



P2CODE

Programming Platform for  
Intelligent Collaborative Deployments

# Resource Management

Powering smart, secure, and  
scalable infrastructure  
control



Visit our website and  
follow us on Social Media



Funded by  
the European Union

Project funded by  
Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra  
Sveits Edoughastat  
Eidgenossenschaft der Eidgenossen  
Eidgenossenschaft der Eidgenossen  
Eidgenossenschaft der Eidgenossen  
Eidgenossenschaft der Eidgenossen

Funded by the European Union (P2CODE, 101093069). Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them. This work has received funding from the Swiss State Secretariat for Education, Research and Innovation (SERI).

# P2CODE in Context

The P2CODE Architecture delivers automated and trustworthy orchestration of services across federated, multi-domain environments—driving innovation in Industry 4.0, mobility, healthcare, and beyond.

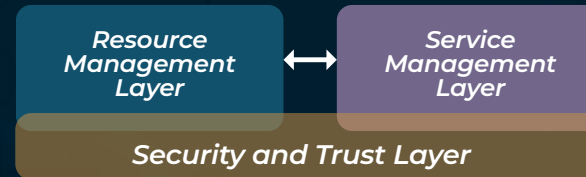
At its core, P2CODE is built on a **layered architecture that is modular, secure, and developer-centric.**

Within this design, the **Resource Management Layer (RM-L)** provides the foundation—intelligently allocating and scaling compute, storage, and network resources to power dynamic distributed services across IoT, edge, and cloud.

## What It Does

The RM-L abstracts heterogeneous infrastructure using standardized APIs and automates resource provisioning. It enables seamless orchestration, telemetry, scheduling, and policy enforcement across distributed environments.

# P2CODE Open Platform



## Core Components

- 1 Resource Manager**  
Catalog, inventory & ordering via TMF APIs
- 2 Policy Engine**  
Automates lifecycle transitions (e.g., Provision → Activation)
- 3 Scheduler**  
Dependency-aware workload placement across clusters
- 4 Telemetry Module**  
Centralized metrics and anomaly detection
- 5 Storage (Ceph/ODF)**  
Persistent, resilient edge-to-core data handling
- 6 Controllers & Drivers**  
Supports NGSI-LD, Open5GS, TeraFlowSDN, RAN, Compute

## Key Benefits



**Resource Orchestration**  
Full lifecycle management with TM Forum APIs



**Secure Access**  
Controlled, standards-based permissions



**Telemetry & Monitoring**  
ML-powered anomaly detection



**Intelligent Scheduling**  
Cluster-aware workload placement



**Distributed Storage**  
Reliable, persistent data handling with Ceph



**Controller Ecosystem**  
For IoT, RAN, Mobile Core, and Networks

## Why It Matters

- Bridges physical infrastructure and orchestration platforms
- Enables scalable, programmable control of resources
- Reduces complexity in multi-domain, heterogeneous