

Service ID S00068

Location France



ARPA 1 - Qualification of safety systems providing obstacle detection an

Provider service

INRAE

Link to content

<https://agrifoodtef.eu/services/arpa-1-qualification-safety-systems-providing-obstacle-detection-and-robot-safety-0>

Type of Sector

Arable farming, Greenhouse, Horticulture, Livestock farming, Tree Crops, Viticulture

Accepted type of products

Design / Documentation, Physical system, Other

Type of service

Collection of test data, Performance evaluation, Provision of datasets, Test design, Test execution, Test setup

Description

We offer a comprehensive testing service to validate the safety functions of autonomous mobile robots and robotic systems. Our tests use a high-precision laser tracker for accuracy to assess your robot's ability to detect and stop when encountering an obstacle, as defined in ISO 18497:2024 (Protocol included in part IV Annex D.2). These tests, conducted at our Montoldre site in France, will help ensure your robot's compliance with industry safety standards. A representative from your team must be present to assist in configuring and monitoring the system during testing.

How can the service help you

ARPA1 service helps customers ensure that their agricultural robots can safely detect obstacles. Before service, customers may be concerned about potential collisions and safety risks. After testing, they receive detailed reports on the robots' stopping performance, eliminating uncertainty and confirming safety in the field.

The test operator produces and reviews the final test report. This document belongs exclusively to the customer, satisfying the need for verified safety compliance and unbiased operational confidence.

How the service will be delivered

The ARPA1 test can be customised to focus on specific safety features manufacturers wish to evaluate. These features are jointly established before testing.

However, the tests specifically determine how well the robot detects obstacles and stops safely. Some limitations exist, such as the need for a manufacturer's technical representative to be present during the test and the requirement to provide technical manuals in advance. In addition, conducting the tests during the winter may not be possible, so customers should plan accordingly.

Service customisation

Testing is available year-round, with possible restrictions during the winter season due to soil and weather conditions. Each test lasts approximately three days, depending on the conditions established during the technical meeting, and is carried out on the premises of INRAE - Montoldre - AgroTechnoPôle in France (just two hours from Lyon).

The manufacturer's representative will be involved throughout the process to ensure accurate testing and validation. The robot's technical and user manuals must be submitted in advance. Customers will receive a detailed technical report on the test. This service is aimed at manufacturers of agricultural robots and safety systems.