

Service ID

S00107

**Location**

Italy, Remote

Design of testing protocols for physical testing

Provider service

Politecnico di Milano

Link to content<https://agrifoodtef.eu/services/design-testing-protocols-physical-testing>**Type of Sector**

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

Accepted type of products

Design / Documentation

Type of service

Test design

Description

Any physical testing activity comprises three main components: the environment (where the tests are conducted), the protocol (which defines the tests to be executed and their methodology), and the evaluation metrics (used to assess the test results). This service focuses on the protocol, while the environment and metrics can be designed as needed through services S00106 and S00108. In the context of testing customer solutions within physical facilities, this service aims to create a suitable testing protocol based on the use cases specified by the customer. The components of the testing protocol defined in this phase may include: Defining the different phases of the protocol and their duration; Outlining the operations to be executed in each phase; Quantifying the effort required for each phase, including the number and qualifications of personnel involved; Distributing testing operations over time, considering seasonal and daily variations, as well as weather conditions; Establishing acceptable and desired variation ranges for each configurable element in the testing environment; Determining the number of test repetitions required and their distribution across the variation ranges. To ensure a comprehensive approach to protocol design, this service involves a collaborative team of both engineers and agronomists.

How can the service help you

Building a system (such as a machine) to solve a problem and designing an experimental protocol to evaluate its performance are distinct activities that require different skill sets. This service assists customers who have developed a solution by designing the experimental activities necessary to validate its efficacy and demonstrate its performance to potential users. At the conclusion of the service, customers receive a comprehensive protocol design that they can immediately implement for testing.

How the service will be delivered

The duration of this service typically ranges from 3 to 6 weeks. The first phase includes one or more interviews in which the customer provides detailed information about the protocol to be designed, including the features of the system to be tested and which specific aspects need evaluation. Additional documentation (such as machine dimensions and specifications) may be requested (under NDA if confidential) to ensure that the designed protocol aligns precisely with the system's features.

Service customisation

Example Service: The customer requests a testing protocol for evaluating the performance of a weeding robot. The protocol designed by AgrifoodTEF leverages a testing environment developed through service S0016.