



## S U C C E S S S T O R Y



# ROVIPO, versatile viticulture robot

This project aims to develop a versatile robot for use in vineyards. The intention is to add versatility to a **mechanical weeding robot** previously developed for use with vines, by equipping it not only to record relevant data during its operations (relating to vigour, detection of symptoms, etc.) but also to conduct other operations in the vineyard, such as clipping, pruning, and the spraying of phytosanitary products.

The three targeted operations will allow for a global reduction in the use of (and also users' exposure to) the phytosanitary products normally used for soil maintenance, pruning and protection against cryptogamic diseases.



### ► PLANT2PRO® BODIES

Institut Français de la Vigne et du Vin (IFV)

### ► CREATION CONTEXT

Naïo Technologies has developed a mechanical weeding robot for the vine, in partnership with the French Wine and Vine Institute (IFV) and the Laboratory for Analysis and Architecture of Systems (LAAS) of the French National Center for Scientific Research (CNRS), as part of a regional collaboration project financed by the Midi-Pyrénées Region (from 2014 to 2016). As an extension of this, a national collaboration project called ROVIPO aims to develop the versatility of the robot via a stilt facility. The project is financed by the Casdar Technological Research programme (2015-2019) and coordinated by IFV with the same partners.

### ► ADDED-VALUES FOR COMPANIES

Since the vineyard environment is fundamentally different from the market gardening environment for which the Naïo company developed its first weeding robot (Oz), the design of a robot for vineyards needed to be modified in terms of its dimensions, power, the position of the tools and the energy with which it is equipped. **IFV's expertise was called upon to define the specifications of the robot in line with the specific constraints of the vineyard.** Naïo's skills in terms of guidance and autonomous navigation within the vineyard are complemented by the data processing function, image analysis and expertise in perception and vision contributed by the LAAS laboratory.

### ► FUTURE PROSPECTS

Once the project is completed (in 2019), the Naïo Technologies company plans to launch onto the market a multi-functional vineyard robot on stilts named Ted, intended for winemakers and also for market gardeners. This robot, which is still at the development stage, will be able to take care of the upkeep of an area of approximately 25 hectares. Its main tasks will be mechanical weeding, pruning, clipping and spraying. It will also be able to gather information (numbers missing, the symptoms of diseases, etc.). Other functions will be added later, such as leaf-stripping and trimming, for example.



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