The development of a cognitive, decentralised Edge-Cloud framework.

CODECO aims at assisting in supporting the Edge-Cloud continuum via the integration of a unique, smart, and cross-layer orchestration between the decentralised data flow, computation, and networking services.

**Keywords:** Edge, Cloud, Kubernetes, IOT, federated

**Programme:** Horizon Europe

**Project ID:** 101092696

**End Date:** 31 December 2025

**Start Date:** 01 January 2023

**Objectives:**
- Reduce Edge-Cloud Setup and Management Time
- Optimize Edge-Cloud Operation via a privacy-preserving data-compute-network orchestration
- Provide automated, privacy-preserving secure data-compute-network orchestration
- Support multi-domain Edge-Cloud operations integrating openness and greenness
- Build a consolidated ecosystem appealing to the different CODECO stakeholder groups

**Overview:**
- Cross-domain, multi-cluster operation support
- Dynamic Container Orchestration
- Support for heterogeneous networking infrastructures
- Support for Edge-Cloud heterogeneous and mobile environments
- Adaptability: ML for behavioural modeling and prediction
- Multi-objective Optimization

**Concept:**
- Dynamic Container Orchestration
- Multi-objective Optimization
- Adaptability: ML for behavioural modeling and prediction

**KEPs (Key Exploitable Results):**

**1.** Open, cognitive toolkits and smart Apps, integrating IoT and advanced concepts to manage, in a smart and flexible way, containerized applications across Edge and Cloud (dynamic-cluster and multi-cluster environment).

**2.** A developer-oriented Eclipse open-source software repository, to be available in an early stage of the project, thus allowing for early exploitation of initial, advanced results and a better adaptation throughout the project lifetime.

**3.** Training tools and events, to support the development of services based on the CODECO framework.

**4.** Use-cases across 4 domains (Smart Cities, Energy, Manufacturing, Smart Buildings) to be deployed in operational environments.

**5.** Open Calls and multiple community events, based on the different use-cases and including different CODECO stakeholders.

**6.** CODECO framework integration into the large-scale EdgeNet experimental infrastructure, to assist in the building of experimentation and novel concepts by the research community.

**Participating Entities:**
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- Eclipse Research Lab
- Coderia

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