This project is co-financed by the European Union
and the Republic of Türkiye

ICTürkiye2025
10 April, İstanbul

PRESENTER FULL NAME: Ezgi ŞANLI

ORGANIZATION: Teknopar Endüstriyel Otomasyon A.Ş.

WORKSHOP NAME: Twin Green and Digital Transition of Industry

E-MAIL: sanli@teknopar.com.tr

TIA Platform
integrated digital solutions

ICTürkiye2025
10 April, İstanbul

teknopar

Description of the Organisation

Teknopark Ankara

BİLKENT CYBERPARK

Cyberpark

Ankara R&D Center

İzmir Manufacturing Facility

Ankara Manufacturing Facility

TEKNOPAR was established in Ankara in 1996 to design and implement automation systems for the growing industrial and manufacturing facilities.

TEKNOPAR has provided comprehensive solutions as a single contractor for the design, implementation, and installation of mechanical, electrical, electronic, and hydraulic systems in industrial facilities and defense systems.

TIA Platform
integrated digital solutions

ICTürkiye2025
10 April, İstanbul

teknopar

MECHANICAL | HYDRAULIC | OUTOMATION | ELECTICAL & ELECTRONICS | INFORMATION TECHNOLOGIES

Your Teams' Expertise

TEKNOPAR offers solutions compatible with its fields of activity in the following areas:

- Information Systems
- M2M/IoT
- Big Data
- Artificial Intelligence
- Digital Twin
- Computer Vision
- Robotics
- Automation and Control Systems
- NDT and Test Systems

TIA Platform
integrated digital solutions

ICTürkiye2025
10 April, İstanbul

teknopar

Your Research Fields

Smart Manufacturing & Digitalization

- Smart manufacturing & digital factories
- Industrial real-time communication (IIoT)
- Digital Twin
- Digital Product Passport
- System modeling & distributed intelligence

AI & Data Analytics

- ICT, AI, ML/DL applications
- Edge/cloud computation
- Complex event processing & real-time analytics
- Image processing & computer vision
- LLM

Automation & Robotics

- Automation, control systems & robotics
- Mechatronics technologies
- Modular machines & M2M interfaces
- Material handling systems

Remote Monitoring & Maintenance

- Remote service management
- Condition monitoring & predictive maintenance
- Energy Monitoring

TIA Platform
integrated digital solutions

teknopar

TIA Platform

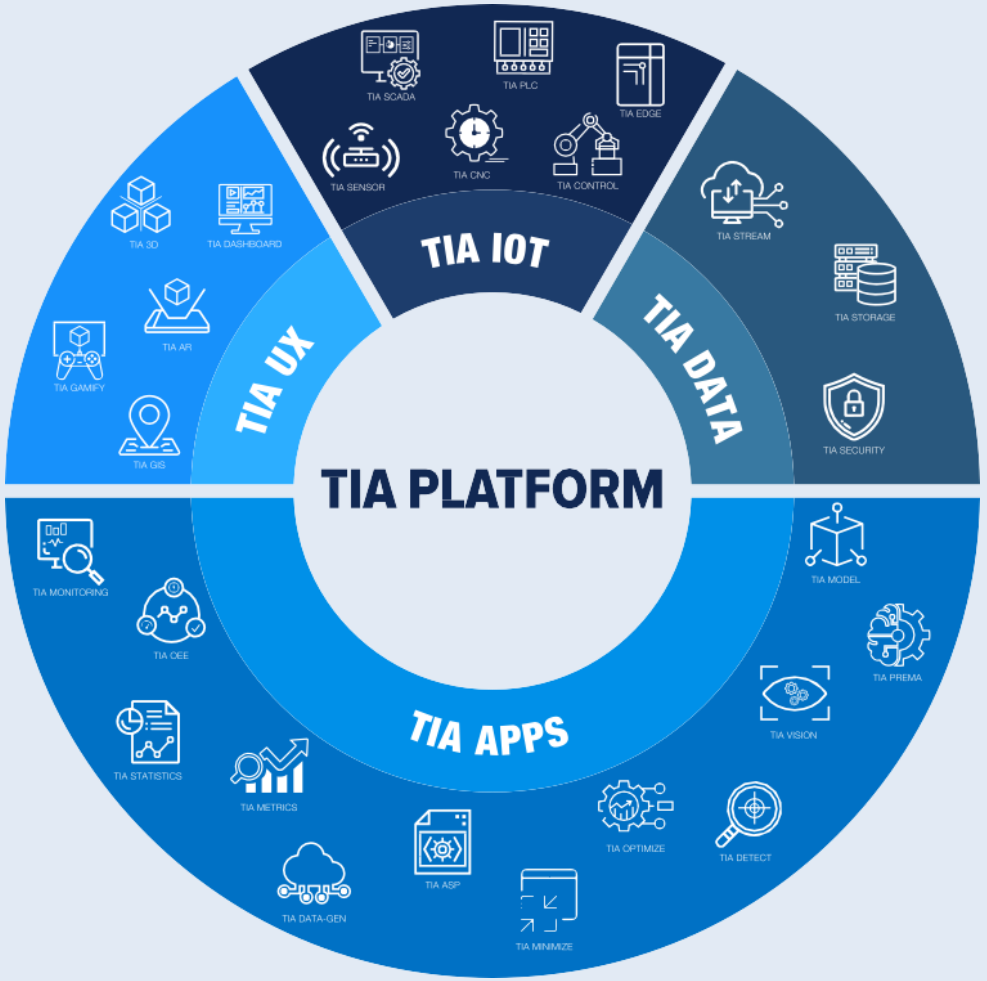
integrated digital solutions

• TIA IOT

• Includes hardware components like sensors, actuators, devices, appliances, and machines that transmit data over the Internet or industrial networks, along with IoT Gateway software.

• TIA APPS

• Consists of software applications and APIs that perform modeling, data monitoring, analysis, and solutions through AI-driven algorithms.



• TIA DATA

•Includes applications for collecting and transforming data into valuable information. It manages tasks such as data access, storage, preprocessing, feature selection, as well as time and frequency domain

• transformation.

• TIA UX

• Enables the digital monitoring and control of real-world assets, offering data and analytics through a real-time digital twin interface and dashboards. It includes configurable reporting features, graphics, and 3D models for enhanced user experience.

TIA Platform
integrated digital solutions

ICTürkiye2025
10 April, İstanbul

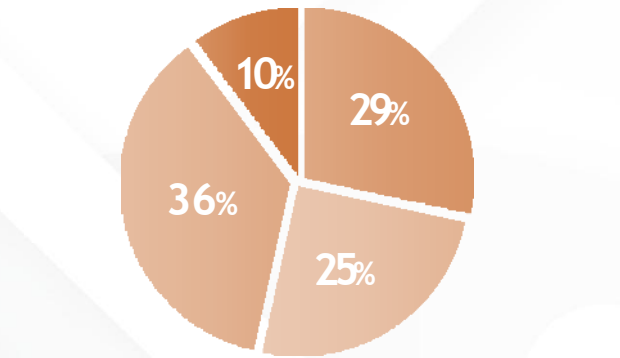
teknopar

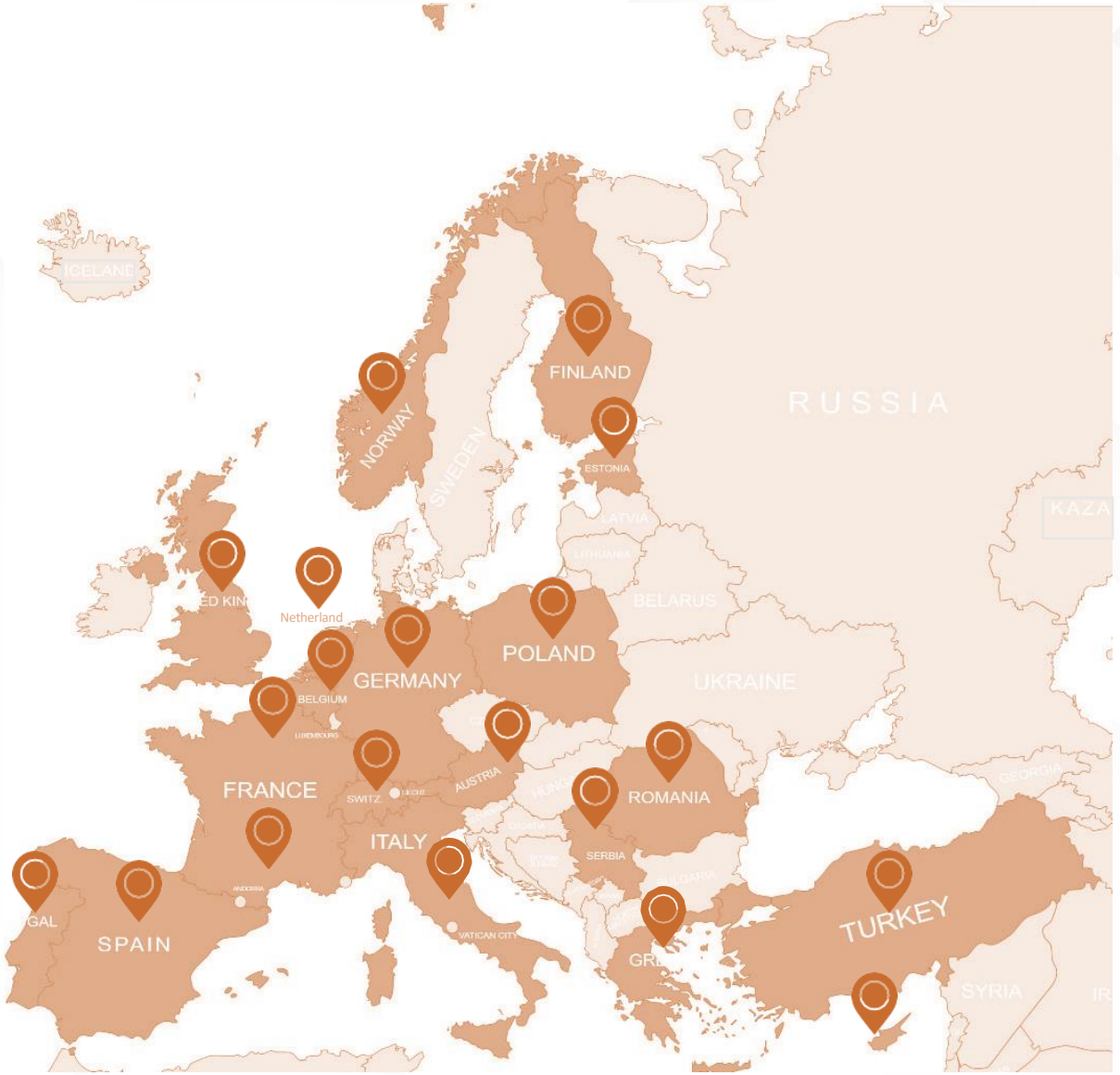
R&D Collaboration

93 Project Partners

19 Countries

14 Funded EU Projects





R&D Network

- Big Data Value Association (BDVA)
- European Factories of Future (EFFRA)
- A.SPIRE
- SMART Advanced Manufacturing EUREKA Cluster
- TWI Innovation Network - Technology Acceleration Programmes (TAPs)
- European AI Alliance
- Digital Twin Consortium

TIA Platform
integrated digital solutions

teknopar

Selected R&D Projects

COMPLETED PROJECTS

EUREKA | TUBITAK | H2020

CONSTRUMATIC 4.0
Intelligent Productive System Based On Flexible Robotic Systems Applied To The Construction Industry And Industry 4.0
Robotics

FACTORY4.0
Development Of Industry 4.0 Based Digital Twin Platform For Manufacturing Data Processing And Analysis
AI / IoT / Digital Twin

TX-VISION
Development Of Ndt (Ndt) X-Ray And Ultrasonic Test System And Prototype Manufacturing
Computer Vision

DIGITBrain
COATWIN- Optimisation Of The Energy Consumption And Operation Of A Coil Coating Industrial Line
AI / IoT / Digital Twin

COGNITWIN
Cognitive Plants Through Proactive Self-Learning Hybrid Digital Twins
AI / IoT / Digital Twin

TC-VISION
Bearing Quality Control Digital Transformation With Computerized Vision And Artificial Intelligence
AI / IoT / Computer Vision

QU4LITY
SMART-CNC - Sustainable Manufacturing For Zero Break Down And Effective CNC
AI / IoT / Digital Twin

MACHINAIDE
Knowledge-based Services For And Optimisation Of Machines
AI / IoT / Digital Twin

AI-REGIO
AI4CNC - A Federated Learning System Platform Development for CNCs
Artificial Intelligence

DIGIPRIME
CNCToolHealth - A Cognitive Digital Twin for CNC Tool Health Monitoring
AI / IoT / Digital Twin

FLOW-CAM
Floating Offshore Wind Turbine Cable Monitoring
AI / IoT / Computer Vision

WELDVUE
Optimised Welding in High Value Industries
AI / IoT / Computer Vision

ONGOING PROJECTS

HEUROPE - H2020

AI-PRISM
AI Powered human-centred Robot Interactions for Smart Manufacturing
AI / IoT / Robotics / Digital Twin

Circular - TwAIn
Platform for Integrated Sustainable and Circular Manufacturing
AI / IoT / Digital Twin

AMALTEA
Advancing Green Deal Principles in sMart FacAde TechnoLogies for the construcTion sEctor based on AI, Data & Robotics
AI / IoT / Digital Twin

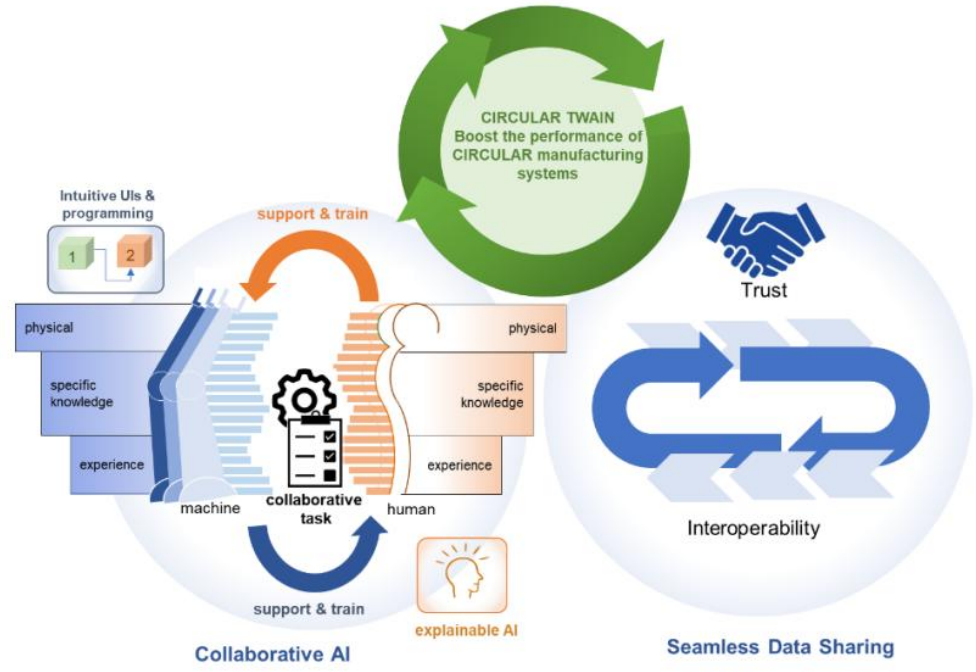
StreamSTEP
Streamlining the optimisation of Sustainable Thermal Energy systems and Prototype technologies in process İndustries
AI / IoT / Digital Twin

ITEA |SMART EUREKA | TUBITAK

PREDISURF
Predictive Digital Tool for Surface Treatment Industry
AI / IoT / Computer Vision

HORIZON 2020 | EUREKA innovation across borders | SMART advanced manufacturing program | ITEA 3 | TÜBİTAK | MarTERA ERA-NET COFUND | FLOW-CAM | machinaide | COGNITWIN | TWIN | TX VISION | WeldVue | Factory4.0

Our Ongoing Projects



CircularTwAIn

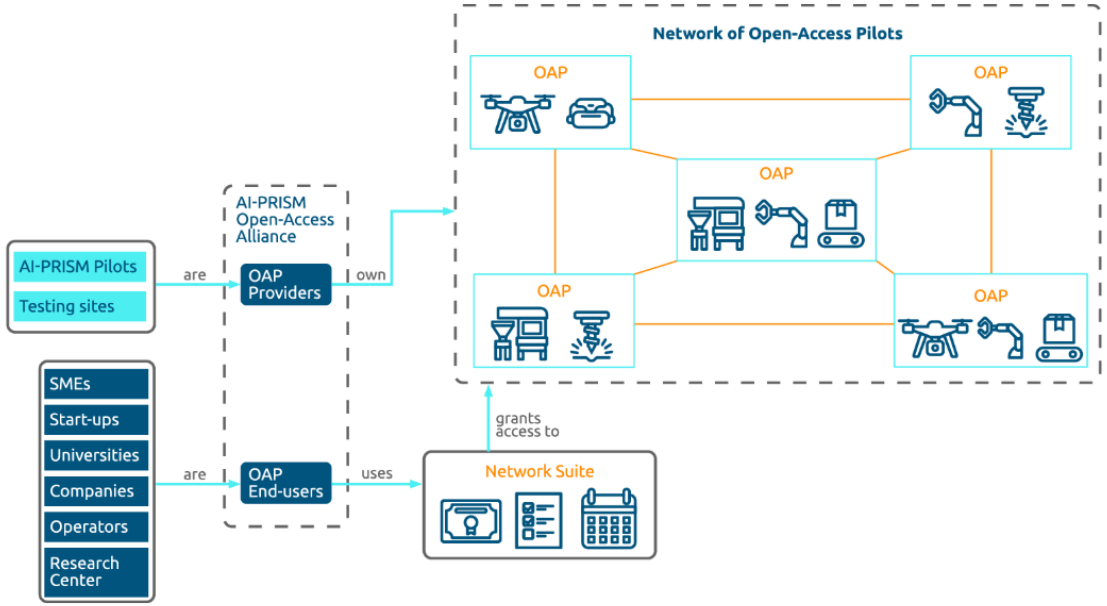
AI Platform for Integrated Sustainable and Circular Manufacturing

Circular TwAIn will lower the barriers for all the stakeholders in manufacturing and process industry circular value chains to adopt and fully leverage of trusted AI technologies, in ways that will enable end-to-end sustainability, i.e. from eco-friendly product design to the maximum exploitation of production waste across the circular chain.

To this end, the project will research, develop, validate and exploit a novel AI platform for circular manufacturing value chains, which will support the development of interoperable circular twins for end-to-end sustainability. Circular TwAIn will unlock the innovation potential of a collaborative AI-based intelligence in production based on the use of cognitive digital twins

Moreover, based on the use of trustworthy AI techniques, Circular TwAIn will enable human centric sustainable manufacturing, fostering the transition towards Industry 5.0.

Our Ongoing Projects



AI PRISM

AI Powered human-centred Robot Interactions for Smart Manufacturing

AI-PRISM is an industrial-end-user driven project that will provide a human-centred AI-based solutions ecosystem targeted to manufacturing scenarios with tasks difficult to automate and where speed and versatility are essential. The result will be an integrated and scalable ecosystem with installation-specific solutions for semi-automated and collaborative manufacturing in flexible production processes and for which specific robotic programming skills will not be required, thanks to its programming-demonstration modules.

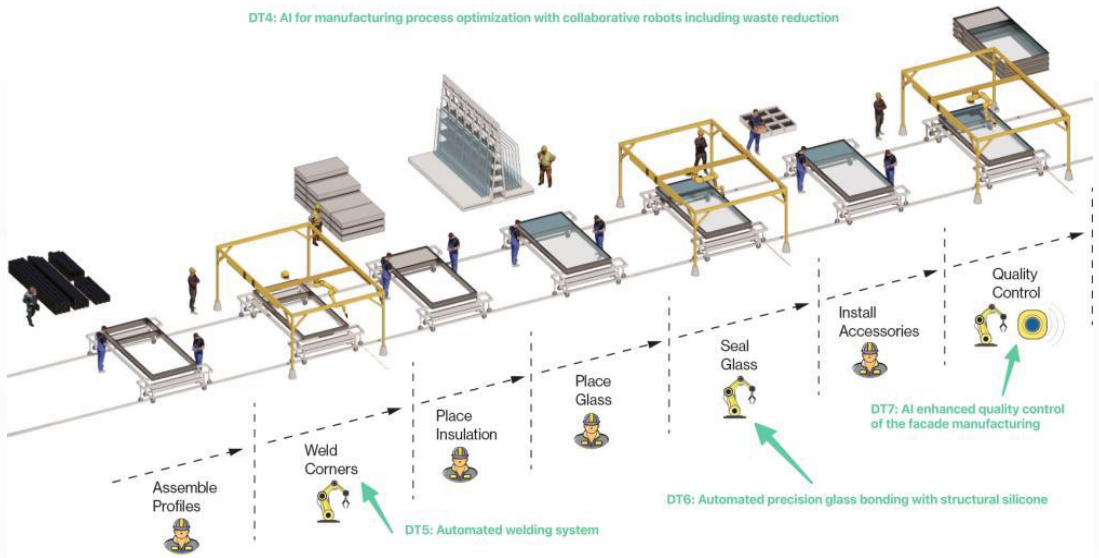
Our Ongoing Projects

PREDISURF

PREDIctive digital tool for SURFace treatment industry

PREDISURF will increase the transparency of the surface treatment process, allowing estimation of material and energy demand. The digital approach will avoid manual operation and analyses that are costly and not feasible in a productive manufacturing environment. To get it a model-based approach based on mass and energy balance and integrated in a cyber-physical production system will be implemented. The tools will be complemented with an artificial vision package as to correlate the process conditions with the obtained surface treatments.

Our Ongoing Projects



AMALTEA

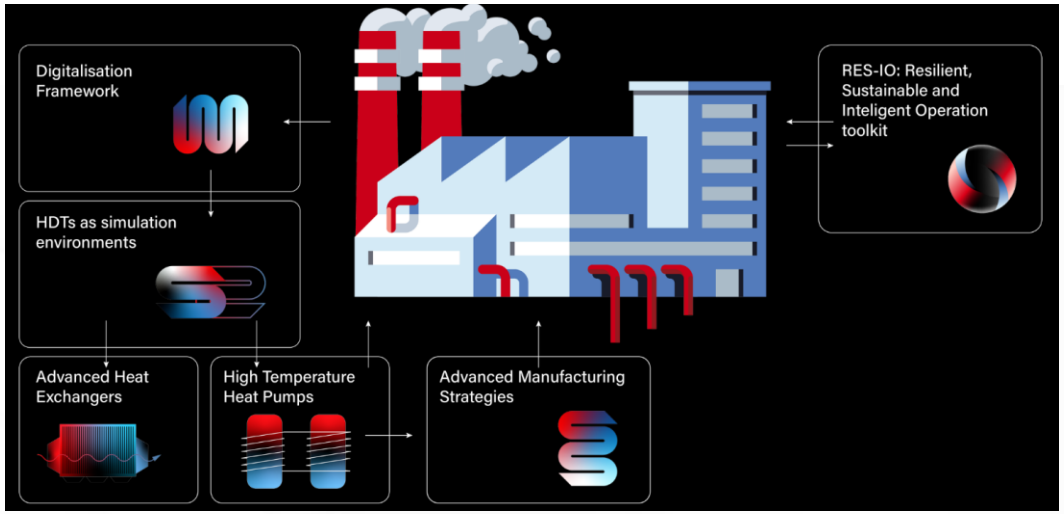
Advancing Green Deal Principles in sMart FacAde TechnoLogies for the construcTion sEctor based on AI, Data & Robotics

The AMALTEA project aims to enhance sustainability in the construction sector by utilizing artificial intelligence, robotics, and data analytics technologies. Throughout the project, pilot implementations across different regions of Europe are planned to increase energy efficiency, optimize resource utilization, and reduce waste.
The project is being carried out with 16 partners from 10 European countries, each specializing in design, artificial intelligence and data analytics, robotics, manufacturing, and construction. Additionally, expertise in social and human sciences (SSH) contributes to improving the interaction between developed technologies and human users.

The AMALTEA project focuses on the following objectives:

- Accelerating digital transformation in the construction sector
- Enhancing energy efficiency through AI-supported curtain wall systems
- Optimizing production and assembly processes with robotic Automation
- Ensuring process transparency through big data analytics and digital twin Technologies
- Reducing the carbon footprint in line with the Green Deal framework

Our Ongoing Projects



StreamSTEP

Streamlining the optimisation of Sustainable Thermal Energy systems and Prototype technologies in process Industries

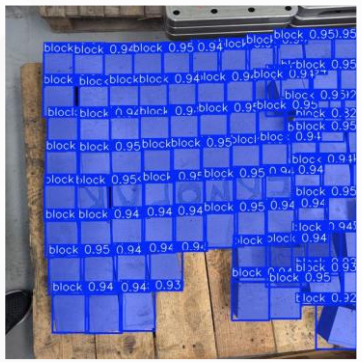
The project will address processes that generate waste heat across temperature grades, from 135℃ to over 1400℃, deploying five innovative heat exchanger prototypes in challenging applications and achieving flexible operation across multiple heat sinks.

Heat upgrade will be managed through high temperature heat pumps, achieving outlet temperatures at 150℃ and at 215℃, with improved performance through the use of ejector technology and the capacity to operate dynamically across a range of required temperatures.

These innovations will be enabled through advanced manufacturing techniques, implementing a holistic digital twinning pipeline which will provide the necessary infrastructure to deploy powerful optimisation agents.

These technologies will improve energy balance, intermediary storage, and GHG avoidance and facilitate data-driven LCA processes. Material performance will also be enhanced through the use of novel material alloys.

Our Ongoing Projects



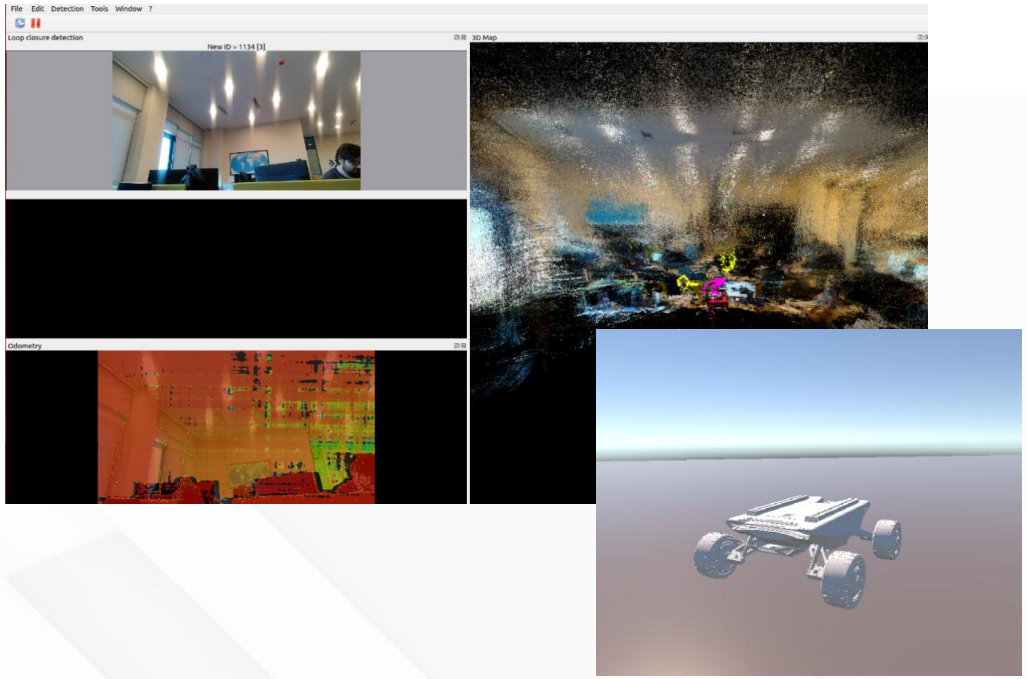
RoboTwin

Digital Twin Applications for Industrial Robots and CNC Machines Project

The project's objective is to address integration challenges and efficiency losses between industrial robots and CNC machines. The digital twin technology developed by TEKNOPAR aims to optimize manufacturing processes using 3D modeling and simulation techniques. Within the project scope, robotic arms will be utilized for machine loading tasks, and real-time monitoring and optimization of production processes will be enabled through sensor-supported IoT-based data collection infrastructure.These digital twins will enhance energy efficiency in CNC machines and robots, reduce labor costs, and improve overall production efficiency.

The project aligns with TÜBİTAK’s Vision 2023 sustainable development goals by incorporating innovative solutions such as special protective measures, energy efficiency-enhancing applications, and security breach notification mechanisms.

Our Ongoing Projects



IkaTwin

Multi-Purpose Autonomous Robot Development Project with System Diagnostics and Adaptive Controller with Digital Twin Approach

Unmanned ground vehicles (UGVs) are actively used in both military and civilian sectors today. By equipping UGVs with capabilities such as route planning and adaptation to changing environmental conditions, they can be made autonomous and independent of human control. This project aims to enhance the autonomous capabilities of a ground robot using digital twin technology. Development will be carried out on an unmanned ground vehicle that currently lacks autonomy but is compatible with ROS and CAN communication protocols.In the system to be developed by TEKNOPAR, the vehicle will be equipped with dynamic modeling, system diagnostics, route planning, and adaptive controllers. Through the digital twin, the vehicle's speed, position, inclination, and environmental data will be remotely monitored. Bidirectional wireless data transmission between the vehicle and the application will allow users to observe the vehicle as if it were physically present. Thanks to adaptive controllers, the vehicle will instantly adapt to changing road and weather conditions. Additionally, the system's development aims to provide reliable, efficient, and autonomous solutions for applications such as safe operations in hazardous environments, automated load transportation in warehouses, and unmanned cargo delivery.

TIA Platform
integrated digital solutions

ICTürkiye2025
10 April, İstanbul

teknopar

HORIZON-CL4-INDUSTRY-2025-01-TWIN-TRANSITION
Call Topics

ID	Call Topics
01	Integrated approaches for remanufacturing (Made in Europe)
02	Physical and cognitive augmentation in advanced manufacturing (Made in Europe)
05	Advanced manufacturing technologies for leadership of EU manufacturers in products for the net-zero industry (Made in Europe)
31	From heat-driven processes to the use of mechanical and electric forces (Processes4Planet)
32	Green and resilient flexible production processes (Processes4Planet)
33	Integrated use of renewable energy carriers in industrial sites (Processes4Planet)
34	Smart integration of net zero technologies into Energy Intensive industries (Processes4Planet and Made in Europe)
35	Developing and embedding upcycling technologies into viable business (Processes4Planet)
36	Safe and clean processing technologies and products (Processes4Planet)

ICTürkiye2025
10 April, İstanbul

PRESENTER CONTACT DETAILS:
Ezgi Şanlı
Project Specialist
sanli@teknopar.com.tr
COUNTRY: Türkiye