The Pan-European 6G Telco-Cloud for 3C Networks



Project Overview

Call 4/5 webinar

Prof. Christos Verikoukis ISI/ATH

Co-funded by the European Union

Co-funded by the European Union under Grant Agreement No 101292787. Views and opinions expressed are, however those of the author(s) only and do not necessarily reflect those of the European Union or the Smart Networks and Services Joint Undertaking. Neither the European Union nor the granting authority can be held responsible for them.

Project at a Glance

SOVEREIGN-6G delivers the first real-world 6G Telco Cloud in Europe, the foundation for beyond-connectivity Digital Services exposed through a Unified Service Platform.

FULL NAME
Unified Service Platform Over multi-VEndor Telco Cloud InfrastRuctures, ExposInG beyond ConNectivity services in 6G networks

CALL / TOPIC
HORIZON-JU-SNS-2025-01 · STREAM-C-01

PROJECT COORDINATORS
Prof. Christos Verikoukis (ISI/ATH), Greece

Dr. Theodora Tsapikouni (ISI/ATH), Greece

TECHNICAL MANAGERS

Dr. Konstantinos Ramantas (IQU), Spain

Dr. Marius Iordache (ORO), Romania

DURATION
1 September 2026 – 31 August 2029

TOTAL EC FUNDING

15M€

36 months

29 partners

14 countries

€14.9M Budget

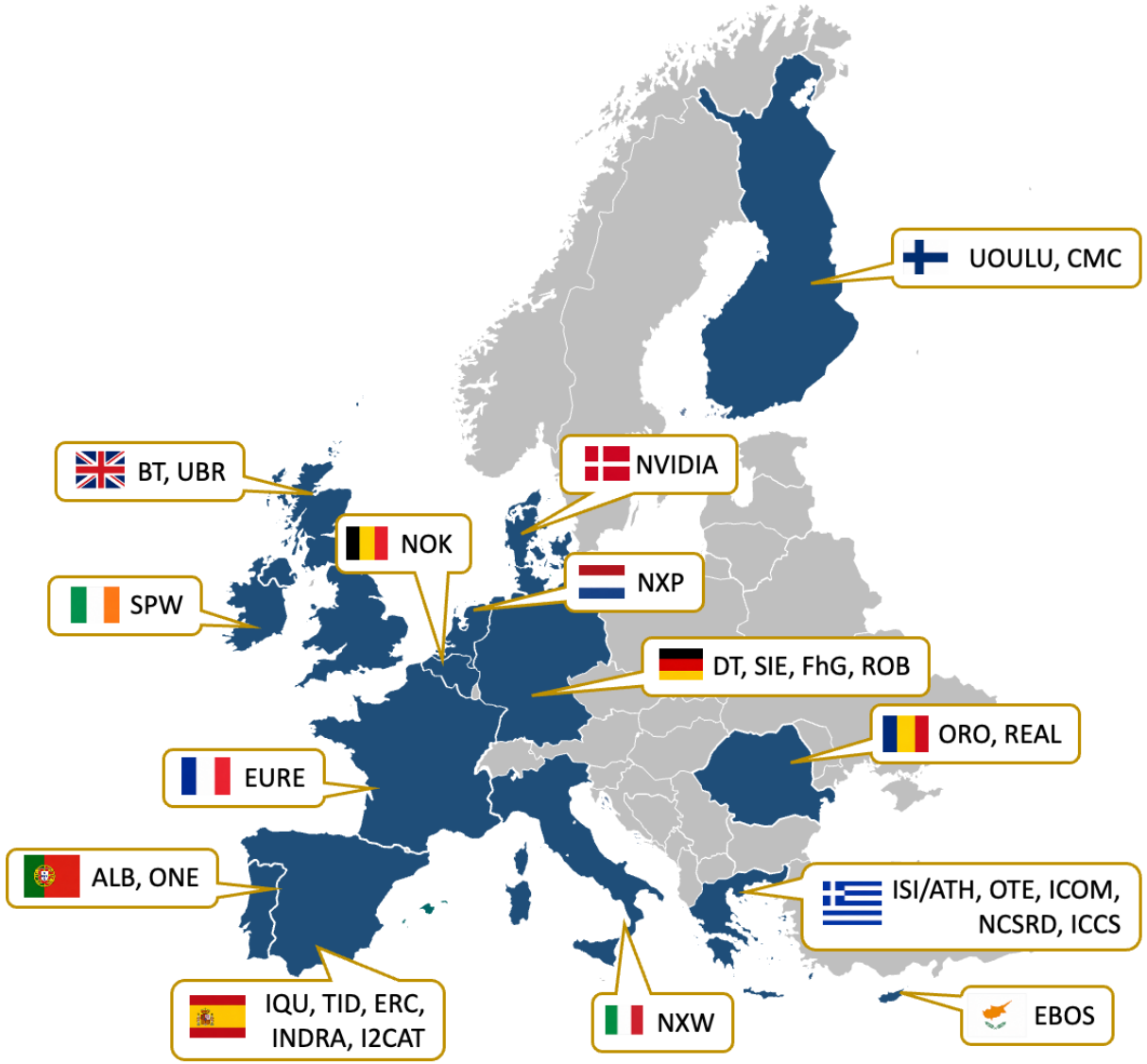
7 work packages

4 × 2 use cases × scenarios

A Strong Pan-European Consortium

- **13 EU member states & UK**

- **8** Research & academia (ISI/ATH, EUR, UOULU, NCSRD, I2CAT, UBRI, FhG and ICCS)
- **6** Telecom Operators (TID, DT, BT, ORO, ALB, OTE)
- **9** Large vendors (ERIC, NOK, SIE, NXP, NVIDIA, ICOM, INDRA)
- **8** Innovative SMEs (EBOS, IQU, NXW, REAL, ONE, SPW, ROB, CMC)



Telco AI Factories

Tier 1 Telcos see a new revenue opportunity in hosting AI inference across their datacenters and distributed network infrastructure

Deutsche Telekom

€1bn+ AI revenue

Projected revenue by 2030

Plans inference datacentres in telecom infrastructure.

Munich AI Cloud operating with nearly 10,000 GPUs.

Telefónica

17 edge nodes

Deployed across Spain

Low-latency compute close to customers, with control over data.

Part of Spain's AI gigafactory bid.

Orange Group

GPU-as-a-Service

Orange Business

Cloud Avenue: GPUs for inference and training in French datacentres.

Part of France's AION AI gigafactory bid.

BT Group

14 MW for GPUs

Planned at three BT sites

Nscale AI datacentres.

InferSlice at MWC26: LLM inference and fractional GPU sharing.


ERICSSON BLOG

7 OCT 2026

Telco edge: the secure sweet spot for edge AI inference

Network intelligence
Context-aware AI

Low-latency inference
Compute close to devices

Data sovereignty
Local, protected processing

Source: ericsson.com/en/blog/2026/10/telco-edge-ai-inference


NOKIA NEWSROOM

15 APR 2026

Nokia and Orange advance AI-RAN innovation with NVIDIA

GPU-based RAN
Nokia anyRAN + NVIDIA

AI optimization
Radio and energy efficiency

Integrated sensing
New services through ISAC

Source: nokia.com/newsroom/nokia-and-orange-advance-airan-innovation-with-nvidia/
Collaboration to develop and evaluate AI-RAN capabilities

Why SOVEREIGN-6G?

The challenge

- 6G telco cloud: Hybrid technologies, Multiple owners (hyperscalers, multi-MNO federations and private infrastructure)
- Cross-Domain Integration and E2E SLA: A complex challenge
- Lifecycle management of digital services remains manual and OPEX-heavy

The SOVEREIGN-6G Solution

- Deliver the pan-European 6G Telco Cloud Continuum built on interconnected 6G sites
- Converge IT, Networking, OT and Edge AI platforms under one orchestration continuum
- Automate discovery, negotiation, instantiation and SLA assurance with intent-driven cognitive control loops
- Expose beyond-connectivity services through a single Unified Service Platform

SOVEREIGN-6G vision: telcos at the top of the value chain

NaaS
Network-as-a-Service

CaaS
Compute-as-a-Service

AIaaS
AI-as-a-Service

SeaaS
Sensing-as-a-Service

SecaaS
Security-as-a-Service

Three Pillars

Addressing the main challenges of the Communication Service Provider – to - Digital Service Provider transformation

Pillar 1 — Unified Service Platform

A new BSS and Digital Service Aggregator & Marketplace for multi-stakeholder ecosystems

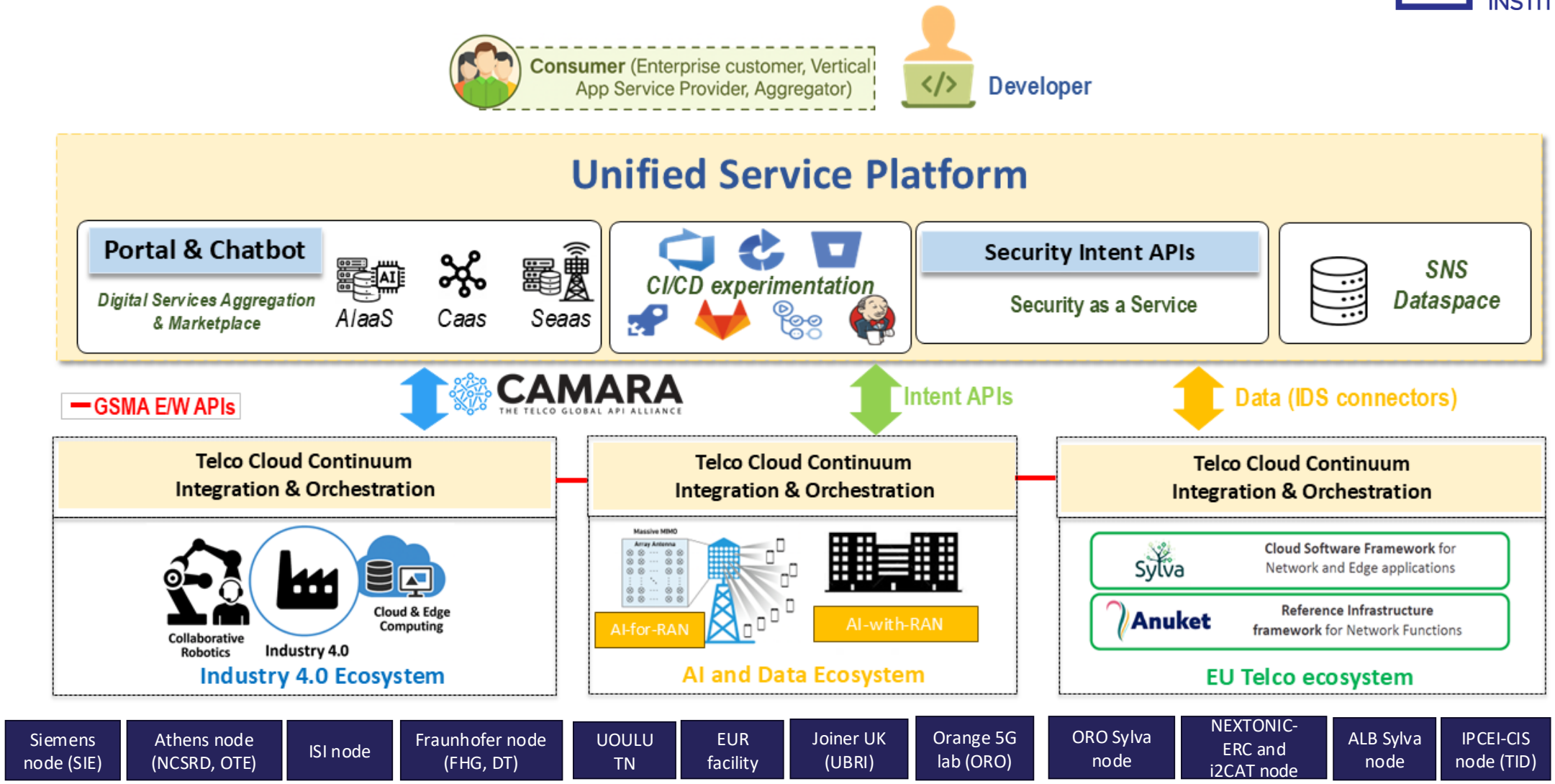
Pillar 2 — IT / OT / NT Telco Cloud Continuum

Digital Service Orchestrator, NDTs and intent-based networking for end-to-end SLA assurance

Pillar 3 — Native AI Edge

Distributed inference, sovereign Edge-AI acceleration and multi-modal sensing

Overall Architecture



Innovation Areas

Agentic AI over the Unified Service Platform

Beyond Connectivity Services (ISAC, AIaaS)

6G Telco Cloud continuum orchestration

AI-RAN resource orchestration

Physical AI

Sylva as an AI Factory platform

From Intent to Service, Across Europe

Main flow: the USP acts as a single point of contact; the underlying Operator Platforms and DSO handle fulfilment and SLA compliance

1 Express intent
Verticals order & bundle services via portal, chatbot or intent APIs

2 Translate
GenAI + NDT turn intents into Service Orders & CAMARA API calls

3 Distribute
Requests forwarded to the right provider domain and Operator Platform

4 Orchestrate
DSO composes IT / NT / OT / AI resources across the continuum

5 Assure & learn
Cognitive closed loops keep SLAs; data shared via 6G dataspace (GAI-X compilan)

Three ecosystems representing the key stakeholders of the future telco cloud

- Industry 4.0
- AI & Data
- EU Telco infrastructures

UC1 · Smart Manufacturing & Robotics

UC1 · Industry 4.0

1.1 CNFs disaggregation & resilience for collaborative robotics
FhG · TRL 4



1.2 Telco cloud continuum for smart manufacturing
SIE · TRL 5



UC2 · AI & Data

2.1 Distributed AI for Physical AI applications
NOK · TRL 4



2.2 Multi-modal sensing & GenAI through AI-RAN at the telco edge
EURE · TRL 4



UC3 · EU Telco Infra

3.1 Predictive RCA & assurance for Core / O-RAN CNFs
ORO · TRL 5



3.2 Secure federated CI/CD for mission-critical Sylva deployments
ALB · TRL 5



UC4 · Cross-ecosystem

4.1 Intent-based management of digital services at the Port of Barcelona
I2CAT · TRL 5



4.2 Zero-touch marketplace for immersive content creation
ICOM · TRL 4



SOVEREIGN-6G

ATHENA INDUSTRIAL SYSTEMS INSTITUTE

Thank You!!!



Prof. Christos Verikoukis ISI/ATH

cveri@isi.gr

https://sovereign6g.eu/