Innovation and Capacity building

in Agricultural Environmental and Rural UAV Services

ICAERUS

PULL Open Call for Farming, Forestry and Rural Challenges (FFRC)

Open Call text

1. Introduction

This document provides information regarding the ICAERUS Open Calls, with a focus on PULL Open Calls for Farming, Forestry and Rural Challenges (FFRC), 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)

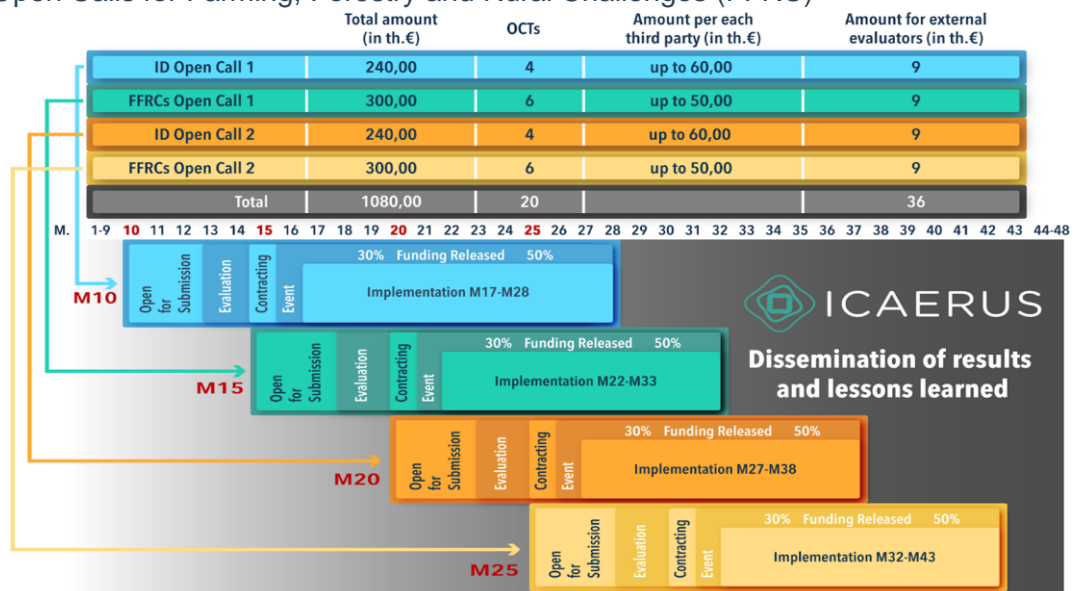|	Total amount (in th.€)	OCTs	Amount per each third party (in th.€)	Amount for external evaluators (in th.€)
ID Open Call 1	240,00	4	up to 60,00	9
FFRCs Open Call 1	300,00	6	up to 50,00	9
ID Open Call 2	240,00	4	up to 60,00	9
FFRCs Open Call 2	300,00	6	up to 50,00	9
Total	1080,00	20		36

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. PULL Open Call for Farming, Forestry and Rural Challenges (FFRC)

2.1 General Information

ICAERUS PULL Open Calls for Farming, Forestry and Rural Challenges (FFRC) aim to attract **end-users (agri-food producers, environmental monitoring entities and rural communities)** to utilize drones and services built around them for **individual commercial needs** (e.g., crop production, early warning systems…) and/or **community-related issues** (e.g., disaster risk reduction, forest/wildlife conservation, etc.).

The 2 PULL Open Calls for Farming, Forestry and Rural Challenges (FFRC) will be initiated on **M16** and **M25** of the ICAERUS project respectively and after proposal submission and evaluation, the selected stakeholders will apply the ICAERUS outputs to address their challenges between **M22-M33** and **M32-M43** respectively. The PULL Open Calls will result **12 FFRCs winners**. A total sum of **600,000 €** is dedicated to iterations of this type of open call, 300,000 € per iteration. Each winner may ask for up to 50,000 €.

The PULL 1 Open Call for Farming, Forestry and Rural Challenges (FFRC) will be published on October 17th, 2023. It is planned to finance 6 winners in this call. The total sum for this iteration of the PULL Open Call is 300,000 €, and each winner may ask for up to 50,000 €.

Proposals with the highest scores will be selected for funding. If more than one proposal shares the same score and is listed at the last place planned for funding, scores received for the criteria of iii) impact and exploitation, and i) concept and feasibility will be compared. If the scores are identical, scores received for ii) technology readiness and innovation development, and iv) organizational capacity, sufficiency in the applicant's background and allocation of resources will be compared. If a tie persists, an interview will be conducted with the applicants in question, with the participation of evaluators and the ICAERUS Open Call Advisory board.

The ICAERUS consortium, with the approval of the EC, retains the discretion to select a higher or lower number of applications than initially scheduled, which may impact the subsequent call.

Table 1 PULL 1 Open Call – application and selection timeline

	Activity	Date
Application and selection	Launch of the PULL 1 Open Call	October 17th, 2023
	Deadline for submitting the proposals	January 16th, 2024, 17.00 CET
	Eligibility check	Mid. January 2024
	Evaluation and selection	January - February 2024
	Evaluation results and contracting	February - March 2024

	Activity	Date
Implementation	Phase 1 - Design	April – May 2024
	Phase 2 – Develop	June – December 2024
	Phase 3 - Market	January – March 2025

2.2 Topics

Within ICAERUS PULL Open Call for Farming, Forestry and Rural Challenges (FFRC), the following types of applications/solutions (but not limited to) are expected to be funded, while more details can be found in the ICAERUS PULL Open Call Applicants' Guide:

- *Applying innovative solutions that leverage drone technology to address specific challenges faced by farmers, foresters, and rural communities.*
- *Sustainable agriculture, e.g., using drones to support regenerative farming methods, reduce the use of pesticides and fertilisers, and improve soil health.*
- *Logistics and supply chain management, e.g., for transporting goods and deliveries to remote areas, managing inventory and distribution, and monitoring supply chain operations using drones.*
- *Infrastructure monitoring and maintenance, e.g., using drones to inspect and maintain roads, bridges and other critical infrastructure in rural areas.*
- *Energy management, e.g., using drones to monitor and optimise renewable energy systems such as wind turbines and solar panels (agrivoltaics).*
- *Water management, such as the use of drones to monitor and manage water resources, including dams, reservoirs and irrigation systems.*
- *Public safety, such as the use of drones for crime prevention and law enforcement, disaster relief and response, and emergency medical services.*

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 PULL Open Calls. In order to be eligible, proposals need to address challenges in Rural Areas.

2.3 Eligibility criteria

ICAERUS PULL 1 Open Call is aimed at (but not limited to) European **agri-food producers, environmental monitoring entities and rural communities/cooperatives**. Detailed eligibility criteria are described in ICAERUS PULL Open Call Guidelines for applicants, Section 3.2 Eligibility criteria. Overall eligibility criteria for the ICAERUS PULL Open Calls are:

- Applicants need to be either an SME or rural community/cooperative (see 3.2.1 and 3.2.2 of the ICAERUS PULL Open Call for FFRC Guidelines for Applicants)
- The applicant must have a valid VAT number. However, in case having VAT number is not mandatory according to the national legislation of the applicant's country, a registration number from the respective national authority (National business registry, Commercial court or similar) must be provided.
- 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 ICAERUS 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 with the highest score could 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 an 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 PULL 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 PULL 1 OC Tab, *https://opencallhub.eu/*, or contact us at *icaerus@opencallhub.eu*.