



Artificial Intelligence Activities for Smart Networks and Services

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EU-Taiwan 6G Joint Workshop – Advancing EU-Taiwan Collaboration through Technical Exchange

On-line, September 22nd, 2026

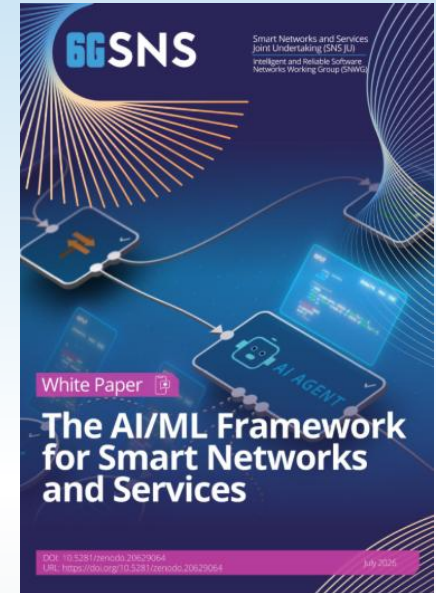


- Co-chaired by Dimitris Tsolkas (Fogus) and myself, with contributions from SNS JU projects
 - 79 SNS-JU research projects + 20 recently started
- The Intelligent and Reliable Software Networks working group scope covers:
 - Analysis of **key trends** and technological challenges **for transforming networks into intelligent, modular, open software platforms**
 - Focuses on **how 6G networks can embrace AI and support AI evolution in fully softwarised, cloud-native environments**
 - Covers core research topics such as cloud-native and “as-code” design, network openness and abstraction, **AI/ML for networks and services**, and DevOps/DevSecOps/MLOps practices
 - Addresses compute and connectivity infrastructures, platforms and components, with particular emphasis on **telco-edge-cloud integration**
- The WG enables a cross-project collaboration space where the activities of multiple SNS JU projects are discussed to converge and create positive synergies
 - Approximately 80% of the projects incorporate AI/ML mechanisms, underscoring the significant focus on AI-oriented research in 6G networks.
- The WG promotes dissemination of results through white papers, conferences, workshops, and collaboration with global stakeholders

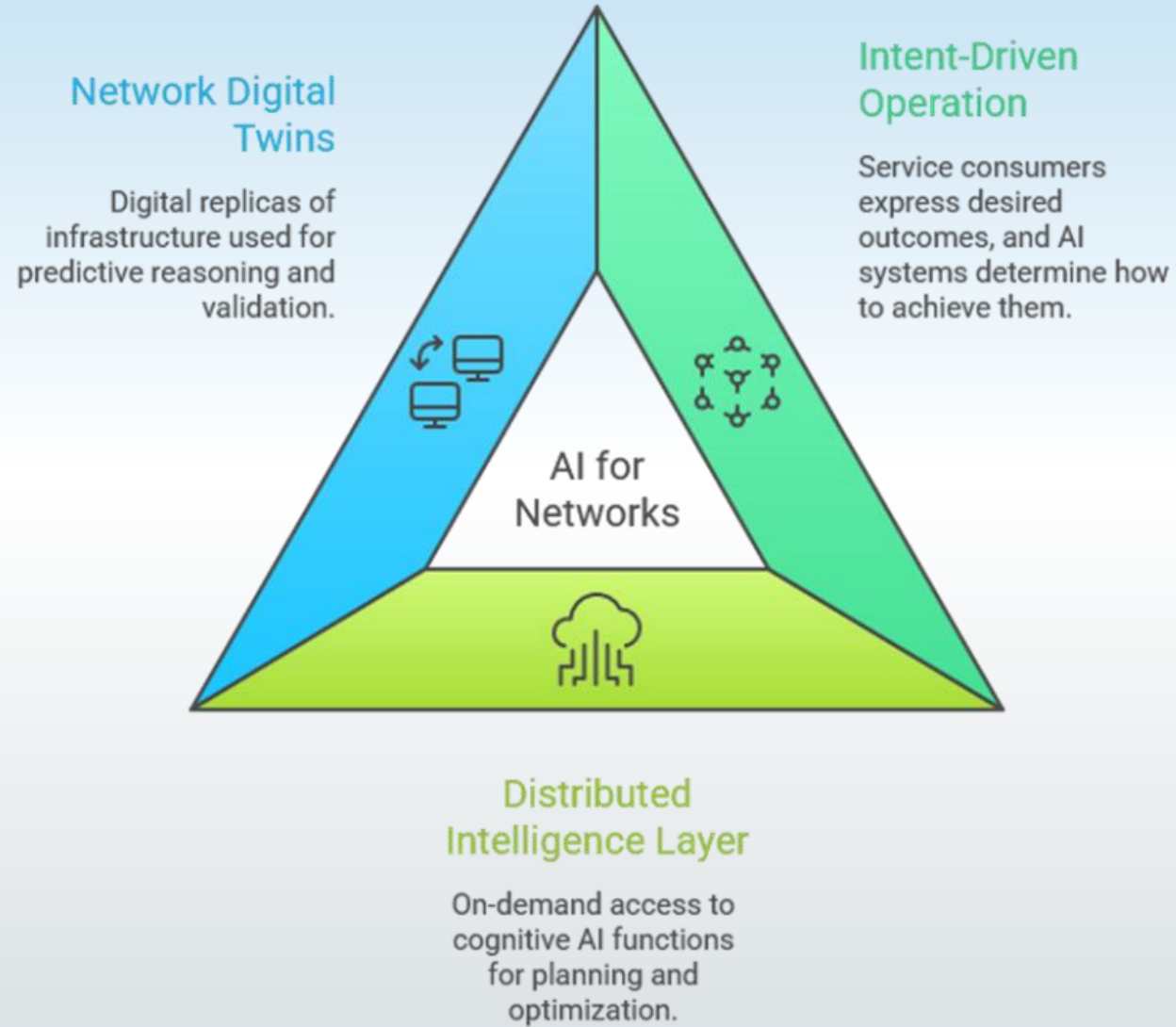
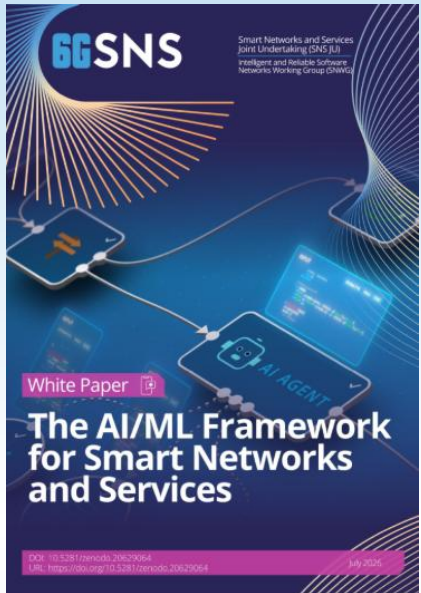
- Release of white papers collecting the views on AI/ML topics from different projects
- Liaison with ITU-T FG AINN facilitating the contribution of both use cases and PoCs to ITU-T reports
- Preparation of an AI glossary for SNS JU projects
- Organization of workshops / special sessions to maximize outreach and interchange of information with communities external to the WG
 - Lately, workshops at both EuCNC 2026 (<https://www.eucnc.eu/programme/workshops/workshop-9/>) and IEEE CSCN 2026 (<https://cscn2026.ieee-cscn.org/special-sessions>) on the topic of “Bridging Research, Software and Standards towards AI-Native networks”

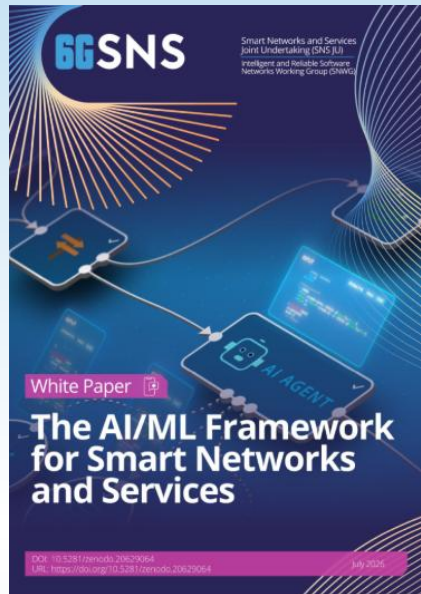


The AI/ML landscape for Smart Network and Services: Taxonomy, Standards, and Innovation pathways
Published in January 2026
[Pdf in SNS JU website](#)



The AI/ML Frameworks for Smart Network and Services
Published in August 2026
[Pdf in SNS JU website](#)





Energy Awareness

AI models must be designed to minimize energy consumption.



Reasoning Under Uncertainty

AI models must effectively handle unpredictable network conditions.



AI models for 6G systems

Interoperability

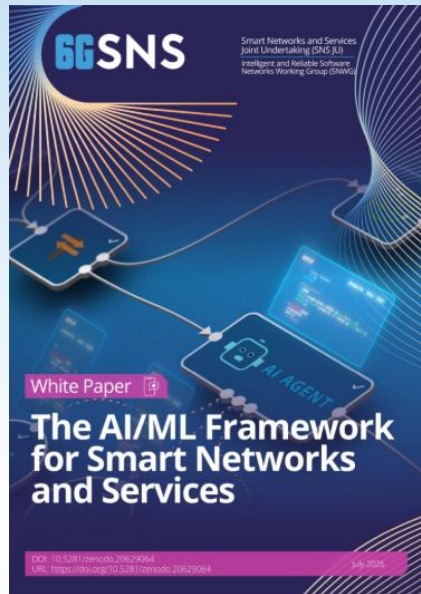
AI models must seamlessly integrate with diverse network components.



Computational Efficiency

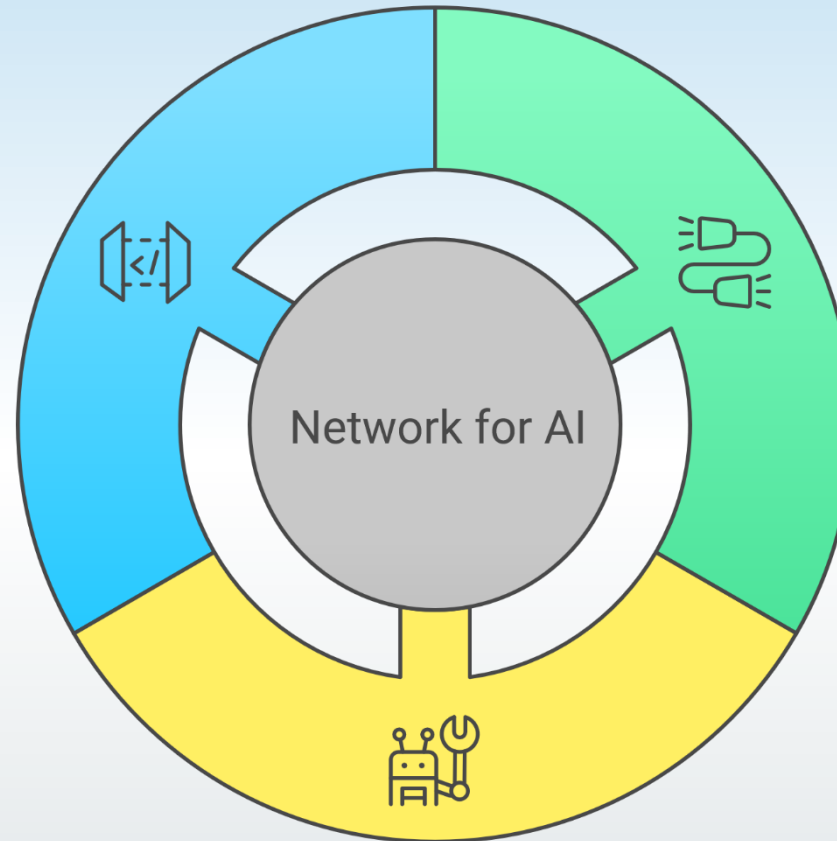
AI models need to operate with minimal processing power.





**Network
Softwarisation**
 Enables AI use through
 openness and
 programmability

**Communication
Protocols**
 Ensures seamless data
 exchange between AI
 systems



**Goal-oriented
Communication**
 AI agents performing
 network functions

- **Terminology remains fragmented**, creating misalignment across research, standards, and implementation.
- **AI-native networking is the real paradigm shift**, not just adding AI to existing systems. AI must become a **native capability** of 6G, not an add-on optimization layer.
- **Lifecycle management is essential**: training, validation, deployment, inference, monitoring, and retraining must be governed.
- **Trustworthiness is operational**, requiring explainability, robustness, traceability, and data integrity.
- **AI/ML is spreading across the full stack**, from PHY/MAC to orchestration, slicing, security, and SLA assurance.
- **Intent-driven and closed-loop control** are essential to manage 6G complexity at scale.
- **Distributed and lightweight AI** is mandatory across cloud, edge, and constrained domains.

- **Establish a common AI/ML vocabulary** for smart networks and services.
- **Accelerate convergence across SDOs** (3GPP, ITU-T, O-RAN, ETSI and IETF) on lifecycle, interfaces, and trust models. **Risk of fragmentation**, need of working through common frameworks and reusable practices.
- **Embed governance and explainability into operational pipelines**, especially for critical functions. Embed **security, privacy, and trust** across the full AI lifecycle.
- **Support distributed intelligence**, including edge-native deployment and federated learning.
- **Develop efficient multi-agent communication mechanisms** beyond stateless APIs.
- **Integrate sustainability metrics into AI operations**, not only performance metrics.
- Build **AI-native orchestration** across multi-domain cloud, edge, transport, and RAN environments.
- Use **Network Digital Twins** for safe training, validation, and decision support.

From Automation → Intelligence → Autonomy

- **AI will be a native component of 6G networks**, not an external optimization tool.
- **Trust, interoperability, and governance** are as important as AI performance.
- **Collaboration across research, industry, and standards** is the key to building sustainable AI-native networks.
- Opportunity of collaboration between EU and Taiwan in common areas of interest

6G SNS

6TH GENERATION SMART
NETWORKS & SERVICES

THANK YOU FOR YOUR ATTENTION



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