
# INTECRO ROBOTICS

**26.10.2021**

# About Intecro

- Robotic System Integrator, founded in 2010 in Ankara, 54 employees
- Brings together robotic technologies and innovative manufacturing processes to deliver integrated systems for manufacturers.

- Business Units:
  - General Industry
  - Defence and Aerospace
  - Robotic Equipment
  - After Sales Services

- Intecro delivers
- Machines That Build Machines

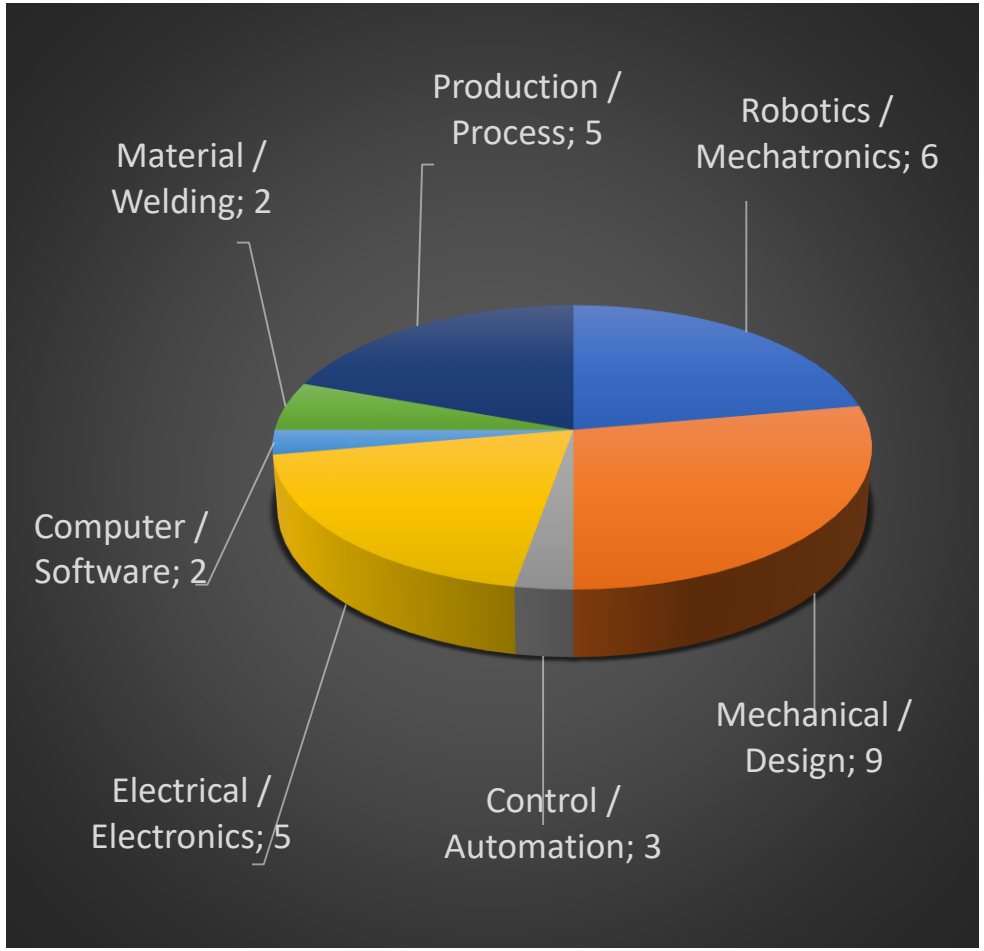
# Employee Distribution

Technical Disciplines: 32 total, 5 MS, 3 PhD

- Robotics / Mechatronics
- Mechanical / Design
- Control / Automation
- Electrical / Electronics
- Computer / Software
- Material / Welding
- Production / Process

Blue collar workers: 12

Administrative staff: 10

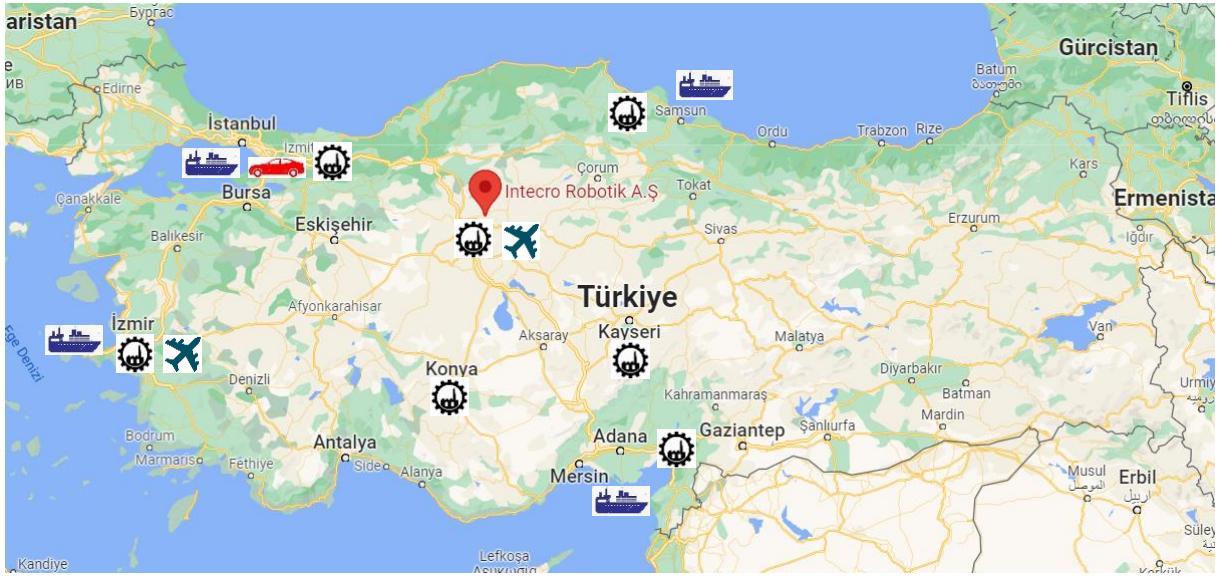



# Intecro Headquarters

- Total area: 8.000 m²
- Production: 5.000 m²
- Office space: 1.500 m²

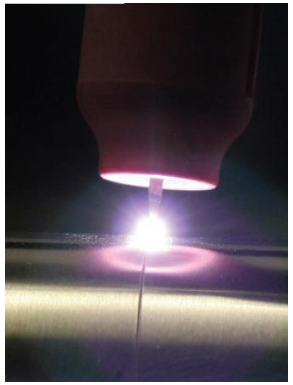


- 15 minutes to Ankara ESB airport
- 5 hrs by car, 1 hr by plane to Istanbul
- Conveniently located, close proximity to
  - Major ports
  - Industrial zones

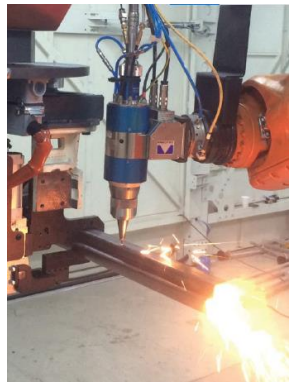


# Technical Competencies And Know-how



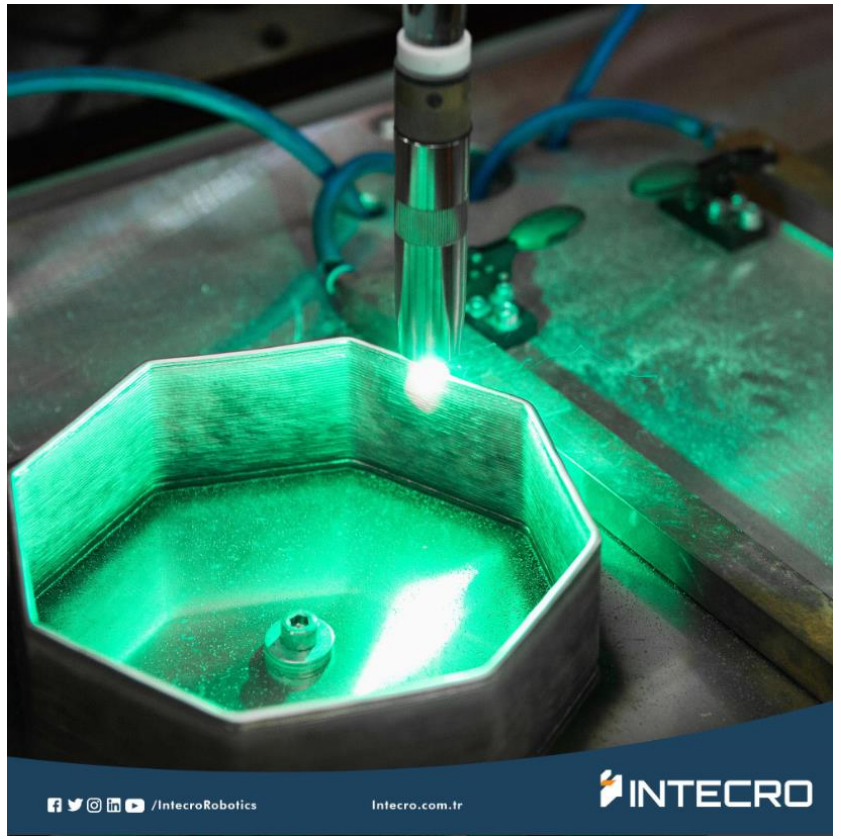







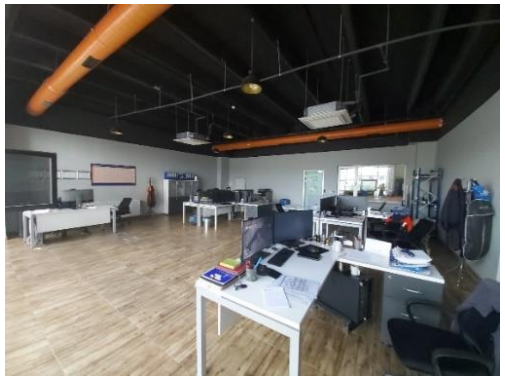
# Emerging Process Technologies

- Robotic WAAM (Wire Arc Additive Manufacturing) Technologies
- Robotic Composite Technologies
- Robotic Armor Steel Joining Technologies

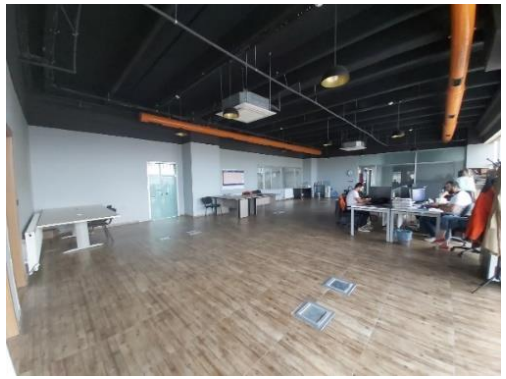


# Facilities

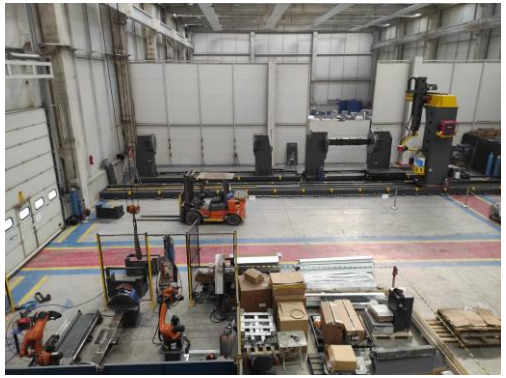
Administration



Design



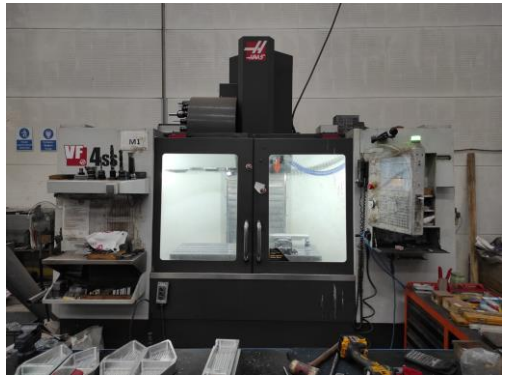
Service



Assembly and integration

Robotic welding

CNC plasma cutting



CNC machining

Manual welding

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# R&D Center

- In 2017, Intecro Robotics has been granted an «R & D Center» status by the Ministry of Industry and Technology.
- Tax incentives.
- Funding in R&D projects.


TÜRKİYE CUMHURİYETİ
BİLİM, SANAYİ VE TEKNOLOJİ BAKANLIĞI

AR-GE MERKEZİ BELGESİ

Bilim, Sanayi ve Teknoloji Bakanlığı tarafından,

İntecro Robotik Otomasyon Mak. A.Ş.

5746 Sayılı Araştırma ve Geliştirme Faaliyetlerinin Desteklenmesi Hakkında Kanun kapsamında sağlanan teşvik ve muafiyetlerden yararlanmak üzere bu belge verilmiştir.

Dr. Faruk ÖZLÜ
Bakan

T.C.

# Quality Certifications

- Intecro Robotics has **ISO 9001:2008** Quality Management Certificate.
- All products and systems of Intecro Robotics are **CE Certified.**


ISO 9001:2008


CE Certification

# Software Tools

- Mechanical design (Solidworks)
- Analysis (Ansys)
- 3D CAD/CAM
- Simulation and offline programming
- PLM / PDM
- Embedded software development

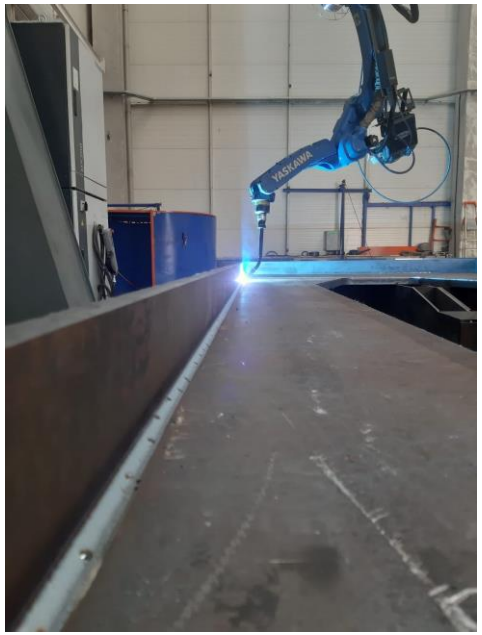




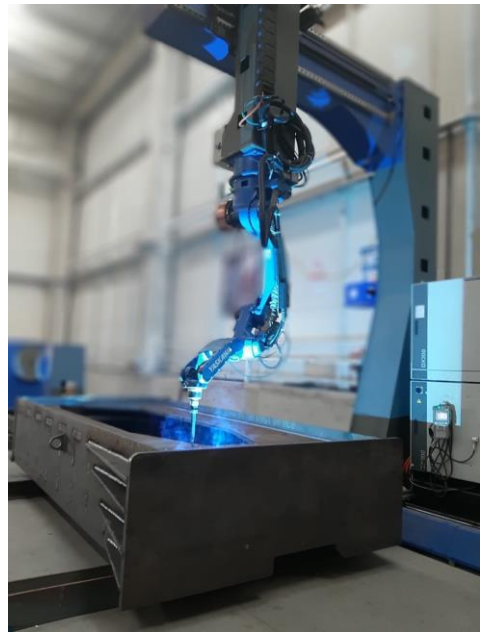



# Production

- Plasma cutting
- CNC bending
- Robotic and manual welding
- Heat treatment
- Machining
- Assembly and quality control







# Automation and Programming

- Robot programming
  - Online
  - Offline
- Automation software / hardware
  - PLC
  - HMI
  - Scada
- Cabinet assembly
- Test and calibration
- Instrumentation

# General Industry Business Unit







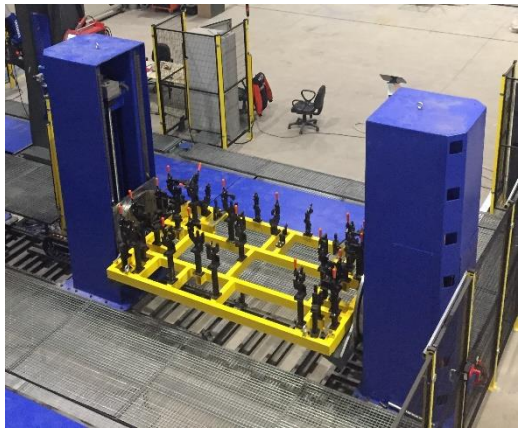





# Defence & Aerospace Business Unit

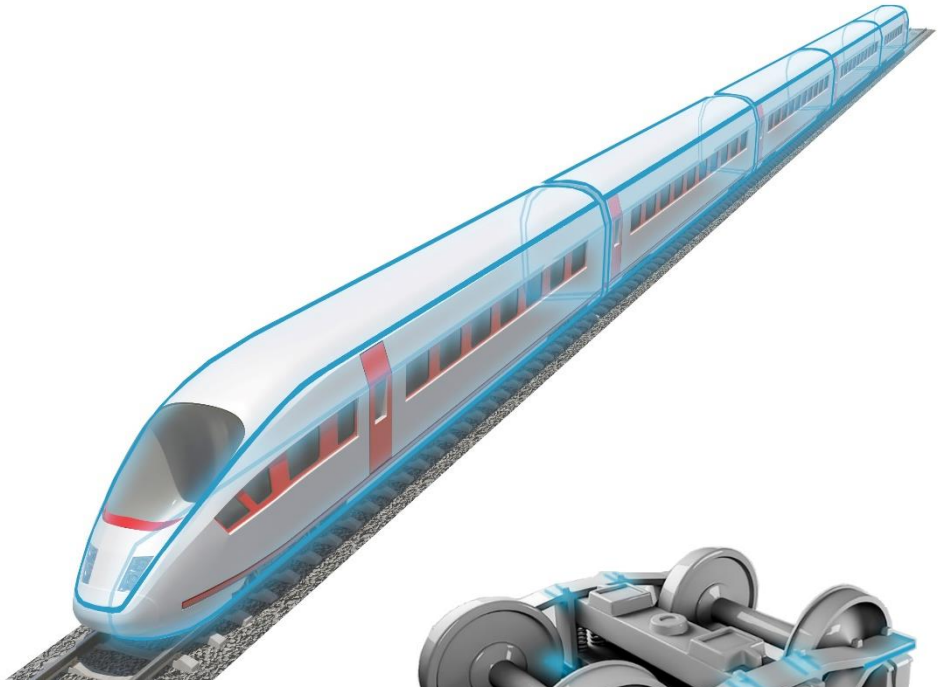
- ARMOUR VEHICLE PRODUCTION LINES
- AMMUNITION & ORDNANCE PRODUCTION SOLUTIONS
- COMPONENT PRODUCTION LINES

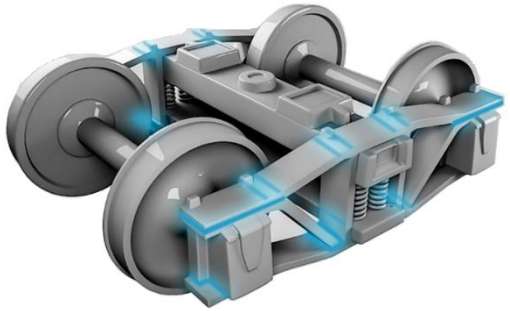

# Robotic Equipment Business Unit

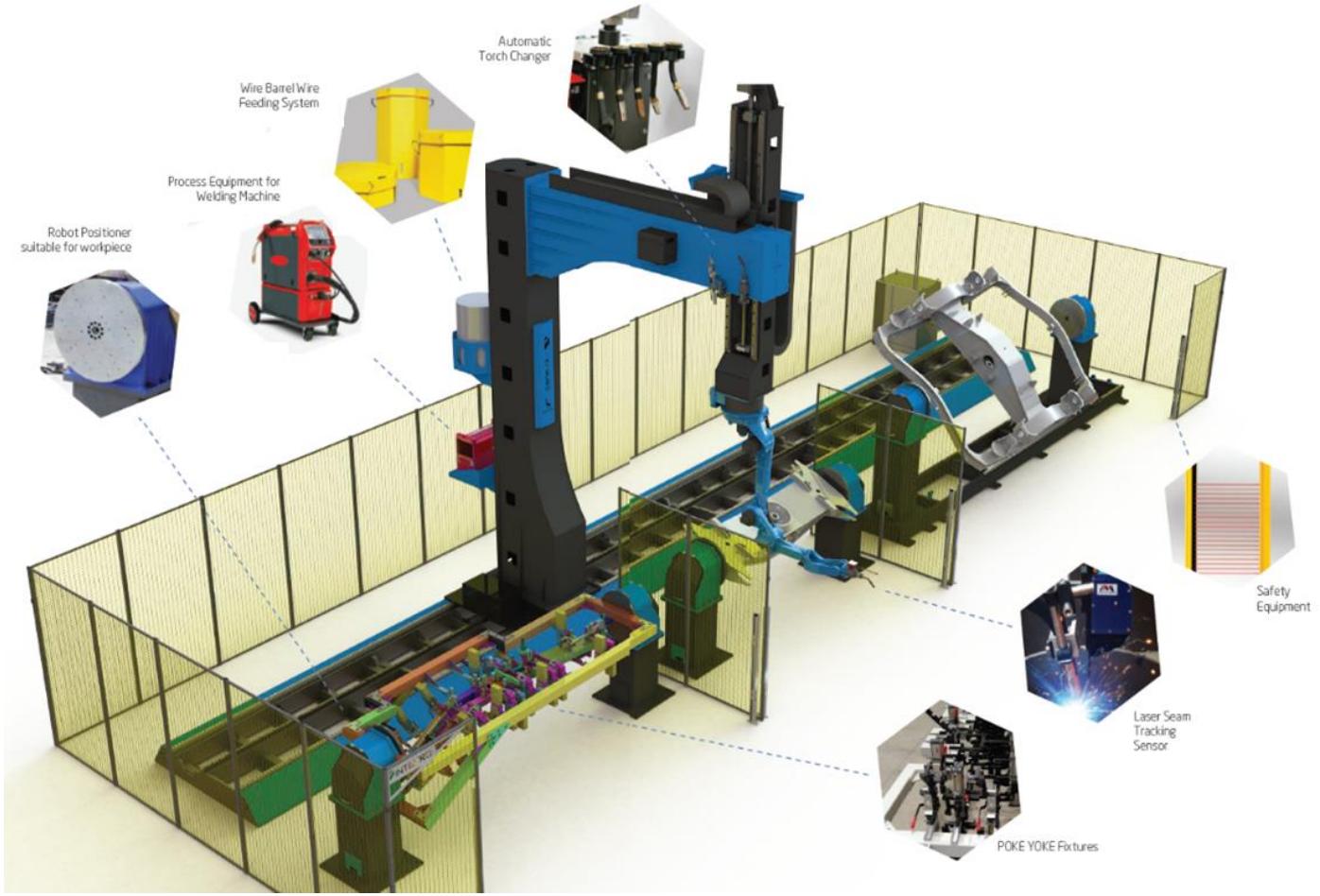




# Custom-made Integrated Systems







# Intecro’s Technology Partners

**IPG Photonics**
Made in USA

**Kuka Robotics**
Made in Germany

**Fanuc Robotic**
Made in Japan

**SIFF Spot Gun Tech**
Made in Turkey

**Robital robot peripherals**
Made in Turkey

**Siemens**
Made in Germany

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**Schunk Inteck**
Made in Germany

**Fronius Electronics**
Made in Austria

**Precitec Laser GmbH**
Made in Germany

**Piab /Shmalz**
Made in Germany

**FESTO**
Made in Germany

# Robotic Gantry Welding Line

- Turkey’s largest **«Gantry Robot Line»**
- Welding of aluminum passenger vagons
- 180 meters total length
- Twin-wire CMT welding
- Camber mechanism
- Laser sensing
- Hydraulic jigs

180m Gantry Welding System

# Aluminum Profile Welding Line

# Vagon Body Final Welding Process


# Full Penetration Armor Steel Welding

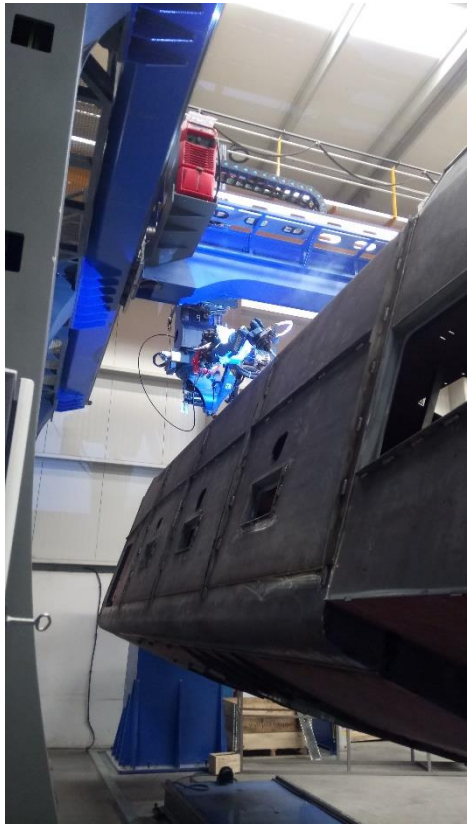
- Armor Steel Welding (Cobra-II and Arma Military Vehicles)
- %98 success in full penetration welding during mass production

Otokar

# Welding of APCs

- Gantry welding line
- ”Kirpi II” and
- Amazon” armoured personnel carriers.

BMC

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# Robotic 3D Plasma Cutting

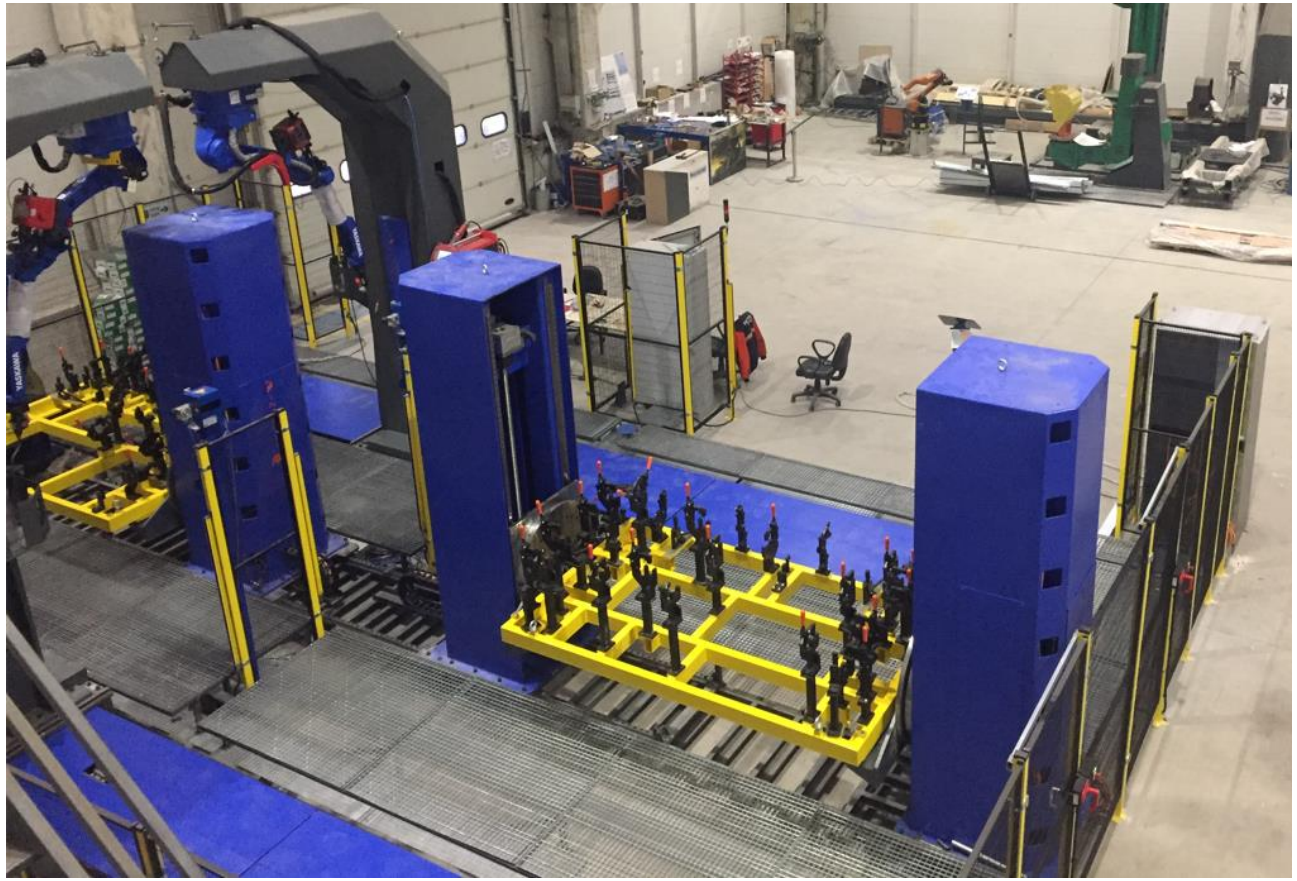
- Plasma and oxy-fuel cutting of tank sections and dish heads.
- CAD data based offline programming for 3D cutting.
- Laser sensing.


# CMT Welding of Electrical Enclosures

- Welds tested against leaks using Helium.
- CMT welding system.
- Laser seam tracking

# Robotic Welding of Bus Components

- Synchronized motion in 18 axes.
- Vertically moveable positiones.
- Laser sensing
- 11 fixtures.

# Plasma Cutting and Welding of Bus Chassis

- Robotic x-y-z gantry system
- Plasma cutting
- MAG welding
- Offline programming


ISUZU

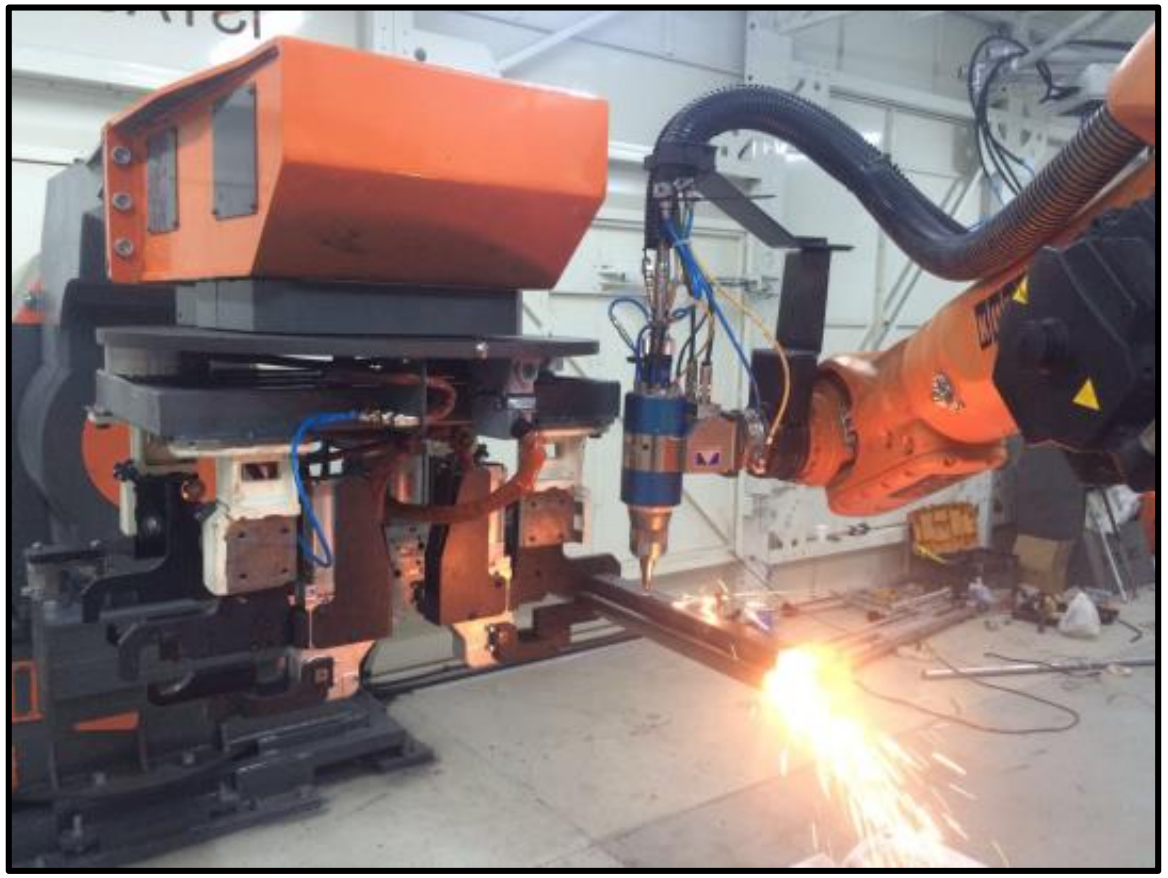
INTECRO

# Robotic Pillar Gantry Welding Line

- Welding of vagon chassis up to 18 m.
- 20 ton payload positioners.
- Rotating pillars with vertical stroke.
- Synchronized motion in 19 axes.

# Robotic Laser Cutting Line

- Laser cutting of a wide range of profiles and pressed sheet metal parts used in tractor cab production.
- Offline programming.



# Robotic Welding Line

- Elevator parts.
- Spot welding and arc welding system.
- Custom positioners design for space savings.

# Robotic Spot Welding Line

- Spot welding
- Seat components
- Safety components

ARIKAN
KRİKO ve MAK. SAN. TİC. A.Ş.

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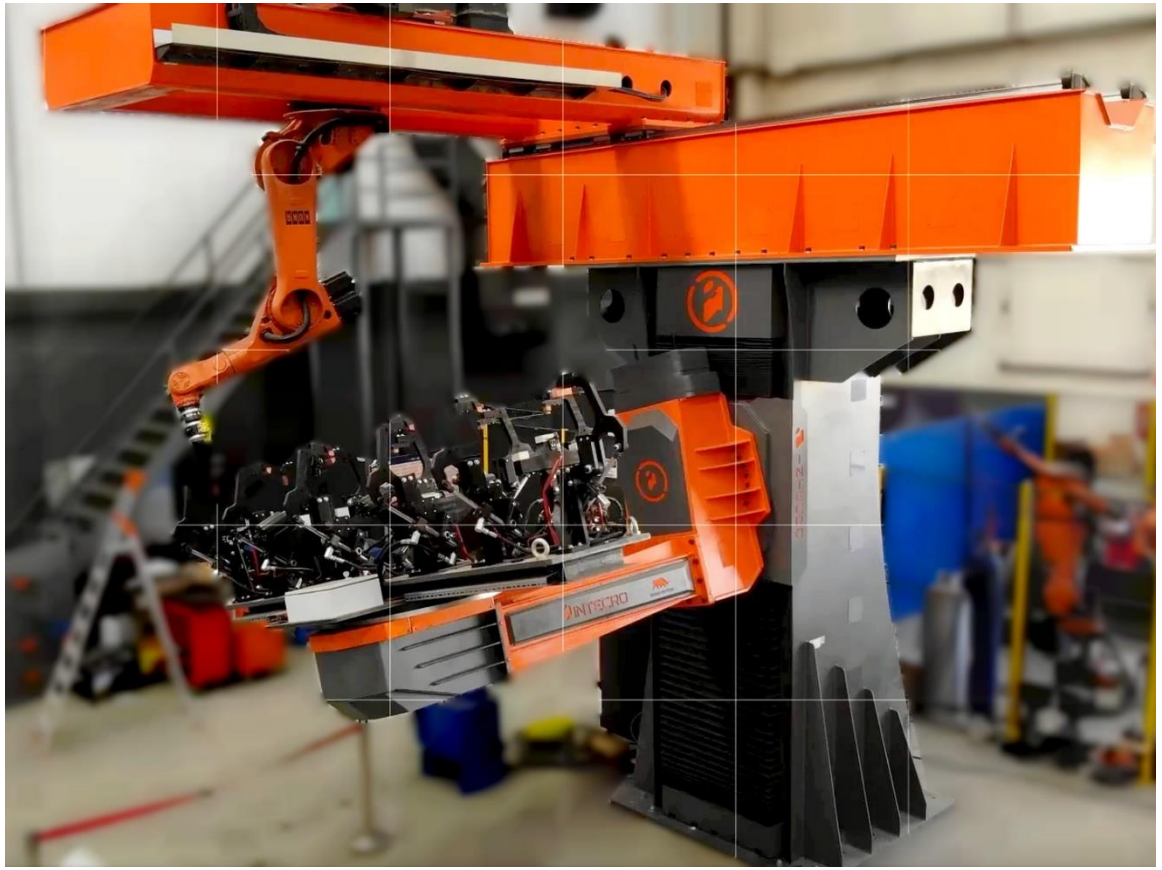
# Engine Assembly Line

- Diesel engine assembly.
- Flexible automation.
- CNC tending.
- Machine vision.
- Bolt screwing.
- Torque control.

Mahindra


# Robotic Laser / Laser Hybrid Welding and Cladding

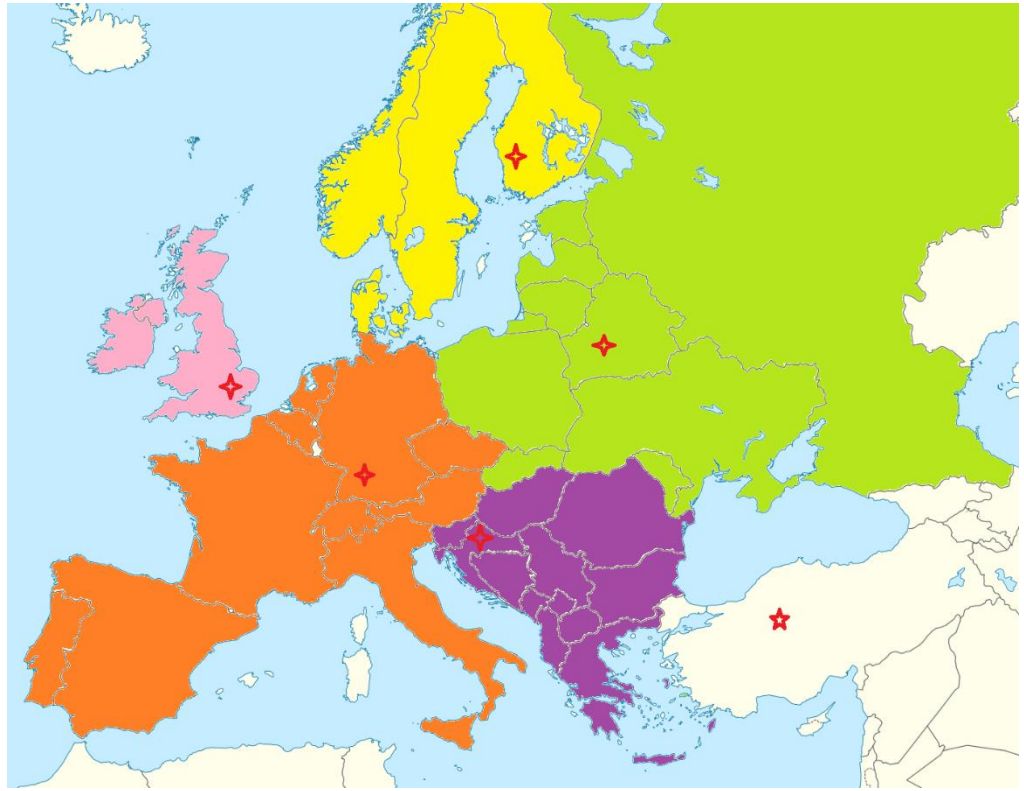
- Hybrid gantry-positioner concept.
- Synchronous motion in 11 axes.
- Offline programming.
- Production of missile components



# After Sales Services Business Unit

Network of partners and integrators.
Responsibilities:

- «DISIS» management
- Remote service utilising AR
- Local service and periodic maintenance
- Supply of spare parts and consumables
- System revisions and retrofits
- Service contracts
- Training
  - In-house, on site, remote
- Qualified personnel services



# DISIS - Digital Transformation for the Smart Factories of the Future

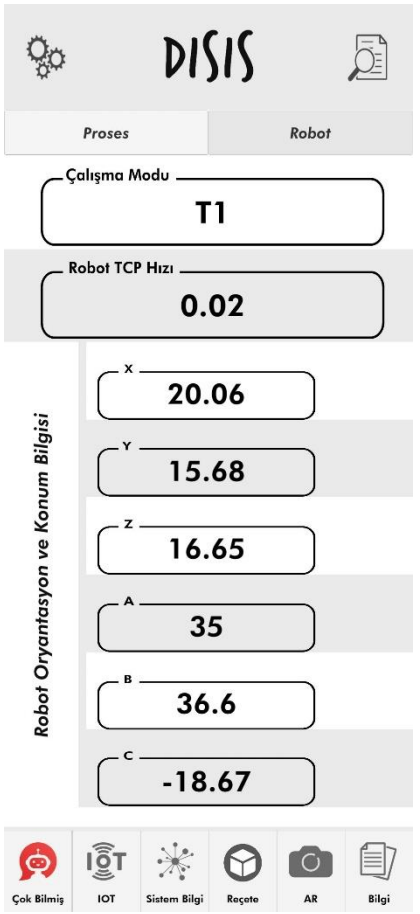
I AM DISIS, Intecro's platform applicable
to all the smart #hashtags!

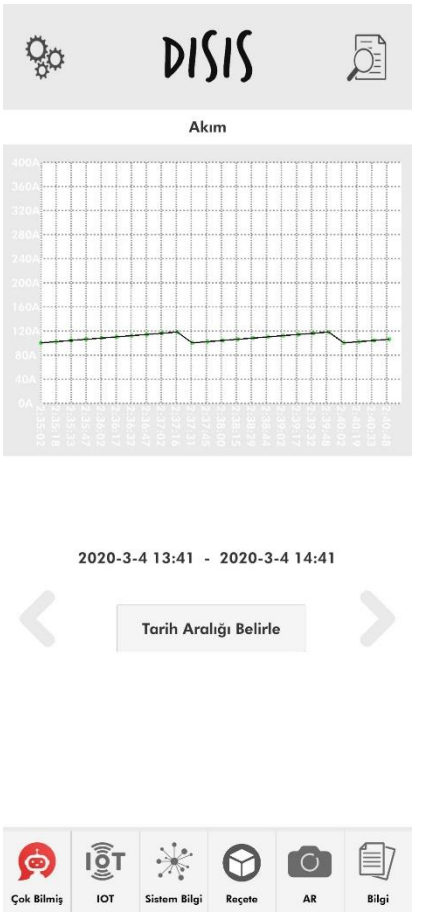
- # Augmented Reality
- # Mobile Technology
- # Remote Service
- # Robotics
- # Automation
- # Data Analysis
- # Smart factory



# DISIS - Traceability

- I am user friendly
- I provide advanced traceability
- I make it possible to track
  - Machine uptime
  - Machine run rate
  - Machine utilisation
  - Consumable components
  - Energy consumption

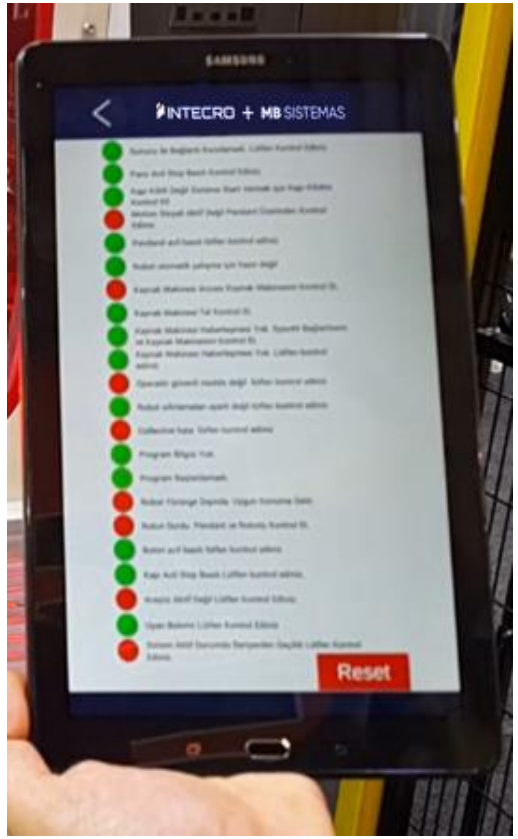
# DISIS – Maximised Uptime and Support

I try my best to maximise uptime, but in case something goes wrong

- Communication with other machines
- Notification of personnel
- Alarm and fault logging

you'll be the first to know.





# References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Ford
HYUNDAI Rotem
alfanar
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Mahindra
BMC
ISUZU
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Nordica Sterling
HUNOR
SAB
TURKISH AEROSPACE
enikon AEROSPACE
TUVASAS
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More Innovation