

Service ID S00004



Location At user's premises, Belgium

Evaluating automation readiness of agricultural robots

Provider service

Instituut voor Landbouw-, Visserij- en Voedingsonderzoek (ILVO)

Link to content

<https://agrifoodtef.eu/catalogue-of-services/evaluating-automation-readiness-agricultural-robots>

Type of Sector

Arable farming, Horticulture, Tree Crops, Viticulture

Accepted type of products

Physical system

Type of service

Collection of test data, Desk assessment, People training, Performance evaluation, Test design, Test execution, Test setup

Description

Developing autonomous agricultural robots requires more than just solid mechanics—it needs reliable software to manage navigation, task execution, and communication between components. With this service, we offer a ready-to-use open-source robotic software framework to evaluate how your platform performs autonomous operations. By integrating your hardware with our system, you can verify the performance of your steering, sensors, and actuation systems under realistic agricultural scenarios. The framework supports a wide variety of robot types and drive configurations (e.g., Ackerman, skid-steer) and provides built-in modules for GNSS-guided navigation, task scheduling, and sensor interfacing. Additionally, it also allows the development of custom add-ons to test experimental features, innovative ideas, or validate new components.

How can the service help you

- > Determine whether your robot is ready for autonomous operation.
- > Receive detailed insights into how well your platform executes tasks like navigation, turning, and sensing
- > Pinpoint issues related to the integration of the mechanics and software and improve based on iterative evaluation trials
- > Know what works, what needs adjusting, and how your robot compares to a fully autonomous standard.

How the service will be delivered

- > Customise test scenarios and framework modules according to your robot's setup
- > Various drive types, steering configurations, and sensors are supported. Add-ons can be developed to test custom hardware, experimental control algorithms, or new features.
- > Software is adaptable for simulation-based testing if your platform isn't physically available.
- > Modular & Scalable Design allowing to test multiple robots together.

Service customisation

During the first step the framework is integrated into your robot or simulation model. This takes place at the workshop in our testing facility or remotely, depending on the configuration. We support during the setup and evaluation. Evaluation includes testing AB lines, steering control, GNSS-based navigation routines and custom scenarios. After the service, you will receive a detailed report of test results, logs, and feedback.

For more information on the open-source framework, you can always access the documentation (<https://artof-ilvo.github.io/>).