



agrifoodTEF - Service List

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Hyperspectral measurements and analysis

Description: Perform hyperspectral measurements and machine-learning based analysis on agrofood products

service ID:

S00001

service type:

test setup, test execution, test design, collection of test data, performance evaluation, provision of datasets

sector:

food processing, arable farming, horticulture

delivered to TEF:

physical system (possibly including software), software, data, design/documentation, other (including: nothing)

location:

in Belgium

provider:

ILVO

Jordy.Windels@ilvo.vlaanderen.be

Fertilizer spreader calibration based on vision and AI-methods

Description: Perform fertilizer spreader calibration based on camera detection/vision and AI-methods using a mobile set-up, for spreader manufacturers

service ID:

S00002

service type:

test design, test setup, test execution, collection of test data

sector:

arable farming, horticulture

delivered to TEF:

physical system (possibly including software)

location:

in Belgium

provider:

ILVO

Jordy.Windels@ilvo.vlaanderen.be

AI-driven LCA-analysis during food processing

Description: Perform automated AI-driven LCA-analysis during food processing to provide information on process energy consumption

service ID:

S00003

service type:

LCA assessment

sector:

food processing

delivered to TEF:

other (including: nothing), data

location:

in Belgium

provider:

ILVO

Jordy.Windels@ilvo.vlaanderen.be

Robotic Software Framework

Description: Application and deployment of agricultural robotic software framework

service ID:

S00004

service type:

test design, test setup, test execution, performance evaluation

sector:

arable farming, tree crops, horticulture

delivered to TEF:

physical system (possibly including software)

location:

in Belgium

provider:

ILVO

Jordy.Windels@ilvo.vlaanderen.be

Food consumption analysis

Description: Food waste detection, food consumption analyses for nutritional defects analysis

service ID:

S00005

service type:

collection of test data, data augmentation, test design, test setup, test execution

sector:

food processing

delivered to TEF:

data, other (including: nothing)

location:

in Belgium

provider:

ILVO

Jordy.Windels@ilvo.vlaanderen.be

Agri Dataset generation

Description: Automated agricultural generated datasets and model validation datasets

service ID:

S00006

service type:

data augmentation, provision of datasets

sector:

arable farming, horticulture

delivered to TEF:

data, other (including: nothing)

location:

in Belgium

provider:

ILVO

Jordy.Windels@ilvo.vlaanderen.be

Conformity roadmap for an innovation

Description: Assessment of necessary steps for an innovation under product development to conform. What standards are eligible, what laws and directives apply for this specific product? How can the innovation be adapted to fit the demands or is new laws and regulations needed?

The service will also list other possible services that the TEF can help the company with and to what extent.

service ID:

S00007

service type:

desk assessment

sector:

arable farming, horticulture, tree crops, livestock Farming,
food processing

delivered to TEF:

design/documentation

location:

in Sweden, at user's premises

provider:

RISE

agrifoodtef@ri.se

Development roadmap for an innovation

Description: Identify development steps that are needed for the product to reach TRL 9.

The service will also list other possible services that the TEF can help the company with and to what extent.

service ID:

S00008

service type:

desk assessment

sector:

arable farming, horticulture, tree crops, livestock Farming,
food processing

delivered to TEF:

design/documentation

location:

at user's premises, in Sweden

provider:

RISE

agrifoodtef@ri.se

Compliance for robotic machine

Description: Help companies to conform to existing regulations, machinery standards, directives and give support how to handle when no clear requirements are in place.

service ID:

S00009

service type:

desk assessment, ELSA assessment, conformity
assessment

sector:

arable farming, horticulture, tree crops, livestock Farming,
food processing

delivered to TEF:

physical system (possibly including software)

location:

in Sweden

provider:

RISE

agrifoodtef@ri.se

Compliance for AI innovation

Description: Help companies to conform to existing regulations, standards, directives and give support when no clear requirements are in place.

service ID:

S00010

service type:

desk assessment, ELSA assessment, conformity assessment

sector:

arable farming, horticulture, tree crops, livestock Farming, food processing

delivered to TEF:

software

location:

in Sweden

provider:

RISE

agrifoodtef@ri.se

Conformity and Safety tests

Description: Conformity test of machines, tractors, vehicle or drones Tests are developed and performed.

service ID:

S00011

service type:

test design, test setup, test execution, collection of test data, performance evaluation

sector:

arable farming, tree crops, horticulture, livestock Farming, food processing, viticulture

delivered to TEF:

physical system (possibly including software)

location:

in Sweden

provider:

RISE

agrifoodtef@ri.se

Test of error handling and failiure monitoring

Description: How does the AI-based system or robotic machine handle unexpected events, errors or malfunction?

service ID:

S00012

service type:

test design, test setup, test execution, collection of test data, performance evaluation, data analysis

sector:

arable farming, horticulture, tree crops, viticulture, livestock Farming, food processing

delivered to TEF:

software

location:

in Sweden

provider:

RISE

agrifoodtef@ri.se

Experimentation AI Crop production

Description: Experiment on robotic and AI solutions for agriculture. Dependent on the specific needs a company has, the service is adjusted to fulfil the needs.

service ID:

S00013

service type:

desk assessment

sector:

arable farming

delivered to TEF:

physical system (possibly including software), software, design/documentation

location:

in Sweden

provider:

RISE

agrifoodtef@ri.se

Experimentation AI Livestock production

Description: Experiment on robotic and AI solutions for agriculture. Dependent on the specific needs a company has, the service is adjusted to fulfil the needs.

service ID:

S00014

service type:

desk assessment

sector:

livestock Farming

delivered to TEF:

physical system (possibly including software), software, design/documentation

location:

in Sweden

provider:

RISE

agrifoodtef@ri.se

Experimentation Robotics Crop production

Description: Experiment on robotic and AI solutions for agriculture. Dependent on the specific needs a company has, the service is adjusted to fulfil the needs.

service ID:

S00015

service type:

desk assessment

sector:

arable farming

delivered to TEF:

physical system (possibly including software), software, design/documentation

location:

in Sweden

provider:

RISE

agrifoodtef@ri.se

Experimentation Robotics Livestock production

Description: Experiment on robotic and AI solutions for agriculture. Dependent on the specific needs a company has, the service is adjusted to fulfill the needs.

service ID:

S00016

service type:

desk assessment

sector:

livestock Farming

delivered to TEF:

physical system (possibly including software), software, design/documentation

location:

in Sweden

provider:

RISE

agrifoodtef@ri.se

Experimentation UAV Crop production

Description: Experiment on robotic and AI solutions for agriculture. Dependent on the specific needs a company has, the service is adjusted to fulfill the needs.

service ID:

S00017

service type:

desk assessment

sector:

arable farming

delivered to TEF:

physical system (possibly including software), software

location:

in Sweden

provider:

RISE

agrifoodtef@ri.se

Experimentation UAV Livestock production

Description: Experiment robotic and AI solutions for agriculture. Dependent on the specific needs a company has, the service is adjusted to fulfill the needs.

service ID:

S00018

service type:

desk assessment

sector:

livestock Farming

delivered to TEF:

physical system (possibly including software), software

location:

in Sweden

provider:

RISE

agrifoodtef@ri.se

Policy Lab

Description: Investigate identified gaps between current regulations and a company's innovation that needs to be filled and propose changes.

Policy lab (as a regulatory innovation process) aims to i) analyse the challenges that arise in connection between technology/market development and regulation, ii) develop possible solutions, iii) collaborate with relevant stakeholders to determine the next step.

If beneficial use available robotic machinery to test and demonstrate technology with relevant authorities etc.

Case one: The innovation is affected by completely new legislation (no practice).

Case two: Work on the innovation in sandbox (legislation is missing - which one is needed?)

service ID:

S00019

service type:

desk assessment, ELSA assessment, conformity assessment

sector:

arable farming, horticulture, tree crops, viticulture, livestock

Farming, food processing

delivered to TEF:

design/documentation, software, physical system (possibly including software)

location:

in Sweden

provider:

RISE

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Validation and development of AI-powered Agricultural Chemistry sensors and systems

Description: Together with agricultural knowledge at RISE the modern chemistry lab at RISE can be used for verification of AI powered chemical sensing using cost-effective sensors. Examples of such tests includes:

- Chemical analyses within inorganic chemistry – e.g., PFAS in meat (new coming legislation), soil and water.
 - Chemical analyses within inorganic chemistry e.g. heavy metals and other elements.
 - C-14 Biogenic content analysis
 - VOC Emission testing
 - Gas analysis e.g., methane, carbon dioxide, hydrogen.
 - Problem solving within analytical chemistry and custom-made analysis
- Calibration – conductivity and gas measurement units.

service ID:

S00020

service type:

sector:

delivered to TEF:

location:

provider:

RISE

agrifoodtef@ri.se

Validation and development of AI-powered food production sensors and systems

Description: Companies with Robotic or AI products for example for food customisation can use RISE labs for verification of their products using test facilities such as:

- Gas chromatography (identification of components in gases/smells)
- Consumer acceptance and perception
- Food properties at micro-scale (microscopy)
- Rheological food properties
- Macro-scale evaluation of food, e.g. phot and dielectric properties
- Microbial safety analysis
- Test facility for evaluation of systematic cleaning
- Hygienic evaluation of robotized and automated production solutions.

service ID:

S00021

service type:

test design, test execution, test setup, collection of test data, performance evaluation

sector:

food processing

delivered to TEF:

physical system (possibly including software), software

location:

in Sweden

provider:

RISE

agrifoodtef@ri.se

Virtual training or validation of crop and weed detection

Description: RISE openWeeds database is under development and can be used for training and validation of weed detection machine learning algorithms. The annotated images are captured in RISE agrifood testbed and contain some of the weeds growing in the nordic environment.

service ID:

S00022

service type:

provision of datasets

sector:

arable farming

delivered to TEF:

other (including: nothing)

location:

in Sweden

provider:

RISE

agrifoodtef@ri.se

Validation of work result under real conditions crop production robotics

Description: The innovation is tested in real work or real work-like conditions in the nordics and the work result is evaluated from a potential customers point of view. The service is adapted to the actual innovation to be tested.

service ID:

S00023

service type:

test design, test setup, test execution, collection of test data, performance evaluation

sector:

arable farming

delivered to TEF:

physical system (possibly including software), software

location:

in Sweden

provider:

RISE

agrifoodtef@ri.se

Validation of work result under real conditions crop production sensors and decision support systems

Description: The innovation is tested in real work or real work-like conditions in the nordics and the work result is evaluated from a potential customers point of view. The service is adapted to the actual innovation to be tested.

service ID:

S00024

service type:

test design, test setup, test execution, collection of test data, performance evaluation

sector:

arable farming

delivered to TEF:

physical system (possibly including software), software

location:

in Sweden

provider:

RISE

agrifoodtef@ri.se

Validation of work result under real conditions crop production UAV

Description: The innovation is tested in real work or real work-like conditions in the nordics and the work result is evaluated from a potential customers point of view. The service is adapted to the actual innovation to be tested.

service ID:

S00025

service type:

test design, test setup, test execution, collection of test data, performance evaluation

sector:

arable farming

delivered to TEF:

physical system (possibly including software), software

location:

in Sweden

provider:

RISE

agrifoodtef@ri.se

Validation of work result under real conditions livestock robotics

Description: The innovation is tested in real work or real work-like conditions in the nordics and the work result is evaluated from a potential customers point of view. The service is adapted to the actual innovation to be tested.

service ID:

S00026

service type:

test design, test setup, test execution, collection of test data, performance evaluation

sector:

livestock Farming

delivered to TEF:

physical system (possibly including software), software

location:

in Sweden

provider:

RISE

agrifoodtef@ri.se

Validation of work result under real conditions livestock sensors and decision support systems

Description: The innovation is tested in real work or real work-like conditions in the nordics and the work result is evaluated from a potential customers point of view. The service is adapted to the actual innovation to be tested.

service ID:

S00027

service type:

test design, test setup, test execution, collection of test data, performance evaluation

sector:

livestock Farming

delivered to TEF:

physical system (possibly including software), software

location:

in Sweden

provider:

RISE

agrifoodtef@ri.se

Validation of work result under real conditions livestock UAV

Description: The innovation is tested in real work or real work-like conditions in the nordics and the work result is evaluated from a potential customers point of view. The service is adapted to the actual innovation to be tested.

service ID:

S00028

service type:

test design, test setup, test execution, collection of test data, performance evaluation

sector:

livestock Farming

delivered to TEF:

physical system (possibly including software), software

location:

in Sweden

provider:

RISE

agrifoodtef@ri.se

Expand weed identify functionality to new crops and weeds

Description: Help för a company with weed identification or weed removal capabilities to expand the capabilities to new combinations of crop and weeds.

service ID:

S00029

service type:

provision of datasets

sector:

arable farming

delivered to TEF:

physical system (possibly including software), software, design/documentation, other (including: nothing)

location:

in Sweden

provider:

RISE

agrifoodtef@ri.se

Expand training datasets by using synthetic data based on existing datasets

Description: Together with company develop methodology for expanding training dataset with synthetic data.

service ID:

S00030

service type:

provision of datasets, data augmentation

sector:

horticulture, arable farming, tree crops, livestock Farming, food processing

delivered to TEF:

data, other (including: nothing)

location:

in Sweden

provider:

RISE

agrifoodtef@ri.se

Testing of reticulo-ruminal motility measuring systems

Description: Testing the ability of a rumen bolus sensor to measure reticular motility

service ID:

S00031

service type:

test design, test setup, test execution, collection of test data, performance evaluation

sector:

livestock Farming

delivered to TEF:

physical system (possibly including software), software

location:

in Austria

provider:

RGRD

Magdalena.Waldauer@raumberg-gumpenstein.at

Testing of activity measurement of an animal health monitoring system

Description: Testing the ability of an animal health monitoring system to detect activity levels of cows and distinguish between feed intake, water intake, ruminating and resting time

service ID:

S00032

service type:

test design, test execution, test setup, collection of test data, performance evaluation

sector:

livestock Farming

delivered to TEF:

physical system (possibly including software), software

location:

in Austria

provider:

RGRD

Magdalena.Waldauer@raumberg-gumpenstein.at

Testing of the heat detection function of an animal health monitoring system

Description: Testing the ability of a health monitoring system to detect heat in dairy cows and deliver notifications in case of heat

service ID:

S00033

service type:

test design, test setup, test execution, collection of test data, performance evaluation

sector:

livestock Farming

delivered to TEF:

physical system (possibly including software), software

location:

in Austria

provider:

RGRD

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Assessment of environmental impacts when applying digital technologies in agriculture

Description: Based on the main agronomic impact of the use of the technology, environmental impacts are recorded using criteria or indicators in an environmental assessment matrix

service ID:

S00034

service type:

desk assessment

sector:

arable farming, livestock farming

delivered to TEF:

physical system (possibly including software), software, design/documentation

location:

at user's premises

provider:

RGRD

Magdalena.Waldauer@raumberg-gumpenstein.at

Mediation and networking

Description: Establishing co-operation between enterprises for their benefit and creation of usecases with two or multiple partners and supervise projects between two or multiple partners

service ID:

S00035

service type:

desk assessment

sector:

arable farming, livestock Farming

delivered to TEF:

design/documentation, physical system (possibly including software), software, other (including: nothing)

location:

in Austria, at user's premises

provider:

RGRD

Magdalena.Waldauer@raumberg-gumpenstein.at

Datasets

Description: provision of datasets

service ID:

S00036

service type:

provision of datasets

sector:

arable farming, livestock Farming

delivered to TEF:

physical system (possibly including software), software, design/documentation, other (including: nothing)

location:

in Austria, at user's premises

provider:

RGRD

Magdalena.Waldauer@raumberg-gumpenstein.at

Testing of weeding performance

Description: Testing the performance of autonomous weeding, i.e. of a weeding robot.

service ID:

S00037

service type:

test design, test setup, test execution, collection of test data, performance evaluation

sector:

arable farming, horticulture, tree crops, viticulture

delivered to TEF:

physical system (possibly including software), software

location:

in Austria, at user's premises

provider:

JR

agrifoodtef@josephinum.at

Testing of spot spraying performance

Description: Testing the performance of a spot spraying system

service ID:

S00038

service type:

test design, test setup, test execution, collection of test data, performance evaluation

sector:

arable farming, horticulture

delivered to TEF:

physical system (possibly including software)

location:

in Austria, at user's premises

provider:

JR

agrifoodtef@josephinum.at

Testing of crop detection

Description: testing the ability of a solution to distinguish between several plant species (crops)

service ID:

S00039

service type:

test design, test setup, test execution, collection of test data, collection of test data, performance evaluation

sector:

arable farming, horticulture, tree crops, viticulture

delivered to TEF:

physical system (possibly including software), software

location:

at user's premises, in Austria

provider:

JR

agrifoodtef@josephinum.at

Testing of weed detection

Description: testing the ability of a solution to detect weed cover

service ID:

S00040

service type:

test design, test setup, test execution, collection of test data, performance evaluation

sector:

arable farming, horticulture, tree crops, viticulture

delivered to TEF:

physical system (possibly including software), software

location:

in Austria, at user's premises

provider:

JR

agrifoodtef@josephinum.at

Providing dataset for training purpose

Description: provide specific datasets for training ML (images, sensor data, ...)

service ID:

S00041

service type:

data augmentation, provision of datasets

sector:

arable farming, horticulture, tree crops, viticulture

delivered to TEF:

other (including: nothing)

location:

at user's premises, in Austria

provider:

JR

agrifoodtef@josephinum.at

Providing benchmark dataset

Description: provide specific datasets for benchmarking ML (images, sensor data, ...)

service ID:

S00042

service type:

provision of datasets, data augmentation

sector:

arable farming, horticulture, tree crops, viticulture

delivered to TEF:

other (including: nothing)

location:

at user's premises, in Austria

provider:

JR

agrifoodtef@josephinum.at

Usability & UX testing

Description: testing the user-friendliness & user experience of user interface and system

service ID:

S00043

service type:

test design, test execution, test setup, collection of test data

sector:

arable farming, horticulture, tree crops, viticulture

delivered to TEF:

other (including: nothing), physical system (possibly including software), software

location:

in Austria

provider:

JR

agrifoodtef@josephinum.at

Testing of biomass estimation

Description: testing the accuracy of a system to estimate biomass

service ID:

S00044

service type:

test design, test setup, test execution, collection of test data, performance evaluation

sector:

arable farming

delivered to TEF:

physical system (possibly including software)

location:

in Austria

provider:

JR

agrifoodtef@josephinum.at

Testing of Follow-me function of a robot

Description: Testing of robustness and accuracy of the ability of a device to follow a person (or other moving object).

service ID:

S00045

service type:

test design, test setup, test execution, collection of test data, performance evaluation

sector:

arable farming, horticulture, tree crops, viticulture

delivered to TEF:

physical system (possibly including software)

location:

in Austria

provider:

JR

agrifoodtef@josephinum.at

Testing of person detection function of a robot

Description: Testing of robustness and accuracy of the ability of a device to detect a person (or other moving object).

service ID:

S00046

service type:

test design, test setup, test execution, collection of test data, performance evaluation

sector:

arable farming, horticulture, tree crops, viticulture

delivered to TEF:

physical system (possibly including software)

location:

in Austria

provider:

JR

agrifoodtef@josephinum.at

Testing of field navigation

Description: Testing the navigation accuracy and performance of a robot

service ID:

S00047

service type:

test design, test setup, test execution, collection of test data, performance evaluation

sector:

arable farming, horticulture, tree crops, viticulture

delivered to TEF:

physical system (possibly including software)

location:

in Austria

provider:

JR

agrifoodtef@josephinum.at

Testing of sensor performance

Description: Testing the precision and accuracy of sensor systems

service ID:

S00048

service type:

test design, test setup, test execution, collection of test data, performance evaluation

sector:

arable farming, horticulture, tree crops, viticulture

delivered to TEF:

physical system (possibly including software)

location:

in Austria

provider:

JR

agrifoodtef@josephinum.at

AI Integration - Data Storage

Description: Provide data storage infrastructure for AI, simulations and data processing results.

service ID:

S00049

service type:

provision of datasets, collection of the datasets

sector:

arable farming, horticulture, tree crops, viticulture, livestock

Farming, food processing

delivered to TEF:

software, other (including: nothing)

location:

in Poland

provider:

PSNC

marcinp@man.poznan.pl

AI Integration - V-Server / PaaS/ AI platform

Description: Provide virtual infrastructure Cloud Virtual Servers/PaaS/ AI Platform to support deployment of the models/tools/software stack

service ID:

S00050

service type:

data processing, simulations, performance evaluation

sector:

arable farming, horticulture, tree crops, viticulture, livestock

Farming, food processing

delivered to TEF:

software, other (including: nothing)

location:

in Poland

provider:

PSNC

marcinp@man.poznan.pl

AI Integration - Computation Power

Description: Provide HPC and Grid-Computing infrastructure for AI, simulations and data processing.

service ID:

S00051

service type:

data processing, simulations, performance evaluation

sector:

arable farming, horticulture, tree crops, viticulture, livestock

Farming, food processing

delivered to TEF:

software, data, other (including: nothing)

location:

in Poland

provider:

PSNC

marcinp@man.poznan.pl

AI-Testfield – Co-design Robots

Description: Provide support for co-designing robots for high-value crops

service ID:

S00052

service type:

test design, test setup, test execution

sector:

arable farming, horticulture, tree crops, viticulture, livestock

Farming, food processing

delivered to TEF:

physical system (possibly including software), software

location:

in Poland

provider:

L-PIT

lukasz.lowinski@pit.lukasiewicz.gov.pl

Datasets - Real-World Training

Description: Provide, i.e., capture real-world training data sets incl. labels and metadata for training AI algorithms.

service ID:

S00053

service type:

provision of datasets, data augmentation

sector:

arable farming, horticulture, tree crops, viticulture, livestock

Farming, food processing

delivered to TEF:

other (including: nothing)

location:

in Poland

provider:

L-PIT

lukasz.lowinski@pit.lukasiewicz.gov.pl

Expand training datasets by using synthetic data based on existing datasets

Description: Together with company develop methodology for expanding training dataset with synthetic data.

service ID:

S00054

service type:

provision of datasets, data augmentation

sector:

arable farming, horticulture, food processing

delivered to TEF:

data, other (including: nothing)

location:

in Poland

provider:

L-PIT

lukasz.lowinski@pit.lukasiewicz.gov.pl

Usability & UX testing

Description: testing the user-friendliness & user experience of user interface and system

service ID:

S00055

service type:

test design, test execution, test setup, collection of test data

sector:

arable farming, horticulture, viticulture

delivered to TEF:

physical system, software

location:

in Poland

provider:

L-PIT

lukasz.lowinski@pit.lukasiewicz.gov.pl

Test design: definition of the test environment

Description: Items to be defined include: crops; weeds; growth stage for each; allowed extraneous plants, their quantity, their location wrt the chosen plants; type of cultivation (e.g., open field, greenhouse); type and conditions of soil; preferred environmental features (climate; lighting conditions; wind; rain; presence of water on the ground; ...).

service ID:

S00056

service type:

test design

sector:

arable farming, horticulture, viticulture

delivered to TEF:

design/documentation, other (including: nothing)

location:

at user's premises, in Poland

provider:

L-PIT

lukasz.lowinski@pit.lukasiewicz.gov.pl

Test design: definition of the test protocol

Description: Items to be defined include: phases composing the testing protocol; operations to be executed for each phase; number and qualification of personnel involved in each phase; duration of each phase; distribution of testing operations over time (times of the day); distribution of testing operations over time (times of the year); acceptable and desired variation range for each item of the environment; acceptable and desired variation range for each item of the timing; number of test repetitions required and their distribution over the variation ranges.

service ID:

S00057

service type:

test design

sector:

arable farming, horticulture, viticulture

delivered to TEF:

design/documentation, other (including: nothing)

location:

at user's premises, in Poland

provider:

L-PIT

lukasz.lowinski@pit.lukasiewicz.gov.pl

Test design: definition of the test evaluation

Description: Items to be defined are the quantitative and/or qualitative performance metrics (which in turn pose requirements on input data and ground truth) to be applied to test results.

service ID:

S00058

service type:

test design

sector:

arable farming, horticulture, viticulture

delivered to TEF:

design/documentation, other (including: nothing)

location:

at user's premises, in Poland

provider:

L-PIT

lukasz.lowinski@pit.lukasiewicz.gov.pl

Desk assessment activities

Description: Matching between designed experimental requirements and features of the system under test

service ID:

S00059

service type:

desk assessment

sector:

arable farming, horticulture, viticulture

delivered to TEF:

design/documentation

location:

at user's premises, in Poland

provider:

L-PIT

lukasz.lowinski@pit.lukasiewicz.gov.pl

Testbed preparation

Description: soil preparation; seed/plant procurement; seeding/planting; plant growth management + Preparation of technical infrastructure supporting the tests

service ID:

S00060

service type:

test setup

sector:

arable farming, horticulture, viticulture

delivered to TEF:

design/documentation, other (including: nothing)

location:

in Poland

provider:

L-PIT

lukasz.lowinski@pit.lukasiewicz.gov.pl

Support for interconnection of the system under test to agrifoodTEF's technical infrastructure

Description: Base integration for conducting tests through the main infrastructure + additional components (e.g., developing a data collection node in ROS)

service ID:

S00061

service type:

test setup

sector:

arable farming, horticulture, viticulture

delivered to TEF:

physical system (possibly including software), software

location:

in Poland

provider:

L-PIT

lukasz.lowinski@pit.lukasiewicz.gov.pl

Test execution services

Description: General support during execution of tests by the system under test (e.g., monitoring activities to ensure compliance to protocol)

Technical support during execution of tests by the system under test (e.g., ensuring that the necessary processes on the system under test are correctly configured and running)

Management of technical infrastructure during execution of the tests by the system under test, including verification of data exchange between system under test and infrastructure

Employment of external agricultural machinery (e.g., tractor) and personnel (e.g., tractor driver) in order to allow the system under test to execute the tests

service ID:

S00062

service type:

test execution

sector:

arable farming, horticulture, viticulture

delivered to TEF:

physical system (possibly including software), software

location:

in Poland

provider:

L-PIT

lukasz.lowinski@pit.lukasiewicz.gov.pl

Data collection services

Description: Collection of data generated by the system under test

Collection of data generated by agrifoodTEF's technical infrastructure (e.g., IoT sensors deployed in the field)

Collection of ground truth data

Curation of the documentation accompanying the collected data (e.g., description of logged features, information for test reproducibility)

service ID:

S00063

service type:

collection of test data, provision of datasets

sector:

arable farming, horticulture, viticulture

delivered to TEF:

physical system (possibly including software), software

location:

in Poland

provider:

L-PIT

lukasz.lowinski@pit.lukasiewicz.gov.pl

Performance evaluation services

Description: Application of performance metrics (previously defined) to test data and ground truth data (previously collected)

service ID:

S00064

service type:

performance evaluation

sector:

arable farming, horticulture, viticulture

delivered to TEF:

data

location:

at user's premises, in Poland

provider:

L-PIT

lukasz.lowinski@pit.lukasiewicz.gov.pl

Data validation and processing services

Description: Validation of collected datasets (e.g., check for presence of all datastreams, check for drop-outs, check for focus or exposure of camera images)
Preparation for performance evaluation (e.g., formatting; identification of the images containing selected visual markers; association between images from the system under test and the ground truth)

service ID:

S00065

service type:

data augmentation, data analysis

sector:

arable farming, horticulture, viticulture

delivered to TEF:

data

location:

at user's premises, in Poland

provider:

L-PIT

lukasz.lowinski@pit.lukasiewicz.gov.pl

LCA assessment

Description: Life Cycle Assessment of system under test

service ID:

S00066

service type:

LCA assessment

sector:

arable farming, horticulture, viticulture

delivered to TEF:

physical system (possibly including software),
design/documentation

location:

in Poland

provider:

L-PIT

lukasz.lowinski@pit.lukasiewicz.gov.pl

Evaluation of Smart Perception Systems for Precision Farming

Description: Provision of real-time sensor data to enable the evaluation of AI systems in real operating vineyard conditions

service ID:

S00067

service type:

desk assessment, provision of datasets

sector:

viticulture

delivered to TEF:

physical system (possibly including software), software,
design/documentation, other (including: nothing)

location:

in France

provider:

None

Qualification of safety systems providing obstacle detection and robot safety functions (ISO 18497 reference obstacle)

Description: This test checks the detection safety function and the safety shutdown of the robot in case of the presence of obstacle(s).

In particular, the test assesses the robot's ability to detect and stop when it encounters a reference obstacle (described in ISO 18497:2018) in its detection zone.

The machine performs a uniform rectilinear trajectory, an obstacle is placed in its trajectory at different points to cover the entire width of the risk zone. The machine's behaviour is recorded during the test and its compliance with the requirements is checked. The tests are repeated 7 times per modality.

This test is monitored using a high-precision (10 micrometre) reference positioning system (laser tracker), which records the robot's trajectory, speed and position throughout the test.

The experimental site hosts robots whose guidance function is either absolute (GNSS) or relative (following a line marked on the ground).

A technical representative from the robot manufacturer must be present during the test to configure the system to be tested appropriately, check that it is operating correctly, allow information to be checked and attend the testing.

Technical and user manuals must be supplied in advance by the manufacturer to prepare the tests and compile the test report.

This test service is provided by INRAE - TSCF - AgroTechnoPôle with SHERPA Engineering as Test Operator, using the resources available at the Montoldre site in France.

service ID:

S00068

service type:

test execution, collection of test data, performance evaluation

sector:

arable farming, horticulture, greenhouse, tree crops, viticulture, livestock farming, food processing

delivered to TEF:

physical system, other (including: nothing)

location:

in France

provider:

INRAE

agrotechnopole@inrae.fr;

adriana-del-pilar.sanchez-vargas@inrae.fr

ARPA 2 - Qualification of perception systems in harsh environmental conditions (rain, fog, night)

Description: This test qualifies the performance of on-board detection systems on agricultural robots, ensuring safety functions under difficult environmental conditions.

In particular, these tests enable to verify the nominal operation of sensors and the preservation of their safety behavior (described in ISO 18497).

The machine or detection system is installed in the "PAVIN Fog & Rain" platform at CEREMA's Clermont-Ferrand site (France), which provides controlled environmental conditions and measurements of precipitation rate, distribution and size of rain and fog droplets.

The tests are carried out in a static position [robot as a whole or sensing device alone], observing the detection or non-detection of obstacles for two positions: i) emergency stop limit and ii) detection limit. The detection system tested must trigger the appropriate safety signals according to the position and nature of the obstacles under various conditions of fog density, and/or rain precipitation (ARPA 2 provides for 5 levels of rain intensity). Non-detections (False negatives) and false detections (False positives) are observed. False negatives constitute a safety non-compliance.

A technical representative from the robot manufacturer must be present during the test to configure the system to be tested appropriately, check that it is operating correctly, allow information to be checked and attend the testing. Technical and user manuals must be supplied in advance by the manufacturer to prepare the tests and compile the test report.

This test service is provided by INRAE - TSCF - AgroTechnoPôle, with CEREMA, as Test Operator, using the resources available at PAVIN platform in Clermont-Ferrand (France).

service ID:

S00069

service type:

test setup, test execution, collection of test data, performance evaluation, provision of datasets

sector:

arable farming, horticulture, greenhouse, tree crops, viticulture, livestock farming

delivered to TEF:

physical system, other (including: nothing)

location:

in France

provider:

INRAE

agrotechnopole@inrae.fr

ARPA 3 - Qualification of safety functions ensuring robots keep within their working area (physical or virtual barriers)

Description: This test assesses the operation of on-board geofencing safety systems on agricultural robots.

In particular, the test assesses a robot's ability to respect the integrity of its work area (described in ISO 18497: 2018).

The robot is tested in an operational situation consisting of imposed trajectories that repeatedly encounter the limits of the working area. A succession of obtuse and acute angles and specific boundary approach conditions create a number of configurations likely to be encountered in agricultural environments, enabling testing of the robot's safety devices that keep the machine within its working zone.

The test includes three different trajectory modes which the robotic system is asked to execute: 1) total surface coverage trajectory; 2) plot contour trajectory; 3) trajectory crossing borders.

This test is monitored by an aerial camera (drone) and a high-precision reference system (laser tracker) (10 micrometers). The robot (including the associated tools) must not cross the boundary. In such a case, the robot must go into a safe state.

A technical representative from the robot manufacturer must be present during the test to configure the system to be tested appropriately, check that it is operating correctly, allow information to be checked and attend the testing.

Technical and user manuals must be supplied in advance by the manufacturer to prepare the tests and compile the test report.

This test service is provided by INRAE - TSCF - AgroTechnoPôle, with SHERPA Engineering, as Test Operator, using the resources available at the Montoldre site In France.

service ID:

S00070

service type:

test setup, test execution, collection of test data, performance evaluation

sector:

arable farming, horticulture, greenhouse, tree crops, viticulture, livestock farming

delivered to TEF:

physical system, other (including: nothing)

location:

in France

provider:

INRAE

agrotechnopole@inrae.fr

ARPA 4 - Qualification of safety systems for human detection and collision avoidance (diverse working environments)

Description: This test qualifies the performance of safety detection and emergency stop systems on agricultural robots. In particular, the test assesses the ability to detect human-shaped obstacles and to stop the robot when it encounters them, within its detection zone.

The machine follows a straight, uniform trajectory through an inter-row of artificial vegetation. A dummy is placed on the machine's trajectory at various points to cover the risk zone. The dummy wears non-glossy clothing and can be heated to simulate human body temperature. In addition, the tests are carried out on a child-sized dummy, which is more difficult to detect and largely complies with the characteristics of ISO Standard 19206-2: 2018.

The dummy is placed on the floor at various points in the test area, in three different positions to cover a wide range of scenarios (one standing and two lying positions). The robot must approach the dummy and stop before any contact is made between the dummy and the machine or its tools. Compliance with requirements is checked.

This test is monitored by a high-precision (10-micrometer) reference positioning system (laser tracker), which provides millimetre-precision information on the robot's trajectory and speed.

A technical representative from the robot manufacturer must be present during the test to configure the system to be tested appropriately, check that it is operating correctly, allow information to be checked and attend the testing.

Technical and user manuals must be supplied in advance by the manufacturer to prepare the tests and compile the test report.

This test service is provided by INRAE - TSCF - AgroTechnoPôle, with SHERPA Engineering, as Test Operator, using the resources available at the Montoldre site In France.

service ID:

S00071

service type:

test setup, test execution, collection of test data, performance evaluation

sector:

arable farming, horticulture, greenhouse, tree crops, viticulture, livestock farming

delivered to TEF:

physical system, other (including: nothing)

location:

in France

provider:

INRAE

agrotechnopole@inrae.fr

Virtual ARPA test - Level 1 : Exploitation of news tools for generation of Synthetic realistic data sets to test AI systems based on camera sensors - Application to ARPA4

Description: Generation of huge simulated realistic scenes representative of various working conditions from one original images (2D OR 3D, static OR Dynamic).

Exploitation :
 (i/ for learning phase of IA Systems)
 ii/ for testing efficiency of AI Systems

service ID:

S00072

service type:

certification, conformity assessment

sector:

arable farming

delivered to TEF:

software, physical system (possibly including software)

location:

in France

provider:

INRAE-TSCF-AgroTechnoPôle-with

SHERPA-Engineering Partner

None

its

Vitula ARPA test - Level 2 : Exploitation of Digital twins for virtual test activities about safety and other robotic performances assessments

Description: Development in progress of a complementary digital twin for safety tests of agricultural robots

service ID:

S00073

service type:

certification, conformity assessment

sector:

arable farming

delivered to TEF:

physical system (possibly including software), software

location:

in France

provider:

INRAE-TSCF-AgroTechnoPôle-with

SHERPA-Engineering Partner

None

its

Characterization of Smart systems for weed destruction

Description: Development in progress of a bench able to evaluate :

i/ All Perception/Decision modules

ii/ all Perception/Decision/Action Modules

service ID:

S00074

service type:

test design, test setup, test execution, collection of test data, performance evaluation

sector:

arable farming

delivered to TEF:

physical system (possibly including software), software

location:

in France

provider:

INRAE-TSCF-AgroTechnoPôle

None

Virtual weeding solution test - Level 1 : Exploitation of news tools for generation of Synthetic realistic data sets to test AI systems based on camera sensors - Application to weed destruction systems evaluation

Description: Generation of huge simulated realistic scenes representative of various working conditions from one original images (2D OR 3D, static OR Dynamic).

Exploitation :

(i/ for learning phase of IA Systems)

ii/ for testing efficiency of AI Systems

service ID:

S00075

service type:

test design, test execution, test setup, collection of test data, performance evaluation, provision of datasets, data augmentation

sector:

arable farming

delivered to TEF:

software, other (including: nothing)

location:

in France

provider:

INRAE-TSCF-AgroTechnoPôle-with

SHERPA-Engineering Partner

None

its

Evaluation of Automatic Machines and Agricultural robots

Description: Physical tests (ARPA1, ARPA2, ARPA 3, ARPA4) of IA (or classical) safety devices embedded on robots in accordance with ISO 18487 standard and International OECD in progress

service ID:

S00076

service type:

test design, test setup, test execution, collection of test data, performance evaluation, conformity assessment

sector:

arable farming

delivered to TEF:

physical system (possibly including software)

location:

in France

provider:

INRAE-TSCF-

None

ARPA PC1 - Qualification of trajectory execution accuracy of crop production robots (out-door mobility).

Description: This test qualifies the dynamic trajectory-following accuracy of agricultural robot(s) (working alone or in cooperation). In particular, the test evaluates the accuracy of execution of a typical proposed path, incorporating typical sections for different agricultural work phases, different terrain relief configurations, and other types of disturbance.

The machine performs a loop trajectory composed of straight and circular sections, as well as headland trajectories enabling it to make significant course changes (e.g., half-turns). The reference trajectory to be performed, depending on the size and capabilities of the machine, is set up beforehand in the area where the machine is to be used.

At the customer's request, the course can take in sloping areas with a constant gradient (10%, 20%) and run at different angles of incidence (e.g., 30°, 45°, 90°). The working environment (presence of rows of vegetation, height of vegetation, width between rows, etc.) is artificially reproduced according to the robot's use. Different types of disturbance (e.g., positive and negative obstacles of different sizes) can be introduced into the path at the customer's request.

This test is monitored using a reference positioning system (laser tracker), which makes it possible to obtain, with millimetre accuracy, the theoretical trajectory to be followed, the robot's actual trajectory, its speed and its position throughout the test. The dynamic behaviour of the machine is recorded during the test, and compliance with the requirements is checked where necessary. The tests are repeated at least 3 times per modality.

A technical representative from the robot manufacturer must be present during the test to configure the system to be tested appropriately, check that it is operating correctly, allow information to be checked and attend the testing.

Technical and user manuals must be supplied in advance by the manufacturer to prepare the tests and compile the test report.

This test service is provided by INRAE - TSCF - AgroTechnoPôle, with SHERPA Engineering, as Test Operator, using the resources available at the Montoldre site In France.

service ID:

S00077

service type:

test design, test setup, test execution, collection of test data, performance evaluation

sector:

arable farming, horticulture, greenhouse, tree crops, viticulture

delivered to TEF:

physical system, other (including: nothing)

location:

in France

provider:

INRAE

agrotechnopole@inrae.fr

ARPA PC2 - Qualification of trajectory execution accuracy of livestock robots (in-door & out-door mobility).

Description: This test assesses the dynamic accuracy of robot trajectory tracking for livestock farming.

In particular, the test evaluates the accuracy of execution of a typical proposed path, incorporating i) representative sections of various work phases, ii) diverse building configurations and transition zones, and iii) other types of disturbance.

The machine executes a circuitous trajectory made up of paths inside buildings and outdoors, representative of a traditional "farmyard" mission. Montoldre experimental site is equipped with a diverse set of infrastructures and transition zones, enabling the robot's precision in executing the trajectory to be assessed, as well as the various on-board safety devices.

The route to be taken and the different areas to be covered are defined by the customer according to the robot's use. In addition to the different features provided by the various infrastructures, additional artificial disruptors can be introduced on request.

This test is monitored using a reference positioning system (laser tracker), which makes it possible to obtain the robot's actual trajectory, speed and position with a very high degree of accuracy (1/10 mm) throughout the selected test circuit (inside and outside buildings, inside-outside transition zones). The machine's dynamic behaviour is recorded during the test. The tests are repeated at least 3 times per modality.

A technical representative from the robot manufacturer must be present during the test to configure the system to be tested appropriately, check that it is operating correctly, allow information to be checked and attend the testing.

Technical and user manuals must be supplied in advance by the manufacturer to prepare the tests and compile the test report.

This test service is provided by INRAE - TSCF - AgroTechnoPôle, with SHERPA Engineering, as Test Operator, using the resources available at the Montoldre site In France."

service ID:

S00078

service type:

test design, test setup, test execution, collection of test data, performance evaluation

sector:

livestock farming

delivered to TEF:

physical system, other (including: nothing)

location:

in France

provider:

INRAE

agrotechnopole@inrae.fr

Evaluation of Automatic Machines and Agricultural robots

Description: Physical tests of smart tyre / caterpillar with soil interactions (moisture, % clay, etc) integrating IA (or classical) management systems

service ID:

S00079

service type:

test design, test setup, test execution, collection of test data, performance evaluation

sector:

arable farming

delivered to TEF:

physical system (possibly including software)

location:

in France

provider:

INRAE-TSCF-

None

AI performance evaluation based on physical testing environments

Description: Testing of devices that embed AI module(s) in their command system - focus on performance (and performance for safety). Test performed in laboratory conditions for optimal reproducibility and repeatability.

service ID:

S00080

service type:

test design, test setup, test execution, collection of test data, performance evaluation

sector:

arable farming, horticulture, tree crops, viticulture, livestock

Farming, food processing

delivered to TEF:

physical system (possibly including software)

location:

in France

provider:

LNE

agnes.delaborde@lne.fr

Evaluation of the efficiency of the hardware associated with the AI functionality

Description: Testing of devices that embed AI module(s) in their command system - focus on energy consumption efficiency. Test performed in laboratory conditions for optimal reproducibility and repeatability. Tests may concern the energy efficiency of SLAM, various types of end effectors, etc.

service ID:

S00081

service type:

test design, test setup, test execution, collection of test data, performance evaluation

sector:

arable farming, horticulture, tree crops, viticulture, livestock

Farming, food processing

delivered to TEF:

physical system (possibly including software)

location:

in France

provider:

LNE

agnes.delaborde@lne.fr

Dataset provision for weed detection

Description: Provision of data set of plant/weed pictures for weed detection

service ID:

S00082

service type:

provision of datasets

sector:

arable farming

delivered to TEF:

other (including: nothing)

location:

in France

provider:

LNE

agnes.delaborde@lne.fr

Automatic machines and Agricultural robots

Description: virtual testing: New Safety function tests (ARPA 1 anti-collision and ARPA 3 geofencing)

service ID:

S00083

service type:

conformity assessment

sector:

arable farming

delivered to TEF:

software, physical system (possibly including software)

location:

in France

provider:

LNE

agnes.delaborde@lne.fr

Automatic machines and Agricultural robots

Description: virtual testing: Performance qualification (mobility, energy, etc.)

service ID:

S00084

service type:

performance evaluation

sector:

arable farming

delivered to TEF:

physical system (possibly including software), software

location:

in France

provider:

LNE

agnes.delaborde@lne.fr

Automatic machines and Agricultural robots

Description: virtual testing: High-level supervision tasks (homogeneous and heterogeneous robots cooperation, communication links, etc.)

service ID:

S00085

service type:

performance evaluation

sector:

arable farming

delivered to TEF:

physical system (possibly including software), software

location:

in France

provider:

LNE

agnes.delaborde@lne.fr

Automatic machines and Agricultural robots

Description: virtual testing: Advanced tools (remote monitoring, database creation for deep learning phase of AI systems, preventive maintenance)

service ID:

S00086

service type:

performance evaluation

sector:

arable farming

delivered to TEF:

physical system (possibly including software), software

location:

in France

provider:

LNE

agnes.delaborde@lne.fr

Dataset provision - general

Description: Provision of data set for testing or training (various media and content)

service ID:

S00087

service type:

provision of datasets

sector:

arable farming, horticulture, tree crops, viticulture, livestock

Farming, food processing

delivered to TEF:

other (including: nothing)

location:

in France

provider:

LNE

agnes.delaborde@lne.fr

Dataset quality assessment

Description: Assessment of the quality of a given dataset (to be used for training or testing of an AI system)

service ID:

S00088

service type:

data analysis

sector:

arable farming, horticulture, tree crops, viticulture, livestock

Farming, food processing

delivered to TEF:

data

location:

in France

provider:

LNE

agnes.delaborde@lne.fr

AI performance evaluation based on testing datasets

Description: Tests of AI software module based on a datasets. The test consists in comparing the outputs of the system with a dataset of reference values.

service ID:

S00089

service type:

performance evaluation

sector:

arable farming, horticulture, tree crops, viticulture, livestock

Farming, food processing

delivered to TEF:

software

location:

in France

provider:

LNE

agnes.delaborde@lne.fr

Automatic machines and Agricultural robots

Description: Provision of learning and testing datasets for experimentation and evaluation of AI technologies in viticulture: Image datasets for the autonomous detection of disease (mildew) and health/vigor/water status of vines

service ID:

S00090

service type:

provision of datasets

sector:

viticulture

delivered to TEF:

other (including: nothing)

location:

in France

provider:

LNE

agnes.delaborde@lne.fr

Automatic machines and Agricultural robots

Description: Provision of learning and testing datasets for experimentation and evaluation of AI technologies in viticulture: Image datasets for the autonomous detection of weeds

service ID:

S00091

service type:

provision of datasets

sector:

viticulture

delivered to TEF:

other (including: nothing)

location:

in France

provider:

LNE

agnes.delaborde@lne.fr

Automatic machines and Agricultural robots

Description: Provision of learning and testing datasets for experimentation and evaluation of AI technologies in viticulture: Meteorological sensors datasets

service ID:

S00092

service type:

provision of datasets

sector:

viticulture

delivered to TEF:

other (including: nothing)

location:

in France

provider:

LNE

agnes.delaborde@lne.fr

AI performance evaluation based on mixed testing environments

Description: Evaluation of AI embedded in physical devices (e.g. robot with smart camera) in a semi-simulated environment.

service ID:

S00093

service type:

performance evaluation

sector:

arable farming, horticulture, tree crops, viticulture, livestock

Farming, food processing

delivered to TEF:

software

location:

in France

provider:

LNE

agnes.delaborde@lne.fr

AI robustness evaluation based on testing datasets

Description: Evaluation of the robustness of the AI software module, i.e. its capacity to present the right outputs in all foreseeable normal conditions of operation

service ID:

S00094

service type:

performance evaluation

sector:

arable farming, horticulture, tree crops, viticulture, livestock

Farming, food processing

delivered to TEF:

software

location:

in France

provider:

LNE

agnes.delaborde@lne.fr

AI resilience evaluation

Description: Evaluation of the resilience of the AI software module, i.e. its capacity to present adapted outputs in all foreseeable anomalous conditions of operation

service ID:

S00095

service type:

performance evaluation

sector:

arable farming, horticulture, tree crops, viticulture, livestock

Farming, food processing

delivered to TEF:

software

location:

in France

provider:

LNE

agnes.delaborde@lne.fr

AI explainability evaluation

Description: Evaluation of the explainability of AI solutions.

service ID:

S00096

service type:

performance evaluation

sector:

arable farming, horticulture, tree crops, viticulture, livestock

Farming, food processing

delivered to TEF:

software

location:

in France

provider:

LNE

agnes.delaborde@lne.fr

AI processes certification

Description: Voluntary certification of AI processes (design, development, evaluation, maintenance in operational condition)

service ID:

S00097

service type:

certification, certification

sector:

arable farming, horticulture, tree crops, viticulture, livestock

Farming, food processing

delivered to TEF:

software

location:

in France

provider:

LNE

agnes.delaborde@lne.fr

Provision of datasets for AI training

Description: Provision of structured and well described datasets.

service ID:

S00098

service type:

provision of datasets

sector:

livestock Farming

delivered to TEF:

other (including: nothing)

location:

in France

provider:

Idele, CA PDL

zoe.guy@idele.fr

Livestock expertise

Description: give support on key elements to consider for good data collection on livestock for AI purposes

service ID:

S00099

service type:

desk assessment

sector:

livestock Farming

delivered to TEF:

other (including: nothing)

location:

in France

provider:

Idele, CA PDL

zoe.guy@idele.fr

Data labeling

Description: give support on data labeling

service ID:

S00100

service type:

data augmentation

sector:

livestock Farming

delivered to TEF:

other (including: nothing)

location:

in France

provider:

Idele, CA PDL

zoe.guy@idele.fr

Data analysis

Description: give support on data analysis

service ID:

S00101

service type:

data analysis

sector:

livestock Farming

delivered to TEF:

data

location:

in France

provider:

Idele

zoe.guy@idele.fr

Provision of datasets for AI training in real vinegrowing conditions

Description:

service ID:

S00102

service type:

provision of datasets

sector:

viticulture

delivered to TEF:

data

location:

in France

provider:

IFV

christophe.gaviglio@vignevin.com

Viticulture expertise for data collection on AI issues

Description:

service ID:

S00103

service type:

desk assessment, collection of test data

sector:

viticulture

delivered to TEF:

other (including: nothing)

location:

in France

provider:

IFV

christophe.gaviglio@vignevin.com

Data labelling for AI detection purposes in the vineyard

Description: Give support and expertise on data labelling in real vinegrowing conditions

service ID:

S00104

service type:

provision of datasets, data augmentation, data analysis, AI model training

sector:

viticulture

delivered to TEF:

data

location:

in France

provider:

IFV

christophe.gaviglio@vignevin.com

Data analysis for AI performance evaluation in a real vineyard

Description: Helps to validate the outcomes of an AI solution in the field

service ID:

S00105

service type:

performance evaluation, data analysis

sector:

viticulture

delivered to TEF:

data

location:

in France

provider:

IFV

christophe.gaviglio@vignevin.com

Test design: definition of the test environment

Description: Items to be defined include: crops; weeds; growth stage for each; allowed extraneous plants, their quantity, their location wrt the chosen plants; type of cultivation (e.g., open field, greenhouse); type and conditions of soil; preferred environmental features (climate; lighting conditions; wind; rain; presence of water on the ground; ...).

service ID:

S00106

service type:

test design

sector:

arable farming, horticulture, viticulture

delivered to TEF:

design/documentation, other (including: nothing)

location:

at user's premises, in Italy

provider:

POLIMI, UNIMI

giulio.fontana@polimi.it,

agnese.chiatti@polimi.it,

davide.facchinetti@unimi.it

Test design: definition of the test protocol

Description: Items to be defined include: phases composing the testing protocol; operations to be executed for each phase; number and qualification of personnel involved in each phase; duration of each phase; distribution of testing operations over time (times of the day); distribution of testing operations over time (times of the year); acceptable and desired variation range for each item of the environment; acceptable and desired variation range for each item of the timing; number of test repetitions required and their distribution over the variation ranges.

service ID:

S00107

service type:

test design

sector:

arable farming, horticulture, viticulture

delivered to TEF:

design/documentation, other (including: nothing)

location:

at user's premises, in Italy

provider:

POLIMI, UNIMI

giulio.fontana@polimi.it,

agnese.chiatti@polimi.it,

davide.facchinetti@unimi.it

Test design: definition of the test evaluation

Description: Items to be defined are the quantitative and/or qualitative performance metrics (which in turn pose requirements on input data and ground truth) to be applied to test results.

service ID:

S00108

service type:

test design

sector:

arable farming, horticulture, viticulture

delivered to TEF:

design/documentation, other (including: nothing)

location:

at user's premises, in Italy

provider:

POLIMI, UNIMI

giulio.fontana@polimi.it,

agnese.chiatti@polimi.it,

davide.facchinetti@unimi.it

Desk assessment activities

Description: Matching between designed experimental requirements and features of the system under test

service ID:

S00109

service type:

desk assessment

sector:

arable farming, horticulture, viticulture

delivered to TEF:

design/documentation

location:

at user's premises, in Italy

provider:

POLIMI, UNIMI

giulio.fontana@polimi.it,

agnese.chiatti@polimi.it,

davide.facchinetti@unimi.it

Testbed preparation

Description: soil preparation; seed/plant procurement; seeding/planting; plant growth management + Preparation of technical infrastructure supporting the tests

service ID:

S00110

service type:

test setup

sector:

arable farming, horticulture, viticulture

delivered to TEF:

design/documentation, other (including: nothing)

location:

in Italy

provider:

POLIMI, UNIMI

giulio.fontana@polimi.it,

agnese.chiatti@polimi.it,

davide.facchinetti@unimi.it

Support for interconnection of the system under test to agrifoodTEF's technical infrastructure

Description: Base integration for conducting tests through the main infrastructure + additional components (e.g., developing a data collection node in ROS)

service ID:

S00111

service type:

test setup

sector:

arable farming, horticulture, viticulture

delivered to TEF:

physical system (possibly including software), software

location:

in Italy

provider:

POLIMI, UNIMI

giulio.fontana@polimi.it,

agnese.chiatti@polimi.it,

davide.facchinetti@unimi.it

Test execution services

Description: General support during execution of tests by the system under test (e.g., monitoring activities to ensure compliance to protocol)

Technical support during execution of tests by the system under test (e.g., ensuring that the necessary processes on the system under test are correctly configured and running)

Management of technical infrastructure during execution of the tests by the system under test, including verification of data exchange between system under test and infrastructure

Employment of external agricultural machinery (e.g., tractor) and personnel (e.g., tractor driver) in order to allow the system under test to execute the tests

service ID:

S00112

service type:

test execution

sector:

arable farming, horticulture, viticulture

delivered to TEF:

physical system (possibly including software), software

location:

in Italy

provider:

POLIMI, UNIMI

giulio.fontana@polimi.it,

agnese.chiatti@polimi.it,

davide.facchinetti@unimi.it

Data collection services

Description: Collection of data generated by the system under test
 Collection of data generated by agrifoodTEF's technical infrastructure (e.g., IoT sensors deployed in the field)
 Collection of ground truth data
 Curation of the documentation accompanying the collected data (e.g., description of logged features, information for test reproducibility)

service ID:

S00113

service type:

collection of test data, provision of datasets

sector:

arable farming, horticulture, viticulture

delivered to TEF:

physical system (possibly including software), software

location:

in Italy

provider:

POLIMI, UNIMI

giulio.fontana@polimi.it,

agnese.chiatti@polimi.it,

davide.facchinetti@unimi.it

Performance evaluation services

Description: Application of performance metrics (previously defined) to test data and ground truth data (previously collected)

service ID:

S00114

service type:

performance evaluation

sector:

arable farming, horticulture, viticulture

delivered to TEF:

data

location:

at user's premises, in Italy

provider:

POLIMI, UNIMI

giulio.fontana@polimi.it,

agnese.chiatti@polimi.it,

davide.facchinetti@unimi.it

Data validation and processing services

Description: Validation of collected datasets (e.g., check for presence of all datastreams, check for drop-outs, check for focus or exposure of camera images)
 Preparation for performance evaluation (e.g., formatting; identification of the images containing selected visual markers; association between images from the system under test and the ground truth)

service ID:

S00115

service type:

data augmentation, data analysis

sector:

arable farming, horticulture, viticulture

delivered to TEF:

data

location:

at user's premises, in Italy

provider:

POLIMI, UNIMI

giulio.fontana@polimi.it,

agnese.chiatti@polimi.it,

davide.facchinetti@unimi.it

LCA assessment

Description: Life Cycle Assessment of system under test

service ID:

S00116

service type:

LCA assessment

sector:

arable farming, horticulture, viticulture

delivered to TEF:

physical system (possibly including software),
design/documentation

location:

in Italy

provider:

POLIMI, UNIMI

giulio.fontana@polimi.it,

agnese.chiatti@polimi.it,

davide.facchinetti@unimi.it

Training services

Description: Training in preparation to the use of other AgrifoodTEF services provided by the Node

service ID:

S00117

service type:

training

sector:

arable farming, horticulture, viticulture

delivered to TEF:

design/documentation, other (including: nothing)

location:

at user's premises, in Italy

provider:

POLIMI, UNIMI

giulio.fontana@polimi.it,

agnese.chiatti@polimi.it,

davide.facchinetti@unimi.it

Co-designing tools, e.g., image analysis tool for quantitative field phenotyping (phenology, crop production)

Description: Field testing of IoT prototypes to monitor both fruit and crop development

service ID:

S00118

service type:

Image analysis, ground-truth data (i.e. fruit counting, dimensions, et.)

sector:

tree crops

delivered to TEF:

physical system (possibly including software)

location:

in Italy

provider:

FEM

None

Testing of sensor technology (irrigation scheduling)

Description: Field testing of IoT prototypes to monitor soil features and comparison to research-grade sensors

service ID:

S00119

service type:

collection of test data, desk assessment, conformity assessment

sector:

tree crops

delivered to TEF:

physical system (possibly including software)

location:

in Italy

provider:

FEM

None

Testing of proximal sensing technology (spectral indices)

Description: Field testing of proximal sensing technologies onboard of mobile systems (i.e. UAV, robots) for the assessment of plant physiology traits

service ID:

S00120

service type:

collection of test data, desk assessment, conformity assessment

sector:

tree crops

delivered to TEF:

physical system (possibly including software)

location:

in Italy

provider:

FEM

None

Testing of remote sensing technology (spectral indices)

Description: Field testing of remote sensing technologies (i.e. MODIS, Sentinel data) for the assessment of plant physiology traits (canopy temperature, vigour)

service ID:

S00121

service type:

collection of test data, desk assessment, conformity assessment

sector:

tree crops

delivered to TEF:

physical system (possibly including software)

location:

in Italy

provider:

FEM

None

Test design and ad-hoc mobile monitoring services

Description: Design and implementation of ad-hoc mobile monitoring services, test environment characterisation and measurements

service ID:

S00122

service type:

test design

sector:

tree crops, livestock farming

delivered to TEF:

physical system (possibly including software)

location:

at user's premises, in Italy

provider:

FBK

rgiaffreda@fbk.eu

Hardware suitability assessment

Description: Testing and field validation of hardware used for running AI algorithms, energy efficiency for battery powered hardware, realtime processing assessment

service ID:

S00123

service type:

test execution

sector:

tree crops

delivered to TEF:

design/documentation

location:

in Italy

provider:

FBK

rgiaffreda@fbk.eu

AI algorithms analysis and benchmarking

Description: Memory and computing power footprint assessment, efficiency and selection of most performing solutions

service ID:

S00124

service type:

performance evaluation

sector:

tree crops, livestock farming

delivered to TEF:

software

location:

digital service

provider:

FBK

rgiaffreda@fbk.eu

Data interoperability assessment

Description: Analysis of collected data and opportunities for valorisation assessment, valorisation of experimentation data assets

service ID:

S00125

service type:

data analysis

sector:

arable farming, tree crops

delivered to TEF:

design/documentation, other (including: nothing)

location:

digital service

provider:

FBK

rgiaffreda@fbk.eu

Co-design of Robotic and AI systems and components for arable farming solutions

Description: Field testing of sensors, decision support and robotics on arable farms that meet agro-ecological F2F criteria. Locations are Lelystad, Valthermond, Westmaas and Vredepeel.

service ID:

S00126

service type:

test setup, collection of test data, test execution, provision of datasets, performance evaluation

sector:

arable farming

delivered to TEF:

physical system (possibly including software), data, design/documentation, software

location:

in the Netherlands

provider:

WUR (Farm of The Future)

ard.nieuwenhuizen@wur.nl, koen.vanboheemen@wur.nl,

bram.veldhuisen@wur.nl

Test, validation and data collection of Robotic and AI systems and components for arable farming solutions

Description: Test, validation and data collection of Robotic and AI systems and components for arable farming solutions on the Farms of the Future, including collecting ground truth data sets

service ID:

S00127

service type:

test setup, collection of test data, test execution, provision of datasets, performance evaluation

sector:

arable farming

delivered to TEF:

physical system (possibly including software), data, design/documentation, software

location:

in the Netherlands

provider:

WUR (Farm of The Future)

johan.booi@wur.nl, pieter.dewolf@wur.nl

Business Model and Market development support for Robotic and AI solutions in arable farming

Description: Advice on business and marketing aspects of high tech solutions in agrifood chains

service ID:

S00128

service type:

business modeling

sector:

arable farming

delivered to TEF:

other (including: nothing)

location:

in the Netherlands

provider:

WUR (WEcR)

george.beers@wur.nl

Co-design of Robotic and AI systems and components for livestock farming solutions

Description: Field testing of sensors, decision support and robotics on dairy farms that meet agro-ecological F2F criteria. Locations are Hengelo and Leeuwarden.

service ID:

S00129

service type:

test setup, collection of test data, test execution, provision of datasets, performance evaluation

sector:

livestock Farming

delivered to TEF:

physical system (possibly including software), data, software

location:

in the Netherlands

provider:

WUR (De Marke)

elles.tewinkel@wur.nl

Test, validation and data collection of Robotic and AI systems and components for livestock farming solutions on Farm of the Future

Description: Test, validation and data collection of Robotic and AI systems and components for livestock farming solutions on the Farms of the Future (De Marke), including collecting ground truth data sets

service ID:

S00130

service type:

test setup, collection of test data, test execution, provision of datasets, performance evaluation

sector:

livestock Farming

delivered to TEF:

physical system (possibly including software), data, design/documentation, software

location:

in the Netherlands

provider:

WUR (De Marke)

elles.tewinkel@wur.nl

Business Model and Market development support for Robotic and AI solutions in livestock farming

Description: Advice on business and marketing aspects of high tech solutions in agrifood chains

service ID:

S00131

service type:

business modelling

sector:

livestock farming

delivered to TEF:

other (including: nothing)

location:

at User's Premises, in the Netherlands

provider:

WUR

De Marke: elles.tewinkel@wur.nl, henri.holster@wur.nl

Provision of specific and long term data sets for arable and livestock farming data from the Farm of the Future experimental farms

Description: Data sets are available for development or validation of AI algorithms.

service ID:

S00132

service type:

provision of datasets, collection of test data, performance

evaluation

sector:

arable farming, livestock Farming

delivered to TEF:

data

location:

in the Netherlands

provider:

WUR (Farm of The Future)

andries.vandermeer@wur.nl elles.tewinkel@wur.nl

Data analysys support for specific and long term data sets for arable and livestock farming data sets

Description: Advice is available for analysis of large and multiple sources data sets.

service ID:

S00133

service type:

data analysis

sector:

arable farming, livestock Farming

delivered to TEF:

other (including: nothing)

location:

in the Netherlands, at user's premises

provider:

WUR (Farm of The Future)

frits.vanevert@wur.nl, elles.tewinkel@wur.nl

Fenotyping support for AI and robotic based plant and livestock data handling and modelling (outdoor + indoor)

Description: Data collection on growth of plants under controlled conditions to assess specific plant properties. Location Wageningen, NL

service ID:

S00134

service type:

performance evaluation, provision of datasets, data analysis

sector:

arable farming, livestock Farming

delivered to TEF:

data, software, other (including: nothing)

location:

in the Netherlands

provider:

WUR

rick.vandezedde@wur.nl

R&D support AI development and robotics crops, livestock and post harvest

Description: Advice and hands on support for development of algorithms for detection of plant properties and precision actuation. AgroFoodRobotics of WUR.

service ID:

S00135

service type:

desk assessment, performance evaluation

sector:

arable farming, livestock Farming

delivered to TEF:

design/documentation, data, other (including: nothing)

location:

in the Netherlands

provider:

WUR

rick.vandezedde@wur.nl

Provision of Farmmaps platform to support Precision farming and KPI accounting data services

Description: Access to farm data within code of conduct farm data use via global WUR platform www.farmmaps.eu, with access to open data and farming data.

service ID:

S00136

service type:

test execution, performance evaluation

sector:

arable farming, livestock Farming

delivered to TEF:

data, design/documentation, software, other (including: nothing)

location:

in the Netherlands

provider:

WUR

fedde.sijbrandij@wur.nl, info@farmmaps.eu

Support in using explainable AI Models (simulation, early warning, DSS) and Digital Twins for crop and livestock management

Description: Building blocks for decision support on crop management are available and accessible via API. This includes decision support on planting, fertilizer use, crop protection and irrigation.

service ID:

S00137

service type:

desk assessment, test execution, performance evaluation, training

sector:

arable farming, livestock Farming

delivered to TEF:

software, data, physical system (possibly including software), other (including: nothing)

location:

in the Netherlands

provider:

WUR

corne.kempenaar@wur.nl

ELSA scan and support for AI and Robotic applications -- Ethical, Legal and Social Aspects

Description: The ELSA lab develops, tests and applies a methodology for (re)designing AI for Sustainable Food Systems (SFS). The methodology involves (a) the systematic identification and exploration of ethical, legal, and social aspects of AI in specific domains in the food sector, and (b) the co-creation with quadruple helix stakeholders of responsible and human-centred AI for SFS. This R&D ecosystem for the Dutch food system where ELSA aspects become an integral part of AI (re)design in the knowledge chain of fundamental, applied and practice-oriented R&D involving representatives from all members of society: public authorities, industry, academia, and citizens.

service ID:

S00138

service type:

desk assessment, test execution, ELSA assessment, conformity assessment

sector:

arable farming, livestock Farming

delivered to TEF:

other (including: nothing)

location:

in the Netherlands

provider:

WUR (ELSA lab)

mireille.vanhilten@wur.nl, vincent.blok@wur.nl

Value Sensitive Design support in AI-and Robotic developments

Description: We explore ethical and societal values of potential end-users of new technology during its development. Based on this, we explore possibilities to attend to these values in the further development or design of the technology, or in the development of an implementation trajectory.

service ID:

S00139

service type:

test design, desk assessment

sector:

arable farming, livestock Farming

delivered to TEF:

design/documentation, other (including: nothing)

location:

in the Netherlands, at user's premises

provider:

Wageningen Economic Research (ELSA lab)

kelly.rijswijk@wur.nl

Business Innovation support using the 5D model of business innovation (modelling)

Description: Wageningen Economic Research has developed a toolkit of concepts, methods and trainings to support companies in their business innovation process. One general rule is that business (model) innovation cannot be done by copying someone-else's recipe. For each company we therefore design and execute a customized approach inspired on our WUR 5D model of business innovation.

service ID:

S00140

service type:

test design, ELSA assessment, training, conformity assessment

sector:

arable farming, livestock Farming

delivered to TEF:

design/documentation, other (including: nothing)

location:

in the Netherlands

provider:

WUR, Wageningen Economic Research
jos.versteegen@wur.nl

User Acceptance Testing (UAT) of AI and robotic solutions

Description: User acceptance is reached when an end user actually uses the product and is pleased with the solution at the same time, depending on their experience with the technology. User Acceptance Testing (UAT) collects user Feedback (quantitative and/or qualitative) to assess to which extend end users accept digital technology in agri-food.

service ID:

S00141

service type:

test design, ELSA assessment, desk assessment

sector:

arable farming, livestock Farming

delivered to TEF:

other (including: nothing)

location:

in the Netherlands

provider:

WUR, Wageningen Economic Research
mireille.vanhilten@wur.nl

Support use of data Reference model for arable farming (standards, interoperability)

Description: To optimize information systems inside an organisation and across the food value chain, reference architectures such as RMagro, Raage and IoF2020 and Blockchain reference architectures are needed for efficient data flows. Data modelling in combination with reference models are applied in several projects at WEcR.

service ID:

S00142

service type:

test setup

sector:

arable farming

delivered to TEF:

design/documentation

location:

in the Netherlands

provider:

WUR, Wageningen Economic Research
mireille.vanhilten@wur.nl

Provision of Agro Data Cube platform for data handling

Description: AgroDataCube provides a large collection of both open data and derived data for use in agri-food applications and aims to become a common reference point for data rich applications in agriculture, where it has been set up with a focus on agricultural production and its environmental performance.

service ID:

S00143

service type:

collection of test data, provision of datasets

sector:

arable farming, livestock Farming

delivered to TEF:

data, other (including: nothing)

location:

in the Netherlands

provider:

WUR, Wageningen Environmental Research (WEnR) & WDCC

Ben.schaap@wur.nl, sander.janssen@wur.nl

Training for AI- and Robotic Skills and Education, MOOCs

Description: A variety of educational materials related to Data Science are offered by different organizations. In addition to online courses such as MOOCs, it is also possible to register for courses from Wageningen University & Research and (partner) institutions.

service ID:

S00144

service type:

desk assessment, performance evaluation, training

sector:

arable farming, livestock Farming

delivered to TEF:

design/documentation, other (including: nothing)

location:

in the Netherlands

provider:

WUR, Wageningen Environmental Research (WEnR) & WDCC

ben.schaap@wur.nl

Provision of dedicated and private experimentation facilities on a real vineyard

Description: Includes access to storage, battery loading, access to fields and workshop for prototyping purposes, access to internet, management of logistic issues to ensure confidentiality

service ID:

S00145

service type:

test setup, test execution, collection of test data, performance evaluation, data augmentation, people training

sector:

viticulture

delivered to TEF:

physical system, other (including: nothing)

location:

in France

provider:

IFV

christophe.gaviglio@vignevin.com

Provision of support and expertise for Robotic developments and testing in viticulture

Description: Viticulture expertise to help defining and testing the best solutions in a robotic project : expected performance, cost assessment, agroecology

service ID:

S00146

service type:

test setup, test execution, performance evaluation

sector:

viticulture

delivered to TEF:

other (including: nothing)

location:

in France

provider:

IFV

christophe.gaviglio@vignevin.com

Evaluation of the performance of crop protection equipment

Description: Perform evaluation of the performance of innovative (precision) crop protection equipment using dedicated measuring equipment and protocols both in lab and field conditions

service ID:

S00147

service type:

test design, test setup, test execution, collection of test data, performance evaluation

sector:

arable farming, tree crops, horticulture

delivered to TEF:

physical system (possibly including software)

location:

in Belgium

provider:

ILVO

Jordy.Windels@ilvo.vlaanderen.be

Datasets and infrastructure for automatic monitoring of daily individual liveweight in small ruminants

Description: Providing huge, historic, structured datasets and physical facilities under experimental conditions for testing AI solutions for developing Early Warning Systems (EWS) for small ruminants under a large spectrum of conditions. Interconnect Gold Standards and datasets. Provision of living animals (small ruminants, sheep), experimental facilities, and real-time sensor data (WoW platform) to evaluate AI systems in real farming conditions. Experimental facilities for small ruminants (sheep) including indoor and outdoor (harsh) conditions. Walk-over-Weighing (WoW) platform for real-time automatic monitoring of individual liveweight. Static scale (ISO ref.), reference datasets gathered under controlled conditions. results: Real-time EWS for individual welfare, performance and health.

service ID:

S00148

service type:

provision of datasets; test execution; test design; test setup; performance evaluation; collection of test data

sector:

livestock farming

delivered to TEF:

physical system (possibly including software); software

location:

in France

provider:

INRAE

None

Eggs detection

Description: Dataset of annotated images where parasite eggs are located. The location of eggs were manually annotated on thousand of microscope images. This dataset can be used to train a neural network able to automatically count the number of eggs on picture. This could have application to estimate the level of infestation of animals. Coproscopie is particularly time consuming, automatic method could be very helpful. Images from microscope were manually annotated to locate the eggs.

service ID: S00149	location: in France
service type: provision of datasets	provider: INRAE
sector: livestock farming	None
delivered to TEF: other (including: nothing)	

Goat detection

Description: Dataset of annotated images where animals are located. This dataset could be used to train a neural network specialized in outdoor goat detections. This network can then be used instead of a GPS (more costly and one sensor per animal vs 1 camera for all animals).

service ID: S00150	location: in France
service type: provision of datasets	provider: INRAE
sector: livestock farming	None
delivered to TEF: other (including: nothing)	

Behavior via accelerometers

Description: Data set of annotated sequences of 3 Axis acceleration data with the associated behavior. This dataset could be used to train an algorithm to estimate behavior from accelerometers data. animals were setup with accelerometers and film to annotate their behavior. In total, h of film were annotated. Dataset still in development.

service ID: S00151	location: in France
service type: provision of datasets	provider: INRAE
sector: livestock farming	None
delivered to TEF: other (including: nothing)	

Provision of datasets for AI training: photo and video

Description: Provision of structured and well described datasets.

This dataset can be used in conjunction with another complementary dataset (e.g. health, feed intake).

service ID:

S00152

service type:

provision of datasets

sector:

livestock farming

delivered to TEF:

other (including: nothing)

location:

in France

provider:

INRAE

None

Provision of datasets for AI training: feed intake datasets

Description: Provision of structured and well described datasets.

This dataset can be used in conjunction with another complementary dataset (e.g. health, photo, video).

service ID:

S00153

service type:

provision of datasets

sector:

livestock farming

delivered to TEF:

other (including: nothing)

location:

in France

provider:

INRAE

None

Provision of datasets for AI training: health datasets

Description: Provision of structured and well described datasets.

This dataset can be used in conjunction with another complementary dataset (e.g. feed intake, photo, video).

service ID:

S00154

service type:

provision of datasets

sector:

livestock farming

delivered to TEF:

other (including: nothing)

location:

in France

provider:

INRAE

None

Provision of a virtual computing infrastructure

Description: Virtual computing infrastructure (CPU, GPU) and storage space

service ID:

S00155

service type:

test execution

sector:

livestock farming

delivered to TEF:

other (including: nothing)

location:

in France

provider:

INRAE

sector:

None

Provision of physical testing and experimentation facilities to enable the evaluation of AI systems

Description: Access to testing and experimentation facilities: sheepfold

service ID:

S00156

service type:

test execution

sector:

livestock farming

delivered to TEF:

physical system (possibly including software); software;

design/documentation

location:

in France

provider:

INRAE

sector:

None

Provision of physical testing and experimentation facilities to enable the evaluation of AI systems

Description: Access to testing and experimentation facilities: cattle slaughterhouse

service ID:

S00157

service type:

test execution

sector:

livestock farming

delivered to TEF:

physical system (possibly including software); software;

design/documentation

location:

in France

provider:

INRAE

sector:

None

Provision of physical testing and experimentation facilities

Description: give access to physical testing and experimentation facilities (fields and buildings, internet access, aso) to enable the evaluation of AI systems in real operating field conditions : arable crops

service ID:

S00158

service type:

test execution

sector:

arable farming

delivered to TEF:

physical system (possibly including software)

location:

in France

provider:

ARVALIS

r.berthelot@arvalis.fr, M.SALIN@arvalis.fr

Evaluation of Smart Perception Systems for Precision Farming: agrophotonic sensors

Description: Test and development of agrophotonic sensors & image processing chains. Acquisition and interpretation of image datasets acquired through sensors, to generate agronomic indicators (LAI, biomass, number of plants etc...)

service ID:

S00159

service type:

test design; test setup; test execution; collection of test data; performance evaluation; data analysis

sector:

arable farming

delivered to TEF:

physical system (possibly including software)

location:

in France

provider:

ARVALIS

r.berthelot@arvalis.fr, M.SALIN@arvalis.fr

Evaluation of Smart Perception Systems for Precision Farming: satellite data

Description: Test and development of satellite image interpretation models. Provison of performance evaluation of models integrating satallite images for yield estimation, supply chains, pre-harvest grain quality/risk estimation, from satellite data.

service ID:

S00160

service type:

performance evaluation

sector:

arable farming

delivered to TEF:

physical system (possibly including software)

location:

in France

provider:

ARVALIS

r.berthelot@arvalis.fr, M.SALIN@arvalis.fr

AI robustness evaluation based on testing datasets

Description: Provision of standardized API for integrating nutrient, water, and carbon management plugg-ins in Agricultural Decision Support Systems. Application programming interface for input and carbon monitoring based on CHN-AMG model

service ID:

S00161

service type:

performance evaluation

sector:

arable farming

delivered to TEF:

data

location:

in France

provider:

ARVALIS

r.berthelot@arvalis.fr, M.SALIN@arvalis.fr

Evaluation of Automatic Machines and Agricultural robots: insects in storage silos

Description: Test of tools for detection and identification of insects in storage silos. Provision of taxon identification and location information of insects in storage silos

service ID:

S00162

service type:

test design; test setup; test execution; collection of test data; performance evaluation; data analysis

sector:

arable farming

delivered to TEF:

physical system (possibly including software)

location:

in France

provider:

ARVALIS

r.berthelot@arvalis.fr, M.SALIN@arvalis.fr

Evaluation of Automatic Machines and Agricultural robots: insect pests

Description: Test of tools for detection and identification of insect pests. Provision of taxon identification and location information of pests in the fields

service ID:

S00163

service type:

test design; test setup; test execution; collection of test data; performance evaluation; data analysis

sector:

arable farming

delivered to TEF:

physical system (possibly including software)

location:

in France

provider:

ARVALIS

r.berthelot@arvalis.fr, M.SALIN@arvalis.fr

AI performance evaluation based on physical testing environments: weed control - software

Description: Testing of devices that embed AI module(s) in their command system - focus on weeding performance. Physical testing of autonomous or semi-autonomous devices in on-field conditions focusing on AI performances.

service ID:

S00164

service type:

test design; test setup; test execution; collection of test data; performance evaluation; data analysis

sector:

arable farming

delivered to TEF:

physical system (possibly including software)

location:

in France

provider:

ARVALIS

r.berthelot@arvalis.fr, M.SALIN@arvalis.fr

Evaluation of Automatic Machines and Agricultural robots: weed control - hardware

Description: Testing of weeding devices that embed AI module(s) in their command system. Physical testing of autonomous or semi-autonomous devices in on-field conditions focusing on the hardware.

service ID:

S00165

service type:

test design; test setup; test execution; collection of test data; performance evaluation; data analysis

sector:

arable farming

delivered to TEF:

physical system (possibly including software)

location:

in France

provider:

ARVALIS

r.berthelot@arvalis.fr, M.SALIN@arvalis.fr

Dataset provision for weed detection

Description: Provision of dataset of plant/weed pictures for weed detection. Provision of learning and testing dataset for experimentation and evaluation of AI technologies

service ID:

S00166

service type:

provision of datasets

sector:

arable farming

delivered to TEF:

other (including: nothing)

location:

in France

provider:

ARVALIS

r.berthelot@arvalis.fr, M.SALIN@arvalis.fr

AI performance evaluation based on physical testing environments: irrigation - software

Description: Testing of devices that embed AI module(s) in their command system - focus on irrigation performance. Physical testing of autonomous or semi-autonomous devices in on-field conditions focusing on AI performances.

service ID:

S00167

service type:

test design; test setup; test execution; collection of test data; performance evaluation; data analysis

sector:

arable farming

delivered to TEF:

physical system (possibly including software)

location:

in France

provider:

ARVALIS

r.berthelot@arvalis.fr, M.SALIN@arvalis.fr

Evaluation of Automatic Machines and Agricultural robots: irrigation - hardware

Description: Testing of irrigation devices that embed AI module(s) in their command system. Physical testing of autonomous or semi-autonomous devices in on-field conditions focusing on the hardware.

service ID:

S00168

service type:

test design; test setup; test execution; collection of test data; performance evaluation; data analysis

sector:

arable farming

delivered to TEF:

physical system (possibly including software)

location:

in France

provider:

ARVALIS

r.berthelot@arvalis.fr, M.SALIN@arvalis.fr

Evaluation of Automatic Machines and Agricultural robots: plant species detection

Description: Test of species detection algorithms in plant cover + evaluation of models for valorisation. Provison of performance evaluation of species detection and identification & models for post-harvest valorisation.

service ID:

S00169

service type:

test design; test setup; test execution; collection of test data; performance evaluation; data analysis

sector:

arable farming

delivered to TEF:

physical system (possibly including software)

location:

in France

provider:

ARVALIS

r.berthelot@arvalis.fr, M.SALIN@arvalis.fr

AI Model Training

Description: Guided training of machine learning models via GPU server resources from JR.

service ID:

S00170

service type:

AI model training

sector:

arable farming, horticulture, tree crops, viticulture, livestock farming

delivered to TEF:

software, data

location:

remote

provider:

JR

agrifoodtef@josephinum.at

Data analysis

Description: Use of descriptive statistics to get an insight into a dataset and statistical methods for plausibility filtering and filtering of outliers of the provided data to improve model training process.

service ID:

S00171

service type:

data analysis

sector:

arable farming, horticulture, tree crops, viticulture, livestock farming

delivered to TEF:

data

location:

remote

provider:

JR

agrifoodtef@josephinum.at

Data augmentation

Description: Pre-processing of image or sensor data such as normalization, correlation analysis, dimension reduction, adding randomized noise and artificial expansion, as well as anonymization and data labeling

service ID:

S00172

service type:

data augmentation

sector:

arable farming, horticulture, tree crops, viticulture, livestock farming

delivered to TEF:

data

location:

remote

provider:

JR

agrifoodtef@josephinum.at

Test suitability of an agricultural implement on an autonomous carrier platform

Description: Test of an autonomous carrier platform with an agricultural implement. Qualitative investigation of the influences on work quality of the implement, safety of the overall system and function.

service ID:

S00173

service type:

test design; test setup; test execution; collection of test data; performance evaluation; data analysis

sector:

arable farming, horticulture, tree crops, viticulture

delivered to TEF:

physical system (possibly including software)

location:

at user's premises, in Austria

provider:

JR

agrifoodtef@josephinum.at

Provisioning of testbed for crop production

Description: Provisioning of testbed for crop production

service ID:

S00174

service type:

test design, test setup, test execution, collection of test data, performance evaluation

sector:

arable farming

delivered to TEF:

other (including: nothing)

location:

in Sweden

provider:

RISE

agrifoodtef@ri.se

Provisioning of machine platform for tests

Description: Provisioning of machine platform for tests

service ID:

S00175

service type:

test design, test setup, test execution, collection of test data, performance evaluation

sector:

arable farming

delivered to TEF:

other (including: nothing)

location:

in Sweden

provider:

RISE

agrifoodtef@ri.se