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# ANATIS: THE AUTONOMOUS MOBILE AGRICULTURAL ROBOT

#smart farming #agricultural robotic #mobile robotic #independent robot  
#human and machine interface #production engineering

Since 2016, Capacités has been part of the innovation strategy for Carré HKTC, a farming machine manufacturer in the Vendée region of France. Capacités' engineers are using their expertise in computer science and in robotic demonstrator design to work with Carré HKTC on developing an agricultural robot. The new intelligent machine is an autonomous mobile robot that hoes soil. It is called Anatis and promises to be an absolute breakthrough innovation for the fruit and vegetables sector.

## AN INTELLIGENT MACHINE THAT IS EASY TO PROGRAM AND EASY TO CONTROL

The company Carré HKTC has always stood out by betting on innovation. By developing the Anatis agricultural robot project with Capacités, it wanted to open up to the fruit and vegetable crops market by offering an autonomous soil preparation machine.

The experts from Capacités relied on their industrial culture and expertise in advanced robotics to translate the manufacturer's intentions into adapted technical specifications. The constraints connected with complex exterior environments and conditions for use and safety were examined in detail, guiding certain choices of actuators and electrical components.

The control algorithm is combined with a built-in camera and a GPS tracking system to guide the robot autonomously. It can pass from one row of crops to the next without human intervention.

The human-machine interface is designed in the form of a visual application, making it easier for the farmer to control and program the robot. The data collected while the robot is working allows the farmer to measure and optimize the machine's actions.

To successfully complete this project, the Capacités' experts benefited from support and technical equipment from the LS2N laboratory, joint research unit of the University of Nantes, IMT Atlantic, INRIA and CNRS (The French National Centre for Scientific Research). ■ □

### Expertises:

- Robotic and automation
- Data Science and Artificial Intelligence

### CAPACITÉS

Created in 2005, Capacités is the private engineering and research valorisation subsidiary of the University of Nantes. It employs 90 employees, mainly engineers and PhDs, who work directly with scientists in the research laboratories.



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