



Harnessing the Power of Digital Technologies to Protect Plants & the Environment

D1.7: Results of cooperation with other projects and organisations

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Executive Summary

The deliverable D1.7, "Results of Cooperation with Other Projects and Organizations," has been developed within the framework of WP1 Project Management. This key document outlines the strategic framework for collaboration between STELLA and other aligned initiatives.

Task T1.5, "Cooperation with Other Projects" focuses on establishing partnerships between STELLA and other EU-funded projects, initiatives, and organizations that align with its core components, including plant disease modeling, AI-driven plant monitoring, disease detection using robotics, and proximal and remote sensing technologies.

The primary objective of this cooperation is to enhance the impact and outreach of each participating project by leveraging shared resources, expertise, and synergies. This cooperative approach will not only strengthen the outcomes of each project but also contribute to the broader goals of the field by fostering a culture of collaboration and shared learning.

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1 Introduction

1.1 Overview of the project

The STELLA project has developed a comprehensive report regarding the results of the cooperation with other EU-funded projects, initiatives, and organizations. The objective of this document is to detail the outcomes of a series of collaborative meetings and activities held with other relevant projects since the beginning of the project. This deliverable is a key document that analyses the STELLA project's cooperation potential with projects under a similar subject's umbrella and describes the results achieved through these cooperation efforts, offering comprehensive information on the coordination activities undertaken.

Recognizing the similarity in certain activities and expected outcomes of the aligned projects, there is an expectation that the consortia will collaboratively maximize efficiency and impact by fostering synergies. In particular, the cooperation will ensure efficient coordination of activities by:

- (a) regular information on the progress of each project and regular contacts and exchanges
- (b) joint participation in meetings at the request of the European Commission to promote results
- (c) potential coordination of activities and meetings, in particular dissemination and communication activities and
- (d) exchange of information (where appropriate) and consolidation of results (where relevant).

Additionally, STELLA commits to exploring collaboration with other pertinent EU projects and initiatives in this field, cultivating mutually beneficial synergies in collaboration with T6.2 Ecosystem Building and stakeholder engagement.

By documenting these efforts, this report aims to provide a clear understanding of how these collaborations have contributed to the overall objectives of STELLA.

1.2 Document scope

In the event of discrepancy between documents, this document is overruled by the Grant Agreement (GA) including its Annexes and the Consortium Agreement (CA) with its possible addendums.

2 Framework for Cooperation

2.1 Initiation of cooperation activities

T1.5, focused on "Cooperation with other projects," was introduced during the Grant Agreement Preparation phase for STELLA. The task, strategically placed within the Project Management (WP1), aims to facilitate synergies with pertinent EU projects and other initiatives. Specifically, the primary goal is to coordinate and create synergies with projects funded under the same thematic area. This coordination effort encompasses regular information exchange on project progress, joint engagement in Commission-requested meetings to enhance project visibility, potential alignment of activities (particularly in dissemination and communication, including joint policy recommendations), and fostering collaborative endeavours through the exchange and consolidation of results when applicable. The directive also encourages the project to explore potential collaborations with other relevant EU projects and initiatives within the broader field, emphasising the development of mutually beneficial synergies.

2.2 Purpose and core principles

This deliverable will provide the outcome of the collaborative efforts of STELLA with various relevant projects, in order to maximise efficiency and impact, by promoting synergies. The collaboration in particular ensures the efficient coordination of activities and communication and dissemination of results. This deliverable serves as a reference document among consortium partners, to be aware of and kept up to date with the project's plan and advancements on the coordination and synergies with other projects. It can be used as a documentation of the efforts completed, but also planned, ensuring synergies and collaborations with other research projects under topic HORIZON-CL6-2023-GOVERNANCE-01-16 '*Digital technologies supporting plant health early detection, territory surveillance and phytosanitary measures*', and other actions and initiatives, as well as to act as a reference document of the expectations and ideas for joint actions and collaborations. The main purpose of this report is to outline the basis for an effective strategy for the coordination and communication elements addressing the following questions:

- Raise awareness of projects and generate shared interest in looking beyond programme territory, thematic and partnerships.
- Establish cooperation between projects.
- Turn identified overlaps of project activities into an opportunity and build synergies across projects.
- Enhance cross-project collaboration, promoting mutual evaluation of project activities and outcomes.
- Promote and better communicate complementarities between STELLA and other project and initiatives.
- Join efforts on communication activities and dissemination of results among similar projects.

3 Cooperation with relevant projects

The STELLA project has been showcased in the annual meetings of four key EU-funded projects, playing a crucial role in building and strengthening collaborative networks. These presentations provided an opportunity to share STELLA's vision, progress, and innovative approaches facilitating a deeper integration with other relevant initiatives. By engaging with these projects, valuable connections were established, aligning the efforts with broader research goals, and explore opportunities for joint activities and resource sharing.

3.1 Cerberus

3.1.1 General information



Figure 1 CERBERUS logo

Project Name: Multiplatform field surveillance for integral crop health, early detection and actuation

Founding Agency: European Commission (EC)

Total Budget: € 4,891,830

Founding Program: HORIZON-CL6-2023-GOVERNANCE-01-16

3.1.2 Overview of the project

Cerberus will capitalize on early detection to reduce pesticide use and intelligent spray applications to sustainably eradicate pests at their early stages, when damage is reduced and the impact of treatments is high even with low spray rates. To do so, Cerberus will combine large-scale crop observation models enhanced by the high revisiting time and diversity of bands offered by Copernicus, with the high reliability of proximal sensing granted by IoT insect traps reporting at a daily basis, robot-based monitoring at less than 1 m from the crops, and the granularity resulting from citizen data using dedicated apps. Data coming from multiple sources will be merged through a cloud platform, which will produce risk maps and spraying recommendations for users by applying AI algorithms. The proposed concept and methodology of Cerberus has the potential to deploy an innovative crop surveillance system, enhanced by early detection in high-value crops to firmly step ahead in the effective application of sustainable phytosanitary measures and in the co-creation of crop protection policies.

3.2 ICAERUS

3.2.1 General Information



Figure 2 ICAERUS logo

Project Name: Innovations and capacity building in agricultural environmental and rural UAV services

Founding Agency: European Commission (EC)

Total Budget: €5,914,703.00

Founding Program: HORIZON-CL6-2021-GOVERNANCE-01-21

3.2.2 Overview of the project

The ICAERUS vision is to explore opportunities and provide a more complete and interconnected account of the potential and impact of drones as multi-purpose vehicles in EU agriculture, forestry and rural areas. The aim of ICAERUS is to showcase and support, through application, the effective, efficient and safe deployment of drones as well as, identify the risks and added values associated with their use. Large-scale multi-actor experiments and demonstration events to optimise, test and demonstrate drone technology and showcase multiple drone applications while assessing and reducing their associated risks. Use Cases will occur in 5 countries and span across the 5 most important sectoral and societal drone usage purposes: crop monitoring, drone spraying, livestock monitoring, forestry and biodiversity and rural logistics.

3.3 Smart Droplets

3.3.1 General information



Figure 3 Smart Droplets logo

Project Name: Accelerating the achievement of EU Green Deal goals for pesticide and fertiliser reduction through AI, data and robotic technologies

Founding Agency: European Commission (EC)

Total Budget: €3,175,475.25

Founding Program: HORIZON-CL4-2021-DIGITAL-EMERGING-01-09

3.3.2 Overview of the project

The Smart Droplets project focuses on supporting the further development of Smart Farming Technologies that are considered key-enablers for farmers to better monitor their crops and

reduce the use of chemicals (fertilizers and plant protection products) as well as to reduce Greenhouse Gases (GHG) emissions, to enable reaching the Green Deal targets towards reduction of agrochemicals. To this end, the Smart Droplets project introduces a novel approach for crop care tasks, by connecting key-technological aspects during open field spraying and is committed to advancing both hardware and software capabilities during the chemical application, in order to meet the sustainability scope of the EU Green Deal and the recently reformed Common Agricultural Policy (CAP). Smart Droplets' solution relies upon implementing the Autonomous retrofit tractors with Direct Injection System (DIS) for intelligent spraying - avoiding exposure of farmers to hazardous chemicals. Through the combination of high-level technologies (>TRL 7), Smart Droplets adopts a hybrid approach for spraying operations, combining Data/AI/Digital Farm Twin technologies designed to translate data into actionable information, and real-time data collected from Field demonstrators evaluating and demonstrating optimized technologies in the real environments. Ensuring replicability and uptake of digital technologies by deploying innovative tools, services, and recommendations while making them relevant and of practical use to farmers, advisors, and policymakers across Europe; Smart Droplets will test the solution on two diversified and complementary environments, namely apple orchards and wheat farms.

3.4 SHARInG-MeD

3.4.1 General Information



Figure 4 SHARInG-MeD logo

Project Name: Soil health and agriculture resilience through an integrated geographical information systems of Mediterranean drylands

Founding Agency: European Commission (EC)

Total Budget: €4,099,366.96

Founding Program: PRIMA call Section 1 – RIA – 2022

3.4.2 Overview of the project

SHARInG-MeD aims to integrate key soil traits, aligning with LUCAS and Soil4Africa projects, through extensive sampling in paired land uses and three key soil and crop improvement strategies: conservation agriculture, organic material addition, and microbial inoculation, with a focus on soil salinity. By building models that examine the interactions among environmental traits, management practices, and economic and environmental impacts, SHARInG-MeD seeks to create a comprehensive database of soil, agronomic, and environmental indicators. This innovative approach will provide harmonization models for soil properties and their

relationships with agricultural management, offering insights into nutrient flows, soil health, and economic sustainability in arid regions. The project also aims to promote improved soil management in drylands, foster dialogue among stakeholders, and develop exportable models to support sustainable agriculture, mitigate climate change, and reduce risks of soil degradation and desertification.

4 Cooperation meetings

The first cooperation meeting was held on the 27th of March 2024 alongside innovative projects Oper-8, BEATLES project EU, FUTURAL Project, ICAERUS EU, and Smart Droplets. The online event provided an excellent opportunity for collaboration discussions between the six ambitious projects. Inspiring presentations showcased each project's goals, followed by brainstorming sessions to explore potential joint activities and partner involvement.

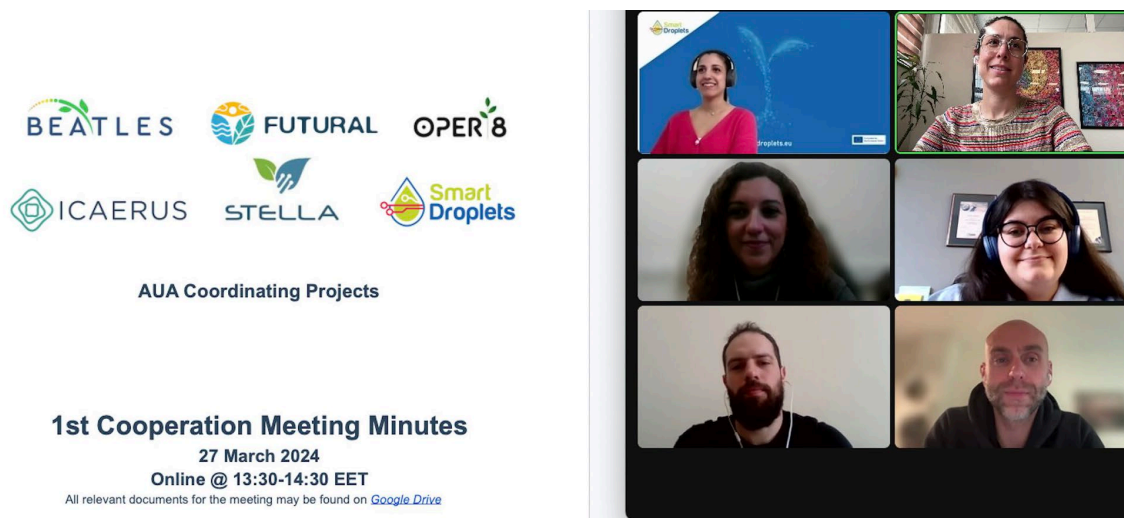


Figure 5 First Cooperation meeting

5 Conclusions and next Steps

During the first nine months of the STELLA project, numerous preliminary meetings and collaborative efforts were conducted with various EU-funded projects and organizations, laying a strong foundation for future cooperation. These collaborations spanned several key areas, including the sharing of technologies and data, planning joint pilot initiatives, establishing field testing sites, and co-participating in dissemination activities and conferences.

Looking ahead, STELLA plans to expand its network by connecting with projects utilizing digital tools for crop management, such as the Forsaid, Chameleon and Spade projects, by the end of 2024. The goal is to broaden collaboration, particularly as the project team prepares for key upcoming events: "Synergy Days" in Barcelona (October 14-15, 2024) and the "Cluster Event: Digitalisation for Farmers and Rural Communities" in Brussels (November 5, 2024). These engagements will not only strengthen existing partnerships but also open opportunities for collaboration with other related initiatives, ensuring that STELLA maximizes its outreach and cooperation with as many organizations as possible.