Innovation and Capacity building

in Agricultural Environmental and Rural UAV Services

ICAERUS

PUSH Open Call for Innovation Development (ID)

Open Call text

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1. Introduction

This document provides guidance information regarding the ICAERUS Open Calls, with a focus on PUSH Open Calls for Innovation Development (ID), including the eligibility and evaluation criteria. The document in its entirety and all associated Annexes must be read carefully for the submission of an application.

1.1 About ICAERUS

Drones are an efficient, flexible digital technology that can perform increasingly complex tasks without damaging the environment, however their widespread adoption across the agri-food sector has been limited by costs, knowledge gaps, regulatory and safety restrictions.

ICAERUS aims to tackle these challenges by **supporting and showcasing the effective, efficient, and safe deployment of drones in applicable settings** and to **identify risks and added values associated with their use**. The ICAERUS vision is to explore drone-based opportunities and provide a more complete and interconnected account of their potential and impacts as multi-purpose vehicles in EU agriculture, forestry and rural areas.

ICAERUS will utilize an **application-oriented approach** to explore multi-purpose drone use in 5 specific drone applications, representing the most important sectoral and societal drone usage purposes in Europe. ICAERUS also plans to use **research, technology optimization, demonstration, and drone education** to create an efficient, trusted, and safe environment for the **EU drone service market** to flourish contributing to the achievement of the EU's decarbonization, digitalization and resilience. ICAERUS will also produce several exploitable results that will offer extensive positive impact including the ICAERUS platform.

ICAERUS Use Cases are large-scale multi-actor experiments and demonstration events aiming to optimise, test and demonstrate drone technology and showcase multiple drone applications while assessing and reducing their associated risks. Use Cases will take place in 5 countries and span across the 5 most important sectoral and societal drone usage purposes:

1) **Crop Monitoring UC (Spain)**: a) **Demonstrate** the capacity of drones in disease and plant stress identification and weed detection in vineyards; b) **assess** drones as a 3D canopy reconstruction tool in vineyards, using aerial (top) with ground (side) image acquisition; c) **Develop** a user-friendly dashboard as a decision support system (DSS), for drone data analysis, visualisation and actions recommendations.
2) **Drone Spraying UC (Greece)**: a) **Test and assess** spraying configurations for optimal drone spraying applications in field conditions; b) **compare** the efficiency and environmental impact of existing conventional spraying to drone spraying practices; c) **Identify** risks and develop mitigation strategies related to drone-based plant protection applications.
3) **Livestock Monitoring UC (France)**: a) **Evaluate** drone solutions for monitoring different grazing cattle and sheep systems, building on existing and implemented solutions and avoiding duplication of effort; b) **assess** their labour-reduction capabilities for drone-based herd monitoring; c) **Examine** governance models and drone adoption barriers and drivers.
4) **Forestry and Biodiversity UC (Lithuania)**: a) **Monitor** forest tree health through the use of drones, satellites and data science; b) **identify and inspect** areas of potentially high fire risk; c) **Monitor ecosystems** and assess biodiversity and wildlife populations; d) **Evaluate** the capacity of drones to manage or prevent the expansion of infectious diseases affecting both feral and domestic animals.

5) **Rural Logistics UC (Greece & N. Macedonia)**: a) **Design and develop** an innovative drone-delivery fleet management system; b) **Automate** drone navigation operations by integrating state-of-the-art technologies; c) **Assess** three types of drones on delivery parcel size/weight and distance; d) **Implement** Drone as a Service (DAAS) model principles.

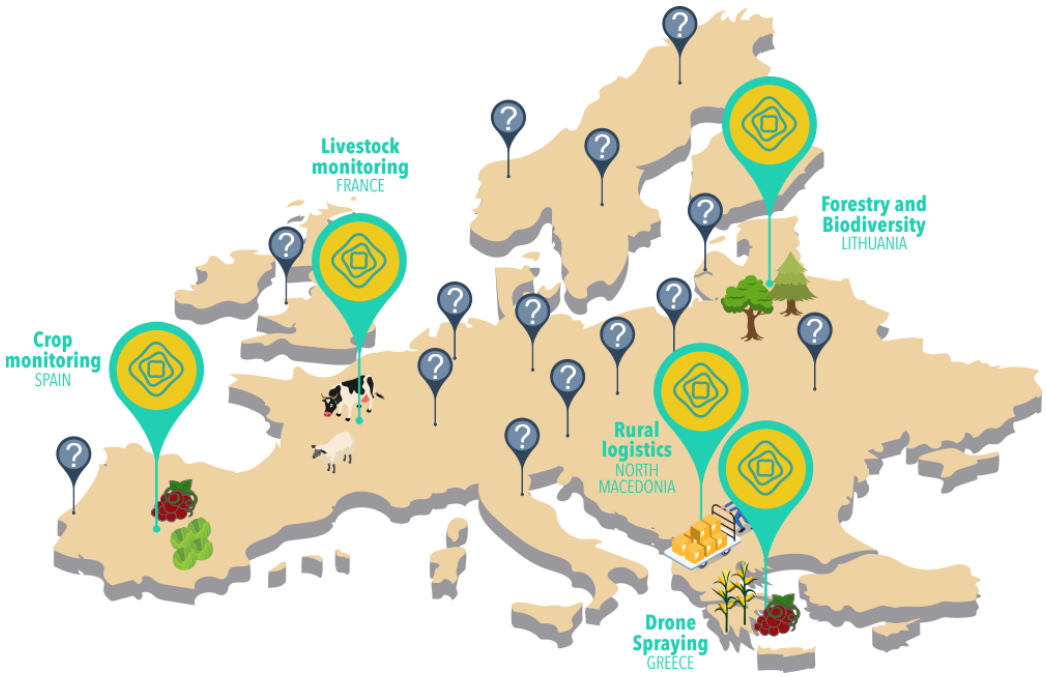

Figure 1: ICAERUS use cases

1.2 ICAERUS Open Calls

ICAERUS will build upon the existing network through the issue and promotion of two (2) types of Open Calls (PUSH/PULL) providing financial support to third parties, as a **mechanism to harvest ideas** and datasets from the ecosystem and **accelerate the formation of a European network** for the effective and efficient adoption of drone technologies. The Open Calls will include:

a) PUSH Open Calls for Innovation Development (ID) and
b) PULL Open Calls for Farming, Forestry and Rural Challenges (FFRC)

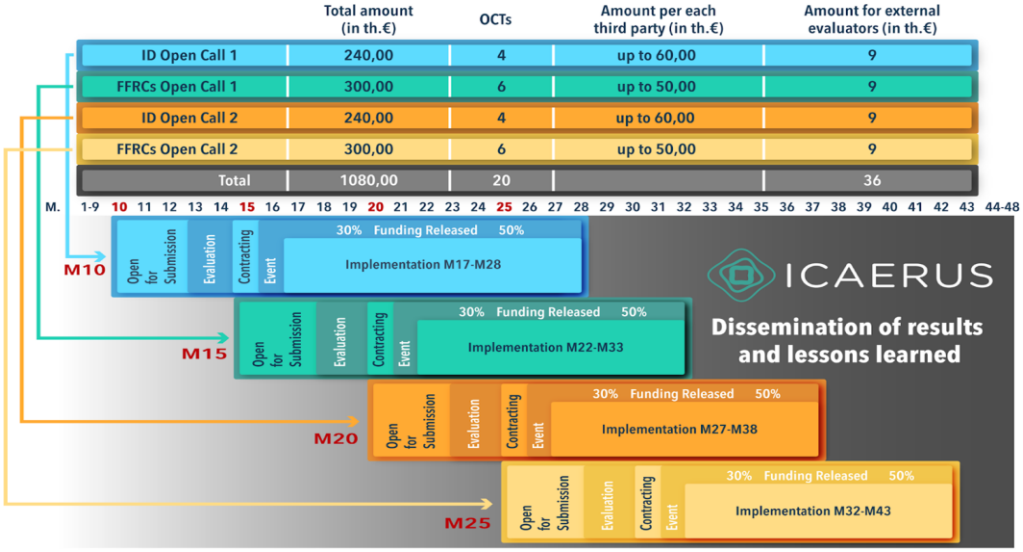

Figure 2 Graphical overview of Open calls

Both types of the Open Calls will have two release dates. In total, a **1,080,000 €** budget is allocated for financial support to third parties. The Open Calls will result in **8 PUSH Innovation Development winners** (480,000 € for ID – up to 60,000 € for each third party) and **12 PULL Farming, Forestry and Rural Challenges winners** (600,000 € for FFRC - up to 50,000 € for each third party). Each sub-project accepted will last for **12 months** and be divided into 3 phases: Design, Development and Market.

2. PUSH Open Call for Innovation Development (ID)

2.1 General Information

ICAERUS PUSH Open Calls for Innovation Development (ID) aim to attract **research and technology stakeholders (e.g., drone manufacturers, start-ups and SMEs exploiting innovative drone services and technologies, AI and IoT companies, research institutes)**, who can **either deliver and exploit drone-related data sets** which allow the assessment of technical and non-technical hypotheses or **develop ideas, concepts and prototypes**, which can then be introduced to the market.

The 2 PUSH ID calls will be initiated on M10 and M20 of the ICAERUS project respectively and after proposal submission and evaluation, the selected stakeholders will implement their idea between M17-M28 and M27-M38 respectively. The PUSH Open Calls will result **in 8 Innovation Development winners**. A total sum of **480,000 €** is dedicated to iterations of this type of open call, 240,000 € per iteration. Each winner may ask for up to 60,000 €.

The PUSH 1 Open Call for Innovation Development (ID) will be published on April 13th, 2023. It is planned to finance 4 winners in this call. The total sum for this iteration of the PUSH Open Call is 240,000 €, and each winner may ask for up to 60,000 €.

Table 1 PUSH 1 Open Call – application and selection timeline

	Activity	Date
Application and selection	Launch of the PUSH 1 Open Call	April 13th, 2023
	Deadline for submitting the proposals	July 11th, 2023
	Eligibility check	July 11th – July 20th, 2023
	Evaluation and selection	August 21st – September 30th, 2023
	Evaluation results and contracting	October 2023

Table 2 PUSH 1 Open Call – implementation timeline

	Activity	Date
Implementation	Phase 1 - Design	November 1st - December 31st, 2023
	Phase 2 - Develop	January 1st – July 31st, 2024
	Phase 3 - Market	August 1st – October 31st, 2024

2.2 Topics

Within ICAERUS PUSH Open Call for Innovation Development (ID), the following types of applications/solutions (but not limited to) are expected to be funded, while more details can be found in the ICAERUS PUSH Open Call Applicants' Guide:

- ***Innovative ideas that leverage drone technology and data sets*** *to address real-world problems and create value for society related to the use of drone technology and associated data sets.*
- ***Drone hardware and software development:*** *developing new hardware and software solutions to increase drone performance, extend flight time and improve data collection and analysis.*
- ***Data analysis and processing:*** *Developing new algorithms and techniques to process and analyse the data collected by drones, such as image recognition, machine learning and artificial intelligence.*
- ***Drone-based services:*** *developing new services that use drone technology, such as aerial photography, surveying, and inspection services.*
- ***Drone-based applications:*** *Developing new applications for drones, e.g., environmental monitoring, precision agriculture, disaster relief, infrastructure inspection, logistics and delivery, and security and surveillance.*
- ***Standards and regulations****: developing new standards and regulations for the safe and responsible use of drone technology, including privacy and security considerations.*

It is important to note that the list above is only indicative and that the applicants are encouraged to submit proposals based on their own ideas related to the topic of ICAERUS PUSH Open Calls. In order to be eligible, proposals need to address challenges in Rural Areas.

2.3 Eligibility criteria

ICAERUS PUSH 1 Open Call is aimed at (but not limited to) European drone manufacturers, SMEs and start-ups exploiting (big) data, AI and IoT companies, research institutes. Detailed eligibility criteria are described in ICAERUS PUSH Open Call Applicants' Guide, Section 3.2 Eligibility criteria. Overall eligibility criteria for the ICAERUS PUSH Open Calls are:

- Applicants need to be either an SME or Research Institute (see 3.2.1 and 3.2.2 of the ICAERUS PUSH Open Call for Innovation Development Applicants' Guide)
- The applicant must have a valid VAT number.
- Existing consortium members of ICAERUS project are not eligible for the Open Calls of ICAERUS.
- The proposal is delivered before the defined deadline, applying the requested submission procedure.
- Proposals shall only ask for funding for that part of the work that is not yet accomplished and will be carried out after having been selected for funding. Of course, this does not exclude the usage of e.g., results, IP, infrastructures or approaches already held by the applicants.
- Only one proposal per applicant can be selected for funding. Applicants that receive funding within one Open Call are not eligible to apply for additional funding in other ICAERUS Open Calls. In case an applicant submits more than one proposal within the same call and both (all) of them are shortlisted for funding, only the one will the highest score can be selected.

2.4 Submission procedure

The entry point for submitting of all proposals for ICAERUS Open Calls is the ICAERUS website, *https://icaerus.eu/open-calls/*.

Submissions received through any other channel will be automatically discarded.

Documents required in subsequent phases will be submitted via dedicated channels, which will be indicated by the ICAERUS consortium in the contracting phase.

In case multiple versions of the same application are submitted, only the last version will be evaluated.

2.5 Origin of funds

The funds provided through the Open Calls come directly from the funds of the Horizon Europe Project ICAERUS, which is funded by the European Commission under Grant Agreement Number 101060643.

In order to receive funding, any selected proposer will sign a dedicated Sub-Grant Agreement with the ICAERUS consortium.

More details on obligations of beneficiaries can be found in Chapter 5 of the PUSH Open Call Applicants' Guide.

3. Points of contact

For all the information related to ICAERUS Open Calls please state your question on FAQ section on the Open Call Hub/ICAERUS PUSH 1 OC Tab, *https://opencallhub.eu/*, or contact us at *icaerus@opencallhub.eu*.