Automated zero-touch cross layer provisioning framework for 5G and beyond vertical services

Press Release

ACROSS Project Successfully Concludes, Advancing Zero-Touch Orchestration for 5G and Beyond

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The ACROSS consortium announces the successful completion of its 36-month Horizon Europe project, ***"Automated zero-touch cross-layer provisioning framework for 5G and beyond vertical services"***. Funded under the **Smart Networks and Services Joint Undertaking (SNS JU)**, ACROSS addressed one of the most critical challenges of next-generation digital infrastructures: the need for autonomous, scalable, and trustworthy management of highly distributed network, compute, and service resources across the edge-to-cloud continuum.

As Europe moves towards 6G and increasingly complex digital ecosystems, manual service management and static orchestration approaches are no longer sufficient. ACROSS responded to this challenge by designing and validating an open, modular, and future-proof zero-touch orchestration framework capable of supporting data-driven operations across multiple administrative domains.

Zero-Touch Orchestration for the Edge-to-Cloud Continuum

At the core of the ACROSS solution is a hierarchical orchestration architecture that combines a logically centralised **Multi-Domain Service Orchestrator (AMSO)** with highly distributed **Cross-Domain Orchestrators (ACDO)** deployed close to the infrastructure. This design enables seamless coordination of network, compute, and application resources while maintaining flexibility, scalability, and interoperability.

The ACROSS platform uses standardised interfaces and open integration mechanisms to support end-to-end service management, from onboarding and configuration to ongoing adaptation and optimisation. By placing key decisions closer to the edge while keeping a global system view, ACROSS enables autonomous orchestration across private, edge, and cloud environments.

Validation Across Realistic, Geo-Distributed Environments

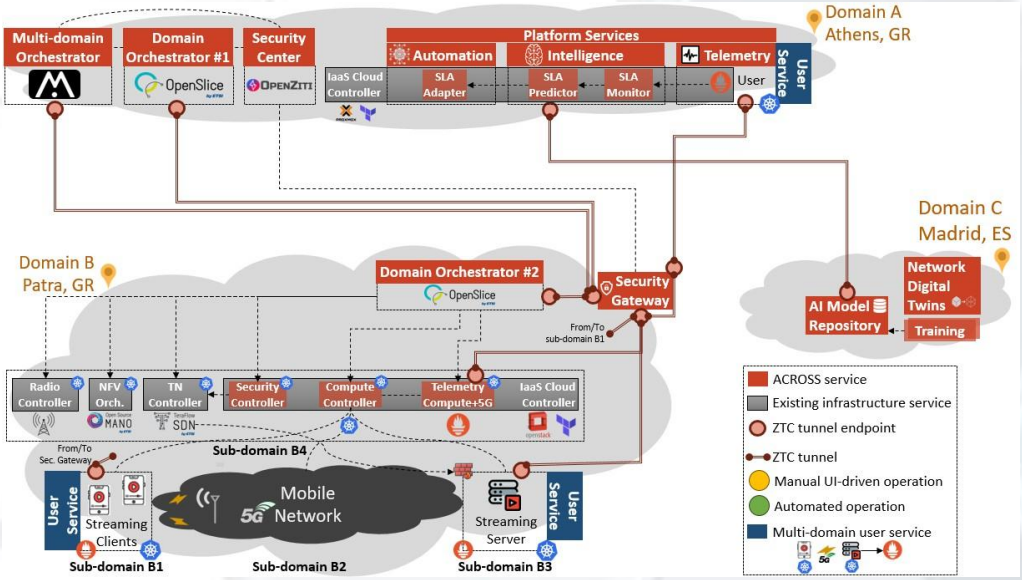
The ACROSS platform was validated through a series of experiments carried out on geo-distributed testbeds in Athens, Patras, Madrid, and Barcelona. These activities focused on evaluating how the platform performs under realistic operating conditions across different locations and infrastructures.

The validation covered a range of zero-touch orchestration scenarios, including **stakeholder-driven**, **device-driven**, and **intelligence-driven** workflows. Through these scenarios, ACROSS demonstrated automated service onboarding, secure device attestation, adaptive resource

management, and AI-supported service optimisation. Overall, the results showed that the platform can significantly reduce operational complexity while maintaining reliability, performance, and security across multi-domain environments.

ETSI ZSM Proof of Concept and Alignment with Industry Standards

One of the key milestones of ACROSS was the successful implementation of **ETSI Zero-touch Network and Service Management (ZSM) Proof of Concept #16**, titled *"Automation Platform across Multi-site and Multi-stakeholder Environments."* The PoC demonstrated how the ACROSS orchestration platform can support automated service and resource management across multiple private domains, adapting network and service components while meeting service level and security requirements.



Through this work, ACROSS confirmed its compatibility with ETSI ZSM specifications and TM Forum Open APIs, reinforcing its alignment with industry standards and its readiness for deployment in real operational environments.

Post-Project Exploitation and Sustainability

Beyond its technical results, ACROSS has laid the groundwork for continued exploitation and long-term impact. The project's orchestration platform has been selected as the baseline technology for the follow-up European flagship project **COP-PILOT**, where it will be further developed and scaled through large-scale trials. These trials will focus on real-world sectors such as smart industry, agriculture, and energy, aiming to bring the platform closer to market deployment.

Sustainability has been a key consideration from the outset. Several core components of the ACROSS platform have been released as open-source assets to support long-term availability and reuse. In particular, the **Open Security and Trust Orchestrator (OpenSTO)** has been made openly available to the community, while the **Multi-Domain Service Orchestrator**

(AMSO/Maestro) has been integrated into the ETSI OpenSlice ecosystem, ensuring its ongoing maintenance and evolution beyond the project's lifetime.

Dissemination, Open Science, and Impact

Dissemination and open science have been core pillars of the ACROSS project throughout its duration. The project contributed scientific publications, released multiple open-access datasets via the SNS JU Metadata Registry System, and maintained active engagement with research, industry, and standardisation communities.

Dissemination efforts will continue beyond the formal end of the project, ensuring that ACROSS results remain visible and accessible to stakeholders. In this way, the knowledge generated during the project is expected to support ongoing research activities and inform future innovation initiatives in the field of zero-touch orchestration and network automation.

About ACROSS

Project ACROSS (Grant Agreement No. 101097122) is a collaborative initiative involving 12 European partners. The project was coordinated by **NOVA**, with **UBITECH** serving as Technical Lead, and was implemented under the Horizon Europe **Smart Networks and Services Joint Undertaking (SNS JU)**.

The consortium extends its sincere thanks to all partners, stakeholders, and collaborators who contributed to the successful completion of the project and to the advancement of zero-touch orchestration technologies for 5G and beyond.

For more information and access to project results, please visit: https://across-he.eu/

Contact: across@partners.nova.gr

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