



AI-Native Networks (FG-AINN)

ITU Focus Group

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18 Mar 2026

**International Workshop on
6G Standardization**

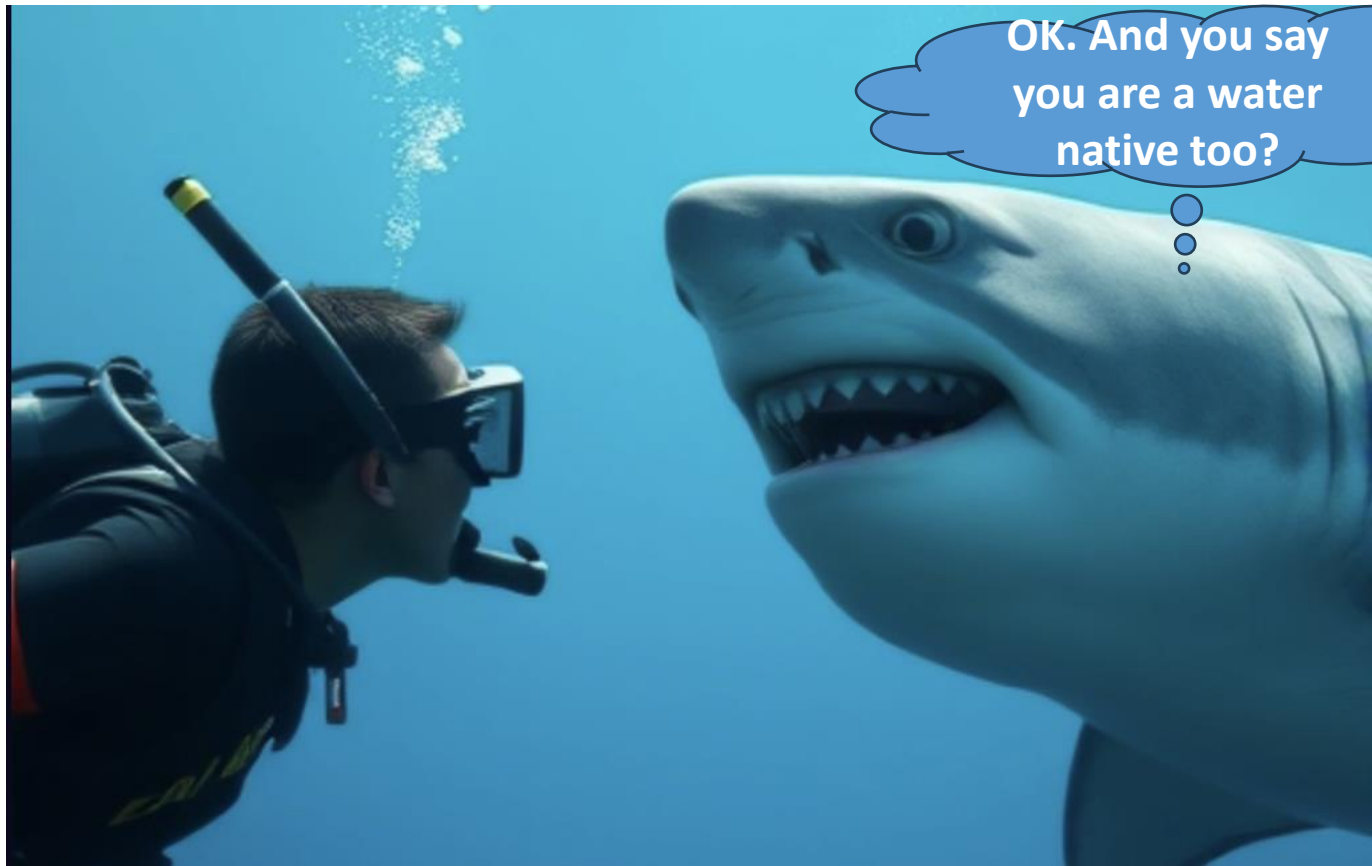


Agenda

1. What is AI Native?
2. Example use cases
3. Key Architectural Concepts.
4. Definitions
5. How to contribute?



What is AI native?



AI Native refers to the **integration** of AI technologies at a fundamental level **within network architecture**, rather than as an additional overlay.

This approach aims to enhance **network autonomy, efficiency, and adaptability**.

Refer: SG13-TD279

Example use case -1: Disaster resilience

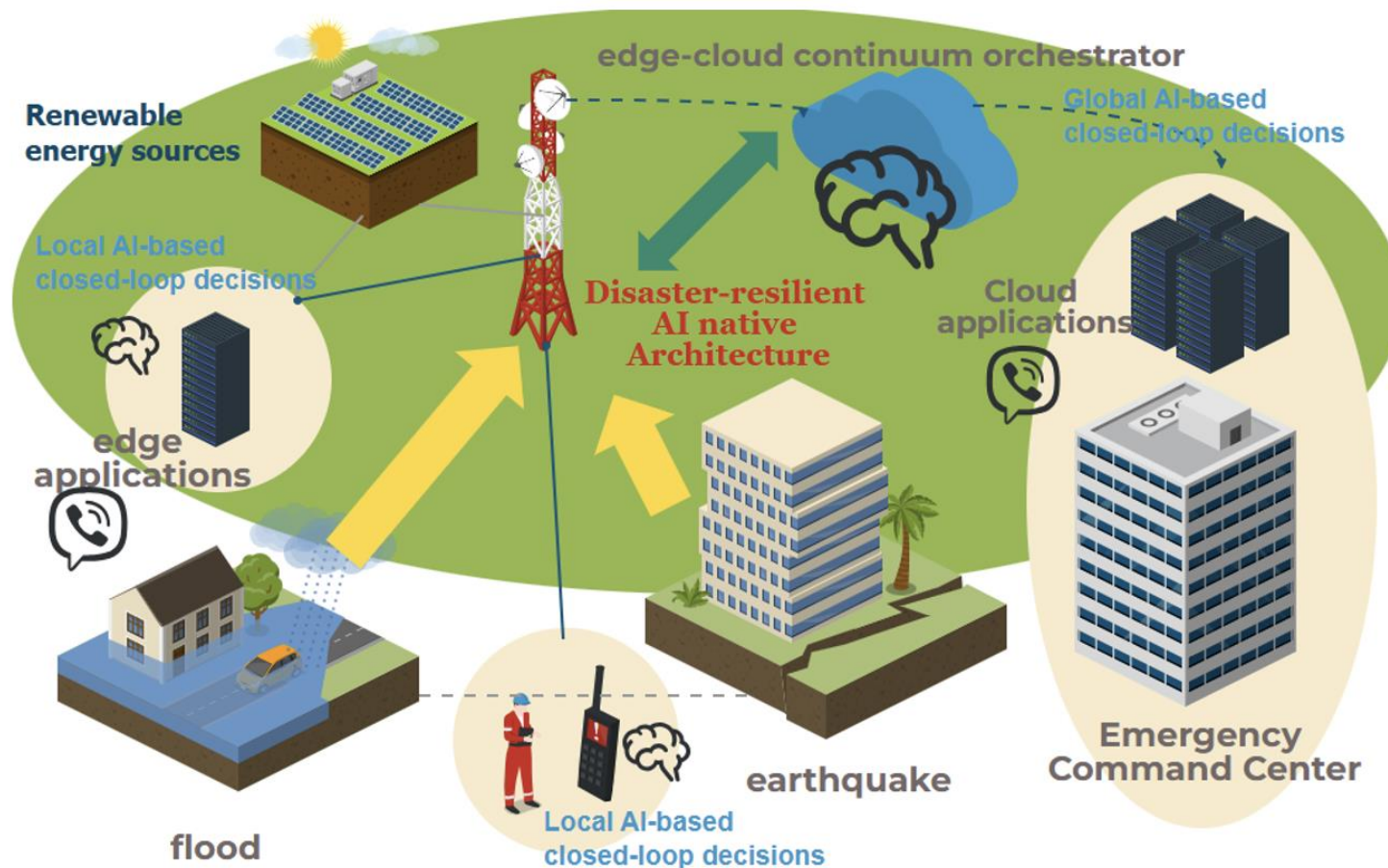
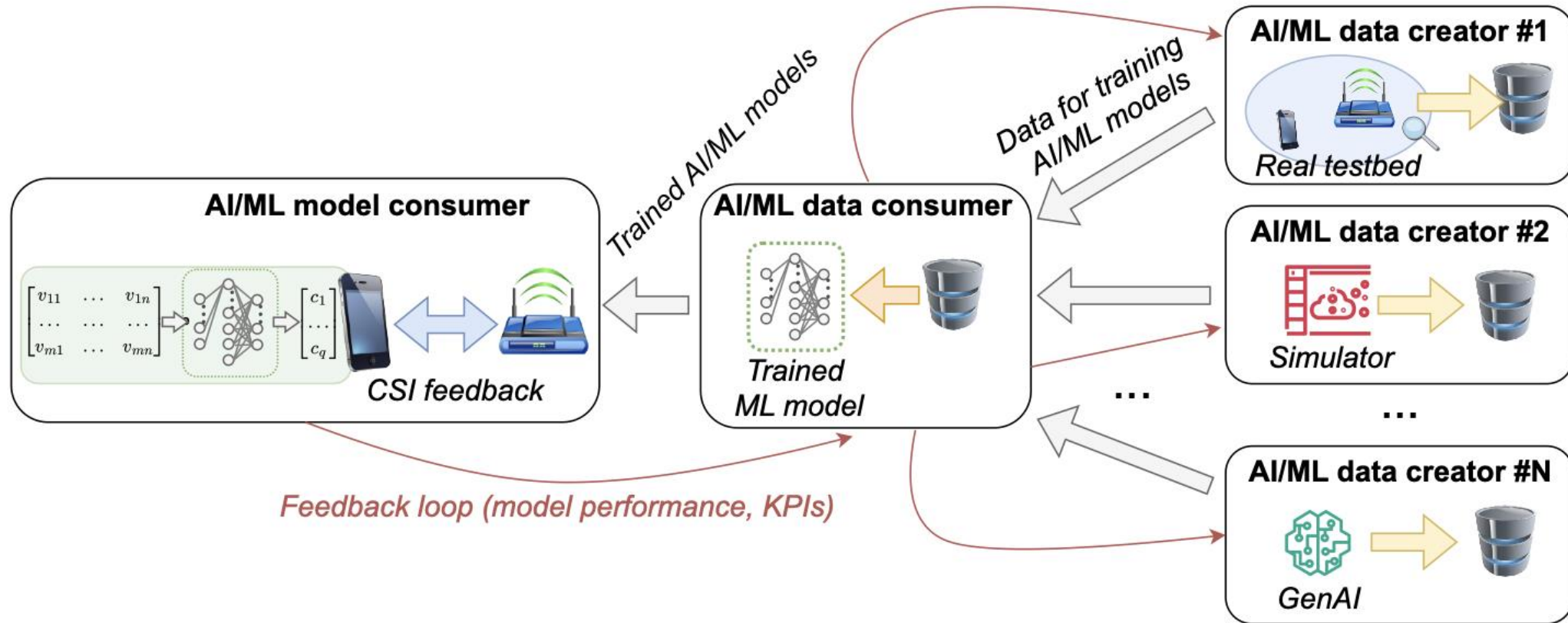


Figure 1: Use case of sustainable networks for disaster handling

Utilization of distributed AI along with renewable energy sources to enhance network flexibility and efficiency, ensuring minimal downtime during transitions between emergency and normal operations.

Example use case -2: Data creator



Knowledge Base (KB): Features specific state (e.g., target network topology and configuration) is used to generate feature specific data (e.g., what-if performance).

AI technologies: GenAI, distillation of knowledge, standardised metadata, data and model catalogues, synthetic data generation are technologies used for generating and managing data for machine learning.

Architecture concept-1: service deployment and use

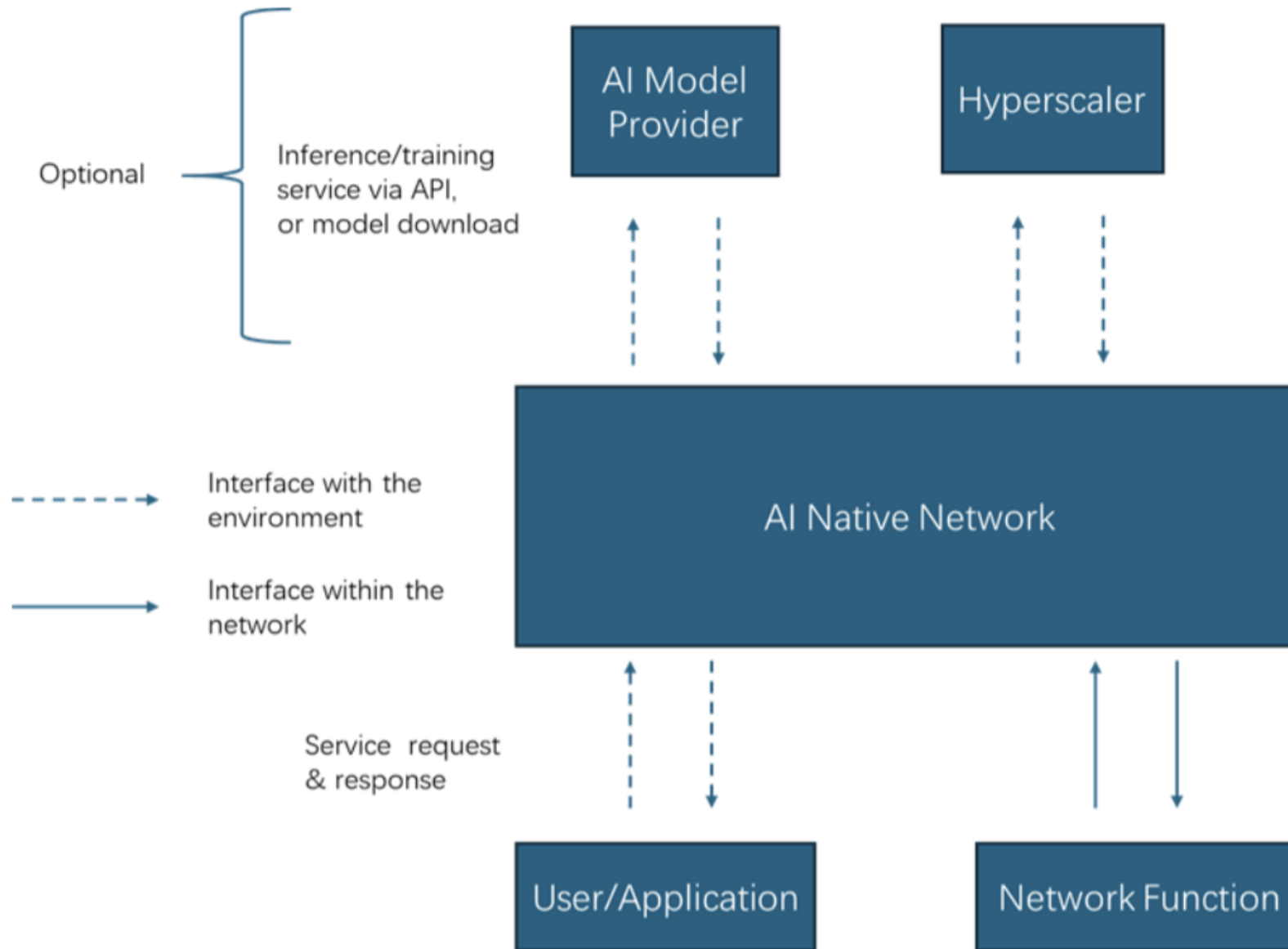


Figure 1. AI service deployment within the AI native network.

Architecture concept-2: capability framework

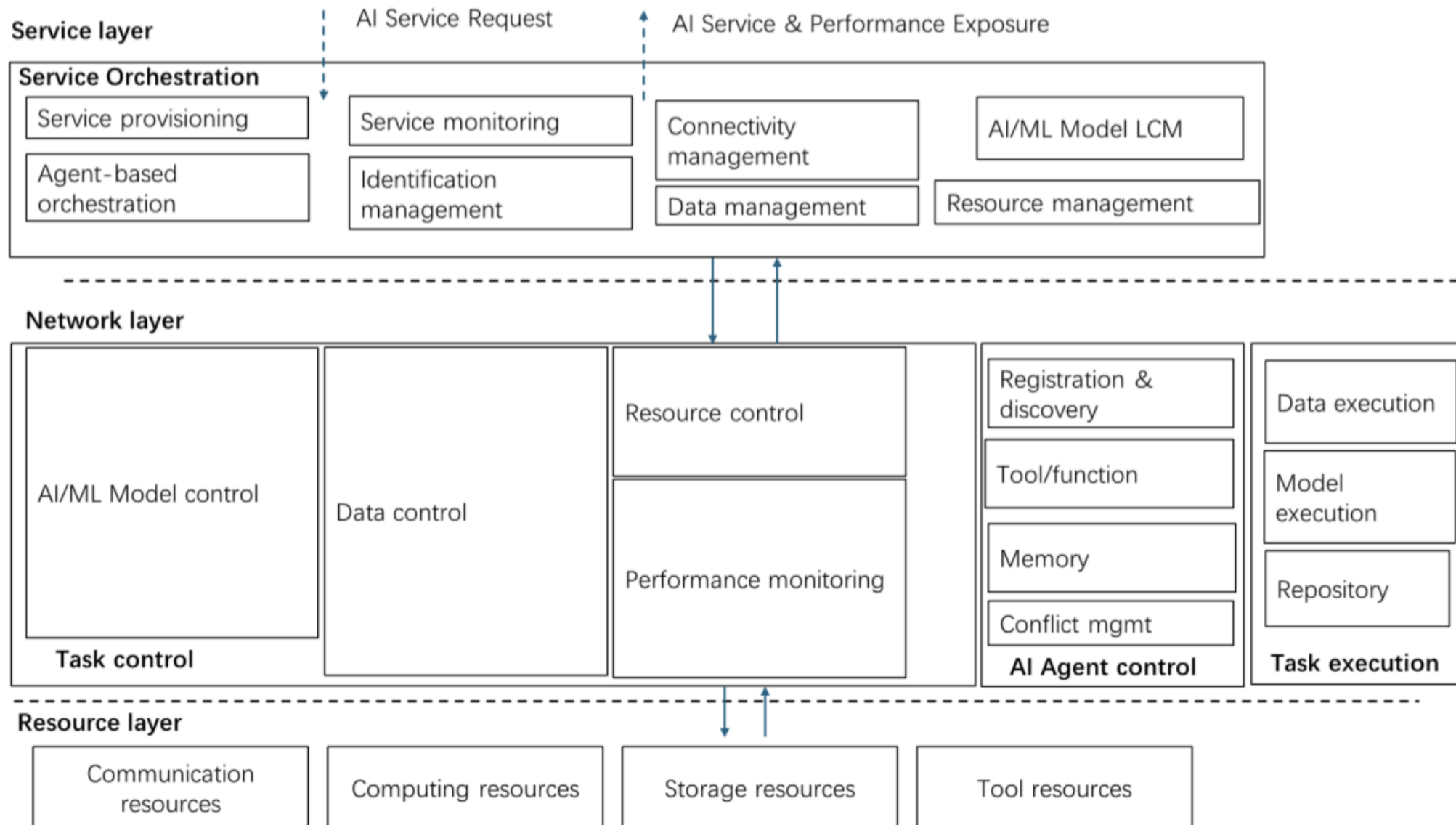


Figure 2. AI Native architecture capability framework.

What is AI Native (Definitions)?

AI-native telecommunication network is: "Telecommunication networks integrating AI as a core component, enabling novel value-added services, and enhancing the performance of the network and its services.

AI-native networks is: "networks in which all steps in the lifecycle of network services, applications and functions, and AI pipelines, are managed by AI, using AI, and with specific aim to make AI integration easier in the network.



AI Agents

AI agent in AI-native telecommunication network : An entity in the AI-native telecommunication network able of interacting with the AI-native telecommunication network environment and that uses AI task-specific capabilities for achieving the goals of the AI-native telecommunication network and its environment.

Knowledge Base

Knowledge base [ITU-T Y.3061]: A subsystem which manages storage, querying, export, import and optimization and update knowledge, including that derived from different sources including structured or unstructured data from various components or other subsystems.

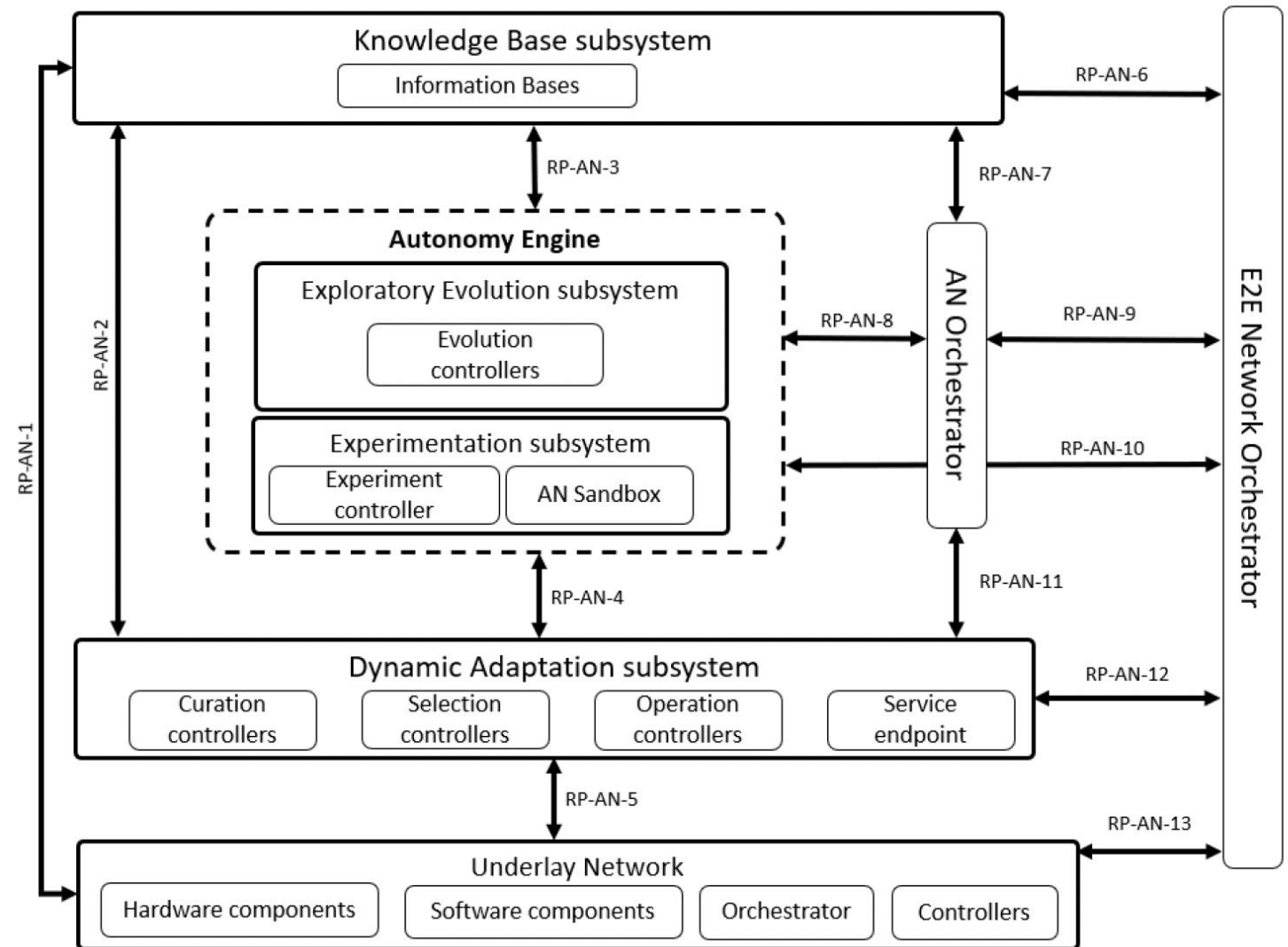
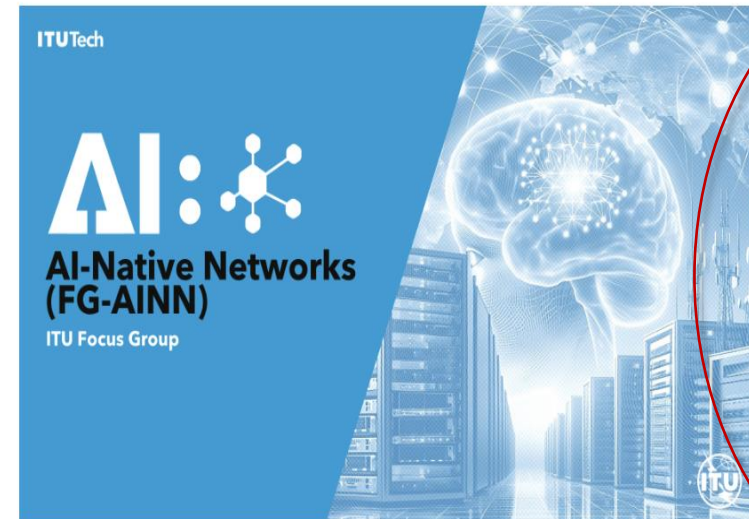


Figure 1 – High-Level Architecture Framework for Autonomous Networks

Introduction: FGAINN

- ITU FG-AINN (Focus Group on AI Native for Telecommunication Network) focuses on:
- **Researching AI integration in network architecture**: Understanding how AI can be embedded in the core of network design, to create intelligent networks. Addressing challenges and gaps: Reviewing current technologies and standards to identify what is lacking in the transition towards AI-native networks.
- **Collaborating with other bodies**: Establishing partnerships with other standard development organizations (SDOs) and industry groups to ensure a unified approach to AI-native networking.

FG-AINN



"The rise of AI-native networks marks a new chapter in the evolution of global

<https://www.itu.int/en/ITU-T/focusgroups/ainn/Pages/default.aspx>

Meetings and
Related Events

News

Past

7th FG-AINN meeting
Virtual, 5-7 May 2026
1200-1630 CEST

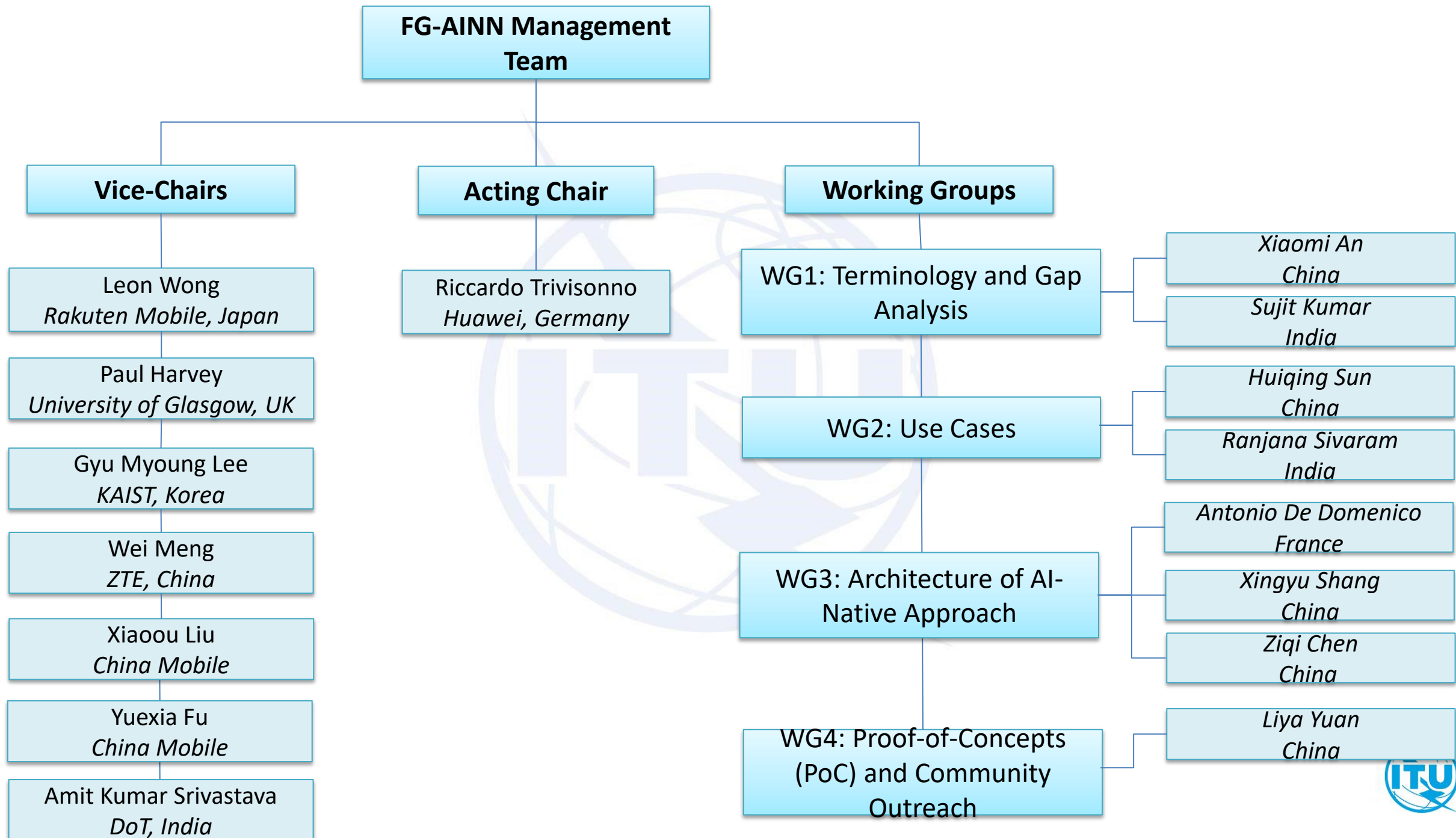
- ▶ Announcement
- ▶ Registration
mandatory to attend on-site or online
- ▶ Documents
- ▶ Remote participation
(for registered delegates only)
Guides: [delegates](#) | [moderator](#)



FG-AINN: Overview

- ITU-T Focus Group on Focus Group on Artificial Intelligence Native for Telecommunication Networks ITU-T Study Group 13 at July 2024 meeting.
- The Focus Group will draft **technical reports and specifications** for AI-Native networks, including exploring and defining the fundamental changes needed in network architecture to fully harness the potential of AI.
- This focus group seeks to identify the requirements, challenges, and opportunities that AI-native networks will bring to the global communications landscape.
- The Focus Group will also identify relevant gaps in the standardization of AI-Native networks.

The primary objective of the Focus Group is to provide an open platform to perform pre-standards activities related to AI-Native Networks.





FG-AINN Build-a-thon Overview

- The **FG-AINN Build-a-thon** is a collaborative innovation event designed to explore and prototype **AI-native solutions** addressing both next-generation telecom network requirements and broader societal challenges.
- In partnership with the **ITU AI/ML in 5G Challenge** and **AI for Good**, this Build-a-thon emphasizes:
 - **Explainable AI,**
 - **Intent-based orchestration,** and
 - **AI pipelines within telecom infrastructures**
- to drive the evolution of **autonomous, adaptive, and resilient networks.**
- Participants will develop practical designs and demonstrators that reflect the **key concepts and architectural principles** discussed within the **ITU-T FG-AINN.**

Example of PoCs

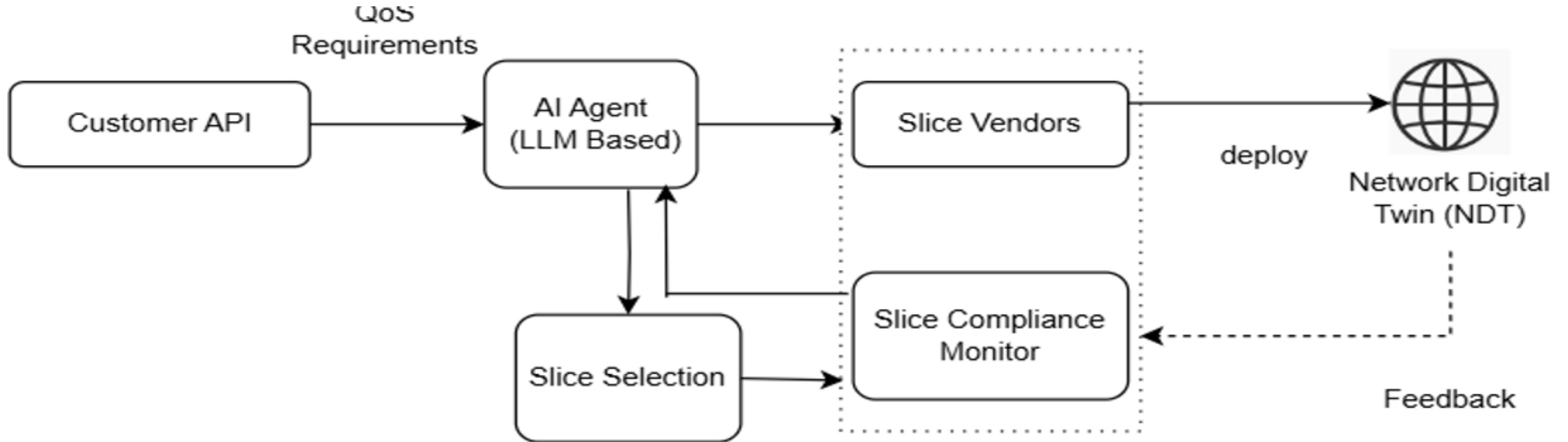


Fig. 9.1.1: AI-Native Proactive Network Slice Marketplace

PoC demonstrates an AI-native network slicing framework where Deep-Q-Network (DQN), Long Short-Term Memory (LSTM), and Large Language Model (LLM) agents enable intelligent, real-time decisions for vendor selection and slice optimization. It showcases integration with open5GS and supports structured data exchange for adaptive orchestration.

Highlight of PoCs

- The ITU-T FG-AINN organized three Build-a-thon challenges in 2025 to accelerate the development and validation of AI-native networking solutions.
- **Build-a-thon 1.0**, conducted in June 2025, saw participation from 23 registered teams, out of which 10 teams submitted final prototypes, and 6 winners were selected. To support the participants, six mentoring sessions were held from May to June 2025.
- **Build-a-thon 2.0**, held during June–July 2025, was supported by five dedicated mentoring sessions and concluded with the announcement of three winners.
- **Build-a-thon 3.0**, held during Aug – Sep 2025. A series of four mentoring sessions were conducted and concluded with the announcement of winners in Oct 2025.
- **Build-a-thon 4.0**, held in Feb 2026 in India.



Purpose and Goals of the FG-AINN Build-a-thon

- . **Aim** is to develop designs and demonstrators that reflect the core concepts and architectural foundations discussed within the **FG-AINN**.
- . The event will **document and showcase the feasibility, trade-offs, and practical considerations** of implementing AI-native networking principles using current design and development tools.

Build-a-thon 4.0 (during AI Impact Summit 2026)

- **Organisation:** International Telecommunication Union (ITU)
- **Co-Organisation** (if any): ITU AI for Good Machine Learning in 5G Challenge, ITU Focus Group on Artificial Intelligence Native for Telecommunication Networks (ITU FG-AINN)
- **Venue & Country:** Sri Sivasubramaniya Nadar College of Engineering, Chennai, India
- **Event Date(s):** 06 February 2026



Build-a-thon 4.0 (during AI Impact Summit 2026)



Thank you!

And

Join us for the 7th FG AINN meeting (fully virtual)

