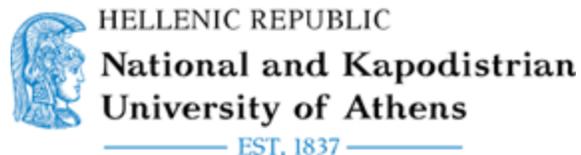


STELAR: Spatio-TEMPoral Linked data tools for the AgRI-food data space

Type of action: HORIZON Innovation Actions

Topic: HORIZON-CL4-2021-DATA-01-03 - Technologies for data management (AI, Data and Robotics Partnership)

Partners:



STELAR Vision:

*The vision of STELAR is to design and develop an innovative **Knowledge Lake Management System (KLMS)** for enabling, supporting, and automating the creation and management of FAIR and AI-ready data in the common European data space, **turning a raw data lake into a knowledge lake.***

The Problem:

- The agri-food sector is witnessing **increasing digitalization** and reformation, however it is **still lagging behind**
- Data spaces comprise **large amounts of data** (various types, schemas, models, languages, and formats), from **diverse sources**, and with **varying quality**; hence, **finding the right data is challenging**.
- Besides FAIR, data needs to be **AI-ready**. However, data annotation and labelling require **domain knowledge and expertise**, implying **a high cost in terms of time and effort** of professional domain experts.
- Users need to **discover, share, and reuse** diverse types of data coming from **many different sources**
- There is **no de facto industry standard** in the market at the moment nor in the foreseeable future



The STELAR Solution:

STELAR will :

1. Empower users to **efficiently and timely discover the right data** for their needs
2. Facilitate **data linking and interoperability**
3. Increase the **automation and reliability of data annotation and labelling**, contributing to the **availability of AI-ready data in data spaces**.
4. **Showcase and evaluate** the STELAR KLMS through three diverse, real-world use cases.



FSH
WP6

Dissemination, Exploitation and Communication



AK
WP5

Pilot Testing
and Evaluation



RM
WP1

Requirements,
Core Platform
and Integration



Tools for
AI-ready data

UBM
WP4



Data Interlinking &
Alignment Tools

UoA
WP3



Data Discovery
& Quality
Management Tools

ARC
WP2



Management and Coordination

ARC
WP7

Data Space (e.g. agrifood)

System 1 (e.g. Data-intensive SME, Data marketplace)

STELAR Knowledge Lake Management System

STELAR toolkit

Describe Link Annotate

STELAR Core Components

Data Catalog Knowledge Graph Workflow Manager

Data Lake

IDS Connector

IDS Connector System 2 (e.g. Farm Advisors)

IDS Connector System 3 (e.g. Food Processor)

IDS Connector System 4 (e.g. Food Inspector)

IDS Connector System N

The Pilots / Use cases:

Three pilots, covering **different stages of the food supply chain**, involving and combining **different types of data**, and addressing **different stakeholders and user needs**:

1. **Risk prevention in food supply lines**, integrating worldwide food safety related data sources;
2. **Early crop growth predictions**, integrating current and historical satellite, hyperspectral, meteorological and synthetic data;
3. **Timely precision farming interventions**, integrating different types of sensor data from the field.



The Results (KERs):

1. A practical, robust, and scalable **Knowledge Lake Management System (KLMS)** to support and automate the creation and management of FAIR and AI-ready data in an automated and energy-efficient way
2. Managed and scalable **Data Discovery and Quality Management Tools**
3. Best-of-breed **Data Interlinking and Alignment Tools**
4. The most advanced **AI-assisted Data Annotation and Synthetic Data Generation Tools**





Spatio-TEmporal Linked data tools for the AgRI-food data space

Thank you for your attention

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