



This project is co-financed by the
European Union and the Republic of Turkey
Bu proje Avrupa Birliđi ve Türkiye Cumhuriyeti tarafından
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searover
Robotics

Description of the Organization



s e a r o v e r
Robotics

- Searover, provides robotic solutions in wind , solar, hydropower industries with maintenance and underwater technologies in the sustainable energy sector since 2018.
- Searover has experience in joint collaborations with companies and universities with R&D projects in the national and international arena.



Predictive Maintenance
Algorithm for Wind Turbines



Autonomous PV Cleaning
and Inspection System



Hydropower Plant Tunnel
Inspection ROV

Research Interest



Wind Turbine Predictive Maintenance Technology

The research is builded based on the difficulty of controlling wind power plants. This product provides predictive maintenance and continuous monitoring.

- The system is based on a machine learning algorithm and a neural network approach to process the data collected from the vibration sensors , to make predictions and detect damages in an early stage.
- We will be able to classify the damage types such as cracks, fractures, burns, as well as the damage size.
- *For example, "Blade x needs maintenance because there is a x cm crack in x,y point" .*



Project Idea

Intelligent Wind Turbine Inspection System- Predictive Maintenance TRL-6

Wind Turbine Predictive Maintenance

Objectives:

- To develop an autonomous early damage detection and diagnosis system to sense and detect damages such as scratches, cracks and corrosion in the key components of wind turbines.
- Advanced Machine Learning algorithms and Deep Learning will be utilized for automatic detection and analysis of various damages from the vibration signals collected by appropriately positioned sensors.

Expected results

- The fully autonomous system will allow predictive and preventive maintenance by early detection of asset failure and minimize the need for manpower by reducing the number of people in the field and their expenses.



Consortium - profile of known partners

No	Partner Name	Type	Country	Role in the Project
01	Searover Robotics	SME	Turkey	Hardware and Software Development
02	Enerjisa Üretim	LE	Turkey	PoC and field tests
03	The University of Strathclyde	Uni.	England	Predictive Maintenance Expertise
04	Izmir University of Economics	Uni.	Turkey	Machine Learning Expertise
05	Research Burgenland	Public R&D	Austria	Ciber Security&Optimization
06				

Consortium - required partners

No	Expertise	Type	Country	Role in the project
01	Wind Turbine Maintenance		Horizon Europe Countries	
02	Wind Power Plant Operation		Horizon Europe Countries	Poc and Field Tests
03	Wind Energy		Horizon Europe Countries	
04				
05				

We are open for further collaborations (not limited with this structure)
Please reach out for further information.



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