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Bu proje Avrupa Birliği ve Türkiye Cumhuriyeti tarafından finanse edilmektedir

International Study Visit, Germany 27-31 Jan 2020

teknopar

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Description of the Organization

teknopar

Teknopar Industrial Automation is an R&D performing SME founded in 1996 and it is one of the leading providers of automation systems and solutions in Turkey for industrial facilities, energy and mobility sectors. Through the development of its engineering and production infrastructure, the company has extended its sphere of activity to provide customers with a wide range of services and end-to-end solutions where integrated applications of mechanics, hydraulics, automation, electric-electronics, and information technologies have been supplied. The company incorporates control, automation and robotics technologies with information technologies and provides industrial communication systems, servo-controlled motion systems, embedded & industrial software.

Application Areas

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Description of the Organization

Industry 4.0: ERP – MES – PLC – SCADA - Hardware

Level 5 : Managing the business- related activities of the manufacturing operation.

05 **ERP** Enterprise Resource Planning

Level 4: Managing production work flow to produce the desired products.

04 **MES** Manufacturing Execution Systems

Level 3: Supervising, monitoring and controlling the physical processes.

03 **Control Systems** SCADA, DCS, HMI

Level 2: Sensing and manipulating the physical processes.

02 **Intelligent Devices** Sensors, analyzers, actuators

Level 1: Defines the actual physical process

01 **Process**

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Description of the Organization

Our Skills

Advanced Industrial Programming

INDUSTRY 4.0

PLC software TIA Portal
Codesys 2.3/3.5
STEP 7 (SCL, STL, Ladder, Graph)
Scada software WinCC

Printed Circuit Board (PCB) and embedded system design

Industrial Communication System Design and Applications: ProfiNET, Profibus, AS-i, Devicenet

Servo controlled motion system design: PLC open motion control SIMOTION, Sinamics

International Study Visits of TARAL to EU Key Players

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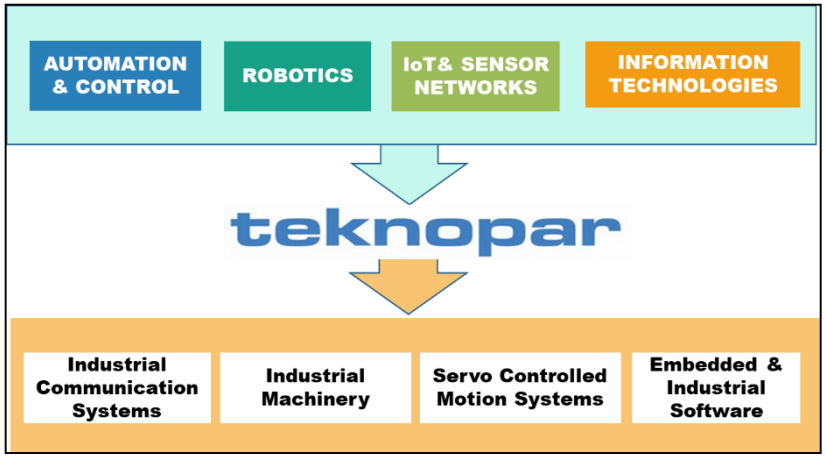
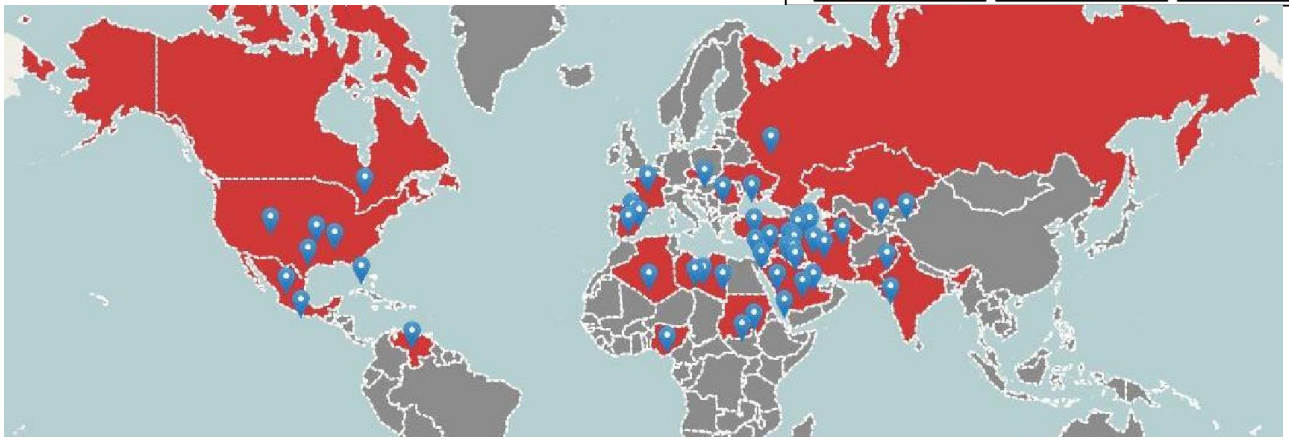
Description of the Organization





To date, TEKNOPAR has implemented projects at 27 countries.

International Study Visits of TARAL to EU Key Players

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Description of the Organization

Fields of Activity

ERW Machines	SWP - SSAW Machines	Power Wave Welding





ULTRASONIC TEST	HYDROSTATIC TEST	X-Ray TEST



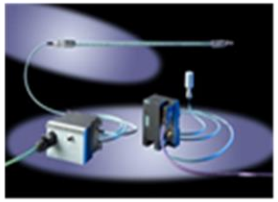
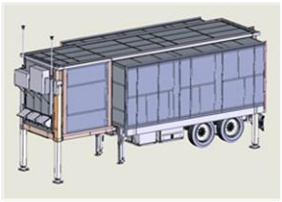



https://www.youtube.com/watch?v=XIVB9T-8H2c

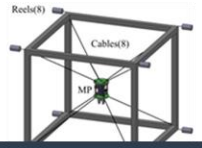
Automation system

Imaging software

Cable Robots	Moving Target Tracking	Automatic Level Identification

http://teknopar.com.tr/construmatic40/



Refurbishment
Modernization and revision of plants and industrial facilities

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Description of the Organization

Expertise offered:

IoT and Sensor Networks

- Applications in manufacturing, energy and mobility
- On-site installation of the sensors, machines and systems
- Condition Monitoring Systems
- M2M/ Internet of Things with HTTP, MQTT, AMQP
- IIoT & Narrow Band IoT (NB-IoT /LoraWAN/ SigFox/..)
- OPC UA, B2MML, PLCopen OPC UA

Automation and Control Systems

- PLC: TIA Portal, STEP 7 SIMATIC Manager, Rockwell Automation PlantPAx
- SCADA: WinCC, Visual Studio .NET
- Industrial Communication System design: PROFINET, PROFIBUS, AS-i, DeviceNet
- Servo Controlled Motion Systems: SIMOTION, SINAMICS, CODESYS
- Hydraulics and pneumatics systems

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Description of the Organization

Robotics

- Material Handling and Transfer Systems: Teknopar supplies and installs hydraulic, electric-electronic field equipment required for the conventional and full-automated control of the transfer systems
- Manufacturing Machinery: Fully or semi-autonomous machinery with automation and control systems
- Cable Robot - CONSTRUMATIC 4.0 (EUREKA): An intelligent productive system based on flexible robotic systems and 4.0 industry applied to the construction industry

NDT and Test Systems

- Ultrasonic Test Systems, X-Ray Test Systems, Hydrostatic Test Systems
- Test-beds fully controlled by PLC-HMI Developed in the standard DICONDE format to facilitate interoperability and communication with 3rd party devices
- Object recognition and anomaly detection by Image Processing, Artificial Intelligence

Edge/Cloud Computation, Analytics and AI

- SoA/Middleware
- Edge/Cloud computation and analytics
- Artificial Intelligence, Machine Learning and Deep Learning
- Digital Twins
- Distributed system architecture Hadoop, Mahout, Spark, Flink
- Programming Languages: C, C++, Python, Java
- Libraries and Environment: Qt, OpenCV, Eclipse, FIWARE

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Description of your research interests

- Smart manufacturing, digital factories, smart energy and mobility
- Automation, control systems and robotics-mechatronics technologies
- Industrial real-time communication technologies (IIoT), system modelling and distributed intelligence architectures
- Modularity-machine with interface, M2M interfaces and material handling systems
- Control systems and robotics-mechatronics technologies
- Cyber Physical Systems (CPS), Digital Twin
- ICT, AI, ML/DL, edge/clod computation, complex event processing and real-time data analytics
- Remote service management, condition monitoring
- Image processing and computer vision applications

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Description of your research interests

Horizon 2020 and EU Projects Involvement

Member of;

- Big Data Value Association (BDVA) PPP
- Vision 2020
- EFFRA
- Eureka Cluster Smart Advanced Manufacturing

Member of Standardization Initiatives

- CCSAGT Cloud Computinfg and Standardization
- 5GTRForum Head of Manufacturing Group for Information Technologies and Communication Authority
- H2020 Expert Advisory Group ''Innovation in SMEs''

BDV BIG DATA VALUE ASSOCIATION

Vision 2020 The Horizon Network

EFFRA EUROPEAN FACTORIES OF THE FUTURE RESEARCH ASSOCIATION

SMART advanced manufacturing program

International Study Visits of TARAL to EU Key Players

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R&D References

COGNITWIN - H2020 DT-SPIRE-06-2019

INDUSTRIAL PARTNERS	UNIVERSITY AND R&D INSTITUTES	TECHNOLOGY PROVIDERS
Noksel Steel Pipe Company	SINTEF AS	TEKNOPAR Industrial Automation
Hydro Aluminium Deutschland GmbH	The German Research Center for Artificial Intelligence (DFKI)	Cybernetica AS
SHI FW Energia Oy	Fraunhofer-Gesellschaft	Nissatech Innovation Centre
Sidenor Aceros Especiales Europa S.L.	University of Oulu	Scortex
Elkem ASA		
Saarstahl AG		

The goal of COGNITWIN is to add the cognitive elements to the existing process control systems, and hence enable their capability to self-organize and offer solutions to unpredicted behaviors. The COGNITWIN project will bring the industrial partners to a new level of Industry 4.0-driven operation by bringing in new data sources, integration of new and existing data, applying machine learning techniques to generate hybrid, self-learning and proactive systems, as parts of their digital transformation journey to cognitive plants.

https://cordis.europa.eu/project/id/870130

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R&D References

MACHINAIDE – ITEA 3 Call 5

	Partner	Country
1	:em engineering methods AG	DEU
2	Aalto University	FIN
3	Additive Industries	NLD
4	CIP System Ltd.	KOR
5	CORDIS Automation B.V.	NLD
6	Dakik Yazilim Teknolojileri	TUR
7	Demag Cranes & Components GmbH	DEU
8	Doğru Bilgi Teknolojileri	TUR
9	Eindhoven University of Technology	NLD
10	Empolis Information Management GmbH	DEU
11	Ermetal otomotiv ve esya sanayi tic.a.s.	TUR
12	ERSTE Software Limited	TUR
13	ETRI	KOR
14	HOP Ubiquitous	ESP
15	IDEAL PLM	FIN
16	Institut for Automation und Kommunication (IFAK)	DEU
17	KE-works BV	NLD
18	Koenig & Bauer AG	DEU
19	Koenig & Bauer Sheetfed AG & Co. KG	DEU
20	Konecranes Global Corporation	FIN
21	Lely Industies N.V.	NLD
22	Remion	FIN
23	RollResearch International Oy	FIN
24	Savox Communications Oy	FIN
25	Technische Universität Berlin	DEU
26	Teknopar Industrial Automation	TUR
27	TNO	NLD
28	TWT GmbH Science & Innovation	DEU
29	VTT Technical Research Centre of Finland Ltd.	FIN

MACHINAIDE aims to support innovative concepts for accessing, searching, analysing and using multiple Digital Twins data for increasing usability and functional upgrading of machines and equipment.
https://itea3.org/project/machinaide.html Other Labelled ITEA Projects: TIOCPS; HU-TWIN, 3DSafeGuard

International Study Visits of TARAL to EU Key Players

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R&D References

FLOW CAM - MARTERA

CONSORTIUM

P 1	Mr Fabrice Auzanneau CEA List
P 2	Prof Monssef Drissi Habti IFSTTAR COSYS
P 3	Dr Perin Unal TEKNOPAR R&D
P 4	Mr Emre Ege Desistek Robotik Ltd. Sti. R&D
P 5	Mr Yoann Jacq MEDYSYS MEDYSYS

MarTERA
ERA-NET COFUND

Flow Cam (FLoating Offshore Wind turbine CAble Monitoring) project aims at studying new methods for the inspection, detection and monitoring of structural defects in the interconnection system of FOW farms.

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R&D References

CONSTRUMATIC 4.0 - EUREKA

Applications

Cleaning

Couting

Loads movement

Others

EUREKA
innovation across borders

The EUREKA Network Application E!11720 CONSTRUMATIC4.0 has been awarded the EUREKA label

Friday, September 29, 2017

Our CONSTRUMATIC 4.0 project was awarded by European Union's EUREKA Programme. Project is developed with Spanish Coprosa and Prodintec. The Eureka project is aimed at designing and prototyping a 5-axis cable-based robot to loads movement, inspection tasks, monitoring, control and measuring tasks and auxiliary tasks in construction sector.

http://teknopar.com.tr/construmatic40/

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Specific Topics and Calls

ICT-46a-2020 "Robotics in Application Areas and Coordination & Support“

- *TEKNOPAR is coordinating a project proposal for the call* ***ICT-46a-2020***
- ***Proposal with conceptual idea advanced.***
- ***We are looking for*** **partners with AI data fusion capabilities**

Specific Topics and Calls

Logo	Participant Organisation Name	Acronym	Type	Country	Flag
teknopar	Teknopar Industrial Automation (Coordinator)	TEK	SME	Turkey	
FORTH	Foundation for Research and Technology – Hellas	FORTH	RI	Greece	
ortelio	Ortelio Ltd.	ORT	SME	UK	
THALES	THALES SA	THA	LI	France	
JOANNEUM RESEARCH	JOANNEUM RESEARCH Forschungsgesellschaft mbH	JRS	RI	Austria	
Jožef Stefan Institute	Jožef Stefan Institute	JSI	RI	Slovenia	
TWI	TWI Limited	TWI	RI	UK	
Aarhus University	Aarhus University	AU	Univ	Denmark	
CEA	French Alternative Energies and Atomic Energy Comm.	CEA	RI	France	
B	Berner Fachhochschule BFH	UPA	Univ	Switzerland	
ICS	Institute Corporate Security Studies	ICSS	RI	Slovenia	

AI				Platform				Robotics					Pilots	
AI and algorithm development	AI based vision processing	AI and Cognition	Cognitive Mechatronics	IoT Platform Provider	Operations Technology (OT)	Platform provider (edge/fog/cloud etc.)	Software solution provider	Robot control	Autonomous robots	Non-visual sensing technologies	Proximity sensing	Other	End user (problem and data owner)	Industrial service provider (problem owner)
X	X			X	X	X		X						
X	X	X	X					X	X	X	X	X		
X	X	X	X					X	X	X	X	X		
X	X	X				X	X	X	X					
X		X							X					
						X	X		X	X				
	X											X		
X				X		X	X							
												X		
X	X	X	X					X	X	X				
X												X		
													X	X

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