

Service ID

S00176

**Location**

Italy, Remote

Design of computational environments for digital testing

Provider service

Politecnico di Milano

Link to content<https://agrifoodtef.eu/services/design-computational-environments-digital-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

Test activities involve three key components: the environment (where the tests are conducted), the protocol (defining what tests are performed and how), and evaluation metrics (used to assess the test results). Through this service, we assist customers in designing a computational environment tailored to running the digital tests required for their software components. Specifically, this service: Defines the data (and metadata) requirements needed to support the test; Identifies the necessary software environment (e.g., operating system, libraries); Selects an appropriate simulator and defines simulated environments, if required; Chooses remote access tools, if applicable. As a result, we deliver a comprehensive design of the testing environment, including specifications such as memory requirements, GPU/TPU acceleration, and necessary libraries. This environment can be deployed on either the agrifoodTEF digital infrastructure or the customer's computing infrastructure (i.e., on premises).

How can the service help you

Many agri-food technologies require testing and validation in fully digital environments, either through (i) simulation before the system is physically deployed or (ii) on specific datasets to evaluate algorithm performance in controlled scenarios. These tests also necessitate a properly configured computing environment, including CPU, memory, GPU/TPU acceleration, operating systems, libraries, and simulators.

How the service will be delivered

This is a digital service with an average duration of 4 to 12 weeks, adjustable as needed. The customer provides a high-level description of the software component(s) to be tested, along with the executable code (under NDA) and the specifications for the tools required for testing.

Service customisation

Example Service: The customer seeks to test an intra-row navigation solution in a simulated environment before deploying the system in the field to avoid damaging plants during weeding operations. To facilitate these tests, we recreate a subset of the customer's deployment environment within the Gazebo simulator, including several cultivated plant rows.