

agrifoodTEF

The European Testing and Experimentation Facilities for Agrifood Innovation

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German Node
Co-funded by the



Federal Ministry
of Food
and Agriculture



What are TEFs and why do we need them in Europe?

Starting with the why...

- Europe is excellent in basic AI and robotics research
- We do not see so much AI and robotics related products
- Companies (especially SMEs) need help to bridge the gap from research to products



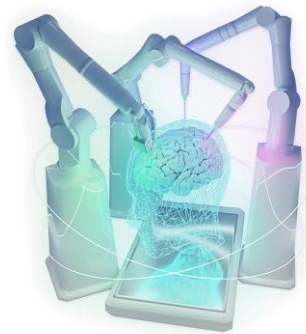
How do we address this problem: Test- and Experimentation Facilities



Domain specific network of organizations that provide services for companies to help them developing AI and robotics based products.



AI in Manufacturing
<https://ai-matters.eu/>

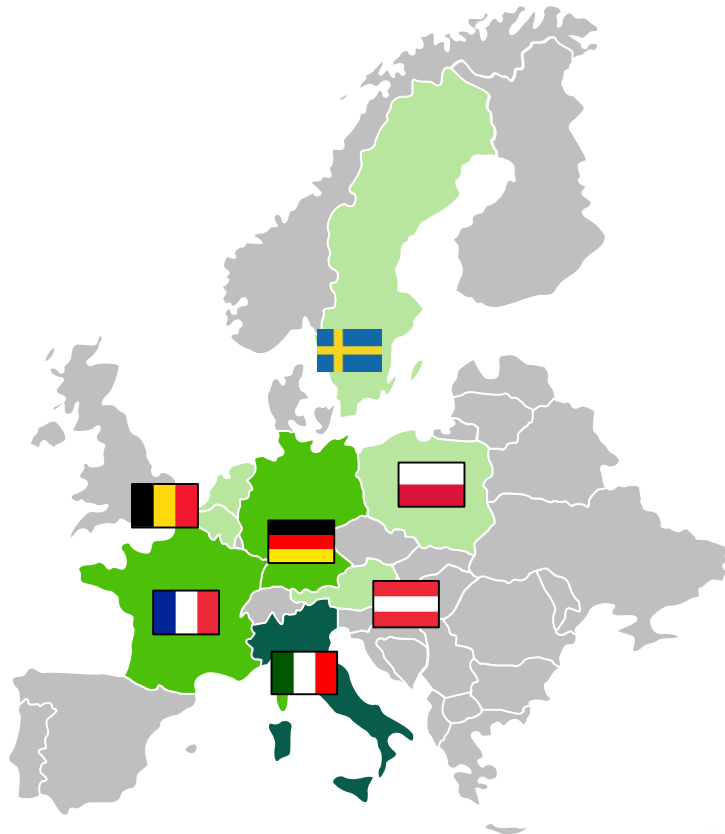


TEF Health
<https://www.tefhealth.eu/>

CitCom^{AI}

AI in Smart Cities and
Communities
<https://citcom.ai/>

agrifoodTEF: The European Testing and Experimentation Facilities for Agrifood Innovation



Our Mission



Developing and offering services together with our customers that help them to develop, test and validate their AI and robotics solutions in real-world conditions in the agri-food domain.

Q&A about the "TEF model"

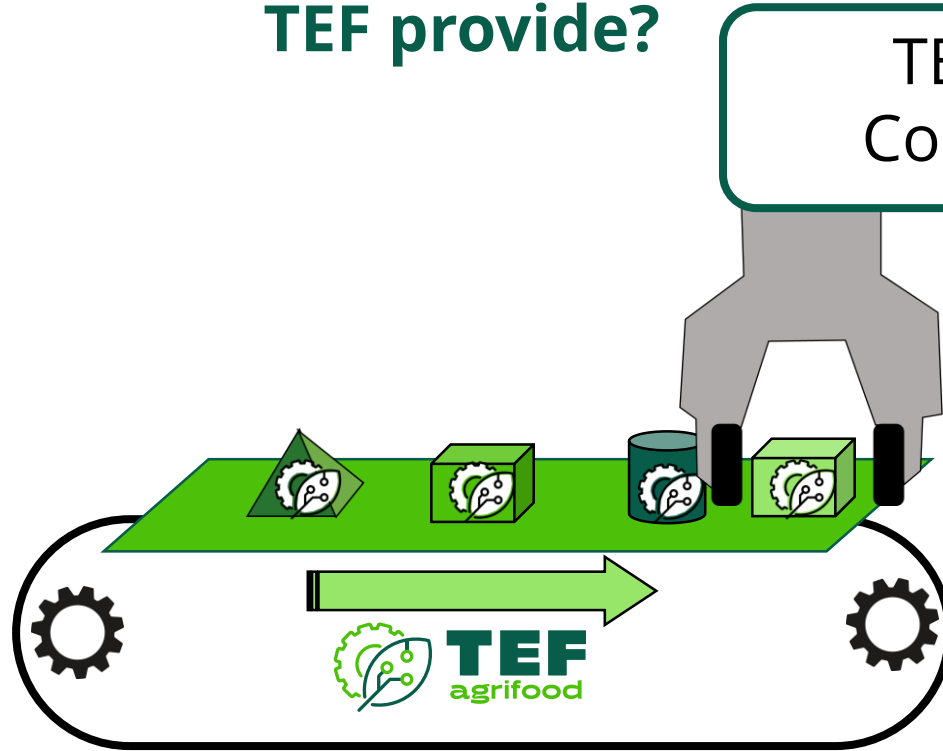


What do Consortium Partners bring?



Competences
Know-how
Facilities

What does a TEF provide?

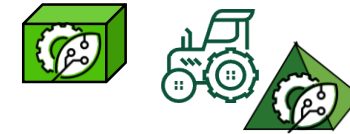


Real-life field validation services

To whom?

TEF Customers: European Companies in the Agri-Food

Product Idea



Product Idea



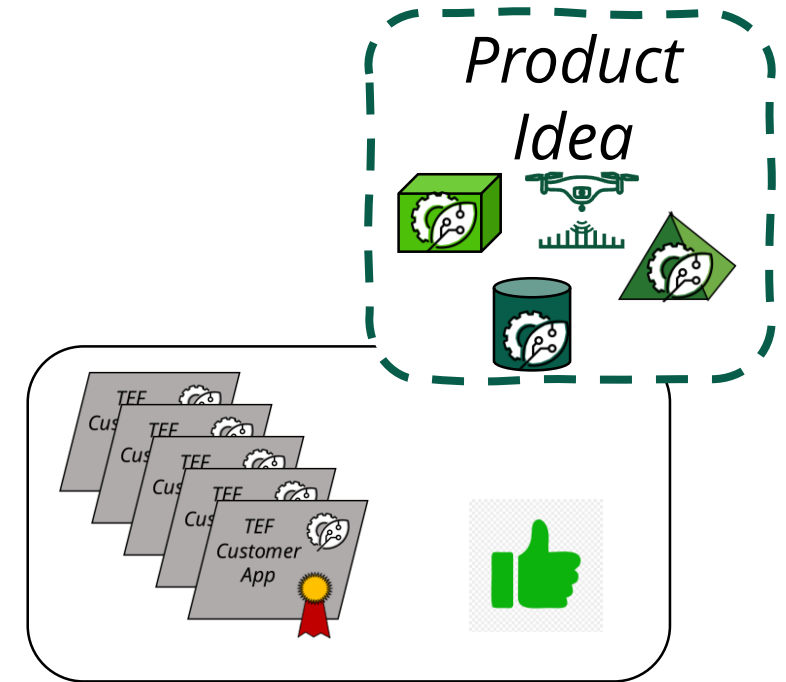
Is a TEF a Certification Organization like TÜV or DEKRA?



- No, but ...



- agrifoodTEF partner LNE (France) does Certification of AI
- We will develop robotic benchmark tests and validation datasets for AI that could serve as building blocks in a certification procedure.



How far are we on our way?



agrifoodTEF - Service List

version 1.0 status: 27.07.2023

- A first version of the service list is available as pdf document.

https://www.agrifoodtef.eu/service-catalogue/2023-07-27-initial-service-list-final-version1_0.pdf

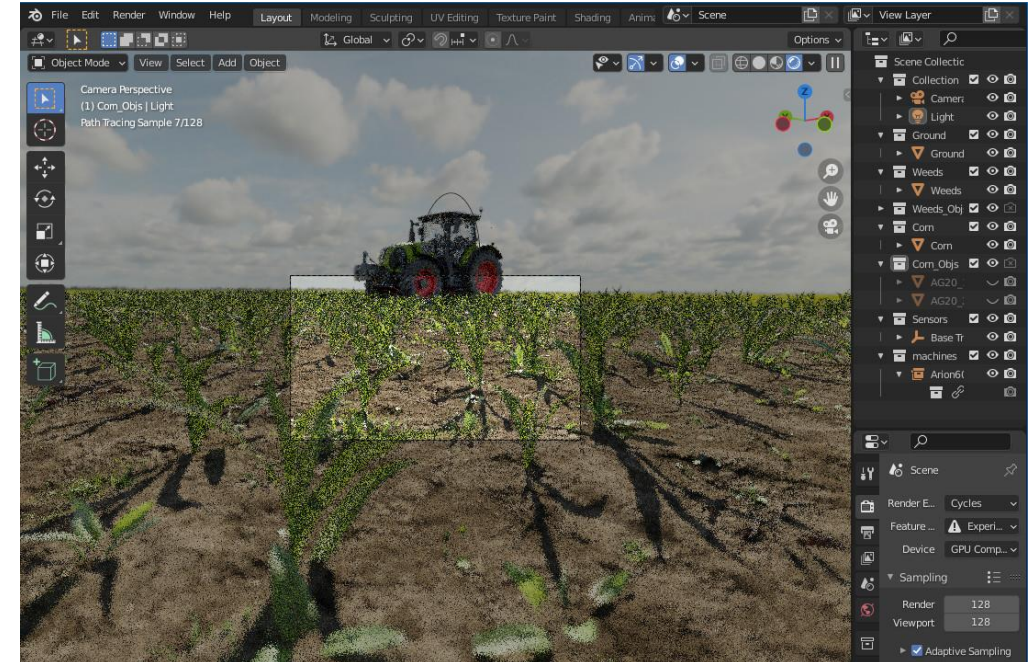
- A first version of the service portal of agrifoodTEF will be available by end of 2023.

How to access a service?

- Have a look at the service catalogue
- We are working together! You can contact your national TEF partner if you have any questions even regarding services located in other countries.
- Come and visit our infrastructures. Let's talk about your needs!



Physical vs. Digital Services



Physical

Digital

Physical vs. Digital Services



- A digital service is in general remote accessible.
- We need to discuss which partner offers the digital services, so that we do not attack the business models of the other partners.
- Digital services will be most probably unique in the agrifoodTEF service catalogue.

Physical vs. Digital Services



- A physical service needs local infrastructure at a TEF side.
- No problem if we have the same service several times in agrifoodTEF.
- We create common quality standards for these services.

TEF: Somewhere between Research and Business



Right place to be. But comes with challenges...

The German agrifoodTEF Node



Partners located in Osnabrück:

- German Research Center for Artificial Intelligence (DFKI)
- University of Applied Sciences Osnabrück (HSOS)
- Agrotech Valley Forum e.V. (AVF)



Main Infrastructure:

- Agro-Technicum (HSOS)
- Test fields
- Several farms



agrifoodTEF: synthetic dataset generation

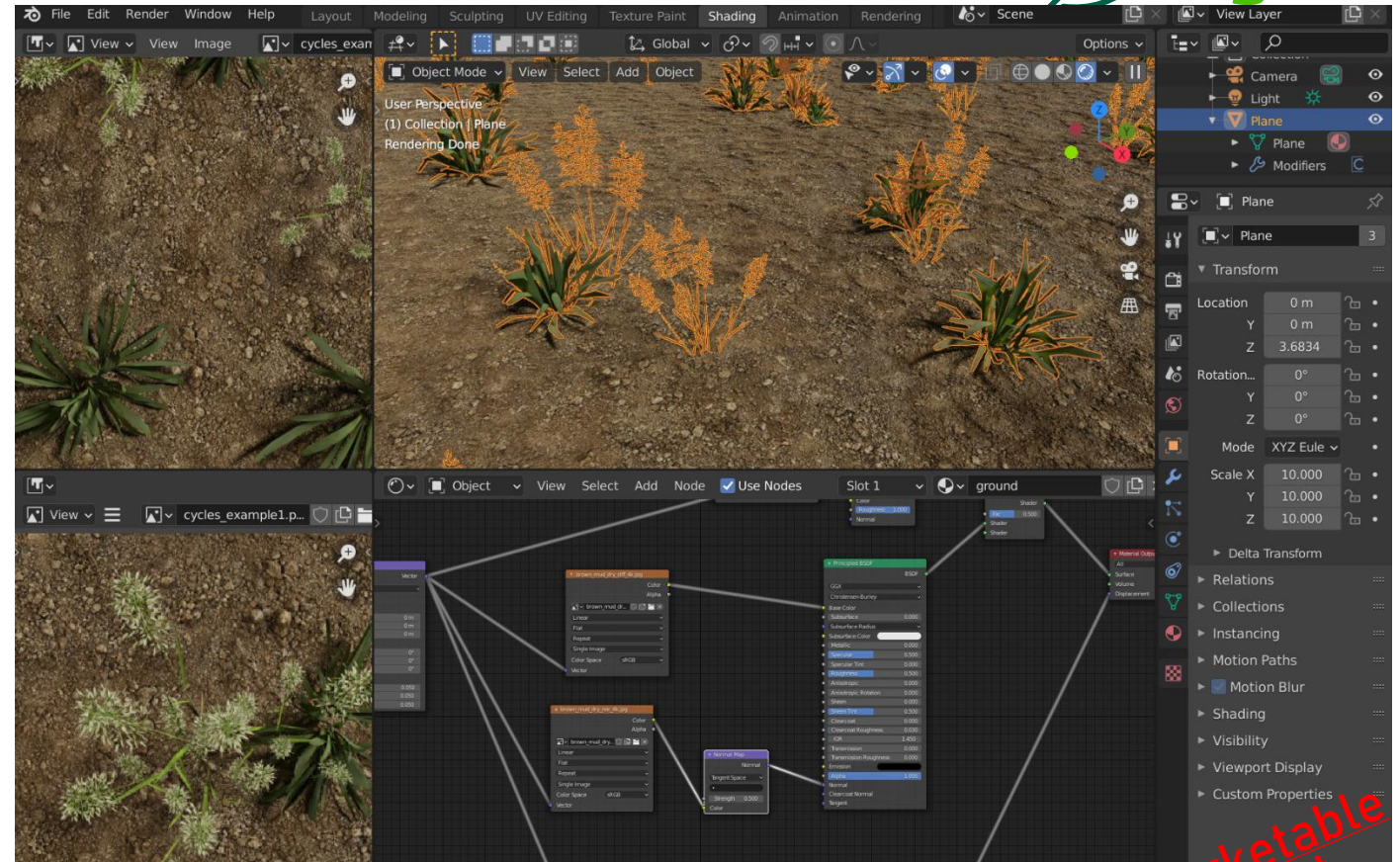


What technology do we want to develop into a service?

A pipeline for synthetic data generation specialized for the agrifood domain.

What the customers ask for

- Training datasets
- Benchmark datasets
- Evaluation of sensor configurations



Not a marketable service yet

agrifoodTEF: AI (edge) platform

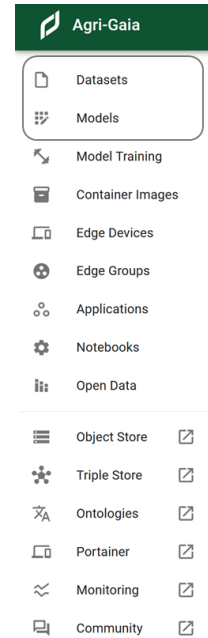


What technology do we want to develop into a service?

An AI platform with EDC connector and automatic edge deployment

What the customers ask for

- Training and Evaluation of AI models
- Easy access to datasets
- Interoperability of datasets and AI models



Datasets

Name	Owner	Size	Modified	Public	Actions
Potatoes with Bounding Boxes	aschlieb	286 kB	9. November 2022 um 18:26 MEZ	<input checked="" type="checkbox"/>	Download Edit Search Delete
Potatoes with Polygons	aschlieb	587 kB	9. November 2022 um 18:27 MEZ	<input type="checkbox"/>	Download Edit Search Delete

Name	Format	Owner	Size	Modified	Public	Actions
claas_ap4.5_yolov5	pytorch	tkorthals	14.5 MB	16. November 2022 um 23:31 MEZ	<input type="checkbox"/>	DETAILS Download Delete
reskil_model_test	pytorch	freddy	34.5 MB	16. November 2022 um 14:55 MEZ	<input checked="" type="checkbox"/>	DETAILS Download Delete
dfki_maize_yolov5	onnx	niqbal996	7.33 MB	24. November 2022 um 11:26 MEZ	<input checked="" type="checkbox"/>	DETAILS Download Delete

Not a marketable service yet



- Several European partner plan to set up a robotic benchmark field as a service.
- We have a focus group on this topic.
- At the moment we collect tests, that are already defined like ISO18497, ARPA, etc. and do workshops with companies to get their ideas on how a robotic system could be tested.

(Real Environment) Detection performance testbed

What technology do we want to develop into a service?

- A testbed for sensors
- A software evaluation pipeline connected to the testbed

What the customers ask for

- Test bed for evaluating the detection performance of a non-contact sensor system and its algorithm under real weather conditions.



Not a marketable service yet

Learn more about the method



AGROTECH VALLEY FORUM



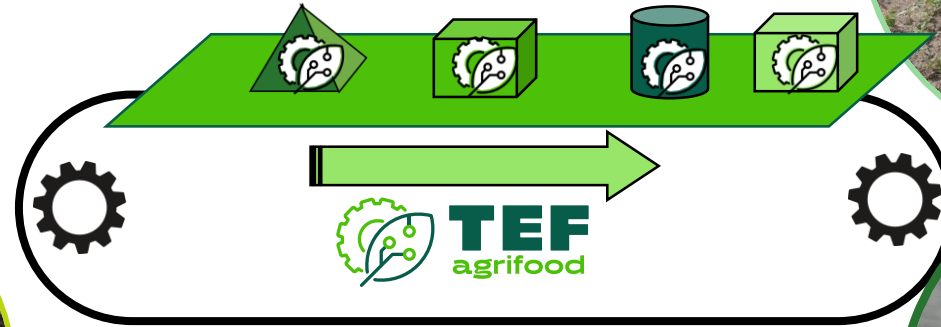
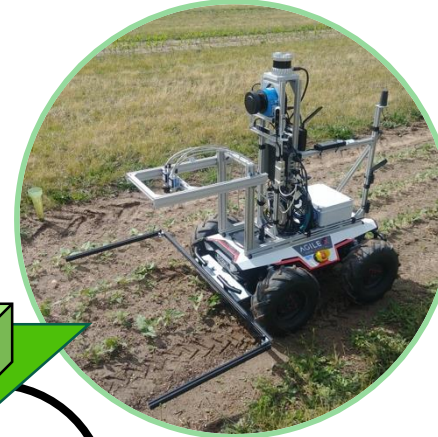
HOCHSCHULE OSNABRÜCK
UNIVERSITY OF APPLIED SCIENCES

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Looking forward to discuss your service needs!



agrifoodtef.eu



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