

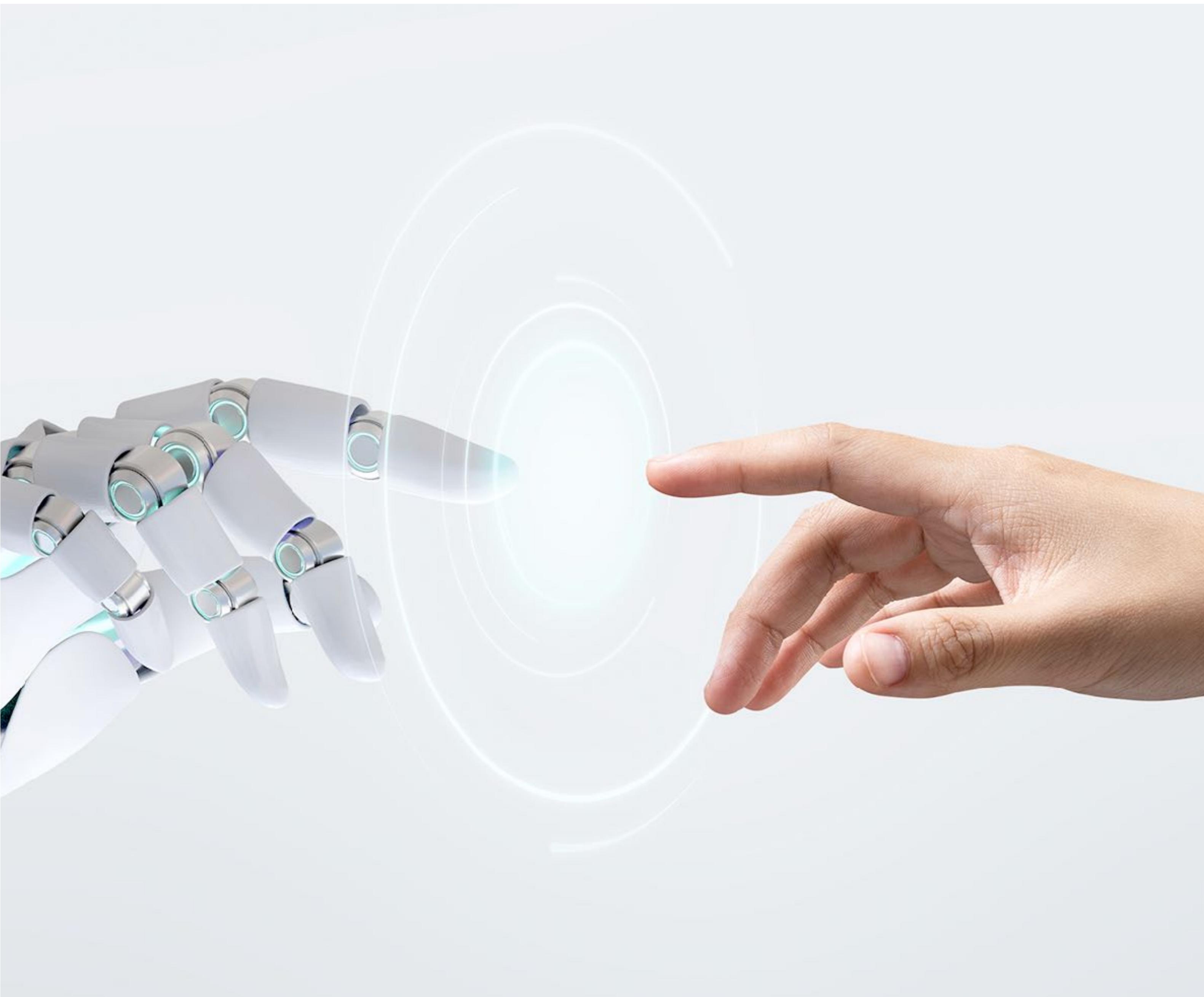


Lion Smart Equipment Solution  
ENGINEERING THE HUMAN FUTURE



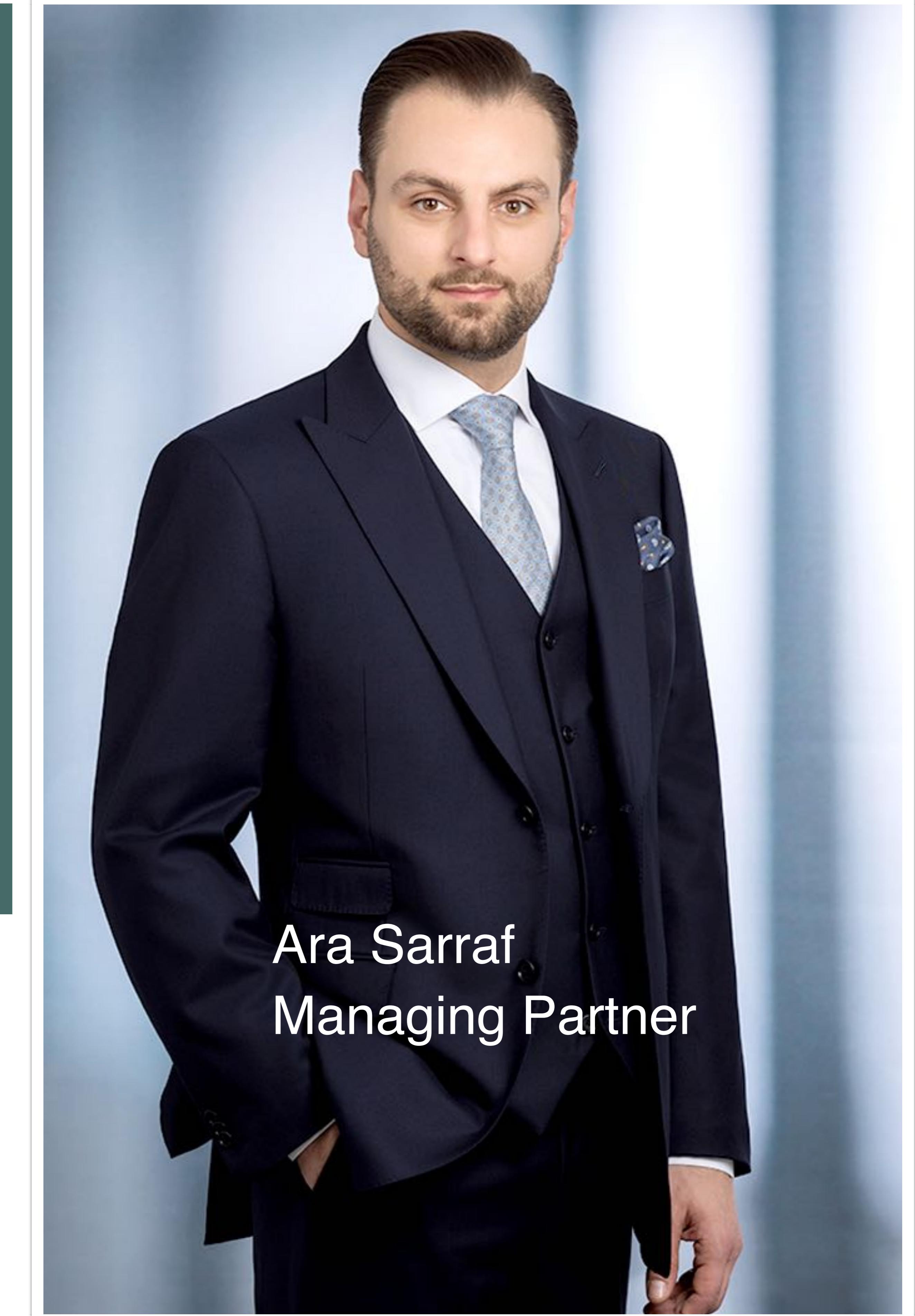
# LION SMART EQUIPMENT SOLUTION

ENGINEERING THE HUMAN FUTURE



- ✓ Tailored Assembly Line Configurations
- ✓ Intelligent Testing Systems & Equipment
- ✓ Vision Inspection Solutions
- ✓ Custom Machine for Automotive Wiring
- ✓ Industrial Software Development
- ✓ Engineering & Industrial Services
- ✓ Artificial Intelligence & Big Data

**Lion Smart Equipment Solution** is your technology partner for customized automation solutions, intelligent testing systems, and future-proof production platforms.



Ara Sarraf  
Managing Partner





LION SMART EQUIPMENT SOLUTION

<https://lion-se-solution.de>

## Our Strength: A Competent Team Driving Your Industrial Innovation

### A multidisciplinary team delivering excellence at every stage:

- Project Managers with international expertise (PMI, Agile) – tightly managing timelines, risks, quality, and budgets.
- Experienced Electronics & Software Engineers, combining deep technical knowledge with agile development to deliver scalable, reliable embedded systems.
- Mechanical Engineers and Designers who turn specifications into robust, cost-optimized, production-ready solutions.

### A robust infrastructure to accelerate your success:

- In-house CNC machining center equipped with advanced manufacturing tools – enabling rapid iteration, tight tolerances, and full IP control.
- Three-shift assembly operations – ensuring near-continuous production capacity for tight deadlines and scalable volume.
- Phase-gated project structure – from specification and concept to prototyping, testing, and final delivery: goal-driven, efficient, and risk-conscious.





# WHAT SETS US APART

## Integrated Collaboration:

Seamless synergy between PMs, hardware, software, and mechanical teams — ensuring coherent, optimized solutions without silos.

## Agile & Transparent Processes:

Regular project reviews, milestone-based deliverables, and proactive risk management foster trust and adaptability.

## Technical Depth & Industrial Insight:

Our engineers bring not only theoretical knowledge but practical industrial experience — from feasibility studies to production ramp-up.

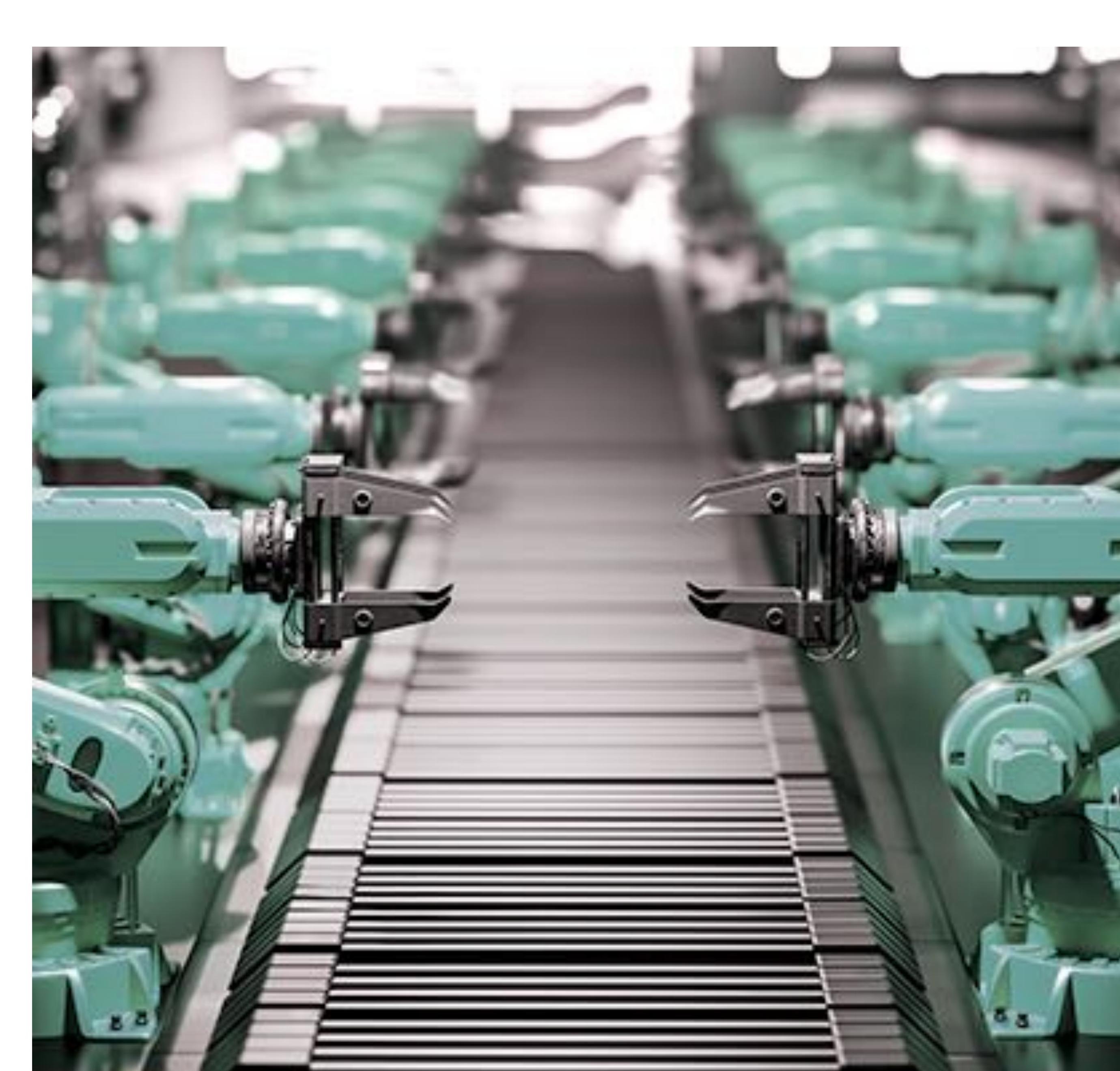
## Operational Continuity:

3-shift operations ensure fast-paced progress, meeting tight deadlines without compromising quality.

## Customer-Centric Delivery:

We are committed to exceeding expectations with documented outputs for every phase — empowering you with traceability, compliance, and readiness for future growth.

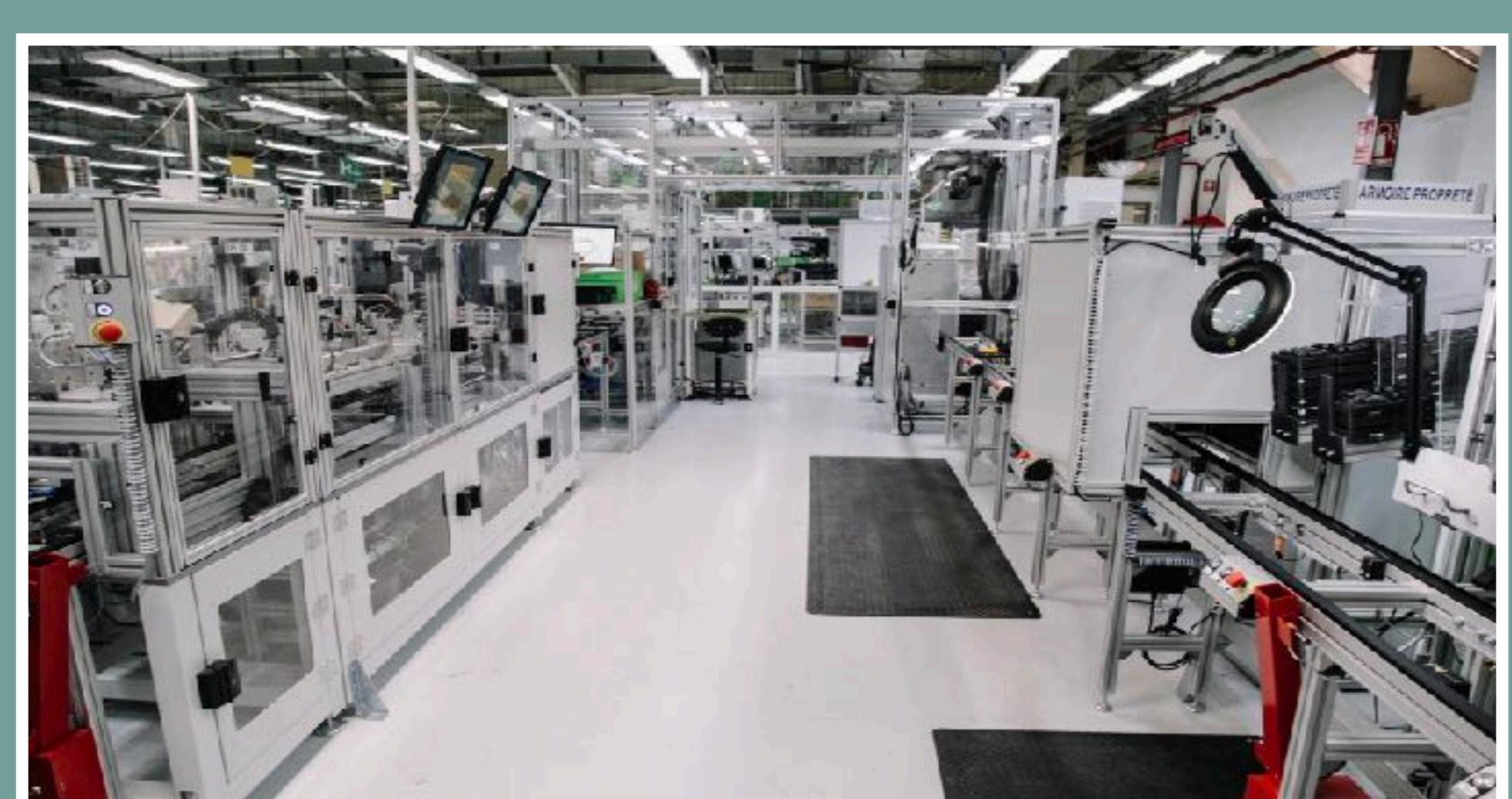




## TAILORED ASSEMBLY LINE CONFIGURATIONS

Whether you are launching a new product or optimizing an existing line, we deliver assembly systems adapted to your production needs...





## Manual Assembly Line

Supervised workstations with ergonomic setups and operator guidance.

Ideal for small to mid-volume production.

*Example: Manual wiring assembly with visual inspection stations.*



## Semi-Automated Lines

Combine human expertise with automation tools like screwdrivers, press stations, or smart fixtures.

*Example: Automated station performs torque-controlled screwing.*



## Fully-Automated Lines

High-speed lines with complete automation for demanding productivity and quality standards.

*Example: Automated assembly of electronic modules including pick & place, soldering, and final test.*



## Custom Handling & Conveyors

Tailor-made conveyors, pallet systems, or rotary tables to ensure smooth part transfer and line synchronization.

*Example: Modular conveyor system with buffer zones and accumulation logic.*



## Robotic Integration

We integrate 6-axis and SCARA robots for precise assembly, handling, and inspection.

*Example: Robotic arm performing pick-and-place of components with integrated vision system for part orientation.*

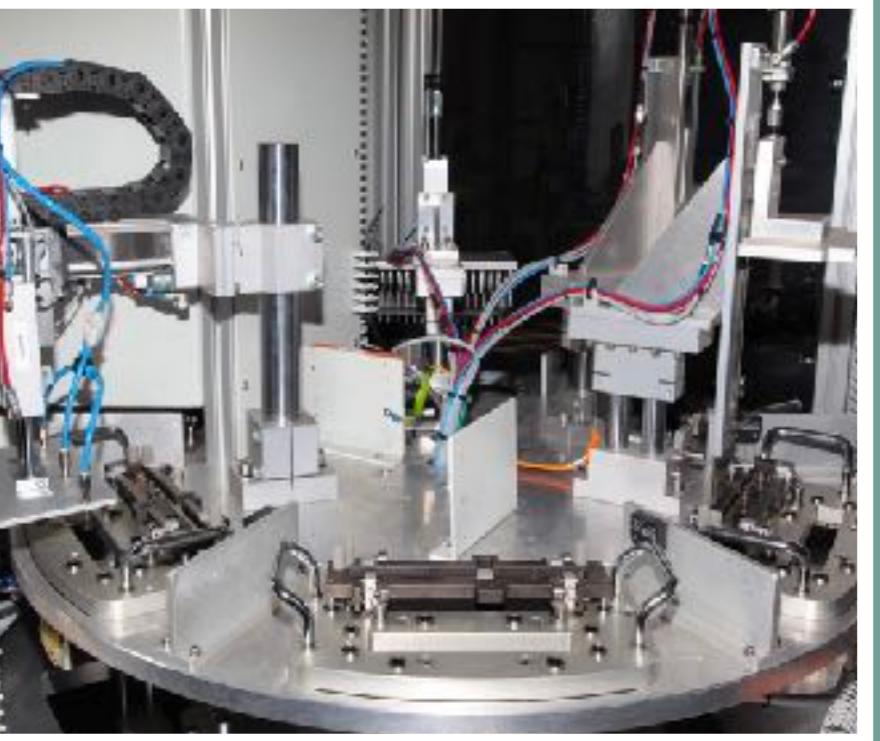




# INTELLIGENT TESTING SYSTEMS & EQUIPMENT

We develop customized testing systems and equipment that ensure the quality, functionality, and reliability of your products throughout the entire manufacturing process.





## 🦁 Turntable Tester

Rotary platform integrating multiple test stations for sequential testing with high throughput.

*Example: Functional and vision tests performed at different rotary stations for a sensor module.*

## 🦁 Embedded Fixture Tester

Compact and ergonomic fixtures embedded into workbenches or automated lines, adapted to your product's shape and interfaces.

*Example: Pneumatic fixture with integrated electrical contacts for end-of-line testing of a PCB.*

## 🦁 Custom Test Benches

Standalone or inline benches for dedicated tests based on product requirements.

### Includes:

- 🦁 **RF Tests** (e.g., antenna performance, signal strength)
- 🦁 **Functional Tests** (e.g., verifying logic functions, I/O, displays)
- 🦁 **Measurement Tests** (e.g., voltage, current, resistance, pressure, flow)

*Example: Functional test bench for IoT device with RF signal validation and current consumption profiling.*

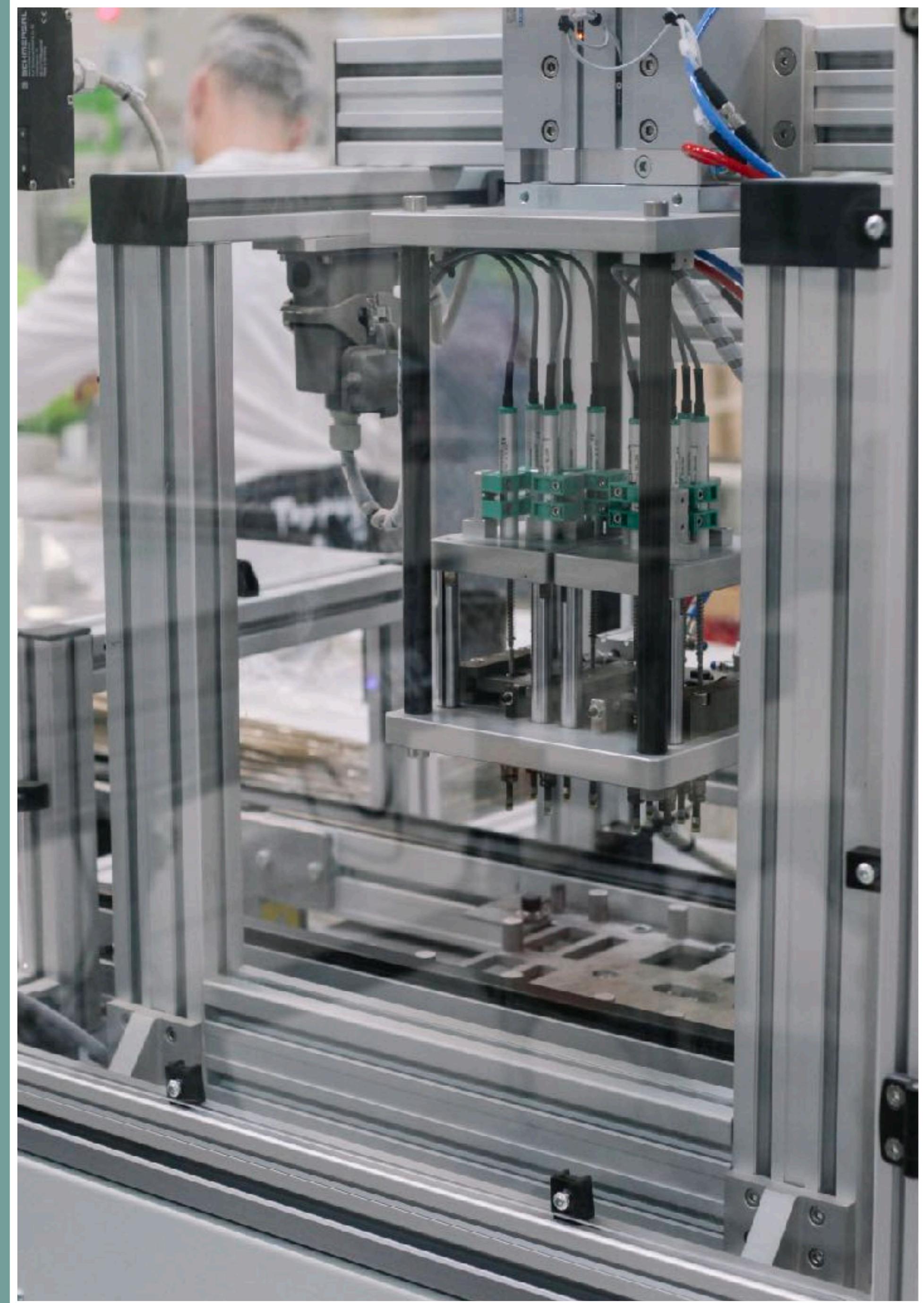




# VISIONS- INSPECTION- SOLUTION

We develop and integrate advanced vision systems to ensure product quality and compliance through automated and reliable image processing ...





## Dimensional Control

High-precision measurement of parts and assemblies to verify critical tolerances.

*Example: Measuring the outer diameter and hole alignment of a machined component.*

## Compliance Check

Verification of conformity against predefined specifications or standards (geometry, marking, labels, etc.).

*Example: Checking label position and text accuracy on a packaged product.*

## Brightness & Luminance Control

Evaluation of light intensity and uniformity, especially for LEDs, displays, and backlit components.

*Example: Validating LED backlight brightness on a dashboard interface.*

## Color Inspection

Real-time detection of color accuracy, uniformity, or deviations in painted, printed, or illuminated parts.

*Example: Identifying color shift on plastic housings due to injection mold variations.*

## Presence & Position Control

Confirmation that components are present, correctly oriented, and properly assembled.

*Example: Detecting missing screws or misaligned connectors on an electronic board.*

## Pixel-Level Control

Inspection of displays or camera sensors down to the pixel level to detect dead pixels, color uniformity, or display artifacts.

*Example: End-of-line control of an LCD screen for automotive use.*

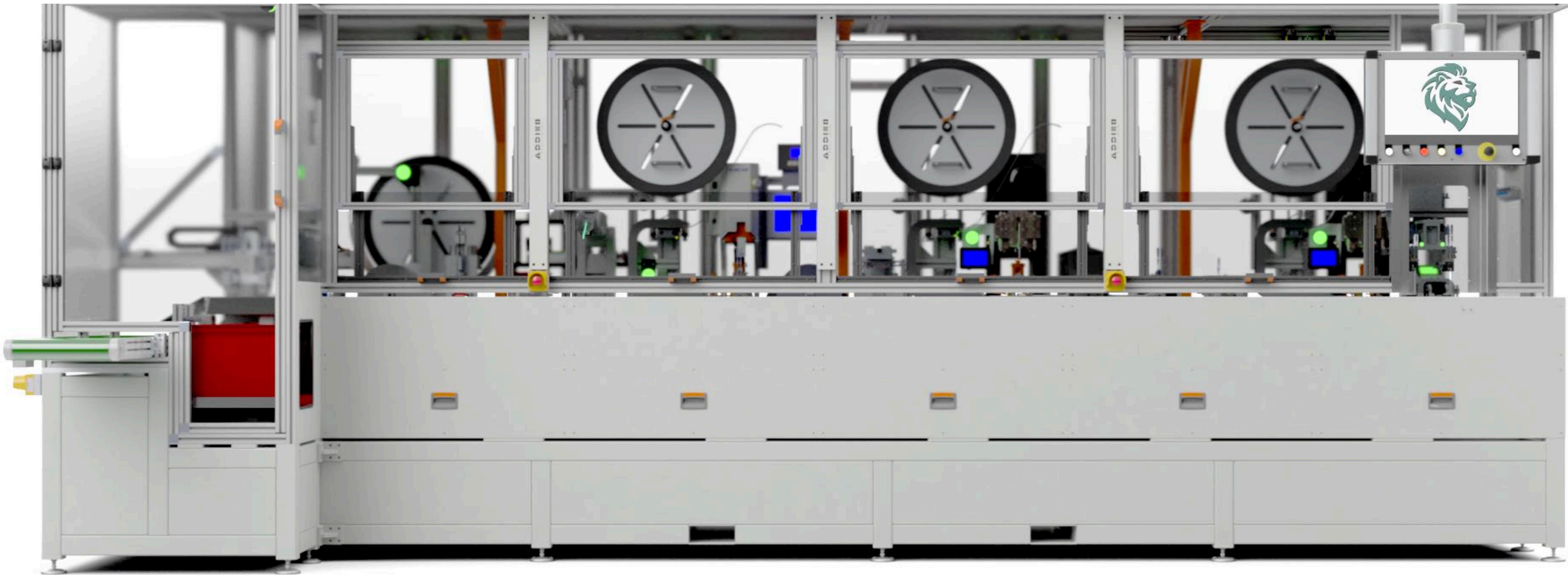




## CUSTOM MACHINERY FOR SPECIALIZED CABLES

We develop highly automated testing and assembly stations for the precise and efficient assembly of automotive cables. Our solutions encompass all process steps.





PARTIAL STRIPPING – FERRULE CRIMPING – REMOVE JACKET – BENDING BRAID – COAXIAL STRIPPING – CENTER CONTACT CRIMPING & CHECKING – BRUSHING - TESTING CONTINUITY – OUTER CONTACT CRIMPING – INTERFACE ADAPTOR CLINCHING & CHECKING – DEEPNESS CHECKING – CUTTING BAD PARTS & CABLE UNLOADING

## Data cable assembly machine: **MATE AX 90°**

### Coaxial Cable processing platform

#### KEY FEATURES

- User HMI
- Quick Reference Selection
- Compatible with Level 3 Data Interface
- Real-Time Equipment Performance
- Flexible Design
- Standard Crimping Applicators
- Products in Reels
- Vacuum System
- Split Cycle (Option)
- Separation of OK & NOK Products

#### COMPATIBLE WITH MULTIPLE PRODUCTS

- Male or Female Connectors
- Different Lengths
- Different Products
- Different Processes (90°/180°)





**ZERO POSITIONING → FERRULE INSERTION → BENDING BRAID → STRIPPING → OUTER CONTACT INSERTION →  
OUTER CONTACT CRIMPING → DEEPNESS CHECK & CAMERA CONTROL → CUTTING BAD PARTS & UNLOADING**

**Data cable assembly  
machine: Coaxial Cable  
processing machine  
type:  
- FAKRA II  
- FAKRA SF  
- FAKRA AX**

#### **COMPATIBLE WITH MULTIPLE PRODUCT:**

- Cable with Center Contact Pre-assembled
- Male or Female Connectors
- Different Lengths
- Different Diameters (RTK/RG Version)

#### **FEATURES**

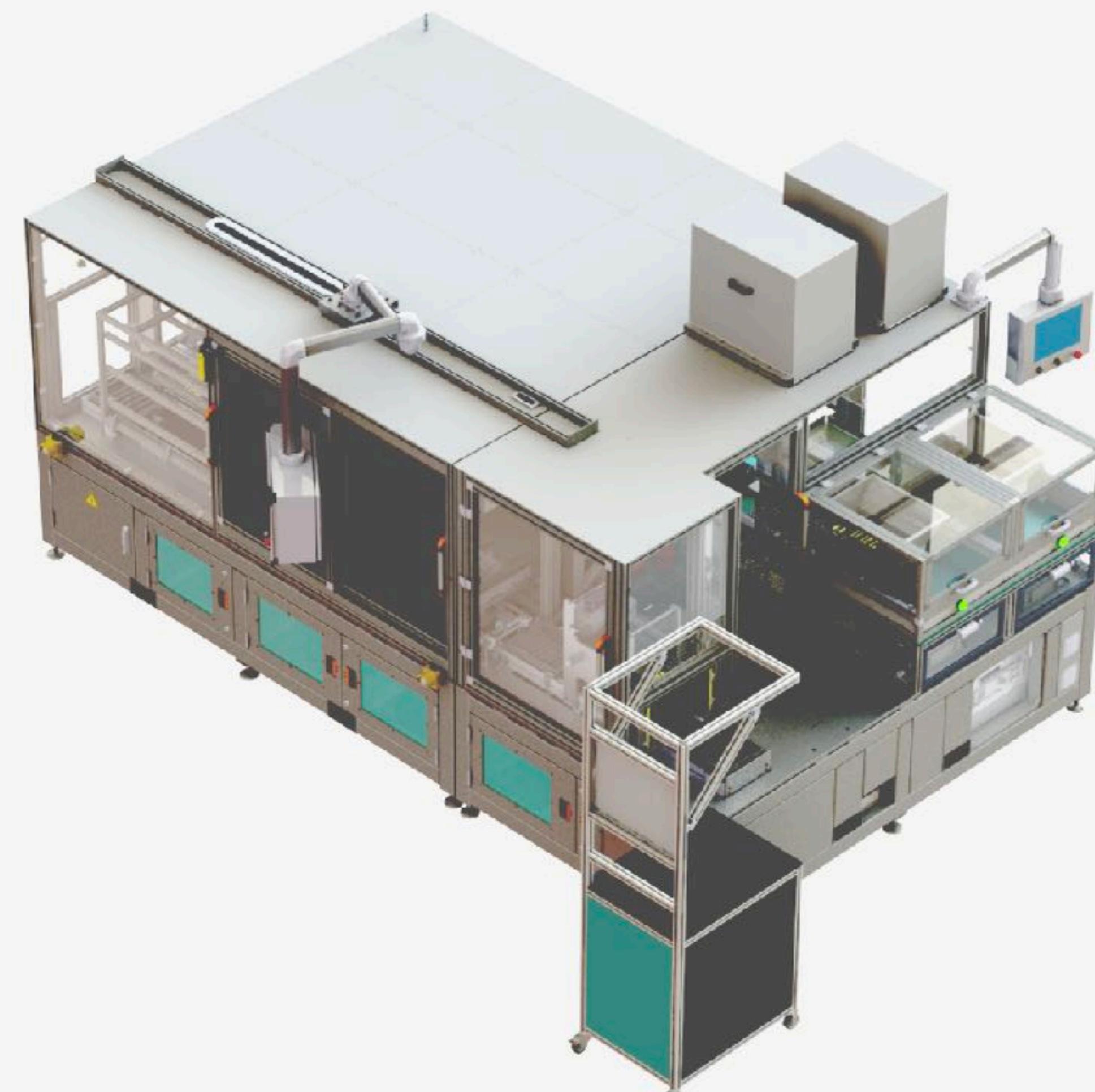
- User HMI
- Quick Reference Selection
- Compatible with Level 3 Data Interface
- Real-Time Equipment Performance

#### **HIGH SPEED CONVEYING MODULE**

- Magnetic Transfer Conveyor
- Fixture with Servo Drives Positioning
- High-Precision Positioning
- Repeatability, Performance & Flexibility



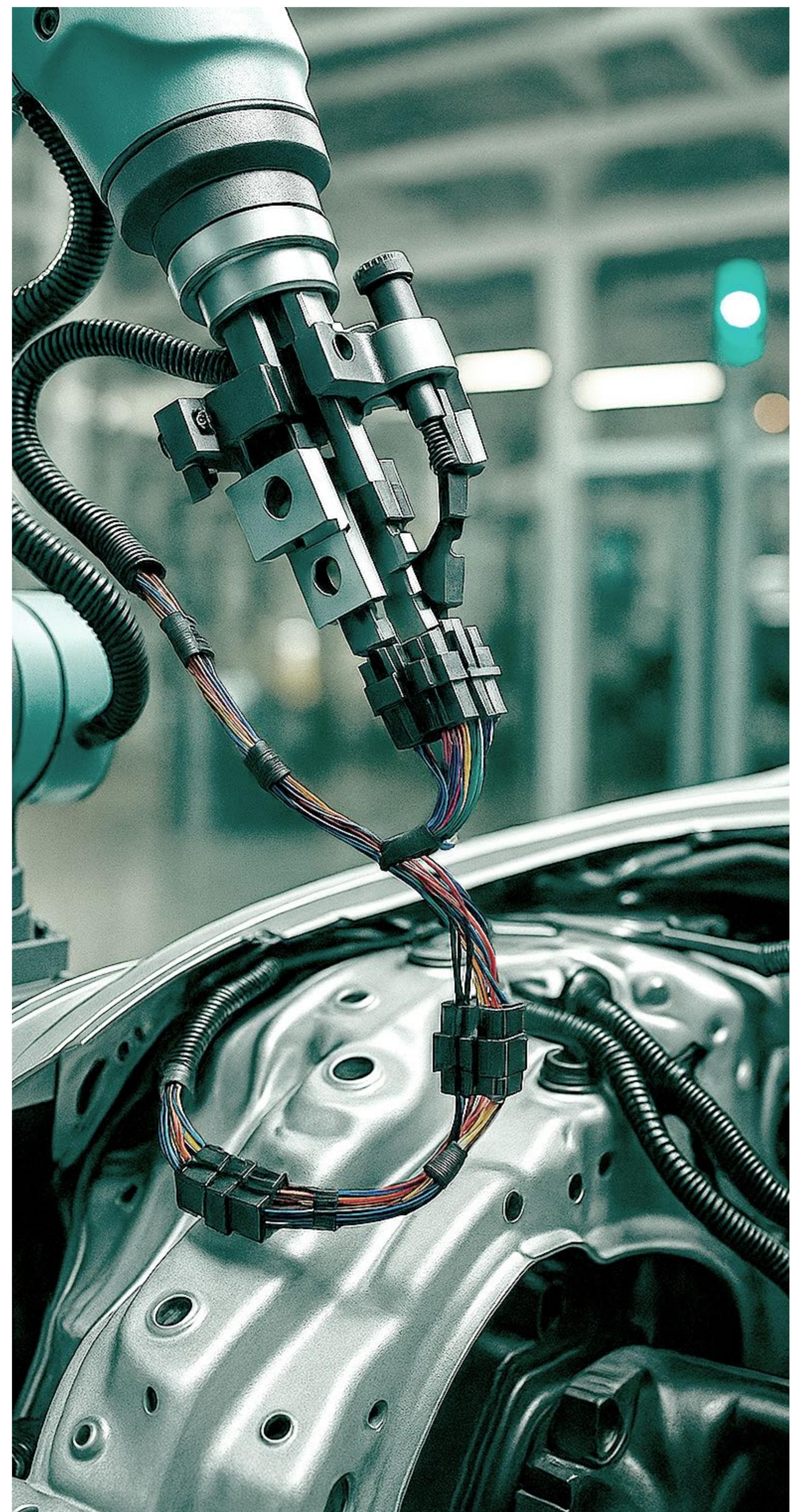
# Fully automated platform for assembly and testing of electrical connectors



## FEATURES

- Flexible feeding (camera vision, robot loading & unloading)
- Ionisation system
- Electrical test
- Separation of OK/NOK parts
- User HMI
- Quick reference selection
- Compatible with level 3 data interface
- Real time equipment performance
- Flexible design





# SMART HARNESS ENGINEERING & AUTOMATION



## Custom Test Benches for Wiring Systems

- Design and integration of custom end-of-line (EOL) or functional test benches
- Embedded traceability, diagnostics and reporting systems

*Example: EOL test bench for automotive harnesses with continuity, isolation, and short-circuit tests.*



## Automation for Wiring Operations

- Deployment of automated equipment for crimping, cutting, stripping
- Integration of semi- or fully-automated workstations

*Example: Automated crimping and stripping station for high-volume harness production.*



## Vision-Based Inspection for Wiring Quality

- Implementation of industrial vision systems for real-time quality control
- Detection of miswiring, missing terminals, insulation issues

*Example: Vision system for verifying pin presence and correct wire color mapping.*



## Technical Support & Industrialization Assistance

- Operator training and process engineering support
- Development of technical documentation and manufacturing instructions

*Example: Creation of harness assembly guides and work instructions for series launch.*





# INDUSTRIAL SOFTWARE SOLUTION

We develop tailored software solutions to support your industrial processes, testing, and traceability needs, ensuring seamless integration and operational efficiency...





## Traceability Master

Centralized software for managing production traceability across workstations and equipment.

*Example: Real-time tracking of serial numbers, operator actions, test results, and assembly steps, with data export for quality analysis or ERP integration.*



## EMS (Equipment Management System) Development

Custom software to monitor and control machine status, production flow, alarms, maintenance logs, and performance KPIs.

*Example: Dashboard showing OEE, downtime reasons, and production targets for an automated assembly line.*



## HMI (Human-Machine Interface) Development

Intuitive interfaces for operators and technicians, designed for efficiency and error reduction.

*Example: Touchscreen panel with guided steps, live test feedback, and part status indicators.*



## Embedded Test Software

Real-time software for controlling and acquiring data from test benches or embedded systems, often developed in LabVIEW, C/C++, or Python.

*Example: Microcontroller-based functional test with CAN communication and automated pass/fail logging.*





# ENGINEERING & INDUSTRIAL- SERVICES

We support your industrial projects with expert services focused on performance, quality, and manufacturability...





## Process Studies & Analysis

In-depth assessment of your current manufacturing processes to identify bottlenecks, inefficiencies, or quality risks.

*Example: Time and motion study on an assembly station to optimize operator ergonomics and reduce cycle time.*



## Manufacturing Consulting

Strategic support to define or optimize your industrialization approach, equipment selection, and production setup.

*Example: Defining a scalable production model for a new electronic product, including layout and investment roadmap.*



## Process Improvement

Implementation of lean methodologies, automation, and quality tools to enhance productivity and reduce waste.

*Example: Introduction of poka-yoke systems and line balancing to reduce defect rate and operator downtime.*



## Design for Manufacturing (DFM) Services

Early involvement in product design to ensure manufacturability, cost control, and quality from the first prototype.

*Example: Review of mechanical parts to reduce complexity and assembly time, while maintaining product performance. Design for Manufacturing (DFM).*





# ARTIFICIAL INTELLIGENCE & BIG DATA

We integrate Artificial Intelligence (AI) and Big Data analytics directly into your machines – unlocking a new dimension of performance, reliability, and responsiveness. Our systems don't just analyze – they learn, decide, and optimize.





## ◆ Predictive Maintenance 4.0

Early failure detection using multi-sensor data collection and AI diagnostics – reduces downtime and extends equipment lifespan.

*Example: A machine-mounted AI system detects abnormal vibrations in a bearing and recommends maintenance 72 hours before a critical failure.*

## ◆ Autonomous & Adaptive Production

Self-adjusting production parameters in real time – reacting to part variation or environmental changes to ensure consistent quality.

*Example: A vision-based inspection system identifies deviations in connector dimensions and adjusts test force and alignment in real time – no manual intervention needed.*

## ◆ Smart Logistics Integration

AI-driven synchronization of material needs with warehouse, AGVs, or operators – reduces delays, stockouts, and excess buffer stock.

*Example: The system detects an above-average consumption of test adapters and autonomously triggers a prioritized resupply from the central warehouse.*





## OUR STRUCTURE, PARTNERS & NETWORKS

At Lion Smart Equipment Solution, we combine deep engineering expertise with industrial manufacturing power – supported by a hand-picked core team and a resilient partner network.



# Organizational Chart



# Ara Sarraf

# Managing Partner

„Every successful organization is only as good as the people behind it.“

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# OUR NETWORKS & REFERENCES





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**LION WORK SOLUTION**  
PERSONALDIENSTLEISTUNGEN



**LION ELECTRONIC SOLUTION**  
SUPPLY CHAIN PARTNER



**LION SMART EQUIPMENT SOLUTION**  
ENGINEERING THE HUMAN FUTURE





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