

Linking space to user needs

Downstream innovation in agriculture through Horizon Europe

Space4Agriculture; 4th April 2025

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EUSPA's mission



Exploitation

- Galileo and EGNOS services provision and 24/7 operations – including management, operation, maintenance, improvement, evolution & protection of infrastructure
- GOVSATCOM hub and IRIS² preparation
- Space Surveillance and Tracking Front Desk



Security

- Security Accreditation
- Security Monitoring Center operations (GSMC)
- Governmental Service Provision
- Key contributor in the implementation EU Space Strategy for Security and Defence



Utilization

- **Market development, communications, user uptake, applications, innovation**
- For Galileo, EGNOS, commercial use of Copernicus, GOVSATCOM, SST, and soon IRIS²

Building the EU Space Downstream ecosystem for Agriculture




- Market intelligence
- Creating, supporting, and scaling up a **new generation of SMEs, start-ups, and innovators in the EU**
- Fostering the EU Space Downstream **industry competitiveness**
- **Promoting synergies** among different components of the EU Space Programme



Our target: Customer-focused companies that **add value and exploit EU Space Programme data & services** and deliver **actionable information** to support digital agriculture

EU Space agricultural applications and market projections



Environmental Monitoring

- Carbon capture & content assessment
- Environmental impact monitoring

Natural Resources Monitoring

- Biomass monitoring
- Crop yield forecasting
- Soil condition monitoring
- Vegetation monitoring

Operations Management

- Asset monitoring
- Automatic steering
- CAP monitoring
- Farm machinery guidance
- Farm management systems
- Field definition
- Livestock wearables
- Pastureland management
- Precision irrigation
- Variable rate application

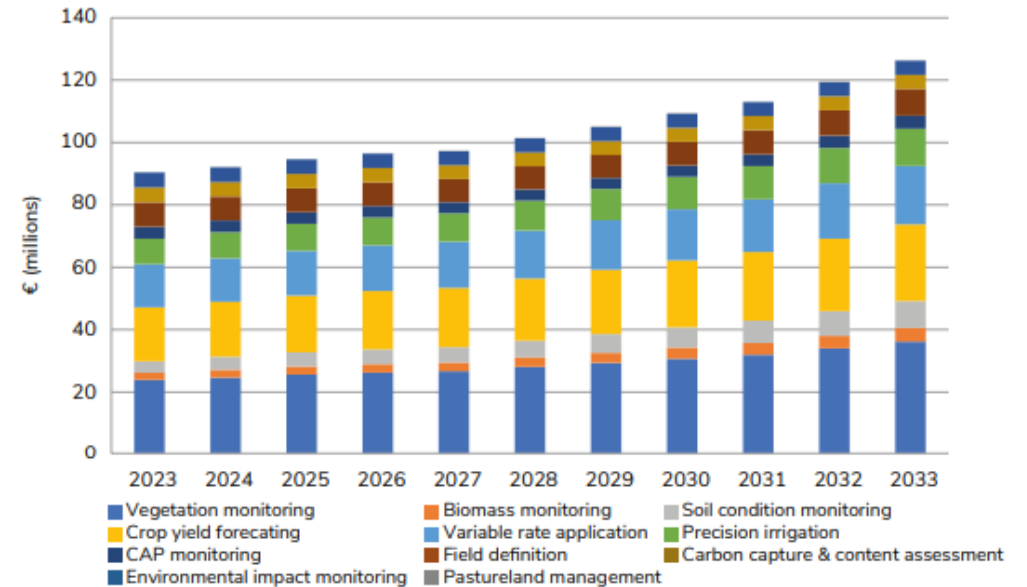
Weather Services for Agriculture

- Climate services for agriculture
- Weather forecasting for agriculture

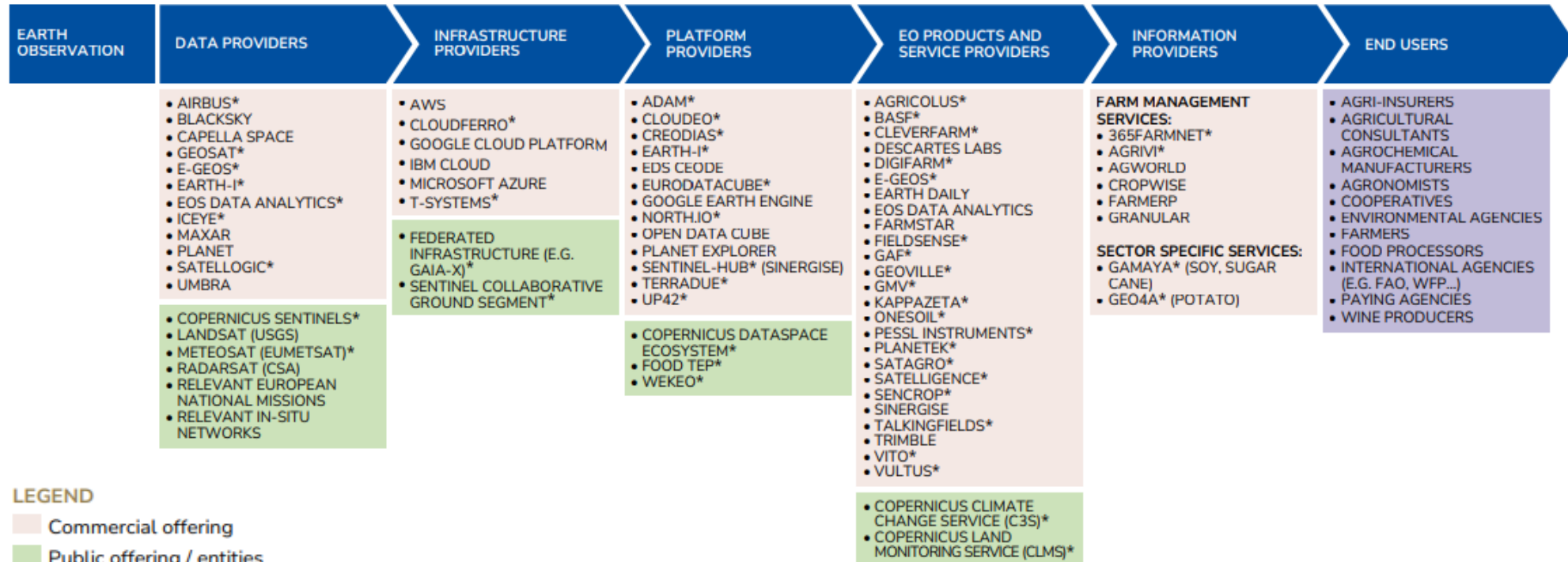
Legend

- EO application
- GNSS application
- Synergetic application (combined use of EO and GNSS)

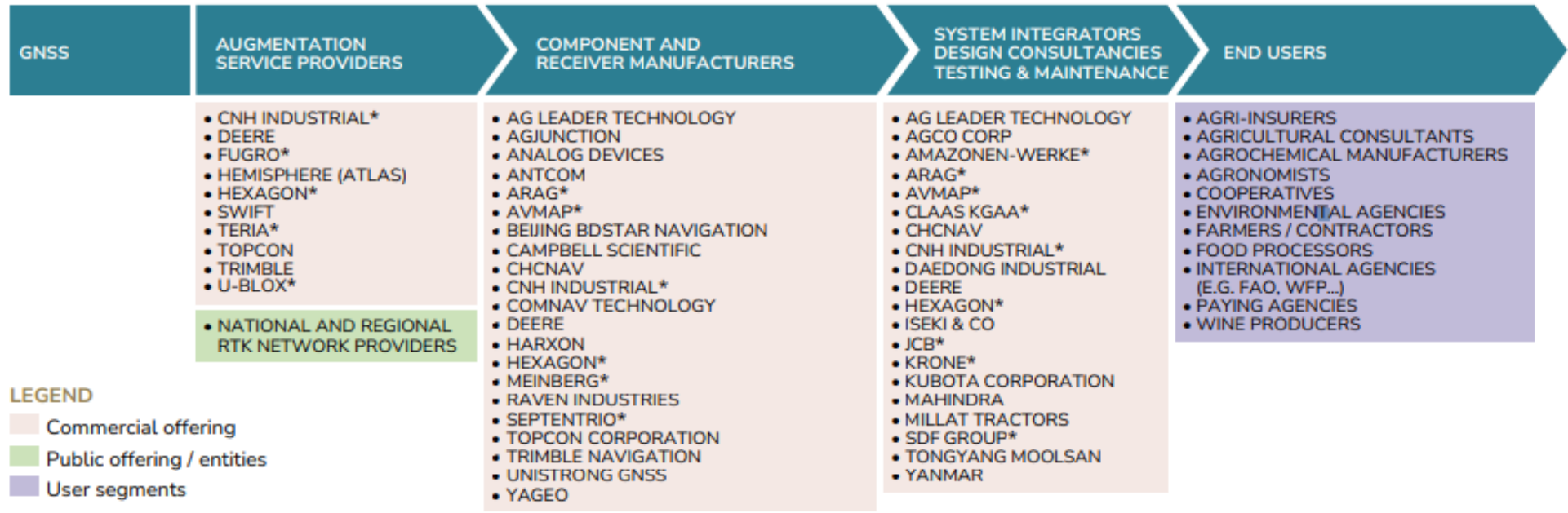
Revenue from EO data sales by application



Agriculture Value Chains - EO



Agriculture Value Chains - GNSS



User Consultation Platform

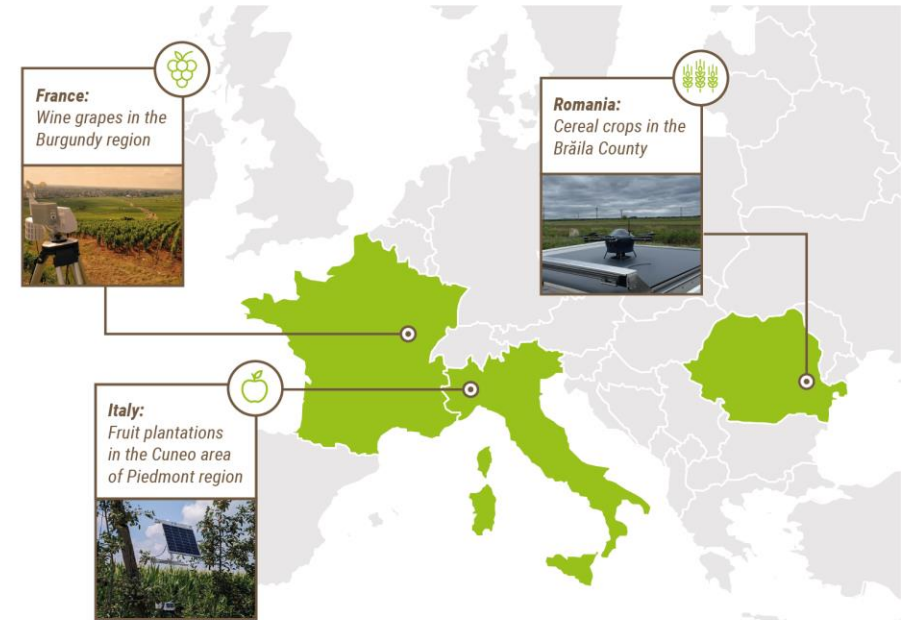
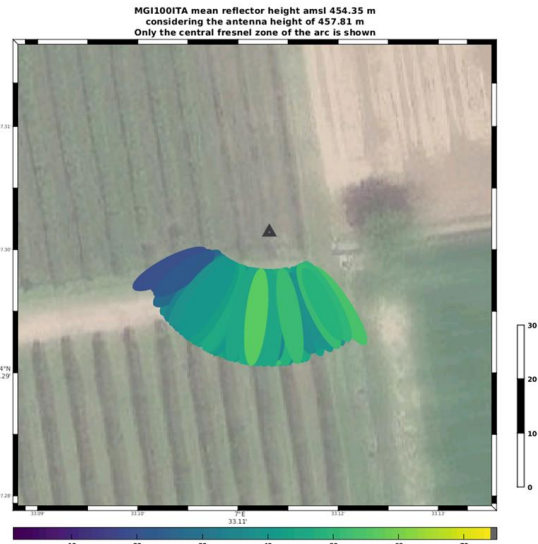
- The **users** as a starting point to inform Programmatic actions and R&I initiatives.
- Inputs into the development of user-centric space data services within the European Union Space Programme
- Farmers, agro-insurers, cooperatives, agronomists, paying agencies, international agencies, agrochemical manufacturers, research centres etc.
- In addition: Ad Hoc agro-industry exchanges



Meteorological assimilation from Galileo and drones for agriculture



- Develop a toolchain for soil & atmospheric monitoring, weather forecasting and severe weather / irrigation / crop monitoring advisories, with **Galileo**, **Copernicus** and **drone** data at its core.



Meteorological assimilation from Galileo and drones for agriculture



- **MAGDA SYSTEM CONCEPT:** Delivery of augmented weather forecasts and irrigation recommendations directly to farmers, enabled by a dedicated dashboard and APIs to interface with already existing Farm Management Systems.



Artificial intelligence applied to precision farming By the use of GNSS and Integrated Technologies

- Improve Europe’s **precision agriculture** with AI through a combination of innovative technologies
- **Synergies between** Global Navigation Satellite System (GNSS) and Earth Observation (EO) for more accurate and continuously available Precision Agriculture services.



**Greek Pilot
Peach orchards**

The pilot in Greece focuses on the full management of peach orchards, benefiting from the capability to overcome the limitation of EO and UAV data which cannot provide accurate results in orchards crops due to tree canopy shape.



**Portuguese Pilot
Tomatoes**

The pilot in Portugal focuses on the detailed management of diseases, speeding up the detection of diseases earlier during the growth period and delivering the ability to apply corrective measures earlier than without the use of GNSS services, i.e. before the harvest.

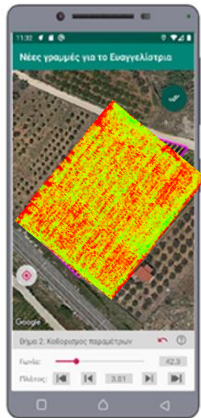


**Italian Pilot
Vineyards**

The pilot in Italy focuses on the management of 200 ha of vineyards, with a focus on being able to improve automatic guidance, decrease water usage and connect AgriBIT services to other management platforms.

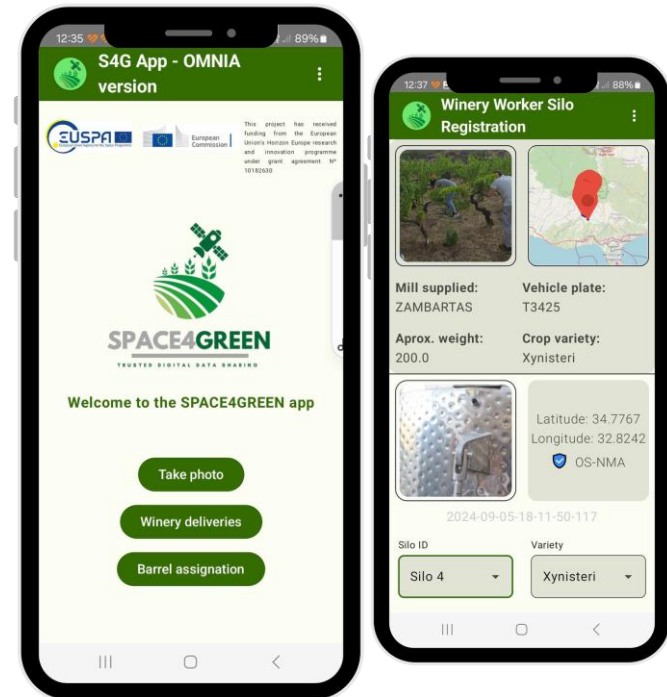
Project achievements in a nutshell

- 20-months piloting phase across Europe, validating improvements in agricultural practice
- **Eight precision agriculture services released**, combining expert agricultural knowledge with EO systems, and on-the-ground technologies including advanced sensors and artificial intelligence
- Improved quality of harvest → **less fertilization & pesticides, better use of water resources**



Traceability in agriculture through EU Space

- Transparency, Traceability, and Trust in Local Food Production [SI]
- Enhancing **CAP** Rules Monitoring and Auditing [ES]
- Transparency and Traceability of **Olive Oil** [ES]
- Traceability and Authenticity of **Wine** [CY]
- Environmental Sustainability Index of **Cotton production/Cultivation** [GR]
- Environmental Sustainability Index in **Vineyards** Cultivation [CY]



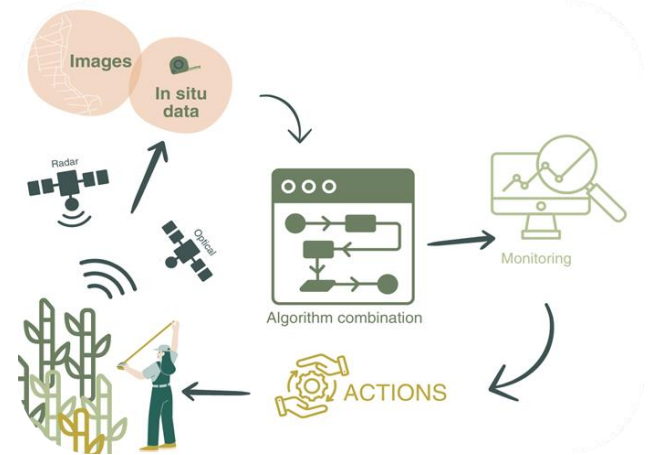
Implementing Smart Farming Applications using EO Data, Soil Sensors & Robotics



- Combining multi-level, multi-technology approaches, SQAT delivers high-resolution **soil property maps**.
- The SQAT system leverages Copernicus data, autonomous robot-mounted sensors, and innovative in situ analysis tools, to **enhance productivity and reducing costs**.
- Mapping and sampling of **soil at various levels and resolutions**
- **Services** to be developed: variable rate liming (VRL), variable rate seeding (VRS), variable rate macronutrient fertilisation (VRMF), variable depth tillage (VDT), and a carbon farming monitoring, reporting and verification solution.

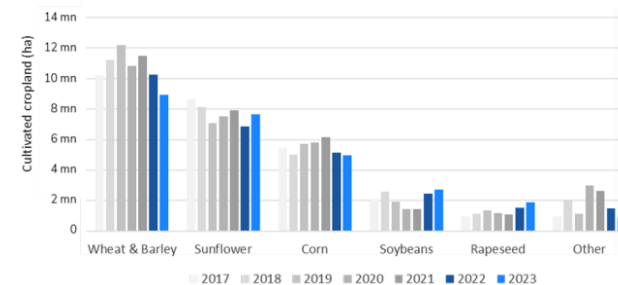
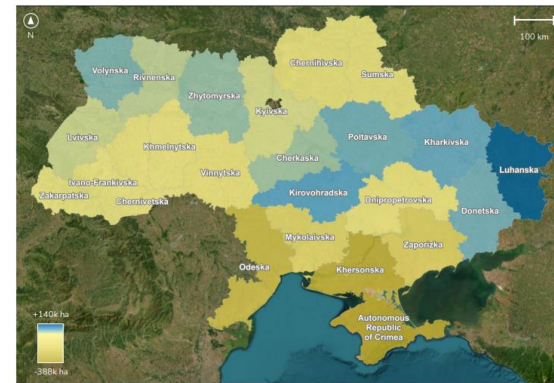
Bringing EU Space abroad

- **Internationalization** of EU Space Programme data and services
- Diagnostic tool that integrates optical, infrared and SAR data
- Locally adapted tool to support sugarcane crop management in Colombia
- Mills and farm managers test new biomass and anomaly products to reduce fertilizers and plan irrigation



Linkages with food security

- **Demonstrating how Copernicus data can be used** to quantify the impact of war in Ukrainian agriculture
- **Collaboration** with JRC and Ukrainian researchers to ensure data consistency with in-situ measurements
- Leveraging the **EUSpace4Ukraine industry Network** of innovators
- Output: EUSpace4Ukraine [White Paper](#) and an interactive [StoryMap](#)

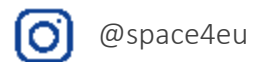




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