



The Standards People

# ETSI Research Conference 2023

Maximizing the Impact of European 6G  
Research through Standardization

## ACROSS project standardisation actions

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# 1. Project Overview

- **Project Name:** **ACROSS** – Automated zero-touch cross-layer provisioning framework for 5G and beyond vertical services
- **Project website:** [across-he.eu](https://across-he.eu).
- **Stream:** A-01-07
- **Members:** NOVA | TID | NOKIA | ERI-LMI | NEC | UOP | UPM | CTTC | UBITECH | ICP | K3Y | WINGS
- **Key objective:** ACROSS develops a secure E2E network and service management platform that employs vertical and horizontal zero-touch mechanisms, enabling multi-objective service management optimizations in the presence of trade-offs between performance, energy consumption, and cost.

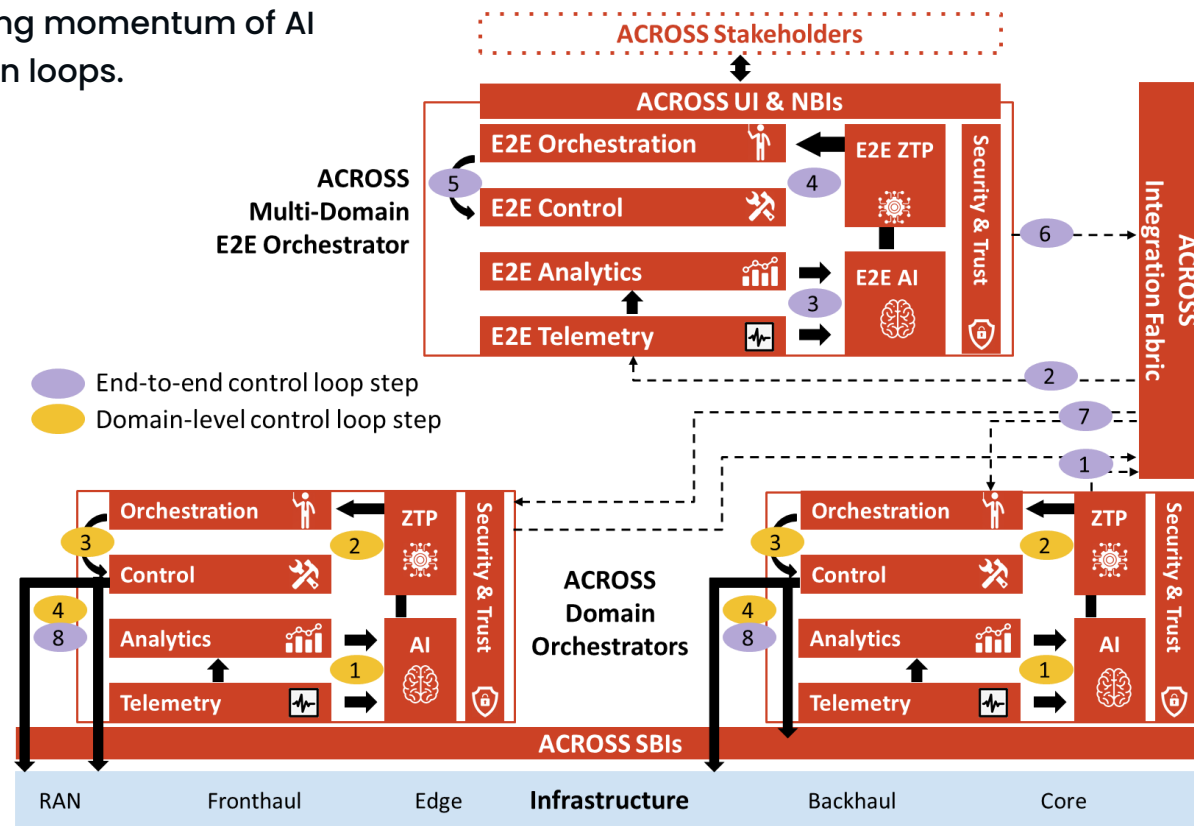
# 2. Technical Information

## • Main development targets: Across project' developments...

1. ... provide an ultra-scalable service orchestration stratum, built as an ensemble of a highly-distributed grid of domain orchestration instances managed by a multi-domain cloud-native service orchestrator, able to ...
2. ... manage multi-X {domain, technology, vendor, tenant} infrastructures spanning across geo-distributed edge-to-core deployments, with...
3. ... increased security and trust over the underlying swarm of devices and ad-hoc data sources, while
4. ... jointly exploiting the data plane programmability, and the exciting momentum of AI to greatly outperform and outsmart existing service orchestration loops.

## • Key technologies investigated:

- Ultra-scalable cross-domain service deployment and orchestration through standardised and vendor-agnostic **cross-domain integration fabric**
- Deep **end-to-end telemetry** on open programmable infrastructures, from both RAN-to-Core infrastructure and the service layer
- Real-time analytics and AI for next-generation end-to-end orchestration, exploiting **complex graph relationships** and AI for TE principles
- Full-Stack **cross-domain zero-touch provisioning (ZTP)**, enabling both Vertical (App-to-Hardware) and Horizontal (RAN-to-Core) automation
- Secure & trusted orchestration mechanisms in fields of TEE, efficient and secure enclave management, improved sec-VNF placement



# 3. Planned Standardization Activities

Alliance with standards and tangible beyond state-of-the-art contributions

Per-module innovation plan

Aligns with

Contributes to



ETSI ZSM, ETSI TFS, P4.org, IETF OAM

ETSI OSM, ETSI TFS, P4.org/Stratum, OpenSlice



ETSI ZSM

ETSI OSM or third-party platforms



ETSI ZSM, ETSI ENI, ETSI SAI

ETSI TFS, OpenSlice, open AI platforms



ETSI ZSM, ETSI NFV, TMF, 5GPPP

OpenSlice/ETSI OSM, commercial orchestrators



ETSI ZSM, ETSI NFV, TMF, 5GPPP

OpenSlice/ETSI OSM, commercial orchestrators



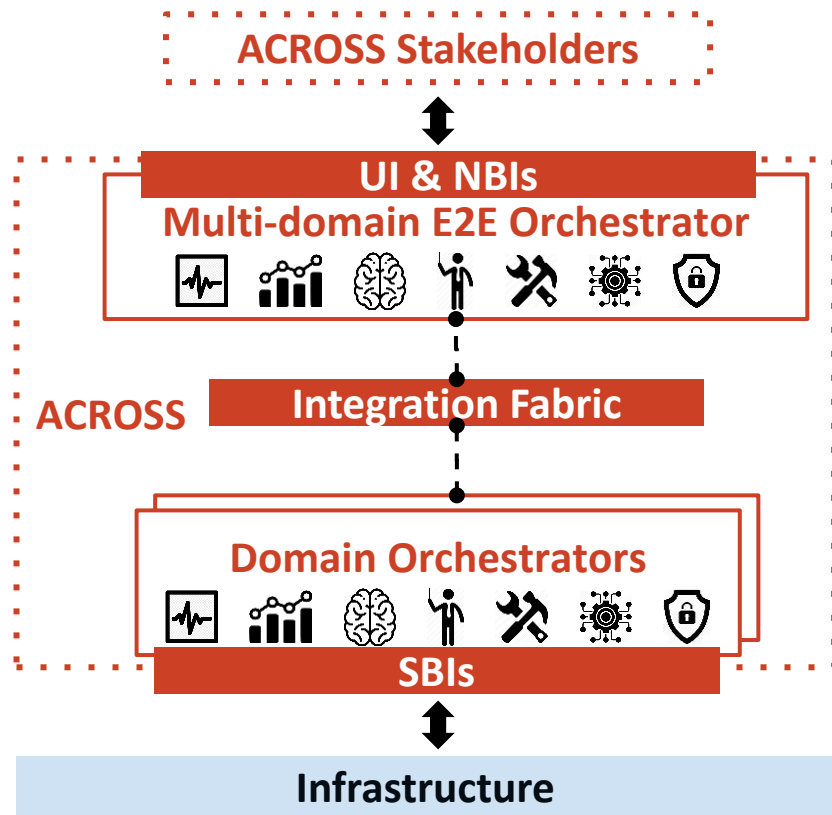
ETSI ZSM

OpenSlice/ETSI OSM, commercial orchestrators



ETSI SAI, SNS Security WG

Open security and trust platforms



# 4. Standardization priorities and steps

## • Targeted priorities with respect to standards:

- Test case 1 on **Policy-driven zero-touch orchestration**
  - Including: secure device onboarding, service telemetry, service management, security)
- Test case 2 on **Infra-driven zero-touch orchestration**
  - Including: UPF provisioning/decommissioning, UPF migration, slice adaptation
- Test case 3 on **Intelligence-driven zero-touch orchestration**
  - Including: Anticipatory detection, analysis, and prevention of congestion problems, Smart energy-aware TE, Smart QoS-aware TE, SLA preservation, heavy-hitter prediction for DDoS prevention
- Test case 4 on **Holistic zero-touch orchestration**
  - Including: expansion of [multi-domain e2e orch. , NFV orch., SDN controller instances], device discovery and onboarding, telemetry, service onboarding, UPF provisioning, SLA preservation

ETSI ISG NFV PoC project On automated E2E policy management

(new addition) ETSI TFS open source contributions

ETSI ZSM PoCs on AI-driven cong. control, TE, and SLA preservation

ETSI SAI technical specifications and report for AI-based DDoS prevention

ETSI ZSM PoC project on “chained zero-touch operations”

## • Planned steps

- Early definition during architecture design phase → Alignment with ETSI ZSM, ETSI NFV, ETSI SAI [Q3-23]
- Platform development and integration → Planning of contributions to ETSI actions [Q1-24 rel.1, Q3-24 rel.2]
- Test-site deployments and validations → Planning of specific ETSI PoCs + early contr. [Q3-24 – Q1-25]
- Full scale test case validations → Contributions to ETSI (PoCs, Tech.Specs, Open source,...) [Q2-25 – Q4-25]

# 5. Thank you for your attention



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