

**Service ID** S00373

**Location** Sweden



## Test of perception performance for camera, radar or lidar

### Provider service

AstaZero (AZ)

### Link to content

<https://agrifoodtef.eu/catalogue-of-services/test-perception-performance-camera-radar-or-lidar>

### Type of Sector

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

### Accepted type of products

Physical system

### Type of service

AI model training, Performance evaluation, Test design, Test execution, Test setup

### Description

Many automated systems or machines use sensor units (i.e., cameras, radar or lidar) to detect or identify objects. The sensor performance is typically reduced when there is a visibility disturbance, e.g., rain or fog. In this service, you can validate how a perception system performs in detecting an object through a fog cloud. Water spray of variable intensity is applied between the sensor and the object used for the detection test. The test is conducted indoors, where the conditions are fully controllable and reproducible. Variable test parameters: Droplet sizes (50 to 400 micrometres). Water flow (0 to 120 l/min). Adjustable light intensity. Distance between the tested unit and the detection object (5 to 20 metres).

## **How can the service help you**

The service offers

- Tests to observe the performance characteristics of a perception system at different levels of visibility interference.
- Tests to compare how different sensors are capable of detecting objects.
- Tests to compare how well different detection algorithms are capable of detecting objects, e.g., before and after software changes.

Controlled, repeatable and documented test conditions.

## **How the service will be delivered**

Customisation is mainly done by selecting detection objects. Some can be provided by AstaZero (e.g., dummies), but the customer may also bring their own items.

## **Service customisation**

The service is offered at the AstaZero test infrastructure, located in Sweden, 60 km east of Gothenburg.

The initial time to set up the test equipment is about 1 hour. Each test case takes about 10 minutes to complete.

The visibility contrast is measured and documented at each test.

The customer provides the units or systems to be tested. Detection objects are provided in the service, but the customer may also bring their own.