

Service ID S00263

Location Remote



Execution of AI testing

Provider service

GRADIANT

Link to content

<https://agrifoodtef.eu/services/execution-ai-testing>

Type of Sector

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

Accepted type of products

Data, Design / Documentation, Software or AI model

Type of service

Test execution, Test setup

Description

The execution AI testing service takes your existing test definitions and handles their execution within our specialized testing infrastructure. We manage the intricate setup process required for each test scenario, ensuring all parameters and conditions are precisely configured to match your requirements. Furthermore, we also offer a test scenario design service that can be executed prior to this service (see related services). Our expert team oversees the complete testing cycle, from initial environment preparation through result collection. After test completion, you receive a detailed report documenting all test outcomes, observations, and relevant measurements. This service is particularly valuable for sophisticated testing needs that demand careful setup and expert knowledge. We understand that certain test scenarios require nuanced configuration and specialised expertise. Our service bridges this gap by providing both the necessary infrastructure and professional oversight to ensure your tests are executed accurately and yield reliable results. The comprehensive reports we deliver enable you to make informed decisions based on thorough test data.

How can the service help you

This service addresses critical testing needs for organisations developing and implementing agrifood AI technology solutions. Before using our service, customers often face uncertainty about how their digital agricultural solutions will perform under real-world conditions.

They may have developed innovative solutions—such as AI-powered crop yield prediction models, disease detection algorithms using satellite imagery, digital twins for greenhouse management, or machine learning models for precise weather-based irrigation scheduling—but lack expertise to validate their performance comprehensively.

After engaging our service, customers receive detailed performance data about their technology's functionality in controlled yet realistic testing environments. For instance, if you have developed a crop production forecasting model, our service will execute predefined test scenarios to evaluate predefined metrics from a test design task, like AI model prediction accuracy, response time to changing environmental conditions, and reliability across different crop varieties. The resulting report provides concrete metrics such as recommended actions evaluation and operational efficiency under various conditions.

How the service will be delivered

This service requires an already designed test scenario. If you don't have this design, we offer another service for this specific purpose (see related services).

Testing scenarios must be clearly defined in advance, as modifications during the execution phase can impact the timeline and results. Moreover, the service accommodates various customisation options while maintaining specific parameters to ensure reliable test execution.

The testing infrastructure supports AI models designed for agrifood applications, including computer vision systems, predictive analytics models, and decision support systems.

Customers can customise their test scenarios by specifying data input variations and performance thresholds relevant to their AI model's intended use case. The test execution can be tailored to evaluate specific aspects such as model accuracy, processing speed, or resource utilisation. However, customers should be aware of certain limitations. The AI model must be

Service customisation

The service is delivered at our dedicated testing facilities equipped with specialised infrastructure for evaluating AI models in technology applications.

Customers must provide their test scenario definition document, which should outline the specific testing parameters, success criteria, a reference dataset, and required configurations for their AI model evaluation. Gradient will conduct a comprehensive assessment of the AI model's performance across under-represented data scenarios and edge cases selected on the test design. This evaluation could analyse the model's behaviour when processing minority class samples and identifying potential blind spots where the model lacks sufficient training data. Additionally, we will examine the model's response to extreme scenarios that may fall outside its intended design parameters, helping to understand its limitations and potential failure modes. The execution timeline typically spans 2-4 weeks, depending on the complexity of the test scenarios and the specific requirements of the AI model being tested. This duration includes initial setup, test execution, data collection, and comprehensive report preparation. To initiate the service, customers need to submit their AI model along with the test scenario definition at least two weeks before the planned execution date.

All testing is conducted at our facilities, though there are no location restrictions for customers. Upon completion, customers receive a detailed technical report documenting the AI model's performance metrics, test conditions, and observed behaviours. This report includes quantitative measurements, statistical analyses, and specific insights about the model's performance under various test conditions. Additionally, we provide a structured dataset of all test results and a detailed