



ACROSS

**Advancing Cross-Layer
Orchestration of Smart
Networks**



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About ACROSS

ACROSS is a Horizon Europe project co-funded by the Smart Networks and Services Joint Undertaking (SNS JU). It develops an **end-to-end service deployment and management platform** for next-generation networks, focusing on **automation, performance, scalability, and energy efficiency**.

ACROSS helps Europe advance towards **automated, efficient, and sustainable 5G and 6G services**, connecting cloud, edge, and network infrastructures under a unified orchestration framework.

Why It Matters

- **Automation:** Enables zero-touch service deployment and management with minimal human intervention.
- **Sustainability:** Introduces energy-aware orchestration, contributing to greener infrastructures.
- **Resilience:** Ensures secure, trusted orchestration across multiple domains.
- **Scalability:** Supports diverse, geo-distributed infrastructures for future digital services.

Objectives

1. **Develop** a future-proof service orchestration framework with AI capabilities for handling events across a distributed cloud continuum.
2. **Design & Implement** a service deployment and orchestration framework using a logically centralized cloud-managed multi-domain orchestrator and distributed domain orchestrator instances.
3. **Create** an end-to-end telemetry infrastructure for zero-touch reporting and collection, featuring standardized reports and visualization.
4. **Develop** unsupervised AI for automated decision-making based on telemetry data to empower control loops.
5. **Implement** zero-touch operations as programmable hooks in response to infrastructure and telemetry data.
6. **Enable** platform security and trust.
7. **Test & Validate** the ACROSS platform across multiple sectors and real testbeds.
8. **Maximise** ACROSS impact and adoption through standardization and open-source activities.

Test Cases

1. Stakeholder-driven zero-touch orchestration

Focuses on translating user-defined policies into automated workflows. This enables faster, more reliable service delivery while reducing complexity for network operators.

2. Device-driven zero-touch orchestration

Demonstrates how the platform responds to events from the infrastructure itself. The system ensures smooth service continuity and resource optimisation.

3. Intelligence-driven zero-touch orchestration

Explores how AI-powered orchestration can anticipate problems before they occur. This proactive approach improves resilience and maintains service-level agreements.

4. Holistic zero-touch orchestration

Serves as an umbrella test case that combines the other three. This highlights the scalability and flexibility of the ACROSS platform in real-world multi-domain environments.

Key Impact

- **Openness and Standardization:** ACROSS project is built with openness and standardization in mind to ensure maximum compatibility and future integration.
- **Open-Source Platform:** Most of the ACROSS platform components are open-sourced, allowing the community to expand upon the foundational work and foster future innovation in network orchestration.
- **Innovation:** The project has filed 3 patents to protect specific, groundbreaking innovations developed within the ACROSS framework.

Consortium

ACROSS brings together **12 partners from 6 EU countries**, combining expertise from academia, research centres, SMEs, and large industry.



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