SPURUP

Sustainable Peri-Urban framework
for Climate Neutral development

SOLUTIONS PROVIDER

Scalable Digital Infrastructure for Large Scale Deployment

Funded by the European Union

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General Information

Solution Name

Scalable Digital Infrastructure
for Large Scale Deployment

Solution Type

Digital Tool
(Digital Infrastructure / Platform)

Solution Owner

NOVELCORE

TRL Level

Starting 1 - Target 4

Challenge solved

Target Pain Point

Fragmented and isolated digital systems. When cities and industries try to become climate-neutral, they use many different tools and sensors. This infrastructure removes the barrier of disconnected systems by securely linking diverse cloud environments, data streams, and energy solutions into one manageable, scalable digital backbone.

The Innovation

Core Functionality

- **Multi-cloud Interoperability:** Connects and manages data across different cloud environments seamlessly.
- **Automated Updates (CI/CD):** Uses automated pipelines to seamlessly update and deploy technical applications across different locations without disruption.
- **Edge Computing & AI Data Management:** Processes data locally at high speeds for real-time analytics and decision-making
- **High-Level Security:** Ensures safe data exchange with robust EU data security protocols and secure authentication

Beyond State of the Art

Unlike conventional, centralized cloud-management systems, this platform provides an intelligent, AI-powered ecosystem that operates flexibly across multiple cloud environments. It uses edge computing for high-speed localized data processing and automated deployment pipelines, meaning it can instantly adapt to and optimize different energy flows, industrial processes, and urban infrastructures in real-time while strictly safeguarding data privacy.

User value - Benefits

01 **Seamless System Integration:** Allows different climate-neutral technologies (like energy, mobility, and waste management tools) to easily "talk" to each other.

02 **Insights:** Provides urban planners, industries, and energy managers with reliable data for better decision-making.

03 **Continuous and Easy Updates:** Automated deployment means the systems are always running the latest, most efficient software without manual intervention.

04 **Security:** Protects sensitive municipal and industrial data using advanced role-based access control and EU compliance standards.

Implementation and validation

Living Lab

The infrastructure acts as the digital backbone and will be deployed to support technical solutions potentially across any Living Lab (Thessaloniki, Aalborg, and Jesi)

Replication Potential

Because the infrastructure is specifically designed to be "multi-cloud" and "scalable", it is highly adaptable. Other cities and industrial parks can adopt this digital backbone to connect their own local technologies, regardless of their existing IT setups, making it a universal blueprint for climate-neutral digital ecosystems.

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