

**Service ID**

S00069

**Location**

France

## **ARPA 2 - Qualification of perception systems in harsh environmental conditions**

**Provider service**

INRAE

**Link to content**<https://agrifoodtef.eu/services/arpa-2-qualification-perception-systems-harsh-environmental-conditions-rain-fog-night>**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**

This service tests the performance of on-board detection systems in agricultural robots, focusing on their safety functions under challenging environmental conditions like fog and rain. Conducted at the PAVIN platform in Clermont-Ferrand, France, the tests evaluate sensor accuracy and response, identifying any false negatives or positives. A manufacturer's representative must be present to configure the system and ensure proper operation during testing.

**How can the service help you**

This service addresses the need to test and validate the performance of detection systems used in agricultural robots, specifically under challenging environmental conditions like rain, fog, and night, reducing the risk of accidents in the field.

**How the service will be delivered**

Testing is available year-round, with possible restrictions related to service demand. The test lasts approximately three days, depending on the conditions established during the technical meeting. The service involves testing the detection system or robot in a controlled environment at the "PAVIN Fog & Rain" platform in CEREMA, Clermont-Ferrand (France). Tests are conducted in static positions under varying rain and fog conditions, observing for safety-critical issues like missed detections or false alarms.

**Service customisation**

The ARPA2 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 the detection system's accuracy and safety under harsh conditions.