



# SPADE

## Open Call #1

**OPENING:** 09 February 2024

**CLOSING:** 10 April 2024 at 17:00 (Brussels time)

**Project Website:** <https://spade-horizon.eu/>

**Open Call platform:** [https://bit.ly/SPADE\\_OC1](https://bit.ly/SPADE_OC1)

All the Open Call documents and templates available for download at

<https://spade-horizon.eu/open-call-1-applicants/>

V3.0 19/02/2024

## List of Acronyms

<b>OC</b>	OPEN CALL
<b>FIF</b>	FINANCIAL IDENTIFICATION FORM
<b>UAV</b>	UNMANNED AERIAL VEHICLES
<b>UCU</b>	UNIVERSAL CONSIDERATIONS ACROSS CASE STUDIES
<b>UCU-CH1</b>	UNIVERSAL CONSIDERATIONS ACROSS CASE STUDIES CHALLENGE 1
<b>UCU-CH2</b>	UNIVERSAL CONSIDERATIONS ACROSS CASE STUDIES CHALLENGE 2
<b>CStudy1</b>	CASE STUDY 1: OPEN-FIELD CASE STUDY INTEGRATION
<b>CStudy1-CH1</b>	CASE STUDY 1. CHALLENGE 1
<b>CStudy1-CH2</b>	CASE STUDY 1. CHALLENGE 2
<b>CStudy2</b>	CASE STUDY 2: FORESTRY CASE STUDY
<b>CStudy2-CH1</b>	CASE STUDY 2. CHALLENGE 1
<b>CStudy3</b>	CASE STUDY 3: LIVESTOCK CASE STUDY INTEGRATION
<b>CStudy3-CH1</b>	CASE STUDY 3. CHALLENGE 1

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## 1. Introduction

### 1.1 About SPADE project

SPADE is a project funded by the European Union under the Horizon Europe program through the HORIZON-CL6-2021-GOVERNANCE-01 call. SPADE comprises a consortium of 21 partners from 10 European countries. Initiated in September 2022, this project is scheduled to span a duration of 4 years and is under the coordination of the Centre for Research and Technology Hellas (CERTH) in Greece.

### 1.2 Objectives and Ambition of SPADE

The strategic objective of SPADE project is to develop an intelligent ecosystem to address the multiple purposes concept in the light of deploying unmanned aerial vehicles (UAVs alias drones) to promote sustainable digital services for the benefit of a large scope of end users in sectors of crop production, forestry, and livestock. This includes individual UAV usability, UAV type applicability (e.g., swarm, collaborative, autonomous, tethered), UAV governance models availability and UAV-generated data trustworthiness. Multi-purposes will be further determined in the sensing dataspace reusability based on trained Artificial Intelligence (AI)/Machine Learning (ML) models. These models will enable sustainability and resilience of the overall life cycle of developing, setting up, offering, providing, testing, validating, refining as well as enhancing digital transformations and “innovation building” services in agriculture. Pilot prototypes will contribute toward greater goals, such as the reduction of deforestation, precision farming and animal welfare.

3 Pilots Prototypes, one per domain (i.e., forestry, cropping and livestock farming), deploying 9 Test Cases combined with 2 Open Calls for up to 12 complementary small projects will contribute toward the goals of sustainable forestry and farming.

### 1.3 SPADE Approach

The SPADE project will take a multifaceted approach. First, it will create a digital ecosystem to address the multipurpose character of UAVs improving the accessibility and control of drone operations, making it easier to utilize UAVs effectively. This platform will also serve as a channel for value-added services enabled by drones. Second, SPADE will showcase three innovative case studies for drones, analyzing and quantifying the benefits at a detailed stakeholder level. These demonstrations will not only reveal new business opportunities but also help in examining the regulatory framework at both international and national levels.

### 1.4 SPADE Open Calls

SPADE is excited to announce the launch of two Open Calls, with a total budget of 720,000 EUR thoughtfully distributed between them, to finance up to 12 innovative projects. These Open Calls are a significant part of SPADE’s commitment to driving innovation in the field of drones for agriculture. In the following sections, we will provide detailed information about the Open Call #1 and how interested applicants can benefit from them.

## 2. SPADE Open Call #1: Open Innovation for Agriculture Drone Technology Advancement.

This Open Call represents a unique opportunity for innovators and visionaries to contribute to the evolution of drone technology in agriculture. SPADE is committed to fostering groundbreaking solutions that can reshape the agricultural landscape, and we are dedicating a budget of **360,000 EUR** to fund exceptional projects in this first call.

To foster a dynamic and thriving ecosystem in the agriculture drone technology sector, SPADE will conduct an Open Call for innovative solutions to identify and finance **six** of the most promising and ambitious Case Studies that will augment the capabilities of agriculture drone technology. To be eligible for funding through the SPADE Open Call, applicants must align their solutions with one of three distinct SPADE Case Study groups:

- 1. Open-Field Case Study Integration (Spain):** The open-field case study in Spain primarily focuses on distinct use cases in potato crops and terraced crops.
- 2. Forestry Case Study integration (Norway):** In Southern Norway SPADE will implement three forestry-based use cases: (1) a drone swarm for forest inventory, (2) a tethered drone for operational support of a wheeled forest harvester, and (3) a heavy-lift drone for implementing forest operations.
- 3. Live-stock Case Study integration (Greece):** The primary objective is to enhance and promote sheep breeding through grazing and health monitoring on the Greek island of Lesvos. It will utilize multi-purpose UAVs in various configurations, synchronized with SPADE platform digital twin services.

### 2.1 Addressing Pilot-Specific Challenges

SPADE's Open Call 1 is designed to invite applicants who can provide innovative solutions to address the specific challenges presented by each of our three distinct Case Studies. These Case Studies encompass various aspects of agriculture drone technology and aim to revolutionize the field in their respective domains.

Furthermore, in addition to the specific challenges of each Case Study, there are two overarching challenges that apply universally across all of SPADE's Case Studies initiatives. These general challenges have the potential to shape the landscape of drone technology in agriculture.

SPADE seeks to select and finance **one project for each challenge**, ensuring that the selected solutions align with our mission to enhance and promote sustainable and efficient practices in agriculture through the power of drone technology.

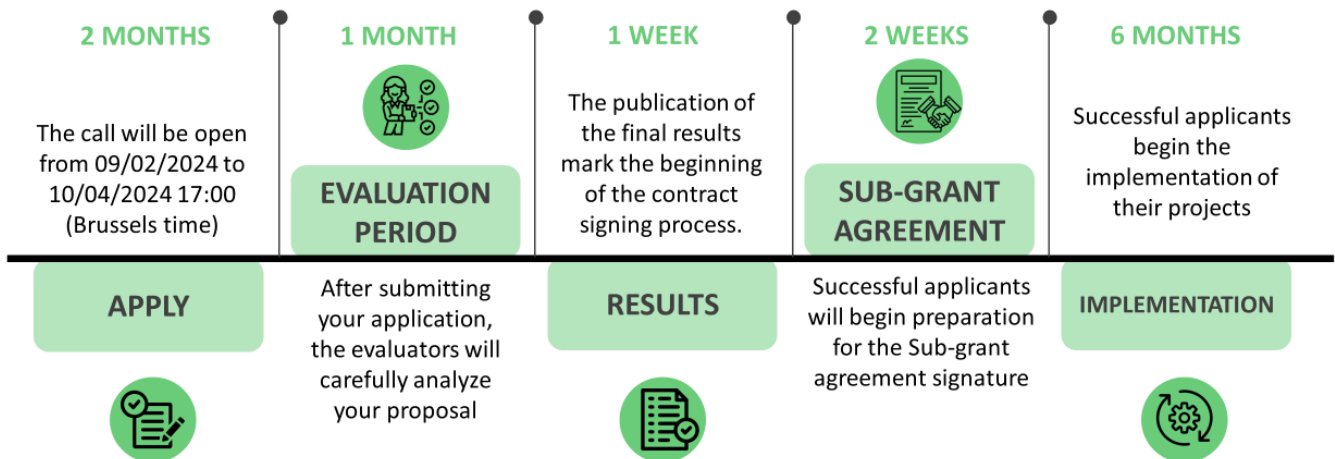
### 2.2 Key Details

**Total Budget:** The SPADE Open Call #1 has a total budget of 360,000 EUR, which will be allocated to support pioneering projects that align with our mission to advance agriculture drones.

**Project Duration:** Each selected project will have a duration of 6 months.

**Maximum Support to Third Parties:** the maximum budget that each project can receive is 60,000 EUR.

## 2.3 Relevant Dates



*Figure 1. Lifecycle of a funded proposal.*

### 2.3.1 Applications

- Opening: **09.02.2024**
- Deadline for submission: **10.04.2024, 17:00h (Brussels time)**
- Apply: via the [SPLORO platform](#)

### 2.3.2 Evaluation

- Evaluation period: Indicatively period to evaluate potential applicants. **11.04.2024 to 09.05.2024**
- Results: The publication of the evaluation's final results will be on **10.05.2024**, marking the beginning of the contract signing process.
- Legal validation and Sub-grant agreement: starting from **13.05.2024 to 24.05.2024**. Legal validation is applied exclusively to successful applicants and involves the submission of various documents to ensure compliance with the requirements of the SPADE project.

**To obtain further information about the evaluation process, kindly refer to Section 6 in this document.**



### 3. Challenges of Open Call #1

SPADE is initiating a comprehensive program that encompasses specific challenges in the domains of Open-Field Case Studies in Spain, Forestry Case Studies in Norway, and Livestock Case Studies in Greece. Through this call, we invite applicants to tackle tailored challenges for each Case Study, promoting innovation in agricultural practices, forestry management, and livestock breeding.

Furthermore, a series of overarching challenges applies across all Case Studies, fostering cross-disciplinary collaboration and addressing broader considerations crucial to the success of the SPADE project. Refer to the graphic below (Figure 2) for a visual representation of the call’s structure, outlining the unique challenges associated with each case and the universal considerations that unite them.

It’s important to note that all solutions must integrate into the SPADE platform. For more details, please refer to the Technical Annex ([Annex 1](#)).

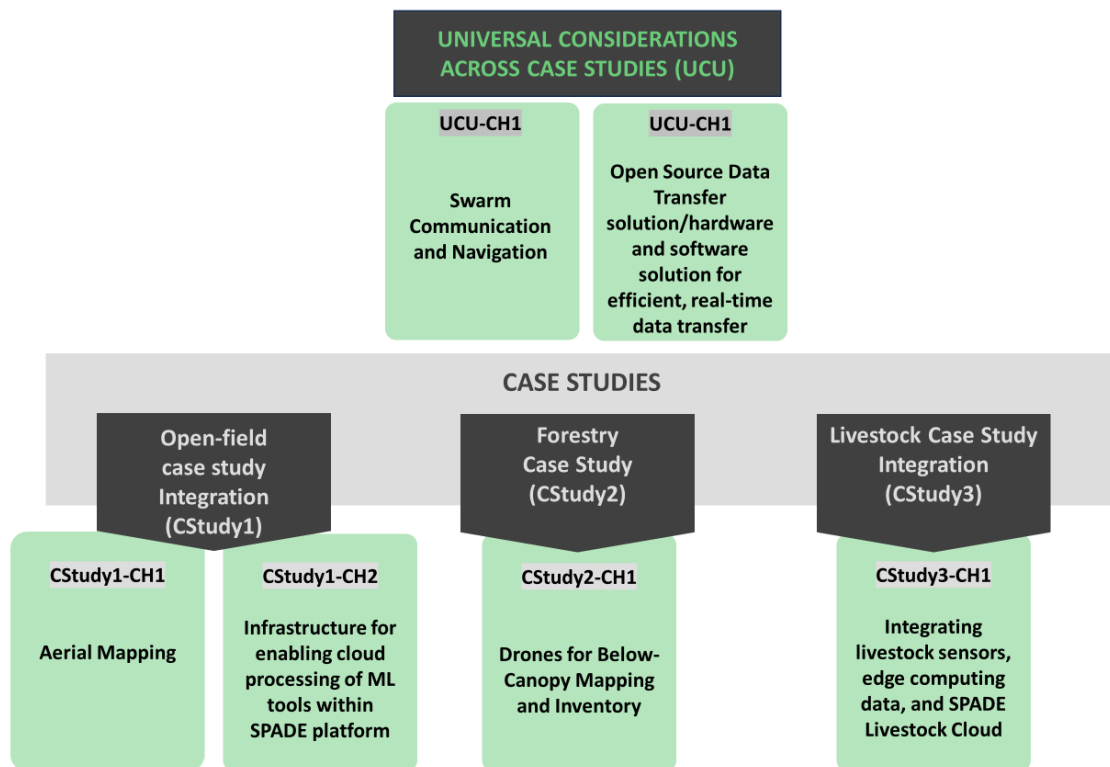


Figure 2. SPADE OC#1. Challenges.

#### 3.1 Universal consideration across case studies (UCU)

##### 3.1.1 UCU-CH1: Swarm communication and navigation.

This challenge revolves around the creation of a robust communication and navigation system designed to control and coordinate a swarm of drones efficiently. The technical requirements outlined for this challenge address various key aspects to ensure success in its implementation.

In this context, participants are tasked with designing a robust system that facilitates seamless interaction among drones, allowing them to communicate and navigate synchronously.

The aim is to optimize the integration of the system with the existing drone fleet, maximizing its performance and efficiency.

The proposal must consider the following deliverables for the project's development.

Challenge	Objective	Deliverables		
		Month 1	Month 3	Month 6
<b>UCU-CH1:</b> Swarm communication and navigation.	System for efficient communication and navigation of drones in a group.	<b>Initial Report</b>	Drone Swarm Data Transfer Performance Prototype	Drone Swarm Navigation Prototype
			<b>Interim Report</b>	<b>Final Report</b>

**Month 1 deliverables**

- **Initial Report:** An initial report should describe the planned methodologies, timelines, as well as key performance indicators (KPI) used throughout the project.

**Month 3 deliverables**

- **Drone Swarm Data Transfer Performance Prototype:** Prototype of a drone swarm communication and analysis on the performance of the data transfer.
- **Interim report:** Report on the fulfilment of KPIs for the mid-term review.

**Month 6 deliverables**

- **Drone Swarm Navigation Prototype:** Prototype of a drone swarm navigation and coordination algorithms.
- **Final report:** Report on the fulfilment of KPIs for the final review.

For specific technical details regarding the implementation and requirements, it is recommended to refer to the [Technical Annex \(Annex 1- Section 3.1.1\)](#). This document provides detailed information to guide participants in the completion of this challenge in swarm communication and navigation.

**3.1.2 UCU-CH2: Open-Source Data Transfer solution/hardware and software solution for efficient, real-time data transfer.**

This challenge revolves around creating a comprehensive solution for efficient real-time data transfer. The primary objective is to develop a solution that facilitates data transfer during flight from drones equipped with ROS or commercial drones supporting open connectivity to the SPADE platform. The proposed solution must be specifically tailored for open SDK commercial drones or ROS-enabled drones, ensuring seamless integration with these devices.

The solution should include a hardware box for data handling and transmission.

The proposal must consider the following deliverables for the project's development.

		Deliverables		
Challenge	Objective	Month 1	Month 3	Month 6
<b>UCU-CH2:</b> Open Source Data Transfer solution/hardware and software solution for efficient, real-time data transfer.	Develop a hardware and software solution for efficient, real-time data transfer from ROS enabled, or commercial drones that support open connectivity, to the SPADE platform during flight.	<b>Initial Report:</b> An initial report should describe the planned methodologies, timelines, as well as key performance indicators (KPI) used throughout the project.	<b>Preliminary Hardware Design</b>	<b>Final Hardware Design</b>
			<b>Initial Software Prototype</b>	<b>Testing and Optimization</b>
			<b>Interim Report</b>	<b>Final Report</b>

**Month 1 deliverables**

- **Initial Report:** An initial report should describe the planned methodologies, timelines, as well as key performance indicators (KPIs) used throughout the project.

**Month 3 deliverables**

- **Preliminary Hardware Design:** Schematics and preliminary design of the hardware box intended for handling and transmitting data from open SDK commercial drones or ROS-enabled drones.
- **Initial Software Prototype:** An initial version of the software demonstrating integration with the drone API for basic data extraction.
- **Interim report:** Interim report should describe algorithm development, progress, challenges and prospective solutions, as well as presenting the remaining work and timelines.

**Month 6 deliverables**

- **Final Hardware Design:** Specifications and final design of the hardware box, considering adjustments and improvements made during development.
- **Testing and Optimization:** Results from comprehensive system testing, along with details about any optimizations made to enhance performance.
- **Final report:** Final report must document the developed hardware and software modules. It should report on system testing and KPIs fulfilment.

To obtain more technical details regarding the implementation and specific requirements, we invite applicants to consult the [Technical Annex \(Annex 1- Section 3.1.2\)](#).

**3.2 Case Study. Challenges (CStudy)**

**3.2.1 CStudy1: Open-field case study integration.**

SPADE aims to address the complex challenges facing the agricultural sector, particularly those related to environmental sustainability and socio-economic factors. With a focus on leveraging drone technology, SPADE aims to conduct thorough testing and analysis in the Balearic Islands, Spain.

The objectives of the open-field case study include:

- evaluating the application of drones in fruit and crop farming,
- streamlining tasks for farmers in the fields, and
- providing valuable insights for agronomic decision-making in the management of fields and crops.

To achieve these objectives, intuitive and user-friendly tools are required for the accurate processing and analysis of data and images captured by the drones.

**3.2.1.1 CStudy1-CH1: Aerial mapping**

The challenge within the SPADE project is designed to enhance the platform’s capabilities by incorporating a user-friendly drone mapping solution. The primary objective is to process photogrammetry data from drones, export the relevant orthomosaics and produce maps of desired resolution based on the user preferences that contribute to a comprehensive understanding of developmental changes within a studied region.

The challenge focuses on integrating the solution into the SPADE platform. This solution should be capable of processing photogrammetry data from drones, generate the relevant orthomosaics, and provide the ability to export maps of vegetation and other indices (NDVI, NDRE, etc.).

The proposal must consider the following deliverables for the project’s development.

Challenge	Objective	Deliverables		
		Month 1	Month 3	Month 6
CStudy1-CH1: Aerial mapping	To integrate a drone photogrammetry data processing solution into the SPADE platform, for facilitating comprehensive regional overview.	Initial Report	Basic Software Prototype	Full Software Version
			Map Generation.	Final Report
			Interim Report	

**Month 1 deliverables**

- **Initial Report:** An initial report should describe the planned methodologies, timelines, as well as key performance indicators (KPIs) used throughout the project.

**Month 3 deliverables**

- **Basic Software Prototype:** An initial version of the software demonstrating the ability to export files in various formats.
- **Map Generation:** Basic user interface for map generation.
- **Interim report:** Report on the fulfillment of KPIs for the mid-term review.

**Month 6 deliverables**

- **Full Software Version:** Fully functional software that meets all requirements, including orthomosaics generation, map creation, and file export.
- **Final report:** Report on the fulfillment of KPIs for the final review.

To obtain more technical details regarding the implementation and specific requirements, we invite applicants to consult the [Technical Annex \(Annex 1- Section 3.2.1.1\)](#).

**3.2.1.2 CStudy1-CH2: Infrastructure for enabling cloud processing of ML tools within SPADE platform.**

This challenge aims to develop a comprehensive infrastructure that enables the efficient execution of trained artificial intelligence (AI) algorithms within the SPADE platform. This infrastructure will provide a versatile environment for data processing, allowing users to easily implement, execute, and evaluate AI algorithms.

**Key Highlights:**

- **Adaptable Computing Platform:** A robust computing platform will be created to facilitate the implementation of AI algorithms. This platform will support hosting both internally developed algorithms and those provided by third parties through a user-friendly interface.

- **Versatile Data Processing:** The infrastructure will handle various types of data, including images, time series, and acoustic data. This flexibility allows users to work with different datasets according to their specific needs.
- **Assessment and Feedback:** AI algorithm results will be presented clearly and accessibly. Users can receive detailed assessments, which can be transferred to end-users or external stakeholders.
- **Multi-Algorithm Support:** The platform will enable users to leverage a variety of AI algorithms. This capability allows the selection and execution of different models based on specific task requirements.

The proposal must consider the following deliverables for the project's development.

		Deliverables		
Challenge	Objective	Month 1	Month 3	Month 6
<b>CStudy1-CH2:</b> Infrastructure for enabling cloud processing of ML tools within SPADE platform	Develop the required infrastructure to be embedded within the SPADE platform in order to support and facilitate the run of trained AI algorithms.	<b>Initial Report</b>	Infrastructure Prototype	Full Software Version and Development Tools
			REST API for Third-Party Algorithm Processing	AI Model Development Toolkit
			<b>Interim Report</b>	<b>Final Report</b>

**Month 1 deliverables**

- **Initial Report:** An initial report should describe the planned methodologies, timelines, as well as key performance indicators (KPIs) used throughout the project.

**Month 3 deliverables**

- **Infrastructure Prototype:** An initial version of the computing platform infrastructure capable of running AI algorithms.
- **REST API and web sockets (or similar technologies) for Third-Party Algorithm Processing:** Capability to run third-party algorithms via REST API and web sockets (or similar technologies) on image data or other types of data.
- **Interim report:** Report on the fulfilment of KPIs for the mid-term review.

**Month 6 deliverables**

- **Full Software Version and Development Tools:** Fully functional software with an intuitive interface for the development and evaluation of AI models.
- **AI Model Development Toolkit:** Development tools for end-users to develop and evaluate AI models.
- **Final report:** Report on the fulfilment of KPIs for the final review.

For specific technical details regarding the implementation, hardware, and software used, it is recommended to refer to the [Technical Annex \(Annex 1- Section 3.2.1.2\)](#).

### 3.2.2 CStudy2: Forestry Case Study

The forestry case study within the SPADE project represents a significant step towards the broader and more efficient use of Unmanned Aerial Vehicles (UAVs) in the forestry sector. This innovative approach aims to analyze and test the use of drones in three specific use cases, all located in the southeastern part of Norway.

This case study not only seeks to improve operational efficiency and sustainability in forestry management but also to set a precedent for the widespread application of advanced technologies in the forestry industry. As SPADE progresses in the analysis and testing of drone use in this context, it is expected to contribute significantly to the sustainable future of the forestry sector in Norway and beyond.

#### 3.2.2.1 CStudy2-CH1. Drones for Below-Canopy Mapping and Inventory

The challenge “**Drones for Below-Canopy Mapping and Inventory**” within the context of the Forestry Case in the SPADE project addresses fundamental challenges associated with the flight of small drones beneath the forest canopy. This case plays a key role in exploring sustainable digital services for the forestry sector. In general terms, the goal is to develop advanced technologies and open-source solutions to enhance forestry management, ensuring the efficient and sustainable use of drones in this critical environment. The specific objective is the creation of a robust **SLAM (Simultaneous Localization and Mapping)** and obstacle avoidance system designed for drones operating beneath the forest canopy, ensuring precise mapping and safe navigation.

This challenge aligns with the overarching vision of the SPADE project, aiming to advance sustainable digital solutions in forestry management.

The proposal must consider the following deliverables for the project's development.

Challenge	Objective	Deliverables		
		Month 1	Month 3	Month 6
<b>CStudy2-CH1:</b> Drones for Below-Canopy Mapping and Inventory	Develop a robust Simultaneous Localization and Mapping (SLAM) and obstacle avoidance system for drones operating beneath the forest canopy. The system aims to autonomously and safely map the forest's trees and ground contents.	<b>Initial Report</b>	Algorithm Prototype	System testing and validation
			<b>Interim Report</b>	Codebase delivery
				<b>Final Report</b>

#### Month 1 deliverables

- **Initial Report:** An initial report should describe the planned methodologies, timelines, as well as key performance indicators (KPI) used throughout the project.

#### Month 3 deliverables

- **Algorithm Prototype:** An initial version of the developed SLAM algorithm must be presented and demonstrated. At this stage, all main components of the algorithm should be in place, but minor components may be lacking. Demonstration can be performed in a simplified environment, or in simulation.
- **Interim Report:** Interim report should describe algorithm development, progress, challenges and prospective solutions, as well as detailing the remaining work and timelines.

#### Month 6 deliverables

- **System testing and validation:** The developed system should be implemented on the small drones developed by SDU and validated by successfully navigating a set of waypoints through a Scots pine forest in Norway, avoiding collisions and accurately generating required maps and point cloud data.



- **Codebase delivery:** Full codebase must be made open-source and be thoroughly documented.
- **Final Report:** Final report must document the developed method and modules. It should report on system testing and KPIs fulfilment.

For specific technical details regarding implementation and requirements, we recommend consulting the [Technical Annex \(Annex 1- Section 3.2.2.1\)](#). This document will provide detailed information and guidance for those interested in participating in this strategic challenge, contributing to technological advancement in the use of drones in the forestry sector.

### 3.2.3 CStudy3: Livestock Case Study Integration

The Livestock Case Study in Lesvos, within the SPADE project, focuses on the implementation of drone technology to enhance livestock management on the Greek island. With a substantial sheep population and mountainous terrain, the primary goal is to utilize multipurpose drones for monitoring health, grazing, and managing environmental risks.

These drones, supplied by project partners, will be equipped with advanced sensors and cameras, including artificial intelligence (AI) and machine learning (ML) technologies. The case study spans from early detection of diseases in livestock to surveillance of grazing areas, providing a comprehensive approach to improving productivity and sustainability in sheep farming on Lesvos.

#### 3.2.3.1 CStudy3-CH1: Integrating livestock sensors, edge computing data, and SPADE Livestock Cloud

This challenge within the SPADE project focuses on developing a comprehensive real-time monitoring solution that combines edge computing tools, wearable transceivers, and intelligent sensors and cameras embedded in UAVs (unmanned aerial vehicles). The main objective is to detect the status of animals in relation to health, grazing, and environmental risks, such as intruders and predators, thereby contributing to the use cases of the SPADE Livestock set.

The proposal must consider the following Work Plan and deliverables for the project's development.

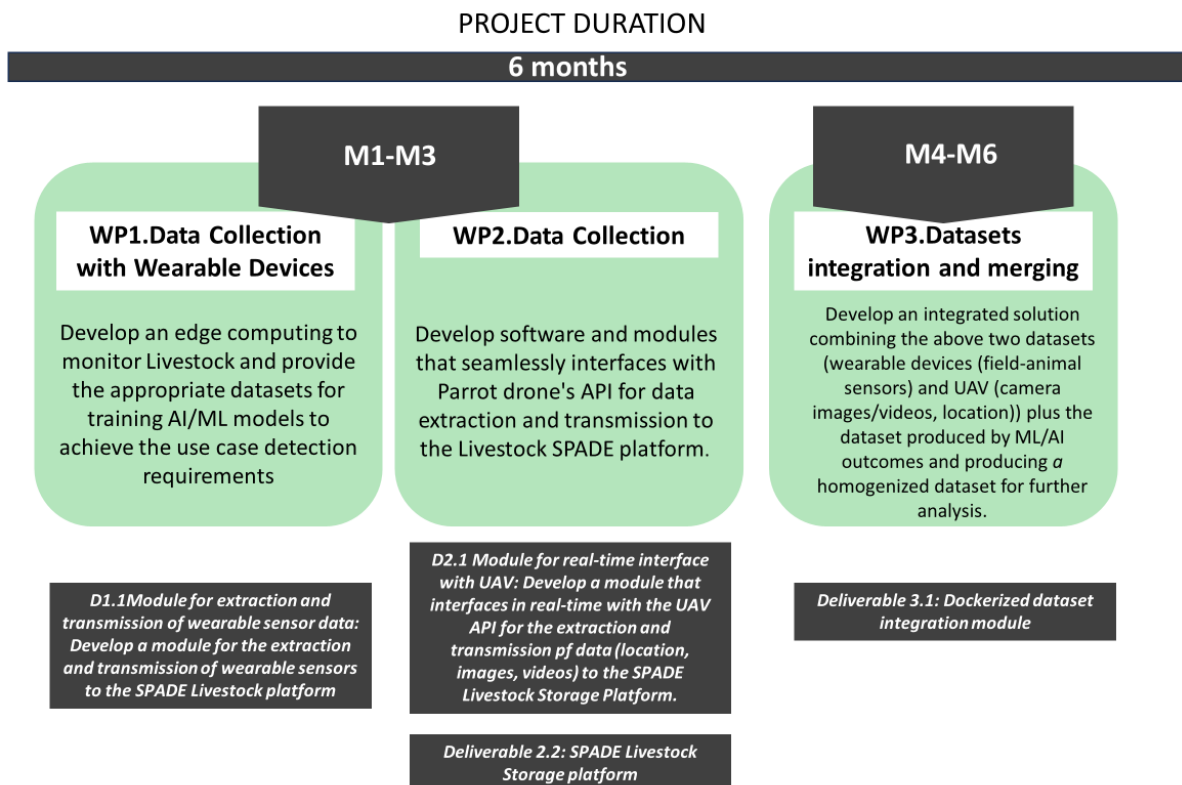


Figure 3. CStudy3-CH1. Work Plan (WP)

Challenge	Objective	Deliverables		
		Month 1	Month 3	Month 6
<b>CStudy3-CH1:</b> Integrating livestock sensors, edge computing data, and SPADE Livestock Cloud	Develop a real-time monitoring solution with edge computing, wearables, and UAV sensors to detect the health and behavior of animals in SPADE Livestock.	<b>Initial Report</b>	Module for extraction and transmission of wearable sensor data.	<b>Module for dataset integration.</b>
			Module for real-time interface with UAV.	
			SPADE Livestock Storage Platform.	<b>Final Report</b>
			<b>Interim Report</b>	

**Month 1 deliverables**

- **Initial Report:** An initial report should describe the planned methodologies, timelines, as well as key performance indicators (KPI) used throughout the project.

**Month 3 deliverables**

- **Module for extraction and transmission of wearable sensor data:** Develop a module for the extraction and transmission of wearable sensors to the SPADE Livestock platform.
- **Module for real-time interface with UAV:** Develop a module that interfaces in real-time with the UAV API for the extraction and transmission of data (location, images, videos) to the SPADE Livestock Storage Platform.
- **SPADE Livestock Storage Platform:** Develop a module that implements a Video live streaming cloud file server and stores drones UAV's data (images, videos)
- **Interim Report:** Report on the fulfillment of KPIs for the mid-term review.

**Month 6 deliverables**

- **Module for dataset integration:** Develop an integrated solution (dockerized) combining the two datasets (wearable devices (field-animal sensors) and UAV (camera images/videos, location)) plus the dataset produced by ML/AI outcomes and producing a homogenized dataset for further analysis.
- **Final Report:** Report on the fulfillment of KPIs for the final review.

For specific technical details regarding implementation and requirements, we recommend consulting the [Technical Annex \(Annex 1- Section 3.2.3.1\)](#).

### 3.3 Technology Readiness Level (TRL)

In the context of the SPADE project, the Technology Readiness Level (TRL) plays a significant role in evaluating the maturity of proposed solutions.

Applicants have the flexibility to determine the TRL at which they will initiate and aim to reach throughout the project; however, it is crucial to consider that challenges involving operational risks, such as swarm navigation and control, may require higher TRLs.



The selection process will favor proposals demonstrating a higher level of maturity, especially those with the potential to achieve elevated TRLs to effectively address SPADE's challenges. Striking a balance between innovation and practical implementation is essential, ensuring that proposed solutions align with the overall objectives and operational requirements of the SPADE project.

In SPADE, only the definition of TRL levels according to the [European Commission](#) will be considered.

TRL 1 – basic principles observed

TRL 2 – technology concept formulated

TRL 3 – experimental proof of concept

TRL 4 – technology validated in lab

TRL 5 – technology validated in relevant environment (industrially relevant environment in the case of key enabling technologies)

TRL 6 – technology demonstrated in relevant environment (industrially relevant environment in the case of key enabling technologies)

TRL 7 – system prototype demonstration in operational environment

TRL 8 – system complete and qualified

TRL 9 – actual system proven in operational environment (competitive manufacturing in the case of key enabling technologies; or in space)

## 4. Eligibility criteria

This section will present the eligibility criteria to be eligible for SPADE's Open Call 1.

### 4.1 Eligible countries

Only applicants legally established/resident in any of the following countries (hereafter collectively identified as the “Eligible Countries”) are eligible for funding:

- The Member States (MS) of the European Union (EU), including their outermost regions;
  - In the case of Hungary, although it is an MS of the EU, according to Council Implementing Decision 2022/2506, no legal commitments should be entered into with any public interest trust established based on the Hungarian Law IX of 2021 or with any entity maintained by said public interest trust.
- Horizon Europe associated countries: according to the updated [list published by the EC](#)

### 4.2 Eligible beneficiaries

The European eligible entities by SPADE open call should be legally identified under the following categories of organisations:

- **Universities and research centers:** academic and research institutions. It's important to note that within a department, multiple research groups exist, and while different groups from the same department can apply, it's crucial that individuals are not concurrently members of multiple research groups to ensure equitable allocation of resources and dedication to their respective research pursuits.
- **NGOs and foundations:** non-profit organizations and foundations with experience in drone applications development.
- **SMEs and startups:** small and medium-sized enterprises and startups that focus on developing innovative solutions related to SPADE case studies.

**Natural persons, mid-caps or large industries or corporations are not eligible for the purpose of the call.<sup>1</sup>**

### 4.3 Legal definition for beneficiaries.

From a legal perspective, beneficiaries should be identified as established legal entities in any of the eligible countries in the call.

In the case of companies only **SMEs** are eligible.

SME will be considered as such if complying with the European Commission Recommendation 2003/361/EC<sup>16</sup> and, the SME user guide<sup>17</sup>. In a summary, the criteria which define an SME are:

- Independent (not linked or owned by another enterprise), by Recommendation 2003/361/EC.
- Headcount in Annual Work Unit (AWU) less than 250.
- Annual turnover less or equal to 50 million EUR OR annual balance sheet total less or equal to 43 million EUR.

**Natural persons, mid-caps or large industries or corporations are not eligible for the purpose of the call.**

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<sup>1</sup> The exclusion of natural persons, medium-sized and large industries, or corporations for the purpose of the call is based on the legality established in the call to which SPADE responds HORIZON-CL6-2021-GOVERNANCE-01, as well as on what is also established in Grant Agreement No. 101060778.

## 5. Proposal submission process

The submission will be done through the official online submission [SPLORO platform](#), which is directly linked to the [SPADE website](#). Only applications received directly through the online submission platform will be considered eligible.

We will provide applicants with an editable template of the application form ([see Annex 2](#)) to let them prepare the application offline before introducing the information in the form available at the [SPLORO platform](#). **Sending this form template in any other format and via e-mail or any other means will automatically disqualify the submission.**

If the applicant discovers an error in a submitted application or aims to improve the application, and provided the call deadline has not passed, the applicant may submit a new version. For this purpose, the applicant must contact the SPADE open call managers to re-open the application. Applicants will be able to modify all questions of the application form as many times as needed until the deadline. Please be aware that once opened, the applicants should send the form again, or it will not be evaluated. Once resubmitted, only the last version received before the call deadline will be considered in the evaluation.

SPADE offers a dedicated support channel available for applicants at [spade@SPLORO.eu](mailto:spade@SPLORO.eu). Requests will receive a response within 72 hours of their submission. While all possible effort will be made to respond in a timely manner, the teams should plan their submissions, accordingly, allowing enough time before the deadline (i.e., at least 72 hours prior) if they expect an answer. Lack of the receipt of an answer to an enquiry shall not constitute grounds for extension or re-evaluation of a submission. Requests or inquiries about the submission system or the call itself, received AFTER two days before the closure time of the call will neither be considered nor answered.

### 5.1 Application preparation

For the successful submission, applicants are strongly advised to follow these steps:

- Check the guidelines for applicants to determine if your organisation is eligible for the project.
- Applicants are required to apply online and answer all mandatory questions (with no exception) at: [https://bit.ly/SPADE\\_OC1](https://bit.ly/SPADE_OC1). Moreover, applicants must submit all the requested documents established in the call. The lack of any of the documents will negatively affect the eligibility of the applicant for the evaluation process. In addition, note that certain documents - which will be required for each applicant selected for the project and signing a sub-grantee agreement - may take time to acquire. It is highly advisable that you read the *Section: Sub-grant agreement preparation* and take into consideration the time needed to obtain these documents.
- Be concrete and concise. Open questions have character limitations.
- Please examine all the open call documents and attend the various online events promoted by the SPADE project in order to be prepared. Please, mark your calendars for our upcoming InfoDay and Technical Webinars:
  - **1<sup>st</sup> InfoDay**. 22.02.2024
  - **Technical Webinar 1**. 29.02.2024. CStudy2: Forestry Case Study.
  - **Technical Webinar 2**. 05.03.2024. Universal consideration across case studies (UCU)
  - **Technical Webinar 3**. 07.03.2024. CStudy 1: Open-field case study integration.
  - **Technical Webinar 4**. 12.03.2024. CStudy 3: Livestock Case Study Integration

**The webinars will be recorded and made available on the [SPADE website](#). Additionally, the applicant will have access to a [FAQs](#) document that will be updated weekly on the website. This update will be based on the questions received through the helpdesk and during the webinars.**

- Only the submission within the Open Call duration will be accepted. There will not be any deadline extensions unless there is a Force Majeure situation (i.e., a major problem with the platform caused by the SPADE consortium and not by the applicants, making the system unavailable for a long period). - It is strongly advised not to wait until the last minute.

- You may request to resubmit your proposal after the initial submission by seeking support from the helpdesk. Please note that to reopen a proposal, candidates are required to complete the resubmission process before the set deadline. When a proposal is reopened, it is reverted to draft status, necessitating a new submission. Failure to resubmit will result in the proposal not being evaluated.
- Resubmission requests will be answered up to two hours before the deadline. The helpdesk cannot guarantee a timely response during the last two hours of the open call. Consider this when writing your proposals.

## 6. Proposal Evaluation and Selection Process

In this section, you will find all the details related to the evaluation and selection process for the proposals submitted to the first Open Call of SPADE.

### 6.1 Application reception

Submissions will be done ONLY via the SPLORO platform, and it will be the unique entry point for all application submissions. Applications submitted by any other means will not be considered nor evaluated. Only the documentation included in the submission will be considered by evaluators. A full list of applicants will be drafted containing their basic information for statistical purposes and clarity (which will be also shared with the EC for transparency). **The application reception will close on 10.04.2024, 17:00 (Brussels time).** There will not be any deadline extensions unless there is a Force Majeure situation, caused by the SPADE consortium and not by the applicants, which renders the system unavailable.

### 6.2 Evaluation process

The evaluation process to be followed during the selection of the proposals is shown in the following figure.

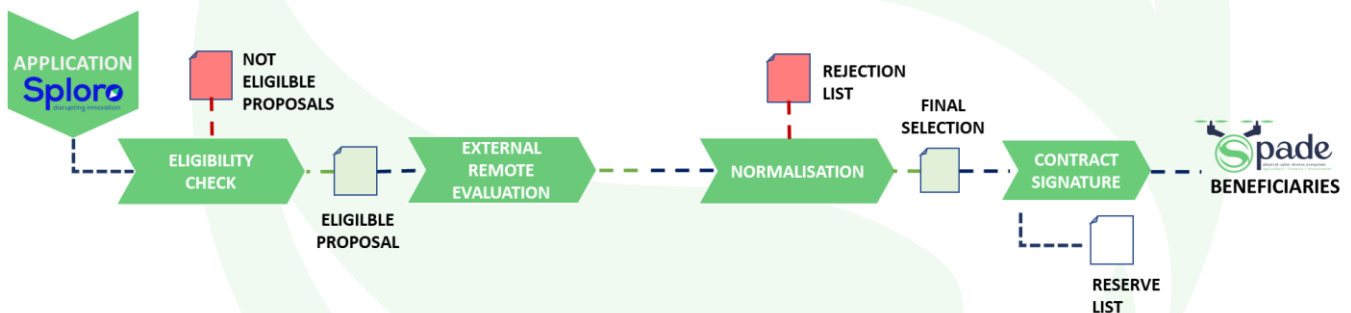


Figure 4. Evaluation process.

The evaluation process will be evaluated according to the following steps:

#### 6.2.1 Eligibility criteria

An automatic filtering to discard non-eligible proposals will follow the shortlist below.

Eligibility criteria check will verify:

- All the required fields are completed on the SPLORO platform.
- Checking the proposal has been submitted only by one partner (**no consortium allowed**).
- Applicants should be registered in an EU Member State or a Horizon Europe associated country.
- The existence of a legal entity.

- e) Multiparticipation per entity:
  - 1. A company sending several proposals will be automatically discarded.
  - 2. In the case of larger organizations like Universities or Research entities only one proposal per research group will be allowed. Sharing personnel between different groups for multi-proposal submission will not be allowed.
- f) The alignment with the SPADE call for proposals and challenges.
- g) The uniqueness of the proposal (proposals that have already been funded in any other project will not be financed to avoid duplicate funding).
- h) Checking the organization (team) submitting fits as a possible candidate due to their technical expertise.
- i) The applicant is not linked or associated entities or have any other legally binding relation which qualifies them as a company group.

Applications marked as non-eligible will get a rejection letter including the reasons (a to i) for being declared as non-eligible. No further feedback on the process will be given.

### 6.2.2 Experts' remote evaluation

Applications that successfully pass the eligibility check will move to the remote evaluation stage, where two external evaluators with expertise in technology, business development, and drone technology will review each proposal, assigning scores based on 4 different evaluation criteria (**Team, Technical Excellence, Implementation, and Impact**).

- 1) **Team:** The applicants will provide details about:
  - their management and leadership qualities;
  - their ability to take a concept from ideas to application;
  - their capacity from a technical perspective and understanding of the SPADE concepts.

The team should be enough in terms of resources and fully dedicated to the project and with a strong background and skill base in drones. We will request for at least 2CVs full time (or 1 full time and several partially) for the development of the experiment.

- 2) **Technical excellence:** the proposals should clearly indicate what and how they want to build. The improvements over the SPADE architecture and demonstrate a high-level of understanding on the open architectures provided by the consortium. The Excellence is evaluated according to the following criteria:
  - Clarity and pertinence of the objectives
  - Excellence, innovation and quality of the project.
  - Appropriateness of the solution to solve the selected challenge.
  - Clear identification of the improvements that will be developed over the current state of technology and their technical feasibility.
- 3) **Implementation:** how they plan to implement the experiment within the given time framework which should be aligned with SPADE planning.
  - Clear and detailed plan of proposed activities, ensuring that the activities are aligned with the project objectives and developed within realistic timeframes.
  - The plan should highlight the suitability of resources, both in terms of human and technological resources, emphasizing the team's commitment and ability to execute the project.
  - The proposed activities must be carried out within realistic timeframes, demonstrating a practical understanding of the project's scope and complexity. This ensures that the experiment progresses as planned and contributes effectively to the overall success of SPADE.
  - It is necessary to take into account all the deliverables established by the case studies leaders and, in addition, contribute to other deliverables that the applicant deems essential for the project's implementation.
- 4) **Impact:** Proposals must demonstrate impact on the SPADE advancement and its contribution to meeting the overall project objectives. The impact is evaluated according to the following criteria:

- Clarity and specificity of the expected benefits for the organization by participating in SPADE.
- Their plans for integration with the SPADE consortium.
- Their ideas in terms of exploitation of results
- Explanation of how mutual and sustainable benefits will be ensured.
- Assessment of the relevance and scope of the expected environmental impact.
- Relevance and potential for economic impact of the project
- Relevance and contribution of the project to desired social improvement or transformation.
- Effectiveness of the proposed experiments to exploit and disseminate the project results and to communicate the project.

The selected experts will be independent of the organisations involved in the consortium and of any third party applying to the call. The experts will sign a declaration of confidentiality concerning the contents of the proposals they read. The form which they use in the evaluation carries a declaration of freedom from conflict of interest which they agree to by signing them. Proposals will be evaluated by 2 evaluators. All evaluators will receive the evaluation guidelines, templates, and will be duly informed about the timing for an agile process and conflict of interest issues. The experts will score each award criterion on a scale from 0 to 5:

*Table 1. Criteria Score.*

SCORE	DEFINITION
0	Proposal fails to address the criterion or cannot be assessed due to missing or incomplete information.
1	Poor – criterion is inadequately addressed or there are serious inherent weaknesses.
2	Fair – proposal broadly addresses the criterion, but there are significant weaknesses
3	Good – proposal addresses the criterion well, but a number of shortcomings are present.
4	Very good- proposal addresses the criterion very well, but a small number of shortcomings are present.
5	The proposal successfully addresses all relevant aspects of the criterion. Any shortcomings are minor.

Only proposals reaching at least 2 points on each criterion and 10 in total will be shortlisted for the consensus meeting. The consensus meeting will only consider proposals over thresholds and will define between experts the feedback which will be given back to proposers with the final result. Each evaluator will produce a short Individual Evaluation Report.

### 6.2.3 Normalisation score

For the final grade calculation, there will be two evaluators per proposal, where each one will score differently without knowing the evaluation of their colleague, thus avoiding one evaluator conditioning the other. Therefore, the same evaluation may receive very different scores. Scores by experts will then be normalized (to avoid positive/negative bias) and shortlisted.

The normalisation process counts with a several steps approach:

- **External Evaluators Average (EEA) and Overall Average Score (OAS):** each evaluator has evaluated several proposals. We calculate the average score of all applicants and compare it with the average score of each evaluator.
- Each External Evaluator Average is compared to the Overall Average Score using a simple division (EEA / OAS). As a result, we know the percentage each evaluator represents of the OAS. This has a double meaning:
  - Evaluators under 100% have a negative pattern against the average. Their scores are then increased.
  - Evaluators above 100% have a positive pattern against the average. Their scores are then decreased.
- **Correction factor:** Based on this formula  $1 + (1 - (EEA/OAS))$ . This factor is unique for each evaluator.



- The following step is applying the Correction Factor to each criterion per evaluator. **Team x Correction Factor | Technical excellence x Correction Factor | Implementation x Correction factor | Impact x Correction factor.**
- Then we calculate the final score of each criterion as the average of each corrected score of the two evaluators on each proposal. (It may be the case that correction brings scores over a 5 in any criteria. In those cases, the score is capped in 5).
- We add the corrected scores and calculate the total score.
- Finally, we build the shortlist according from highest to lowest total score.

Using this method, a more balanced distribution of scores would be guaranteed, and the possibility of biases and distortions would be reduced. At the end of the evaluation process, all proposals will be ranked based on their scores. The list of accepted proposals at remote evaluation will be published as well as the information about the non-eligible proposals. All applicants will be informed about the evaluation results.

### 6.2.4 Final Selection

At the end of the evaluation process all proposals will be ranked based on their scores, and the best proposals (one proposal per challenge) will be invited to sign the sub-grantee agreement ([see Annex 3](#)). The list of accepted proposals at remote evaluation will be published as well as the information about the noneligible proposals. All applicants will be informed about the evaluation results.

In the case of a tie the following criteria will be applied in order:

- Rule 1: No. of women in the submitted CVs;
- Rule 2: Less represented countries in the selection will go first. *(When reviewing the received proposals, the geographic distribution of the organizations that have applied for the call will be evaluated. Those countries with less representation in terms of the number of proposals will be considered as less represented.)*
- Rule 3: Date of submission. Early-birds go first.

The SPADE consortium will then formally approve a list of proposals within the limits of the available funding.

Prior to contracting to the top ranked applicants, the consortium will ask for the approval of the European Commission, and the list of selected projects will be submitted to the European Commission for final screening. Once validated, the project will communicate the results and every applicant will receive via email: An Evaluation Summary Report (ESR) and a letter informing of the rejection decision or invitation to negotiation and following steps.

### 6.2.5 Appealing procedure

The SPADE consortium has foreseen the possibility for applicants to appeal the decision of the consortium of not selecting their proposal. If, after the evaluation process, the applicant considers that there has been a shortcoming in the way the proposal has been evaluated that may affect the final decision on whether to fund it or not; or if the applicant believes the results of the eligibility checks are incorrect and have failed to comply with the rules of the Open Call; and that their interests have been prejudiced as a result, the following appeal procedure is available.

- If clear evidence of a deficiency that could influence the ultimate funding decision exists, it is possible that all or part of the proposal will be subject to re-evaluation.
- Complaints must be submitted within five (calendar) days from the date of receiving the evaluation results.
- As a general guideline, the SPADE Team will investigate complaints with the aim of reaching a decision to issue a formal notice or to close the case within no more than twenty days from the date of receiving the complaint, provided that all required information has been submitted by the complainant.

- In cases where this time limit is exceeded, the SPADE team will inform the complainant via email. If a definitive response cannot be provided at that stage, the response will indicate when a definitive response will be furnished.
- It should be noted that the SPADE consortium does not commit to engage in any further discussion regarding the evaluation of a proposal beyond the definitive response.

**Please be aware that only one request for appeal per proposal will be considered by the consortium.**

### 6.2.6 Validation of the legal entity

Before validating the final list of accepted applicants, we will perform a thorough validation of the legal entities. This validation includes the submission of various documents to ensure compliance with the SPADE project's requirements. The requested elements for validation that will be requested are:

For entities that are already validated by the European Commission's Funding and Tenders Portal that count with are gistered and validated PIC Number we will request the PIC Number and a screenshot of the Funding and Tenders portal in which it's evidenced the type of organisation which has been selected as a beneficiary (university, NGO, foundation, SME...)

For those entities without a validated PIC number OR without a validated status (like self- declared SMEs) we will request:

- Legal entity form. The Legal Entity form for private companies, and public law bodies necessary for the awarding of EU funding. Company Register, Official Journal and so forth, showing the name of the organisation, the legal address and registration number and
- VAT Number registration (if applicable), a copy of a document proving VAT registration (in case the VAT number does not show on the registration extract or its equivalent).

## 6.3 Only SMES

- SME declaration ([see Annex 4](#)): form based on the standard templates by the EC in which the consortium can verify the ownership structure and financial figures to verify the size of the company.
- Balance accounts and P&L for the last two closed years.
- In companies with linked or associated entities, additional information (accounts for mother companies, group trees, etc.) could be requested.
- A legal entity that does not provide the requested data and documents in due time will not be included in SPADE project.

### 6.3.1 Sub-grantee agreement preparation

After the validation of the Legal Entity, a written Sub-grantee agreement ([see Annex 3](#)) will be signed with successful applicants and SPLORO (open call manager). SPLORO will request the applicant to fill a FIF.

- Sub-grantee funding agreement. Signed between the SPLORO (open call manager) and the beneficiary.
- Financial Identification Form (FIF). Form identifying the account in which the funds will be transferred signed by the legal representative of the organization and including a bank statement showing the ownership of the account. SPLORO, will also provide additional security measures to verify the ownership of the account.
- All the legal issues are accurately covered by the planned contracts with the sub-granted beneficiaries. The sub-grantee agreement will foresee, among other things, the special clauses derived from Horizon Europe in cascading granting, the payment schedule, and conditions (milestones), general legal text issues of rights



and obligations by the SPADE consortium and each sub-grantee, including IPR. It will also have a set of annexes such as the description of the project, the Financial Identification Form and any other document required by SPADE consortium to assure the correct execution of the sub-granted projects.

The sub-granted projects will also define deliverables and technical milestones linked to a set of KPIs, to which the project will associate the payment at the end of each phase. The case studies leaders would support the assessment of the milestones. The objective of the contract preparation is fulfilling the legal requirements between the SPADE consortium and every beneficiary of the call.



## 7. Financial support

The overall budget allocated for the OC#1 is 360,000 EUR. The grant is disbursed throughout the SPADE project using a “flat rate” approach. In this approach, funding is progressively distributed based on the achievement of specific outcomes and milestones, rather than relying solely on administrative justifications related to time and/or expenses. It’s worth noting that the maximum amount per beneficiary is 60,000 EUR.

### 7.1 Subcontracting

Regarding “subcontracting,” it is important to note that within the context of SPADE, subcontracting is strictly prohibited for core/essential tasks. This signifies that the primary responsibilities associated with the project must be undertaken and carried out by the team members described in the proposal. It is essential to maintain a clear understanding that the core tasks should not be delegated to external entities or subcontractors. The team should possess the necessary expertise and capacity to fulfil these crucial obligations to ensure the successful execution of the project.

### 7.2 Indicative distributions of the funds.

The selected projects must, in collaboration with a consortium representative (Study Case leader), develop an execution plan outlining the metrics to be achieved at both the third month and the conclusion of the experiment. This action plan will be considered a legally binding document to determine consortium payments.

During the evaluation process, the selected projects will conduct Interim and a final report, presenting the activities carried out and the level of compliance with the metrics outlined in the execution plan. Based on this achievement level, funds will be disbursed in tranches of 30,000 EUR in months 4 and 7 (post-experiment) (Table 2).

The final evaluation will entail a comprehensive review of the experiment, with a final calculation on KPI compliance, releasing funds up to the limit of 60,000 EUR per team.

**Table 2. Payments milestones**

	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7
OUTPUT	KPIs and deliverables definition		Interim Report + Deliverables			Final Report + Deliverables	
Payments (EUR)				30,000			30,000

If, during the two project review stages, the established goals, KPIs, milestones, and deliverables are not achieved, payments will be made based on the percentage of accomplishment.

### 7.3 Origin of funds

Once an applicant has been selected for funding, they will be required to sign a dedicated Sub-Grantee Funding Agreement with the SPADE consortium. It is important to note that the funds attached to the Sub-Grantee Funding Agreement come directly from the funds of the Horizon Europe Project SPADE, which has been funded by the European Commission. Therefore, the funds remain the property of the EU until the payment of the balance, which is managed by the project partners in SPADE via European Commission Horizon Europe Grant Agreement Number 101060778.

The Sub-Grantee Funding Agreement represents a significant commitment from both the SPADE project and the sub-grantees who will receive funding. The relationship between sub-grantees and the European Commission through the SPADE project carries a set of obligations for the sub-grantees with the European Commission. These

obligations will be outlined in the Sub-Grantee Agreement, which the selected applicants will need to review and agree to. It is the responsibility of the sub-grantees to ensure that they fulfil these obligations, and the SPADE consortium partners will provide guidance and support as needed.

All selected applicants should carefully review the terms of the agreement and ensure that they are able to meet their obligations in order to receive the funding and successfully carry out their project.

#### 7.4 Allocation of funds per project.

The maximum amount of funding that can be granted to a single organization for all SPADE calls combined cannot exceed 60,000 EUR. For this first call, the total budget available is 360,000 EUR. If sufficient projects are not financed until the available budget is exhausted, the remaining budget will be allocated to future calls.



## 8. Rules and Conditions

### 8.1 Language

**English is the only official language for the SPADE project.** Submissions done in any other language will not be eligible and will not be evaluated. This means that all the communication and materials will be in English, and all deliverables will only be accepted if in English.

### 8.2 Documents format

Unless otherwise stated in specific questions of the application form ([see Annex 2](#)) any document requested in any of the phases must be submitted electronically in **PDF format without restrictions for printing**.

### 8.3 Absence of conflict of interest

Applicants must not have any actual or potential conflicts of interest during the SPADE selection process or the entire project duration. Any situations that could potentially influence the impartiality of the individuals taking part in the selection process, or during the project implementation, are considered conflicts of interest. These can include financial interests, personal relationships, or any other factors that could affect the applicant's ability to remain impartial. All cases of conflict of interest will be assessed on a case-by-case basis by the relevant SPADE selection committee and consortium partners. If an applicant is found to have a conflict of interest, this could result in the application being disqualified.

It is important to note that SPADE consortium partners, their affiliated entities, employees, and permanent co-operators are not allowed to submit a proposal and therefore to receive any financial support through the open calls, as this would violate the European Commission's regulations.

### 8.4 Ethical Issues

**SPADE strictly adheres to the fundamental ethical principles outlined in the “European Code of Conduct for Research Integrity.”** To ensure compliance, all applicants are required to acknowledge and accept our privacy policy and declaration of honor (ethics) during the submission process. This acknowledgment confirms that, by submitting the form, they accept the terms described in the provided text. No additional documents need to be uploaded; applicants are solely required to read and agree to the terms outlined when submitting the form.

During the evaluation process, **the SPADE consortium may verify whether the self-assessment declaration aligns with the contents of the application.** In cases where clarification is needed, the consortium reserves the right to contact the beneficiaries. If an applicant indicates that their application may have ethical issues, an ethics review will be conducted. Applications that fail to adequately address ethical concerns or privacy aspects will be rejected.

All applicants must thoroughly review and assess their applications for any potential ethical issues before submission. Failure to comply with the ethical guidelines outlined in the “European Code of Conduct for Research Integrity” could lead to disqualification of the application. Therefore, it is of utmost importance that all applicants take the necessary steps to ensure that their proposals meet the highest ethical standards.

#### 8.4.1 Ethics self-assessment

It is imperative that all beneficiaries comply with the ethical guidelines followed by the SPADE consortium ([see Annex 5](#)). These guidelines are designed to ensure that operations are conducted with integrity, transparency, and respect for all stakeholders involved. By adhering to these ethical standards, we aim to promote fairness, accountability, and responsible conduct throughout the bidding process.

## 8.5 Data Protection

**SPADE requires access to Personal and Entity Data in order to process and evaluate applications.** As open call coordinator, SPLORO will act as the Data Controller for all data submitted through the SPLORO platform for this purpose. To ensure the safety and security of this data, the SPLORO platform has been designed and operates under strict compliance with The General Data Protection Regulation (EU) 2016/679 (GDPR). Therefore, all applicants are required to accept the SPLORO Platform terms to ensure full coverage. For more information regarding the data privacy policy and security measures implemented by SPLORO, please refer to their website at <https://SPLORO.eu>.



## 9. Beneficiaries' Responsibilities

The selected organizations are indirectly beneficiaries of European Commission funding. As such, they are responsible for the proper use of the funding and ensure that the recipients comply with obligations under Horizon specific requirements. The obligations that are applicable to the recipients include:

### 9.1 Conflict of interest

Beneficiaries must take all measures to prevent any situation where the impartial and objective implementation of the sub-project is compromised for reasons involving economic interest, political or national affinity, family or emotional ties or any other shared interest ('conflict of interests'). They must formally notify to the SPADE coordinator without delay any situation constituting or likely to lead to a conflict of interest and immediately take all the necessary steps to rectify this situation. The SPADE coordinator may verify that the measures taken are appropriate and may require additional measures to be taken by a specified deadline. If the sub-contracted consortium member breaches any of its obligations, the sub-contract may be automatically terminated. Moreover, costs may be rejected.

### 9.2 Data protection and confidentiality

During implementation of the sub-project and for four years after the end of the sub-project, the parties must keep confidential any data, documents or other material (in any form) that is identified as confidential at sub-contract signing time ('confidential information').

### 9.3 Promotion of the action and EU Funding visibility.

The beneficiary must promote their participation in the SPADE. They will provide targeted information to multiple audiences (including the media and the public) in a strategic and effective manner and to highlight the financial support of the EC. The SPADE Communication Team will guide, provide materials and support these communication activities. Unless the European Commission or the SPADE coordinator requests, or agrees otherwise or unless it is impossible, any communication activity related to the action (including in electronic form, via social media, etc.), any publicity, including at a conference or seminar or any type of information or promotional material (brochure, leaflet, poster, presentation etc.), and any infrastructure, equipment and major results funded by the grant must:

- display the EU emblem;
- display the SPADE logo.

When displayed in association with a logo, the European emblem should be given appropriate prominence. This obligation to use the European emblem in respect of projects to which the EC contributes implies no right of exclusive use. It is subject to general third-party use restrictions which do not permit the appropriation of the emblem, or of any similar trademark or logo, whether by registration or by any other means. Under these conditions, the Beneficiary is exempted from the obligation to obtain prior permission from the EC to use the emblem. Further detailed information on the EU emblem can be found on the Europa web page. Any publicity made by the beneficiary in respect of the project, in whatever form and on or by whatever medium, must specify that it reflects only the author's views and that the EC or SPADE project is not liable for any use that may be made of the information contained therein. The EC and the SPADE consortium shall be authorized to publish, in whatever form and on or by whatever medium, the following information:

- the name of the beneficiary;
- contact address of the beneficiary;
- the general purpose of the project;
- the amount of the financial contribution foreseen for the project; after the final payment, and the amount of the financial contribution actually received;

- the geographic location of the activities carried out;
- the list of dissemination activities relating to the foreground;
- the details/references and the abstracts of scientific publications relating to the foreground and, if funded within the sub-project, the published version or the final manuscript accepted for publication;
- the publishable reports submitted to the SPADE consortium;
- any picture or any audio-visual or web material provided to the EC and SPADE in the framework of the project.

The beneficiary shall ensure that all necessary authorisations for such publication have been obtained and that the publication of the information by the EC and SPADE does not infringe any rights of third parties. Upon a duly substantiated request by the beneficiary, SPADE, if such permission is provided by the EC, may agree to forego such publicity if disclosure of the information indicated above would risk compromising the beneficiary's security, academic or commercial interests.

### 9.4 Financial audits and control

The European Commission (EC) will monitor compliance with the financial support conditions outlined in Annex 1 of the SPADE Grant Agreement by beneficiaries and third parties. The EC may conduct financial audits, which may be conducted by external auditors or by EC services, including the European Anti-Fraud Office (OLAF). Beneficiaries must make all detailed information and data available to the EC or any authorized representative for audit purposes. The beneficiary must keep all sub-project deliverables and documents for up to five years from the end of the project.

### 9.5 Internal communication

Every chosen project participant is required to designate a primary contact who will serve as the coordinator throughout the project's execution:

- Provide any notice in writing to the SPADE coordinator.
- Notify immediately of any change of persons or contact details to the SPADE coordinator.

### 9.6 External communication and open data

As part of the external communication and open data practices, each supported organization will be prominently featured on SPADE's public channels, such as social networks or the website. The financial assistance provided by the SPADE consortium to each beneficiary will be transparently disclosed through a dataset published in an open and free repository, such as Zenodo. It is important to note that only public information will be shared, aligning with the principles of transparency and openness.

Additionally, the publication of solutions developed by beneficiaries is permitted, provided that they have adopted best practices in open-source development (open development, open collaboration, documentation including a getting started, continuous testing, continuous integration, contribute to the SPADE community). Since selected projects are encouraged to initiate their solutions on the SPADE Research Labs infrastructure from the outset, it is emphasized that this infrastructure is backed by the Eclipse Foundation and hosted on its GitLab platform. This early collaboration ensures that solutions can fully benefit from the advantages and services offered by this platform.