

## Consortium



Instituto de Engenharia de Sistemas e Computadores, Tecnologia e Ciência



Consiglio Nazionale delle Ricerche - Istituto di Scienze e Tecnologie per l'Energia e la Mobilità Sostenibili



Teyme Technologie Agricola SL



Associacio Aei Innovvi (Agrupacio Empresarial Innovadora)



Sociedade Portuguesa de Inovação

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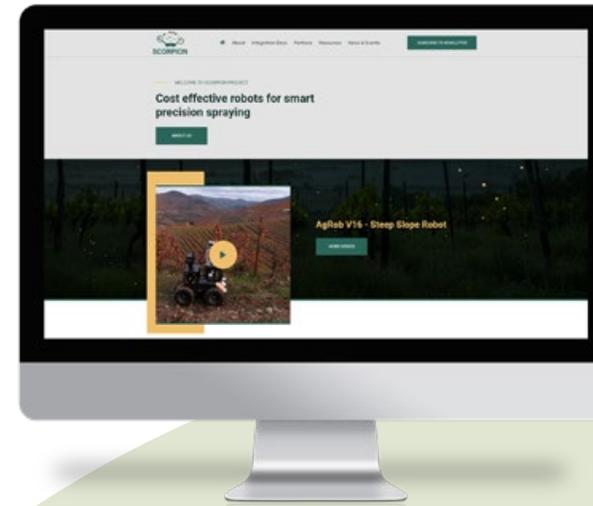
Fundacio Eurecat



Centro Di Ricerche, Studi, Salvaguardia Rappresentanza e Valorizzazione per la Viticoltura Di Montagna

## Contacts

For more information, visit [www.scorpion-h2020.eu](http://www.scorpion-h2020.eu)



@scorpioneuproj1



SCORPION EU Project



SCORPION Project



This project has received funding from the European GNSS Agency under the European Union's Horizon 2020 research and Innovation programme under grant agreement No 101004085.



Cost effective robots for smart precision spraying

## Project Overview

Agriculture in rough terrain is challenging due to steepness, lack of space to manoeuvre, difficulties of communications due to natural obstacles and harsh atmospheric conditions. To cope with these challenges a consortium led by INESC TEC was formed for SCORPION project, bringing together steep slope vineyards associations (CERVIM, INNOVI), robotics and agricultural machinery RTD institutions (INESC TEC, EUT, and CNR-STEMS, WUR), SMEs and large company (TEYME, Deimos, SPI), and an institution devoted to innovation in the sector (IPN).

SCORPION' considers Global Navigation Satellite System (EGNSS) receiver (triple frequency, PPP, OS-NMA, HAS) fused with other sensors, to increase the solution reliability, accuracy and safeness, and to enable autonomous ultraviolet light treatments (to eliminate partial need of phytopharmaceuticals) and to allow high precision spraying in permanent crops.



## Main Objectives & Vision

Spraying in agriculture has a negative impact on human & animal health and the environment. SCORPION's objective is to develop a safe and autonomous precision spraying tool integrated into a modular unmanned tractor (robotics platform) to increase spraying efficiency, while reducing human and animal exposure to pesticides, water usage and labour costs.



### Integration I: Month 11 - November 2021

Robotic sensors and low-level controllers  
INESC TEC is the coordinator and task leader for the first integration, to be released during M11 (November) in Portugal. Integration I will also have the participation of Sogrape, one of SCORPION's end users.



### Integration II: Month 17 - May 2022

Tractor and sprayer integration  
Spain | Led by INNOVI



### Integration III: Month 26 - February 2023

Precision Spraying validation and evaluation  
France | Led by TEYME



### Integration IV: Month 30 - June 2023

Sprayer applying nitrogen/fungus/UV  
Italy | Led by CNR-STEMS



### Integration V: Month 32 - August 2023

Fully integration with a full long term pilot test  
Portugal | Led by INESC TEC

## Workplan

- 🌿 Requirements Analysis and Use Cases (Leader CERVIM)
- 🌻 New Spraying Approaches and Tools for Robotic Precision Spraying (Leader TEYME)
- 🌿 Permanent Crops Perception, Navigation and Localization (Leader EUT)
- 🌻 Control and Safety Systems (Leader INESC TEC)
- 🌿 SCORPION, Integration and Technical Validation (Leader INESC TEC)
- 🌻 Pilots, Dissemination and Communication Activities (Leader CNR-STEMS)
- 🌿 Exploitation of Results and IPR (Leader IPN)

