Eureka Clusters Sustainability Call 2022 projects

Innovations making industry more sustainable and greener

In 2022, the Eureka network together with the Clusters launched the Eureka Clusters Sustainability Call 2022. The Call was jointly implemented between the Eureka Clusters CELTIC-NEXT, EUROGIA, ITEA, SMART and Xecs, and the Eureka Public Authorities of Austria, Belgium, Canada, Denmark, Finland, Hungary, Ireland, Luxembourg, Portugal, Singapore, South Africa, South Korea, Spain, Sweden, Türkiye and the United Kingdom.

At the deadline 15 project proposals were received, ultimately resulting in 11 labelled projects involving 482 PY and 68 partners from 14 countries. The most represented countries are Türkiye (nine projects), Portugal (six projects) and Belgium (four projects). ITEA is the primary Cluster for four projects and a secondary Cluster for four additional ones. With a representation of 65% of the total effort, SMEs are the main contributors to this Call. Large industry covers 16% of the effort, followed by universities with 11%.

The projects of the Sustainability Call 2022 cover many themes:

Theme	Eureka Clusters Sustainability Call 2022 projects
Circular economy	AgAPP-e, NRPCES, RETAILL
Sustainable logistics and supply chain management	ReSource2Tab, RETAILL
Green ICT	DefectFree, iDT4GDC
Sustainable manufacturing	DefectFree, SMCMSSPPA
Renewable energy	ONE, Valkyrie
Distributed intelligence and low data transmission	RETAILL
Earth, Ocean, Space observation systems and exploitation	UAV-GG
Power electronics and management	ONE
Other	SmartAgroInsurance

We invite you to discover the innovative solutions related to ITEA. The first four projects have indicated ITEA as their main Cluster and the last four have indicated ITEA as a secondary Cluster:

AgAPP-e

SUS2022-020

Agriculture's digital Analyser of Production for Phosphorus efficiency

Project leader: Experteam (Türkiye)

For improved production and environmental protection, fertiliser management needs to be local or site-specific; depending on the regional metabolism, agricultural efficiency can be increased even fourfold if the flows and stocks are well-observed. Digital solutions will greatly improve the management of such essential resources, but these are currently missing, leaving the farmer without simple tools capable of providing targeted diagnoses for targeted treatments. AgAPP-e aims to automate fertiliser recommendations and thereby improve accuracy and increase the phosphorus efficiencies of a nation.

https://itea4.org/project/agapp-e.html

RETAILL

SUS2022-071

REtail using Technology based on Artificial InteLLigence

Project leader: Polytechnic Institute of Porto (Portugal)

Food waste is one of the main problems in the current food supply chain. According to the UN Sustainable Development Goals, food losses along production and supply chains must be halved by 2030. In view of this, RETAILL aims to develop an IoT and AI-powered platform that will be adaptable to most countries' food supply chains. This system will improve the food lifecycle, ensure that food waste is valued and make logistics more efficient, thereby reducing the use of resources and increasing the profits of all actors in the value chain.

https://itea4.org/project/retaill.html

SmartAgroInsurance SUS2022-036

Agro Insurance Data Management Platform with API Services

Project leader: SFS Danışmanlık Bilgi İşlem San. ve Dış Tic. A.Ş (Türkiye)

Agricultural insurance is a global, fast-growing billion-dollar industry and, due to the effects of climate change, it is becoming more important every day. Effective insurance policies stabilise farm income, reduce poverty and ensure a climate safety net for food producers. SmartAgroInsurance aims to develop a Smart Agriculture Insurance Data Management Platform to provide, analyse and integrate agricultural data from different sources with insurance industry know-how so that insurance companies can achieve better premium calculations, claim automation and fraud prevention and provide supportive, damage-preventing advice to the farmer.

https://itea4.org/project/smartagroinsurance.html

iDT4GDC SUS2022-042

Intelligent Digital Twin Platform for Climate-Neutral Data Centres

Project leader: Red Dot Analytics Pte Ltd (Singapore)

Data centres are estimated to consume approximately 1% of global electricity use and contribute to 0.3% of all global CO_2 emissions. Climate-neutral data centres have therefore become an important challenge. iDT4GDC aims to develop Artificial Intelligence and Digital Twin technologies into a cloud AI platform to digitalise, optimise and automate data centre operations for sustainability purposes. iDT4GDC will guide data centre operations and management towards a sustainable future along the five pillars of power, carbon, water, circular economy and governance.

https://itea4.org/project/idt4gdc.html

DefectFree SUS2022-048

Machine learning and artificial vision for 0% waste in textile production

Project leader: Smartex (Portugal)

With the aim of reducing defective textiles to close to 0%, this proposal intends to develop a new system based on artificial intelligence and machine vision that, when installed in circular knitting machines, can detect defects in complex fabrics at the time that they are produced. The economic and environmental benefits of this proposal are evident given that the textile industry is one of the biggest in the world but, at the same time, one of the most polluting.

Primary Cluster: SMART

Resource2Tap SUS2022-066

Integrated Resource Management Platform for Water Distribution System

Project leader: Reengen (Türkiye)

An integrated monitoring system will be developed to prevent water losses and indirect energy losses in urban water distribution systems and to optimise the energy consumption of the distribution system. The water leakage prevention system will offer hardware and software solutions to be developed for the detection of technical losses in the water distribution network and an end-to-end monitoring system. Resource2Tap will develop a product with high commercialisation potential that will prevent technical losses with an IoT-based endpoint monitoring system and conventional neural network-based data analysis software.

Primary Cluster: EUROGIA

SMCMSSPPA SUS2022-031

Saw Machine that Can Make Smart and Sustainable Production with Prediction Algorithms

Project leader: Beka-Mak Makina Sanayi ve Ticaret A.Ş. (Türkiye)

Sawing machines, used to bring raw material to the desired dimensions in industrial production companies, are of great importance since they are at the beginning of the production line and have a great effect on production efficiency. In this framework, the aim is to manufacture sawing machines with smart and sustainable production techniques which automatically optimise the cutting parameters (cutting speed, surface quality, etc.) with the data to be collected from the field and provide error and lifecycle estimation for machine equipment.

Primary Cluster: SMART

UAV-GG SUS2022-0072

Monitoring Greenhouse Gases with Long-Range Unmanned Aerial Vehicles and Novel Spectroscopic Sensors

Project leader: Romaeris Corporation (Canada)

The project will use novel, long-range, large payload Unmanned Aerial Vehicles (UAVs) to carry innovative spectroscopic sensors to monitor multiple greenhouse gases (GHGs) over large geographic areas, locate emissions sources, take action and vastly improve our understanding of GHG emissions. A data portal will be created to make such GHG information available to governments and industry worldwide and the data will be made compatible with other sources of information, such as satellites, so that comprehensive and accurate GHG reporting is possible at last.

Primary Cluster: EUROGIA