SNS JU Office & SNS CO-OP CSA

AGENTIC6G

Autonomous Multi-Agent Agentic AI System for 6G Networks

Call 4 & 5 Projects Introduction Webinar

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https://agentic6g.eu/

Project General Information

AGENTIC6G

Autonomous Multi-Agent Agentic AI System for 6G Networks

Project scope

Agentic6G develops an autonomous, distributed multi-agent Agentic-AI system that lets 6G networks self-organise, self-protect, self-heal and autonomously compose and optimise services across the device–edge–cloud continuum.

Project consortium

9 partners · 6 countries (RO, UK, IT, ES, PT, CY)

Industry + Universities + SMEs

Grant

GA No. 101290342 — HORIZON-JU-SNS-2025-STREAM-B-01-01

DURATION	FUNDING	COORDINATOR	TECHNICAL LEAD
36 months	€3.18M · 100% EU funded	Orange Romania (ORO)	Aston University (AU)

Technical Objectives

01 Autonomous multi-agent AI architecture for 6G networks

02 On-demand agent generation, deployment & onboarding

03 Intent-based tools for network exposure, self-protection & self-healing

04 AgenticOps framework for multi-LLM agent lifecycle management

05 Hybrid AI-native orchestration & spontaneous workflow composition

06 Integrate, test, validate & demonstrate PoCs; disseminate to SDOs & open-source

Project website: https://agentic6g.eu/

Project Technical Information

Technology Enablers & Domains

- **Technology Enablers:**
- AI / ML — multi-agent LLM-based Agentic AI
- Trustworthy — self-protection, post-quantum security
- Management & Orchestration — AgenticOps, self-healing, auto-scaling
- Computing Technologies — device-edge-cloud continuum
- Network Slicing — intent-based 6G network exposure
- **Network Domains:**
- RAN, Core, Transport, Edge Computing

Planned Experimentation/ Use Cases

- 10 PoCs validated in-lab across 6 B5G/Pre-6G testbeds & AI farms (RO, UK, IT, ES)
- UC1 – Agentic-AI for Zero-Touch Service Assurance in Multi-Vendor Telecoms (ORO B5G testbed, Bucharest)
- UC2 – Swarm-Intelligent Multi-Robot Interaction over Private Pre-6G Networks (UPV testbed, Valencia)

Vertical Engagement

- Yes — two vertical-driven use cases
  - Telecom service providers (multi-vendor B5G/6G service assurance)
  - Public Protection & Disaster Relief and Industry 4.0 (swarm robotics)
- Via partners' testbeds & vertical expertise, joint requirements definition, KPI/KVI-based results validation and exploitation (KERs)

Project Goals

- Integrated Agentic6G multi-agent AI platform, tested & validated to TRL4
- AI Agents Catalogue with on-demand agent generation & onboarding
- AgenticOps framework for multi-LLM agent lifecycle management
- Intent-based self-protection, self-healing & auto-scaling agentic tools
- Open-source components, >12 publications, contributions to 3GPP/ETSI/GSMA/IEEE

AI Agents & Key Innovations

AI Agents to be Developed

A catalogue of specialised, on-demand AI agents collaborating across the device-edge-cloud continuum:

Network Operations Agent
Monitors & manages multi-domain KPIs in real time

Security Expert Agent
Threat detection & intent-based self-protection

Self-Protector Agent
Post-quantum security & proactive defence actions

Self-Healer Agent
Autonomous fault detection & remediation

Self-Scaling Agent
Dynamic resource & capacity auto-scaling

Software Developer Agent
Automated code & service generation

Orchestration Agent
Multi-agent workflow & lifecycle orchestration

Spontaneous Agent Invoker
On-demand generation & onboarding of new agents

Key Innovations

Multi-Agent Architecture
Distributed intelligent agents collaboratively manage network operations across domains.

On-Demand Agent Generation
New AI agents dynamically created, deployed and integrated as requirements evolve.

AgenticOps Framework
Orchestrates multiple LLM-based agents, ensuring flexible and scalable operation.

Intent-Based Tools
Translate high-level requirements into actions enabling self-optimisation, self-protection and self-healing.

Hybrid AI-Native Orchestration
Dynamic workflow composition and efficient knowledge sharing across agents for continuous adaptation.