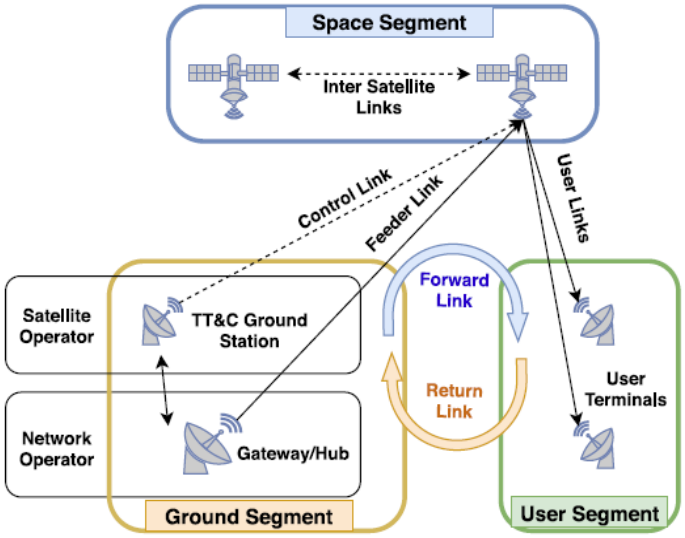
AGRARIAN: Space-Air-Ground Last Mile Infrastructure & Dynamic Programmable Distributed Environment For Edge Farming (https://agrarian-project.eu/)

Country	Contract value (€)	% carried out by Epsilon	No of staff provided	Client	Origin of funding	Date (start/end)	Consortium Members
Malta	4.997.726,25	5% 215.842,50	10	European Commission	EC Horizon HORIZON-CL6-2023-GOVERNANCE-01	1 January 2024 1 January 2027	14 Members

Description of the project



SatCom System Architecture

The AGRARIAN project focuses on creating an open, dynamic environment to enhance sustainability and competitiveness in agriculture. It leverages advanced technologies like edge computing, IoT, CubeSats, and cloud solutions to develop new tools and applications for real-time data processing. This project aims to improve agricultural operations through energy optimization, secure connectivity, and dynamic service deployment, ultimately supporting rural communities and agricultural stakeholders.
Agrarian objectives are:

- Assessment on last mile and edge technology application for sustainable farming and energy efficiency, to lower socio-economic and technological barriers.
- Deliver a hybrid network emulated environment and an ultra-reliable low-latency communications for all the use cases
- Realize a dynamic and programmable distributed ecosystem by establishing a seamless devise-edge-cloud layered environment able to support dynamic computing at the continuum.
- Distributed Intelligence- Edge AI and Governance.
- Provide a holistic agriculture decision support system (ADSS) for last mile connectivity and edge solutions supporting farms and rural development.
- Integration of Networks, Computing environment and Tools.
- Demonstrate the implementation of AGRARIAN solution for various stakeholders by close collaboration and continuous feedback

Services provided

For WP2: Requirements and system architecture

- Defined the technological roadmap for the Agrarian components.
- Provided a detailed analysis and requirements of the AGRARIAN technologies related to communications, data and apps for collecting and processing the appropriate information.
- Defined the approaches for the management of user accesses to various IT resources such as Cloud and Edge, applications, storage systems, and other services belonging to the AGRARIAN infrastructure.
- Produced the overall architecture and detailed technical specifications of the Agrarian ecosystem.

WP3: Open Programmable Platform and Hybrid Network Enablers

- Participated in the ADSS (Agriculture Decision Support System) tool development.
- Developed AI/ML enablers for last mile agricultural governance, leveraging CubeSats for remote sensing of agricultural land.

WP4: Operations & Application Scenarios Development

- Defined a comprehensive integration plan for the project.
- Developed and helped execute the Crete pilot leveraging UAVs for livestock monitoring.

WP6: Dissemination, Communication and Exploitation

- Designed and executed the overall exploitation roadmap for the Agrarian project.