

**Service ID** S00078

**Location** France



## **Qualification of trajectory execution accuracy of livestock robots**

### **Provider service**

INRAE

### **Link to content**

<https://agrifoodtef.eu/services/qualification-trajectory-execution-accuracy-livestock-robots>

### **Type of Sector**

Livestock farming

### **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**

ARPA PC2 thoroughly evaluates how well agricultural robots can follow established paths in indoor and outdoor environments. This service helps ensure that robots can successfully navigate various settings typical of a farm, including any obstacles and transitions between spaces they might face. ARPA PC2 provides essential information about the robot's accuracy and behaviour while moving by testing in real-life conditions. This assessment enhances operational reliability and safety and supports manufacturers in optimising their robots for improved performance in diverse agricultural scenarios.

## How can the service help you

The ARPA PC2 test instills confidence in agricultural robot manufacturers and operators. It ensures that their machines can accurately navigate complex environments, address potential issues in trajectory execution, and improve operational reliability and safety.

Before the service, customers may have uncertainties about their robot's performance in real-world settings; after the service, they gain valuable insights and confidence that their robots can perform as expected in diverse conditions. The final test report is prepared and reviewed by the test operator. This document belongs exclusively to the customer, satisfying the need for verified safety compliance and unbiased operational confidence.

## How the service will be delivered

ARPA PC2 offers a high degree of customisation, empowering customers to tailor it to their specific operational needs. This includes varying test routes and introducing artificial obstacles for a more realistic simulation of real-world challenges.

Customers can even specify the types of buildings and zones their robots will navigate, giving them complete control over their testing environment.

Some limitations exist regarding the robot's specifications and capabilities, and customers should be aware that testing may require adjustments to the robot's settings for optimal performance assessment. Other requirements include requiring a manufacturer's technical representative to be present during the test and providing technical manuals in advance. In addition, conducting the tests during the winter may not be possible, so customers should plan accordingly.

## Service customisation

ARPA PC2 testing is conducted on INRAE—Montoldre—AgroTechnoPôle in France. The site features a range of infrastructures ideal for assessing robot performance. To ensure accuracy, each test is meticulously repeated three times. Testing is available year-round, with the only possible restrictions during the winter due to soil and weather conditions.

Each test lasts approximately five days, depending on the conditions established during the technical meeting, and is carried out on the premises of INRAE - Montoldre - AgroTechnoPôle in France. The manufacturer's representative will constantly be present throughout the testing process, providing continuous support 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.