Testing and evaluation of innovative drone technologies in regulatory sa

Provider service

Instituut voor Landbouw-, Visserij- en Voedingsonderzoek (ILVO)

Link to content

https://agrifoodtef.eu/catalogue-of-services/testing-and-evaluation-innovative-drone-technologies-regulatory-sandboxes

Type of Sector

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

Accepted type of products

Data, Design / Documentation, Physical system, Software or AI model

Type of service

AI model training, Collection of test data, Conformity assessment, Data analysis, Desk assessment, Performance evaluation,

Description

AgrifoodTEF provides access to realistic test environments where innovative drone technologies can be evaluated under controlled yet practical conditions. This includes technical validation of AI systems, embedded sensors, software, and robotic controls used during operations. The tests are adapted to the specific objectives and constraints of a regulatory sandbox, helping companies explore system performance, robustness, and safety in a near-to-real-world configuration. The feedback and technical documentation generated during testing can be used to refine the product and support regulatory approval, certification, and future market deployment.

How can the service help you

Regulatory sandboxes are particularly appropriate in situations where traditional regulatory frameworks fall short due to novelty, complexity, or uncertainty. Specifically, sandboxes are used to:

• Test your drone technology in realistic field conditions without the full burden of commercial deployment.

• Identify technical limitations or safety issues before scaling up.

• Collect performance data to support certification, investor outreach, or internal R&D.

• Get documented insights to inform improvements and future compliance processes.

How the service will be delivered

The evaluation can be tailored to focus on different drone aspects such as AI-based navigation, target detection, spray pattern accuracy, payload integration, or autonomy under stress conditions. Test protocols can be co-designed with the customer to meet internal KPIs or match external certification demands.

Service customisation

The service is performed within the regulatory sandbox. Depending on the complexity of the setup, tests may include multiple repetitions or different operational conditions (e.g., weather, crop types, spray dosage).

Customers receive a performance report, structured data logs, and optional video documentation. The customer must provide a functioning drone, a use case description, and any relevant technical parameters or compliance requirements.