

LIGHTWEIGHT ELECTRICAL PLATFORMS VS TRACTORS. IS THERE A MIDDLEGROUND?

Advantages of robots to the cultivation of vineyards on slopes

- Automation, continuous and safe operation in the field, reducing the exposure of farmers to repetitive and intensive tasks
- Increased productivity and reduced the impact on the environment

Main Challange for robots in sloping vineyards

These environments are open to human traffic and their terrain is generally unstructured for robots

The use of robots over tractors



- Tractors, due to their mechanical complexity, are limited in their automation capabilities
- Robots do not require cabins and can, from their conception, be optimized for crops, reducing energy consumption and operating costs



- Due to their **smaller size**, robots can also **operate in open spaces**
- Reduced weight of the platform also reduces soil compaction



- SCORPION's navigation algorithms can detect people and animals in real time
- It considers the weight distribution of the platform and an elevation map of the terrain
- Seeks out the most optimal routes
- Avoids potentially dangerous areas
- Ability to locate itself in the field with accuracy and robustness
- Integrated GNSS Galileo can accurately acquire locations

With SCORPION, the modular concept of robotic platform for agriculture is explored, starting from the integration of different implements according to the application.

By adopting and expanding standard communication protocols in agriculture such as ISOBUS, interoperability between different machines is facilitated

Technologies developed by SCORPION will help to accelerate the transition to Industry 4.0 through its advanced localization, communication and perception systems. In conjunction with automated decision systems and Big Data management, the digitalization of the field will add more efficiency to operations



