

# EuroStars partner search - Solar Energy company to be partner in the development of a solar powered recharge station for robots.

## Summary

Profile type	Company's country	POD reference
<b>Research &amp; Development Request</b>	<b>Spain</b>	<b>RDRES20240119006</b>
Profile status	Type of partnership	Targeted countries
<b>PUBLISHED</b>	<b>Research and development cooperation agreement</b>	<b>• World</b>
Contact Person	Term of validity	Last update
<b><a href="#">Sabrina WODRICH</a></b>	<b>19 Jan 2024</b> <b>18 Jan 2025</b>	<b>19 Jan 2024</b>

## General Information

### Short summary

A Spanish SME specialized in the development of autonomous robots for industrial environments' inspection and surveillance, wants to build a new solar powered smart station in order to increase robot's autonomy and operation times. The new station, will increase operation time in zones with no power grid connection and, autonomy in clients with no maintenance crew. Powered by solar energy with the additional cleaning and maintenance functions, the new station will open new operative scenarios.

### Full description

Autonomous robots are becoming more and more widespread in our society and more and more companies are choosing to purchase products or services provided by robotic systems. Currently, robot manufacturers provide proprietary charging systems, which usually must be installed in a dry and protected area, as well as connected to the power grid. In addition, many of these robots operate in outdoor areas and are therefore exposed to rain, dust, mud, and dirt in general. This situation causes degradation and malfunction of the main sensors of the robot, the cameras, and LiDAR sensors.

The Spanish SME leads the preparation of a proposal to create an intelligent charging station, which also fulfills the function of maintenance and cleaning through a system of controlled jets of water and air to increase the autonomy of these robotic systems, as well as to provide coverage to remote areas that do not have an electrical socket nearby.

So, the consortium is looking for a partner specialized in solar energy. The main contributions of the partner could be:

- Sizing of the electrical and energy storage system and advice on the installation of the solar panels.
- Providing a solution to problems concerning the dirtiness of the panels and their performance in dusty and dirty conditions, taking into account that complete maintenance of the installation will be carried out once a year.

The targeted call is EUROSTARS 3 - Call, 6 which deadline is 14/03/2024 Deadline for expression of interest is 04/03/2024

#### Advantages and innovations

The development of a new smart station through the integration of state of the art technologies will allow to fill the gaps of the company robots when considering new user cases and operations ranges. The new advantages and innovations will be oriented to:

\* Increase autonomy capacity. A 20% increase of robot operative cycle, is expected to be reached thanks to the inclusion of solar energy capture, storage and conversion systems. Robustness (shock proof), efficiency and dimension criteria will prevail initially when considering desired designed operative outcomes for automatic docking and recharge functionalities.

\* Cleaning and maintenance functionalities will be realized during stock docking and recharging increasing and maintaining operative capacities of IOT and sensors systems of the considered robots. Though initially this functions will cover basic cleaning and preventive maintenance activities, its automatization will help to increase more than 20% the operative indicators for the systems considered. This functionalities will include a smart data input system that will appropriate ML/AI tools will generate new alternatives for increasing operative functions .

#### Technical specification or expertise sought

Expertise in solar panels maintenance, or with a previous developed solution to problems concerning the dirtiness of the panels and their performance in dusty and dirty conditions.

#### Stage of development

**Concept stage**

IPR Status

#### Sustainable Development goals

• **Goal 9: Industry, Innovation and Infrastructure**

## Partner Sought

#### Expected role of the partner

Partner specialized in solar energy, more precisely specialized in a low maintenance solar panels or with a solution to problems concerning the dirtiness of the panels and their performance in dusty and dirty conditions.

The main contributions of the partner could be:

- Sizing of the electrical and energy storage system and advice on the installation of the solar panels.
- Providing a solution to problems concerning the dirtiness of the panels and their performance in dusty and dirty conditions, taking into account that complete maintenance of the installation will be carried out once a year.

Type of partnership

**Research and development cooperation agreement**

Type and size of the partner

- **SME <=10**
- **SME 11-49**
- **SME 50 - 249**

## Call Details

Framework program

**Eureka**

Call title and identifier

**Eurostars 3 - Call 6**

Submission and evaluation scheme

**Two stages process. Proposal are submitted and evaluated at Eureka level and afterwards at the associated country national's funding body level.**

Anticipated project budget

**450k€ for partner estimated**

Coordinator required

**No**

Deadline for EoI

**4 Mar 2024**

Deadline of the call

**14 Mar 2024**

Project duration in weeks

**106**

Web link to the call

<https://myeurekaproject.org/competition/17/overview>

Project title and acronym

**StarHome – Developing a smart and autonomous recharge station powered by solar energy for recharge, clean and maintain ground robots.**

## Dissemination

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### Technology keywords

- **04008003 - Micro- and Nanotechnology related to energy**
- **02001 - Design and Modelling / Prototypes**
- **03003 - Apparatus Engineering**
- **04002012 - Other energy related machinery**
- **04005004 - Photovoltaics**

### Targeted countries

- **World**

### Market keywords

- **08003007 - Other industrial equipment and machinery**
- **006005002 - Photovoltaic solar**
- **03003 - Power Supplies**
- **09008004 - Other utilities and related firms**
- **08002004 - Robotics**

### Sector groups involved

- **Aerospace and Defence**
- **Digital**
- **Renewable Energy**