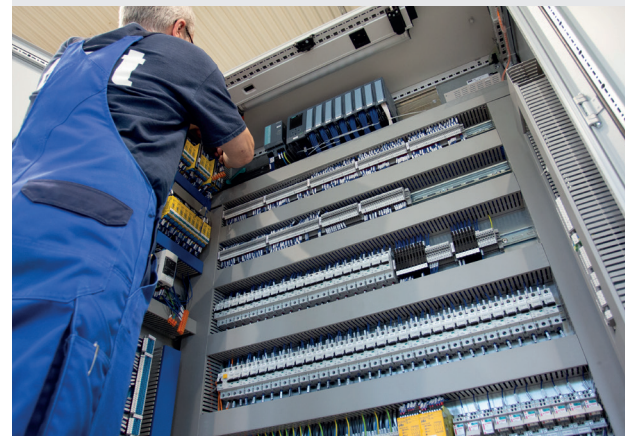
## AUTOMATION

We design and implement technologically advanced solutions following the philosophy of Industry 4.0. That means digitization of automation in the first place. We utilize the technology of virtual commissioning in which the so-called digital twin is created. Its role is to reflect entire processes in the virtual space. All designed aspects can be operated within the IT ecosystem. This includes the processing of orders into material requirements, the production plan, the specification of technology for customized products, the transfer of orders to workstations and machines, etc.

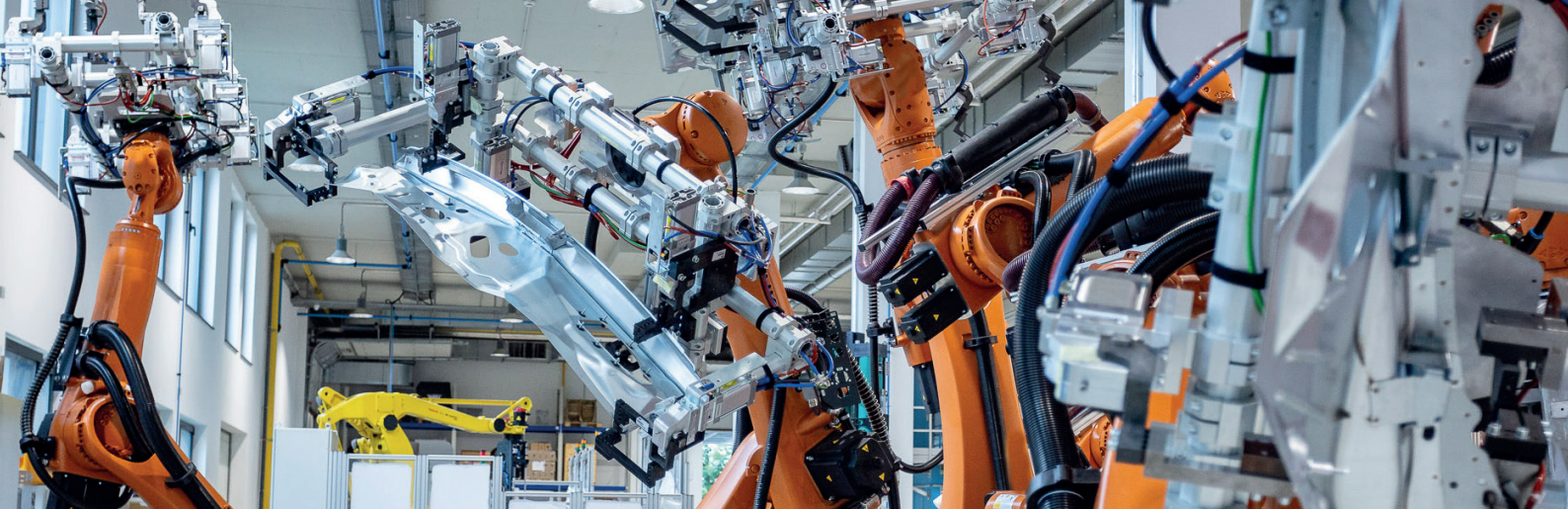
The main area of our activity is designing and turn-key execution of electric works, automation, and production management systems. We design electrical wiring, I&C systems, and control systems. We develop software for controllers and DCS/SCADA systems, as well as dedicated systems for production tracking and management. We ensure comprehensive deliveries and on-site assembly of control cabinets, power supply cabinets and control panels, cable routes and cabling, electrical devices as well as systems of control and measurement instruments and automation. We perform tests, start-ups, and servicing. We cooperate with the largest suppliers of components and devices for automation.

### **Our solutions serve in many industries, including:**

- automotive industry
- cement and lime industry
- energy industry
- oil and gas industry
- metallurgy and metalworking industry
- furniture industry
- food and beverage industry
- paper industry







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## ROBOTICS

We create innovative, automated, robotic workstations and production lines. Together with our customer, we develop detailed project assumptions, and then the solution concept is thoroughly analyzed. We create dynamic computer simulations of the robotic workstation's main elements, which helps to avoid mistakes in further stages of the project. We implement solutions comprehensively, and support the customer throughout the full life cycle of the product - from the start-up to many years of successful operation, offering a flexible warranty and post-warranty service. Our solutions are based on linear drives, pneumatic and hydraulic actuators, servo drives, and industrial robots from world-leading manufacturers.

### We are experienced in:

- inspection and assembly stations for tightness, geometric dimensions, electrical parameters
- visual systems with cameras for quality control
- palletizing stations
- welding and sealing stations
- protective coating application stations
- feeding elements to machines and operating presses
- processing of cast and plastic elements (chamfering, drilling, cutting)
- quality control stations







## CONTINUOUS PROCESS AUTOMATION

AIUT solutions allow precise management of continuous industrial processes and simulations of changes. We create automatic adjustment systems, including temperature, voltage, and current. At the same time, thanks to our advanced production control systems, we ensure the continuity of the main manufacturing processes in factories and enterprises around the world.

Our solutions in the field of automation and support of production control processes (like our advanced DCS, distributed control systems) help to increase the quality of manufactured products. We achieve this by better regulation of manufacturing processes while leading to increase in the overall plant production efficiency.



### AIUT technical capabilities include:

- complete DCS systems  
(Distributed Process Control systems)
- control networks
- measurement automation through sensors, meters, or measuring devices
- automation of control process planning
- production planning and control systems
- software modification without stopping the control system
- maintenance
- data analysis
- advanced algorithms
- process visualization
- reporting





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## SOLUTIONS FOR CHEMICAL AND PROCESSING INDUSTRIES

AIUT has an expert team of process engineers whose objective is responding to the needs of enterprises from the chemical, cement and lime, food, petrochemical, and energy industries. Thanks to their experience, the company has advanced knowledge regarding the construction of apparatuses or entire technological lines in which chemical processes are carried out.

We automate production and support processes by creating and delivering turn-key advanced installations, including sulfuric acid factories and fuel depots. We develop and test our projects in the AIUT research-and-implementation facility in Gliwice.

AIUT supports the whole investment process comprehensively, including technical analysis and cost estimation, development of technical and detailed design, delivery and assembly of equipment, commissioning of installation together with training of client staff, as well as concession and subcontracting documentation.

### **AIUT capabilities include:**

- sulfuric acid production installations
- sulfur transport and storage installations
- fertilizer drying systems
- chemical packaging systems
- installations for unloading vegetable oil from road tankers and rail tank cars
- vegetable oil and esters reloading installations
- installations for liquid fuel and chemical products
- complete vapor recovery units for petrol installations
- systems of hermetization and reduction of volatile compounds
- biogas plant control systems





## MECHATRONICS

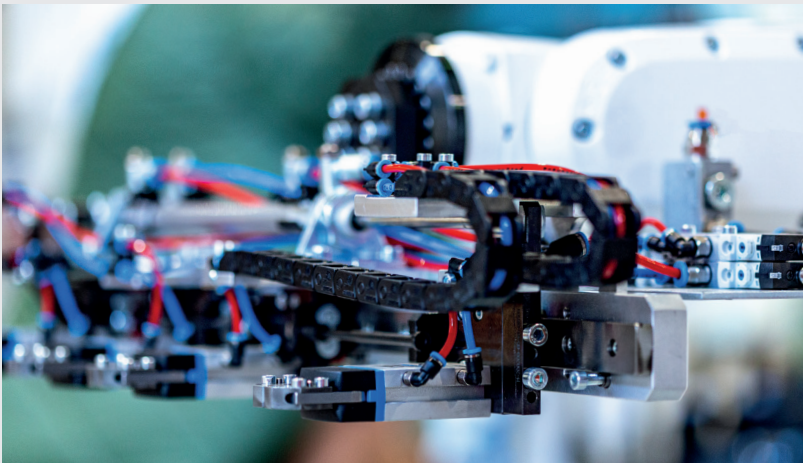
AIUT synthesizes knowledge in the field of mechanical engineering, industrial electrical works, IT, automation, and robotics to create comprehensive advanced market solutions.

AIUT gained expertise in the automation and robotization of production lines and processes. We create machines and advanced mechatronic systems that allow smooth adjustment of the robot's response to the actual situation, alongside many other advantages.

### Technical capabilities

AIUT solutions are used in industrial automation systems and can be freely adapted to meet individual plant needs.

Our multifunctional mechatronic system designs are characterized by flexibility and ease of configuration as well as intuitive operation.



### AIUT options include:

- industry manufacturing systems
- programming of industrial robots
- vehicle and robot control systems
- electromechanical microchips
- coordinate measuring machines



# VIRTUAL COMMISSIONING AND DIGITAL TWIN

Growing market expectations towards the reduction of time needed to launch production processes require advanced solutions to be used. To meet these expectations, AIUT utilizes virtual commissioning (VC) technology to fully optimize the designed or existing production lines and stations.

The range of simulation includes both hardware and software. Our virtual environment enables realistic robot and device validation, robot program to PLC signal mapping, as well as verification of safety procedures and logic errors.

## Virtual system validation includes:

- process simulation
- 3D models of all elements included in the robotized production line
- optimal layout of all components
- selection of robots and system tools
- robot reach-range testing
- collision-free path-planning
- determining service points
- robot trajectory optimization
- adapting the application to the customer's standards

## The main, yet separate tasks for virtual commissioning are:

### VC of a mechanical process

Required simulations and tests for creating the mechanical project of a production system, including the design, kinematics, programs (path-planning), intervals, and cycle time.

### VC of automation and electrics

Defining input/output signals, logical definitions, HMI programming, safety programming.

## Digital twin introduces new possibilities

VC technology enables the replication of robotic stations or production processes, or even the entire production halls, using combined data from the entire production ecosystem. As a result, a so-called digital twin is created. Such advanced simulations allow us to map real product behavior, improve machine and robot behavior, enable monitoring of various process parameters, and reveal production gaps or low-efficiency processes.







## INTRALOGISTICS SYSTEM FOR SMART FACTORY

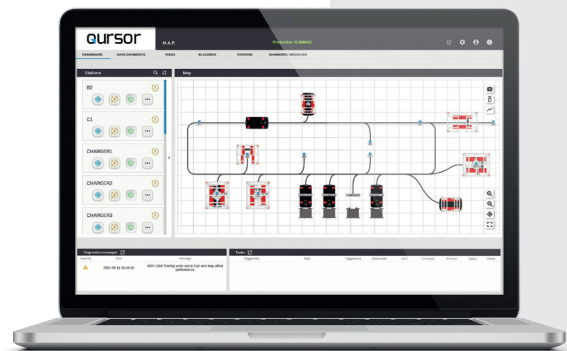
Aformic intralogistics system supports the goal of increased automation and reduced reliance on human labor in industrial processes. By using advanced technologies and data-driven decision-making, we can create more efficient and autonomous manufacturing and logistics systems.

AFORMIC system enables a smooth transportation of materials in real-time, enabling just-in-time production, which can reduce inventory costs and improve production efficiency. It also enhances worker safety in industrial settings by automating hazardous or repetitive tasks, minimizing the need for manual material handling, and navigating hazardous or restricted areas.

Formica AMRs are controlled by the Qursor system, which significantly improves work efficiency through streamlined task management. All this while maintaining the highest safety standards - by constantly monitoring the environment and operations, our advanced safety systems can immediately respond to anomalies and minimize the risk of collision.

### Integration of technology in manufacturing & logistics industries.

- flexible configuration
- improved efficiency
- reduced labor costs
- real-time monitoring
- increased safety
- improved management
- convenient scalability



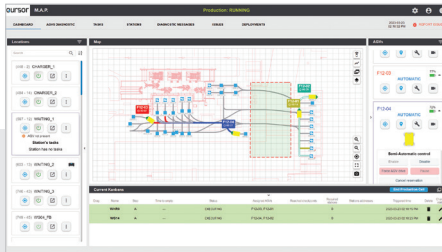




- flexibility and adaptability in dynamic environments
- easy deployment and scalability
- the highest safety standards

## Qursor

The Qursor software allows for comprehensive management and control of all operating parameters of the system and its components. QURSOR is a fleet management system that deals with task allocation, path planning, navigation assistance, or system performance & KPI check, which enables the implementation of autonomous mobile robots in smart warehousing and manufacturing environments. The smooth incorporation of the Qursor system into the factory software system allows for effective management of AGVs and AMRs from multiple vendors including other vehicles monitored by RTLS. Our platform provides full analytics, KPIs, and reports based on metrics gathered from logistic processes, AGVs, AMRS, and factory environments.



## FORMICA

Aformic solution offers highly developed Formica robots that use advanced sensors and mapping technology to adjust real-time maps of the environment and modify their paths in response to changes in the environment, such as obstacles or new paths. Our robots are implemented using process simulation to test and optimize their behavior in virtual environments. Then, during the process of environment mapping, a digital model of the environment is created.

We can customize the design of our robots to suit specific types of material handling equipment, like racks, pallet containers, or any containers of non-standard shapes, ensuring seamless integration and optimal performance.





## AUTOMATED STORAGE AND RETRIEVAL SYSTEMS (ASRS)

We design and co-create the latest trends in intralogistics. We provide comprehensive intralogistics solutions tailored to your individual needs to help you free up warehouse space, optimize its use, and increase the efficiency of warehouse operations. Together with you, we strive for a fully automated warehouse. The objective is to ensure an efficient, smooth, and safe flow of goods within the warehouse and production hall, without the need for the operator to participate. To do that, we offer ASRS solutions such as AMR Formica, conveyor transport systems, automated sorters, and high-storage systems reaching over 40 meters in height that have become indispensable elements of warehouses and distribution centers today. As a general contractor, we provide comprehensive system selection through in-depth analysis, virtual commissioning, assembly integration with WMS, and support during all processes.



# ADVANCED IT SYSTEMS FOR INDUSTRY

We provide leading solutions to cover the full range of enterprise asset management, support of maintenance departments, repair and service management. We design and implement comprehensive automation, control, and production process management systems. We create smart IoT ecosystems for remote, automatic readout and monitoring of municipal utility networks and Smart Grid.



## IT EAM/CMMS

For over 20 years, we have been providing AIUT-IBM Maximo solutions - covering the full range of enterprise asset management as well as support for maintenance, repair, and service departments.

## Data Center

AIUT servers guarantee security and uninterrupted access to data, providing flexibility and performance for applications in local and hybrid environments.

## Big Data

Big Data analytics is becoming the basis for business decision-making. We transform the potential of information into new business products and services.

## Artificial intelligence

We use artificial intelligence technology to create advanced solutions for industry and business.

## Business Intelligence

We help you control and shape your business processes effectively - using advanced data analysis.

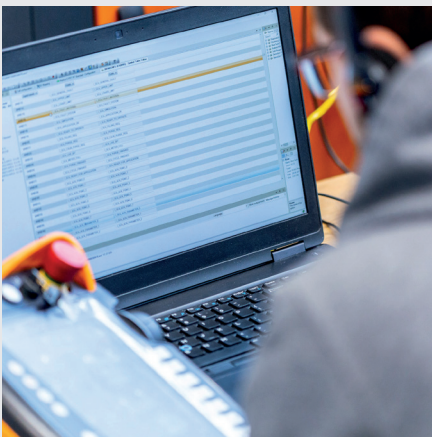
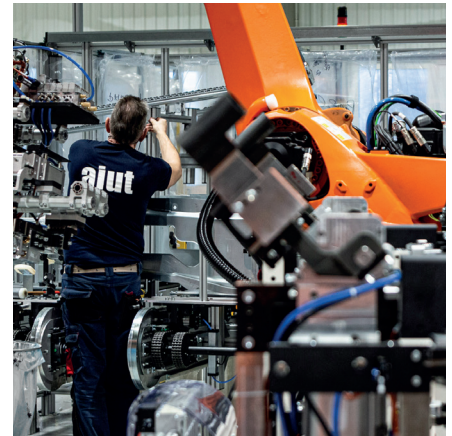
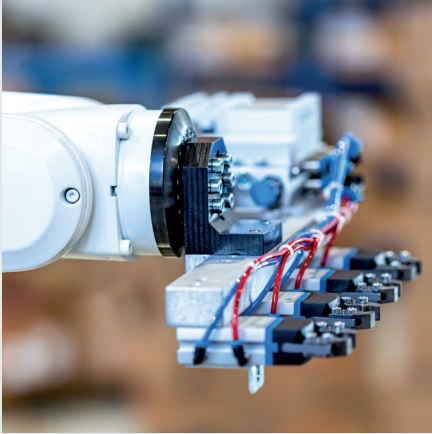
## Service Desk

Our teams of specialists provide 24/7 support, supervising the correct operation of the implemented systems.

## Applications

We design and implement advanced applications to extend the operation and support of our systems. Those are used for a wide range of purposes: visualization of measurement and diagnostic data, consumption management, management of meters and related customer accounts, fuel distribution planning, supervision of service requests, or support in the installation and servicing of our solutions.





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# OUR DNA

## — New technologies and products

We track the latest trends. We design and implement technologically advanced solutions following the philosophy of Industry 4.0.

## — Own solution brands

Some of our solutions can successfully function as independent business models. That is why we have ported them into separate brands.

## — Research and development

Our company conducts research and development projects under its own R&D department and in cooperation with leading academic centers. We own a number of proprietary inventions, patents and trademarks registered in the European Union, as well as in the USA, China, India, Australia and Brazil.

## — Qualified staff

We have over 1,000 employees, of which more than 600 are specialist engineers with competencies in mechanical design, electrical engineering, control systems, robotics, intralogistics, autonomous vehicles, IT systems for production control, electronics and communication devices for the Internet of Things, analytics, and decision support ecosystems, asset management systems, and IT integration.

## — Locally on global markets

We believe that long-lasting and close customer relationships are essential while optimizing industrial processes. That's why we have set up local engineering competence centers in key markets around the world. Their task is to supervise the project during the implementation and to provide the highest quality of service throughout the product lifecycle.

## — Business partnership

We value trust and mutual respect in business relations. AIUT strategy assumes a high level of project personalization and full responsibility for the services provided. We provide support at every stage of the project.

## — References

Our competence is proven by the number of completed projects (3500+). It is also confirmed by the number of enterprises that use our solutions. These include automotive market leaders or fuel potentates, among others. We are a reliable, experienced service provider and a competent partner for global projects. This opinion is shared by both our new and trusted long-term business partners.



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## Global reach, local competence centers

# aiut

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