Service ID S00372

Location Sweden

Test of GPS/GNSS-based products

Provider service

AstaZero (AZ), RISE - Research Institutes of Sweden

Link to content

https://agrifoodtef.eu/catalogue-of-services/test-gpsgnss-based-products

Type of Sector

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

Accepted type of products

Physical system

Type of service

Performance evaluation, Test design, Test execution, Test setup

Description

The functionality of automated machinery is often dependent on continuous reception of satellite positioning signals (GPS/GNSS) of good quality. These signals are sometimes weak, interrupted, disturbed or even false. E.g., jamming has become one commonly occurring problem. In this service you can explore how your product is affected when it is experiencing issues with the satellite reception. With our expertise and test equipment, we will put your product through a number of defined disturbance issues. The tests are designed to mimic the same kind of problems that can occur during real field operations. The tests include: Variable attenuation of the satellite’s signal strength, from zero to total interruption. Interferences of variable levels added to the satellite signals Jamming (strong signals that overpower the satellite signals) Meaconing (re-transmission of pre-recorded GNSS signals) Spoofing (using synthetic signals that look real but show the wrong position)

How can the service help you

This service helps a developer to understand what navigation and positioning challenges the product may experience in the field operations.As the product is exposed to a set of connectivity disturbances, a developer can evaluate which countermeasure implementations work best to keep the product reliable and safe. Thus, it maximises uptime by ensuring that the product performs predictably even if the satellite reception is degraded.

How the service will be delivered

This service is mainly targeting automated machinery such as self-driving tractors or drones but can also be applied to other equipment that uses satellite navigation.

Service customisation

The service is mobile and can be performed as a field test.

The test requires installation of test hardware on the test object.