CODECO Innovation and Research Community Engagement Programme
Experimentation and Validation Challenges

1: Context

CODECO's **Experimentation and Validation Challenges** are designed to stimulate innovation by enabling external participants to propose and carry out validation and experimentation activities within the CODECO framework. This initiative provides a structured opportunity for participants to engage with cutting-edge technologies and concepts defined by CODECO partners, which are listed via Table 1 below.

Table 1: List of Experimentation and Validation Challenges

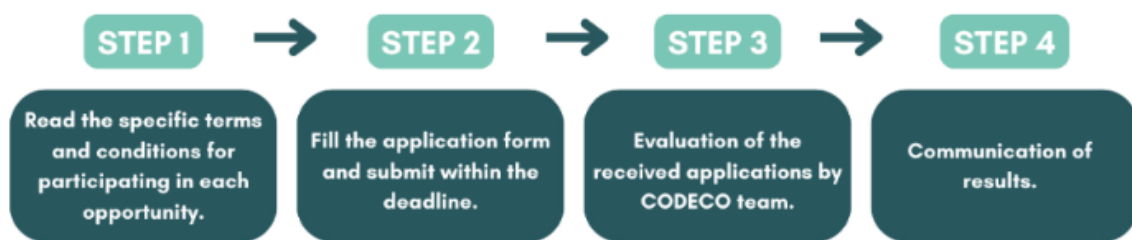| Name	Lead Partner(s)
CODECO Deployment and Scalability	ICOM
CODECO Data Generator #1	UPRC
CODECO Data Generator #2	UPRC
Scalability testing of fine tune training for MARL agents	I2CAT
Scalability of MARL model over increasing number of clusters	I2CAT
[CODEF and Benchmarking] Dynamic Stress Testing	ATH and UPRC
[CODEF and benchmarking] Redeployment Evaluation	ATH and UPRC
[CODEF and benchmarking] Multi-Cluster Evolution for CODEF	ATH and UPRC
[CODEF and benchmarking] Testing, Debugging and AI-powered assistant	ATH and UPRC
[CODEF and benchmarking] Security Mechanisms for CODEF	ATH and UPRC
CODECO Secure Connectivity	UC3M and Telefónica
CODECO Energy Awareness Strategies	FORTISS
CODECO Resilience Strategies	FORTISS
Evaluate the CODECO SWM Scheduler	FORTISS

2: Application

Figure 1: Experimentation and Validation Challenges Application Process.

Stakeholders interested in participating in an Experimentation and Validation Challenge must go through a structured application process, as illustrated above. This process is designed to ensure that the evaluation committee receives all relevant information needed to carry out a thorough and effective assessment of each submission. Application form and instructions can be accessed via the IRCEP menu on the CODECO website at the following link: https://he-codeco.eu/ircep/ircep-challenges/. Considering the scope of the challenges, the process is entirely online and will adhere to the following steps:

(i) Filling of an EU Survey (linked in the main page for the challenges), where all the necessary administrative information needs to be filled, such as name, contact,

organisation of any given applicant. It is also via this form that participants choose each challenge they want to take part in and submit all necessary forms, in particular, the ECA (Eclipse Contributor Agreement).

(ii) Once this form is submitted, it is then processed by the team at INO and forwarded to the respective lead partner(s) of the selected challenge(s).

(iii) Participants are then expected to access and read the instructions available for their selected challenge(s) and submit their results accordingly.

(iv) Once the results are submitted by each participant, these will be evaluated by the respective lead partner towards a maximum of 2 to 3 awarded participants per challenge.

(v) The evaluation conducted by the lead partner will need to be validated by the project coordinator (FOR) and another independent member from the consortium.

(vi) INO will then process the award from an administrative standpoint, ensuring awarded participants sign off the necessary statement of discharge forms to receive the award.

*By submitting the application form, participants confirm they are, in no part, part of any organisation with the CODECO consortium.

3: Evaluation

The evaluation of submissions under these challenges will be conducted considering three key areas: **(i) Relevance; (ii) Impact and (iii) Expertise**, with each area having a maximum grade of 5, towards a total possible grade of 15.

Table 2: Evaluation Areas of Experimentation and Validation Challenges

Key Area	Evaluation Target
Relevance	Should assess how well the submission's design, methods, and outcomes align with the core objectives, questions and/or hypotheses of each challenge. This ensures the results will provide meaningful insights that are directly applicable.
Impact	Should assess the potential outcomes and long-term effects of the submission, focusing on how the results could influence the challenges' target areas. It considers the significance of the findings in terms of advancing knowledge or improving practices, as well as the scale of those effects.
Expertise	Should assess the level of knowledge, skill, and experience demonstrated to conduct, and interpret the challenge effectively. It evaluates whether the applicant possess the necessary technical and subject-matter expertise to ensure the validity, reliability, and credibility of the results.

Moreover, evaluation will follow a **two-phase process**. The **first phase** will consist of the lead partner for each challenge providing their evaluation of the submissions. Once such is completed, the process enters its **second phase** which is where the project coordinator (FOR) and another independent member of the consortium will validate this evaluation.

The entire evaluation procedure is expected to start once applications close in December 2025. It is expected that it will **not take longer than 2 to 3 weeks to complete** from that point onwards.

4: Awards

For each Experimentation and Validation challenge, exception being Local Events where these challenges will be used, a **maximum of three submissions** will be awarded. Each selected submission will receive a **financial award of €2,800**. This amount will be transferred

only after the evaluation process disclosed above has been duly completed **and when** the awarded participants sign the necessary statement of discharge form, provided by INO.

5: Conflict of Interest

Applications will not be accepted from individuals or entities who are partners (beneficiaries) or linked-third parties in the CODECO consortium or who are formally linked in any way to the partners/linked-third parties of the CODECO consortium, and their employees and permanent collaborators. Any entity with a previous link to a CODECO beneficiary (e.g., spin-off), will not be accepted, unless a minimum of 2 years has passed since the termination of the link. Applicants must not have any current and/or potential conflict of interest with the CODECO IRCEP program and during the whole program. Applicants must formally and immediately notify the CODECO project coordinator of any situation constituting or likely to lead to a conflict of interest and take all the necessary steps to rectify this situation.

All cases of conflict of interest will be assessed case by case. Applicants must take all measures to prevent any situation where the impartial and objective evaluation and implementation of the project is compromised for reasons involving economic interest, political or national affinity, family or emotional ties or any other shared interest ('conflict of interests').

If a conflict of interest is discovered and confirmed at the time of the evaluation process, the proposal will be considered as non-eligible and will not be evaluated.

6: Re-use of Challenge Content

The content provided as part of the CODECO Experimentation and Validation Challenges is intended solely for use within the scope of activities necessary to complete the challenge itself. Any use of this material beyond its original purpose—such as reproduction, distribution, or application in external contexts—must first be explicitly approved by the respective organisation responsible for supporting the creation of the specific challenge in question. Participants and third parties are expected to respect these boundaries to ensure proper use and attribution of the contributed resources.

7: Data Preservation, Storage and Privacy

All data gathered during each application process will be stored and controlled by the CODECO Coordinator (FOR) and the INO team (CODECO management team). This data will be stored according to the conditions set out under the project's official Data Management Plan (CODECO D21).

Data inserted and shared by applicants will only be used for the purpose of analysing the received forms and proceeding with the evaluation procedure as well as being stored and preserved for reporting purposes directly connected to CODECO. Moreover, only the data needed to carry out the defined purpose will be utilized and only for the strictly needed period for such.