Introduction

The ninth edition of the autonomy and robotics event World FIRA took place in Auzeville-Tolosane, near Toulouse, France from February 4 to 6. For the third consecutive year, it was an outdoor event featuring various live demonstrations, panel talks and discussions.

The demonstrations included autonomous vehicles and combinations of field robots and implements. Notably, several manufacturers brought vehicles from dealers and customers, including AgXeed, Naïo, MULA, SOFTIROB.

Objectives

This year, from our *SoilRob* team Dr. Adrija Roy and Björn Wang took the opportunity to visit the World FIRA in sunny southern France. Our primary goal of attending the event was to explore the latest advancements in agricultural field robotics and their potential applications in sustainable cropping systems. We wanted to gain insights into the latest developments of sensors and related technologies and use the opportunity to network with manufacturers, dealers, developers and stakeholders. Given the focus of the *SoilRob* project on integrating autonomous field robots into diversified agricultural landscapes, this event provided an opportunity to:

- Gain insights into emerging technologies in agricultural robotics and their potential use in diversified cropping systems.
- Understand current challenges and opportunities in field robot adoption.
- Identify potential collaborations and funding opportunities.

World FIRA and Its Relevance to *SoilRob*

World FIRA is a leading international event dedicated to agricultural robotics, bringing together researchers, industry professionals, and policymakers. The conference features discussions on cutting-edge robotic solutions, artificial intelligence applications, and their integration into precision agriculture.

Relevance to the *SoilRob* project:

- **Technology Integration**: New insights regarding the development of robotic solutions that enhance soil health by minimizing compaction, and improving ecosystem services.
- **Data-Driven Decision Making**: The use of spectral, and thermal imaging and AI-driven analytics in robotic platforms.
- **Collaboration Opportunities**: The event provided networking opportunities with key stakeholders in agricultural robotics, offering potential partnerships for field trials and technology validation.

Day 1

1. TED by Naïo Technologies – The vineyard expert for precision inter-row weeding.
2. JO by Naïo Technologies – Perfect for versatile, lightweight vineyard operations.
3. ORIO by Naïo Technologies – Bringing precision and autonomy to large-scale farming.
4. OZ by Naïo Technologies – The compact, autonomous solution for efficient weeding and soil cultivation in vegetable farming.

Naïo Orio is equipped with a Stanhay precision seeder.

Naio Oz: Naio Technolgies is a trusted partner for farmers in more than 48 countries.

5. MULA 1250 by MULA – Advanced navigation and spraying system for modern vineyards.

Multipurpose autonomous electric platform for automation of agricultural processes.

6. ROBOTTI by AGROINTELLI – The multi-functional powerhouse for seeding, spraying, etc.
7. AIGRO UP – Robust and adaptable robot for multiple agricultural tasks.

The AIGRO UP is an autonomous, flexible and extremely robust tool carrier that can be used for various tasks, such as mowing, harrowing, scouting or other functions that can be added customer specifically.

Day 2

1. Traxx by EXXACT ROBOTICS – Precision viticulture redefined with advanced smart technology for vineyard management.
2. Slopehelper Apple and Grape Picker by PEK AUTOMOTIVE – Revolutionizing apple harvesting with unparalleled precision and efficiency.
3. Slopehelper Drum Mulcher by PEK AUTOMOTIVE – Efficiently maintaining orchards and vineyards with powerful mulching capabilities.

Traxx field robot from Exxact Robotics

Slope Helper Drum mulcher

4. Sabi Agri and Ceol by INRAE - UR TSCF – Pioneering sustainable agricultural solutions with innovative robotics.
5. LabCom TIARA: A project by the joint laboratory of INRAE and SABI AGRI – Advancing agricultural innovation with collaborative robotics solutions designed for precision and sustainability.

The objective of LabCom TIARA is to accelerate the development of a control architecture on SABI AGRI's ALPO electric tractors, enabling autonomous work in interaction with humans.

Agreenculture is discontinuing its CEOL field robot and will now focus entirely on supplying kits to make vehicles autonomous. This includes Kubota tractors, as well as the Kubota-Fede KFAST autonomous orchard sprayer, which features an Agreenculture autonomy kit.

Day 3

1. SoftiRob by SOFTIROB – Advancing soil health with precision-driven robotic solutions for sustainable farming.

SoftiRob, also a French company, demonstrated during a workshop for (French) farmers how the 22 kWh battery of the Softi Rover can be easily swapped using, for example, a tractor SoftiRob is operated by a French arable farmer who tests the vehicle and its associated implements on his own farm. Market introduction is currently planned for 2030.

2. EVAbot by Instituto Superior Técnico Lisbonne PT – Integrating next-gen spraying technology to vineyards for optimized performance.
3. Modular-E by INESC TEC – A highly adaptable robotic system designed to support various field operations with ease.
4. Modular-X by INESC TEC – Enables automation with an innovative, multi-functional approach to farming tasks.
5. CNH (Expo) – Showcased the latest in precision agriculture and autonomous machinery advancements.
6. Orbiba Robot by ORBIBA Robotics – Transforming vegetable farming with autonomous, intelligent weeding and soil management.

7. AgBot 5.115T2 by AGXEED – Applied in large-scale farming with high-capacity work capabilities and precision tracking.

AgXeed was present at World FIRA together with its French dealer Sevra. The companies showcased an Amazone rotary harrow in action.

Other Platforms

New Holland was a partner of the 2025 edition of World FIRA andshowcased the T4.120F featuring the Advanced Vision Assisted Guidance system. This system utilizes a LiDAR sensor mounted at the center front of the cab roof for automated steering.

Odd.Bot brought a 'French' Maverick weeding robot, which was displayed in the Dutch pavilion.