

# Shaping the Future of Connectivity: GSMA's 6G and AI Initiatives in Action

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# We are the world's leading Member Organisation for the mobile ecosystem

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## Connectivity for good

*Engaging members, governments & society to advance policy, facilitate digital innovation and reduce inequalities*

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## Convening

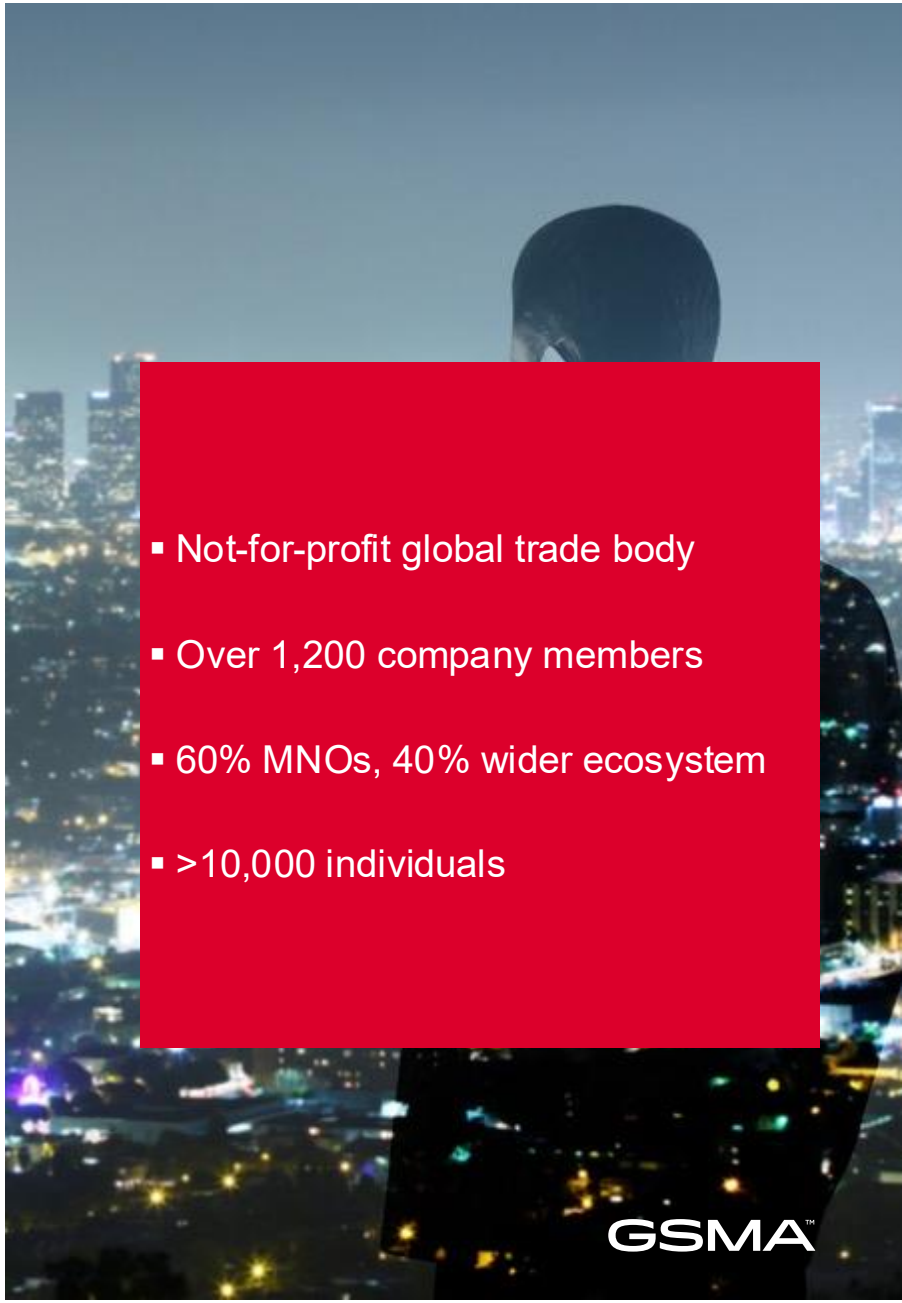
*Bringing the mobile ecosystem and its customer sectors together through the world's largest and most influential connectivity events*

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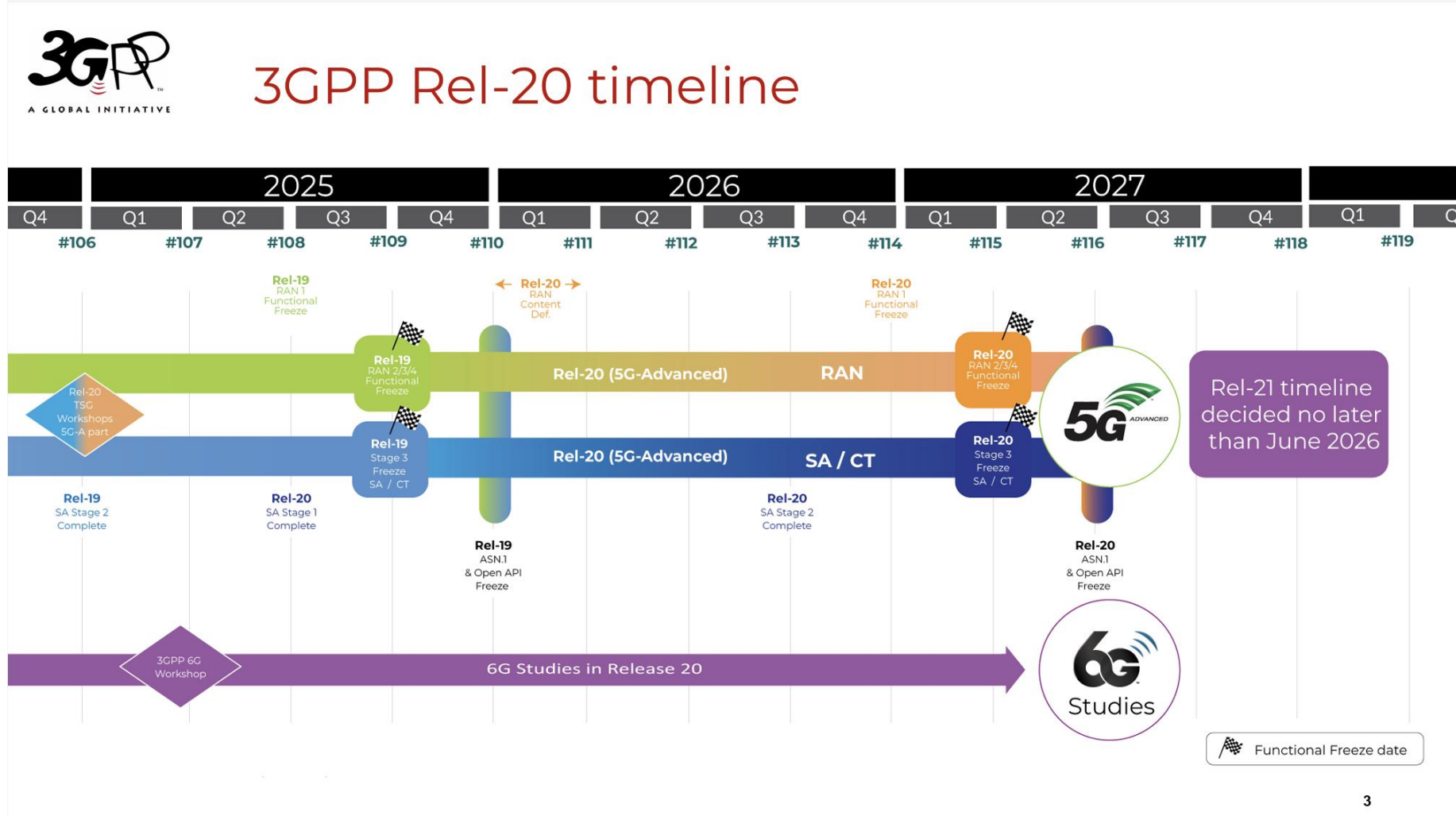
## Industry solutions

*Supporting the technology that makes mobile work: through projects, working groups and other collaborative activities*

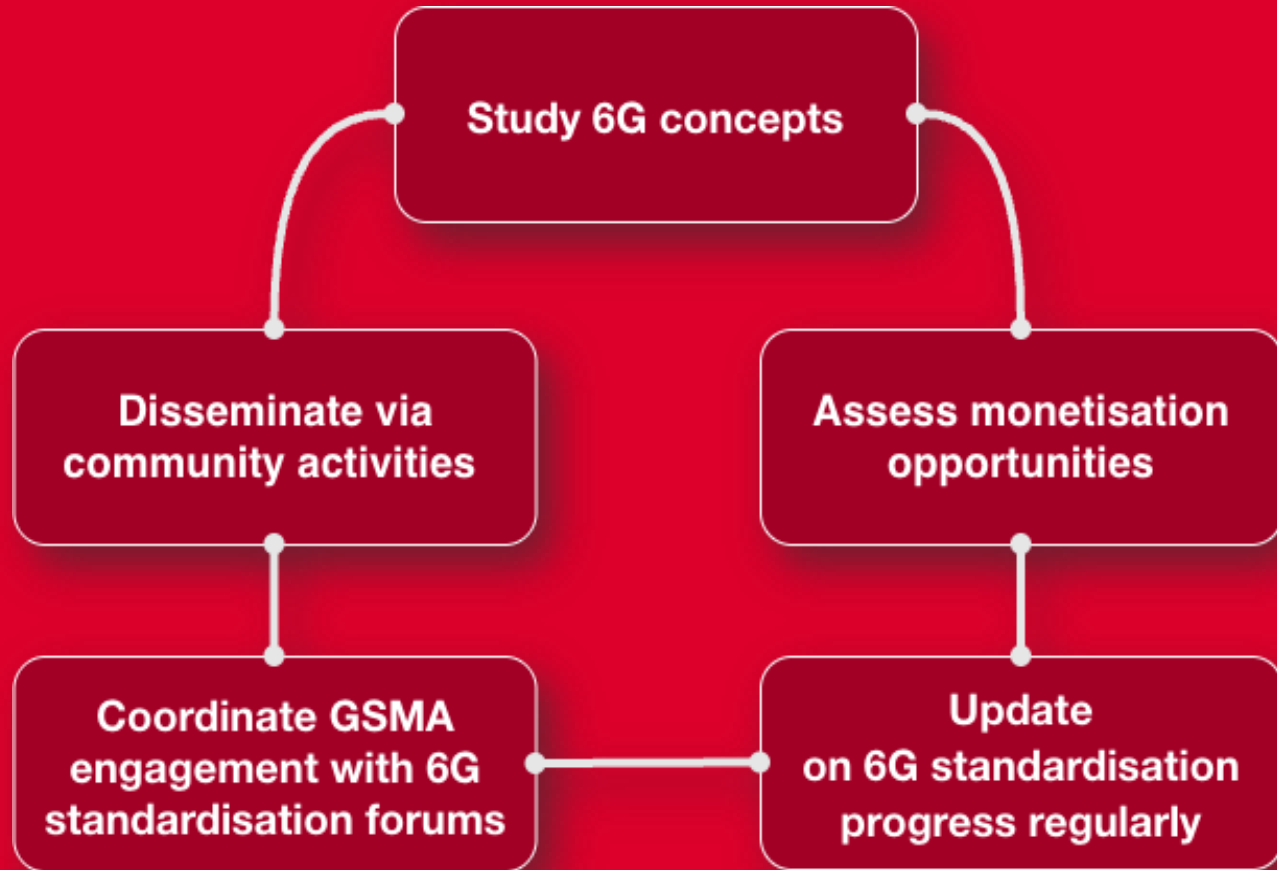
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- A person is seen from behind, looking out over a city skyline at night. The city lights are visible in the background, and the person's silhouette is in the foreground. A large red rectangle is overlaid on the right side of the image, containing a list of statistics.
- Not-for-profit global trade body
  - Over 1,200 company members
  - 60% MNOs, 40% wider ecosystem
  - >10,000 individuals

# 6G Schedule



# GSMA 6G Community



## Community goal

To drive early industry alignment on 6G requirements, architecture, and service enablers in support of 6G standardisation

We currently have over 174 members, spanning operators, vendors, and research institutes

# High-Priority Topics for 2026

**Group 1:** AI/ML (AI Agents & Agentic AI)

**Group 2:** Deterministic Performance (Compute & Transport)

**Group 3:** Data Framework (AI, Sensing, IoT, etc.)

**Group 4:** System Architecture (SBA, Intent, Migration/interworking)

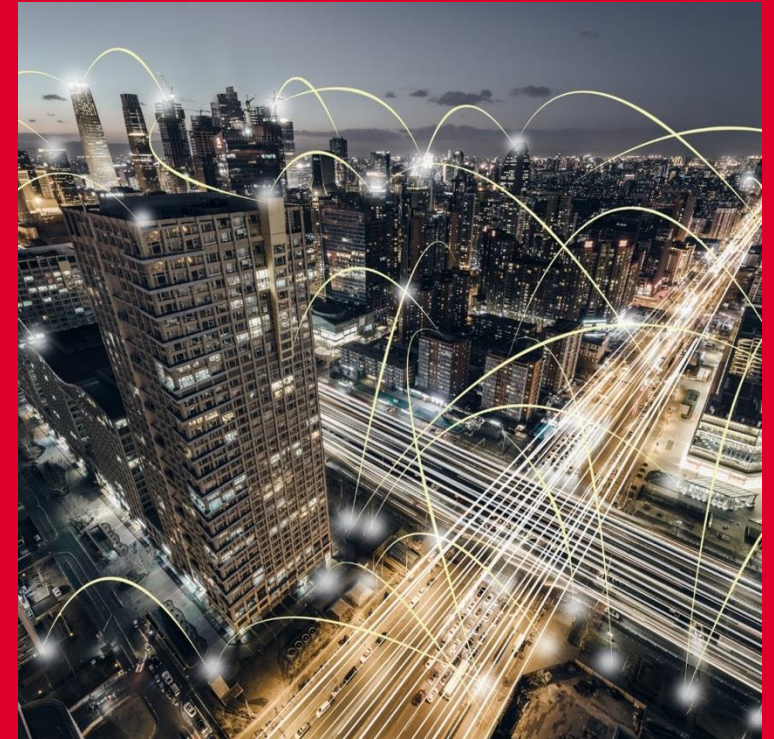
**Group 5:** Upper Layer Architecture (MAC, RLC, PDCP, RRC)

**Group 6:** 6G Terminals

**Group 7:** 3GPP SA1 6G Use Case Study [New Initiative]

**Group 8:** ISAC Technology [New Initiative]

**Group 9:** 6G Progress Report [New Initiative]



# Opening for Multiple PhD Student Placements

## **Role and Placement:**

- 4–6 month industry placement at GSMA
- Open to PhD students in Year 2 or above from disciplines including wireless communications, computer science, AI/ML, or related fields

## **Key Topics:**

- Engage with Integrated Sensing and Communication (ISAC) technologies, contributing analysis spanning both RAN and core network domains
- Explore 6G system architecture within AI network streams, with a focus on intent classification frameworks applicable across diverse use case scenarios
- Actively participate in GSMA's broader 6G and AI community activities, contributing across working streams such as data frameworks, terminals, upper RAN layers, deterministic compute and latency, and Agentic AI, among other emerging areas shaping the 6G and AI research and standardisation landscape
- Contribute to technical deliverables, white papers, conference papers or industry reports that directly inform GSMA's 6G strategy and member engagements



# GSMA 6G Community Workshop

## Prague 2026

Register your interest



### Workshop topics:

- System Architecture; Rel-20 & Rel-21 Standardisation
- AI Networking and Agentic Protocols
- Integrated Sensing and Communication (ISAC)
- Deterministic Transport and Compute
- Data Frameworks
- Distributed Intelligence and Future Terminals
- SA1 Use Cases – ROI and Deployability



**Start:** Sunday 11 October 2026 09:00

**End:** Sunday 11 October 2026 18:00

**Venue:** O2 Universum · Českomoravská 2345/17a · Praha  
9

**Location:** Prague, Czech Republic

# 6G Progress Report

## May Edition 2026

- The GSMA 6G Community has launched a new initiative providing regular updates on global 6G developments across GSMA and 3GPP activities
- Published after quarterly 3GPP TSG plenary meetings, the GSMA 6G Progress Report provides a concise overview of key progress, work planning, and dissemination activities for a broad technical and executive audience
- The first edition covers 3GPP TSG#111, SA2 developments, GSMA 6G Community activities, publications, and upcoming plans





# First Milestone G1 At MWC Barcelona 2026

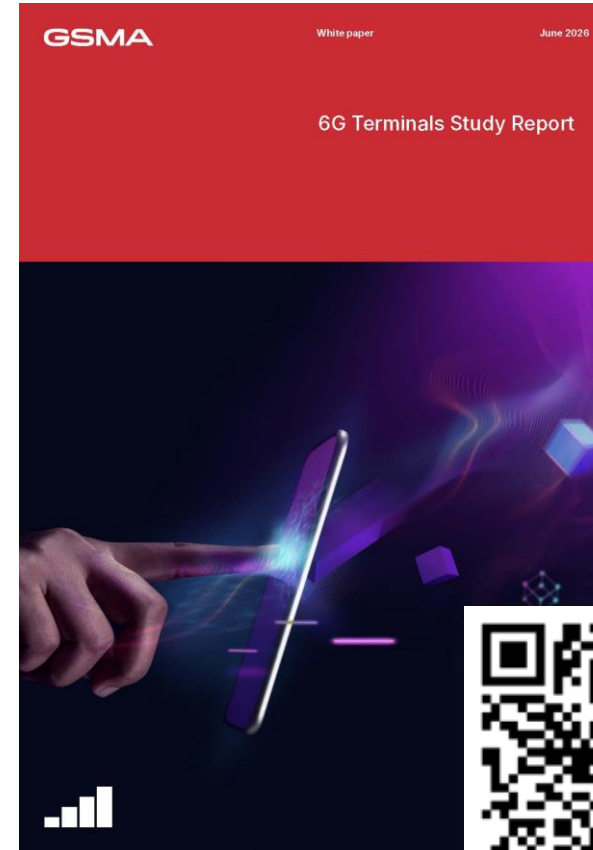
- Agentic systems can enable AI-native telecom networks through autonomous and collaborative AI agents
- Existing agentic frameworks are not yet telecom-ready for real-time, secure, reliable, and interoperable network operations
- Telecom agents must support multi-agent coordination, QoS-aware communication, intent-based interaction, governance, and service continuity
- Telecom-aware agentic protocols are needed to enable scalable and trustworthy 6G network operations

## Contributors:



# First Milestone G6 At MWC Shanghai 2026

- 6G terminals will become intelligent, AI-native platforms combining communication, sensing, computing, and AI.
- Key use cases include AI agents, XR, robotics, healthcare, autonomous transport, and smart manufacturing.
- Core capabilities include high throughput, low latency, integrated sensing, edge-cloud collaboration, and cross-device coordination.
- 6G terminals will enable new services and monetisation opportunities across multiple sectors.





**Join the GSMA 6G Community**

# The 6G AI Transition

3GPP Perspectives



# AI for 6G Architecture (KI#18)

## TR 23.801-01 (FS\_6G\_ARC)

- **Where AI sits in the core (V18.1, 18.2, 18.3):** Three competing positions on AI placement; (1) dedicated new network functions acting as agents, (2) AI capabilities embedded inside existing NFs, or (3) a fully separate AI domain distinct from the packet-switched core [Today's focus]
- **How intent is handled end-to-end (V18.4, 18.5, 18.6, 18.7):** Covers how intent travels from the UE or application function into the core, how it is structured and described, and how it is fulfilled and executed once received. These variants define the intent lifecycle
- **Handling requests without intent (V18.10, 18.11, 18.12):** Ensures the architecture still supports conventional service requests where no intent is expressed, including fulfilment logic and roaming behaviour for non-intent cases
- **AI learning and capability management (V18.13, 18.14, 18.15, 18.16, 18.17, 18.18):** Addresses ML inferencing, model training and provisioning, federated and collaborative learning, how AI tools and services are accessed, how AI capabilities are registered and discovered, and how trusted external AI capabilities from application functions are exposed
- **Monitoring, control and governance (V18.19, 18.20, 18.21, 18.22):** Covers performance monitoring of AI entities, NF-based monitoring architectures, closed-loop autonomous operation, and operator control over AI autonomy levels including fallback mechanisms [Today's focus]
- **5G interoperability (V18.9):** Ensures the 6G AI architecture can coexist and interoperate with existing 5G AI frameworks for continuity of service across generations

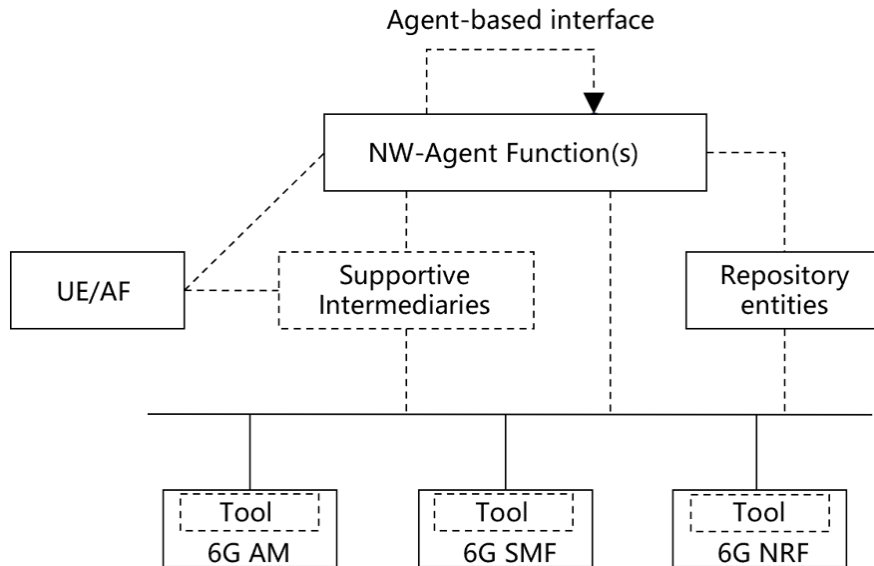
# Two Architectural Options for V18.1 and V18.3 Approved at SA2#175

3GPP TSG-WG SA2#175  
Dalian, China, 18 – 22 May 2026

S2-2605617<sup>cl</sup>  
(revision of S2-2605412/5285/4901/3638)<sup>cl</sup>

Source: China Mobile, SK Telecom, China Telecom, China Unicom, ZTE, CATT, Xiaomi, Huawei, OPPO, vivo, IIT Bombay, HONOR, Futurewei, ETRI, LG Uplus, Ewha Womans University<sup>cl</sup>

Title: [KI#18, Solution variant #18.1] Dedicated new 6G CN NF / set of 6G CN NFs to handle and fulfil requests including intent<sup>cl</sup>

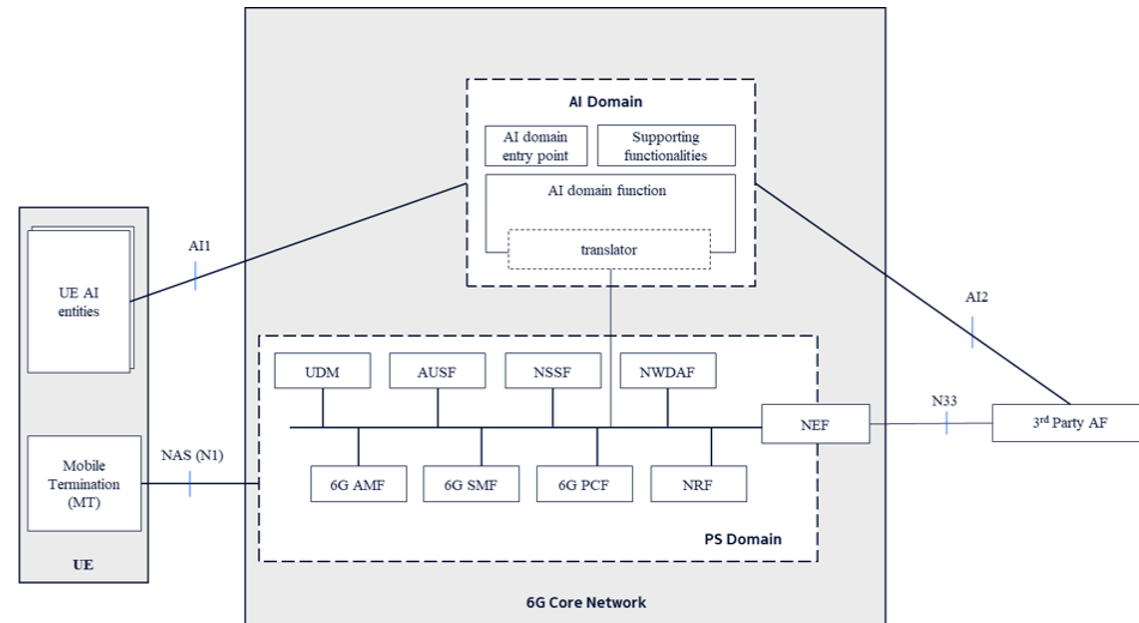


3GPP TSG-SA WG2 Meeting #175  
18 - 22 May, 2026, Dalian, China

S2-2605619<sup>cl</sup>  
(revision of S2-2605496)<sup>cl</sup>

Source: Nokia, Ericsson, AT&T, T-Mobile USA, SK Telecom, Qualcomm, Deutsche Telekom, Apple, Verizon, Softbank, Turkcell, Interdigital, Federated Telecoms Hub, Google, NVIDIA<sup>cl</sup>

Title: [KI#18, Solution Variant #3] New separated domain from PS domain, within 6G CN<sup>cl</sup>

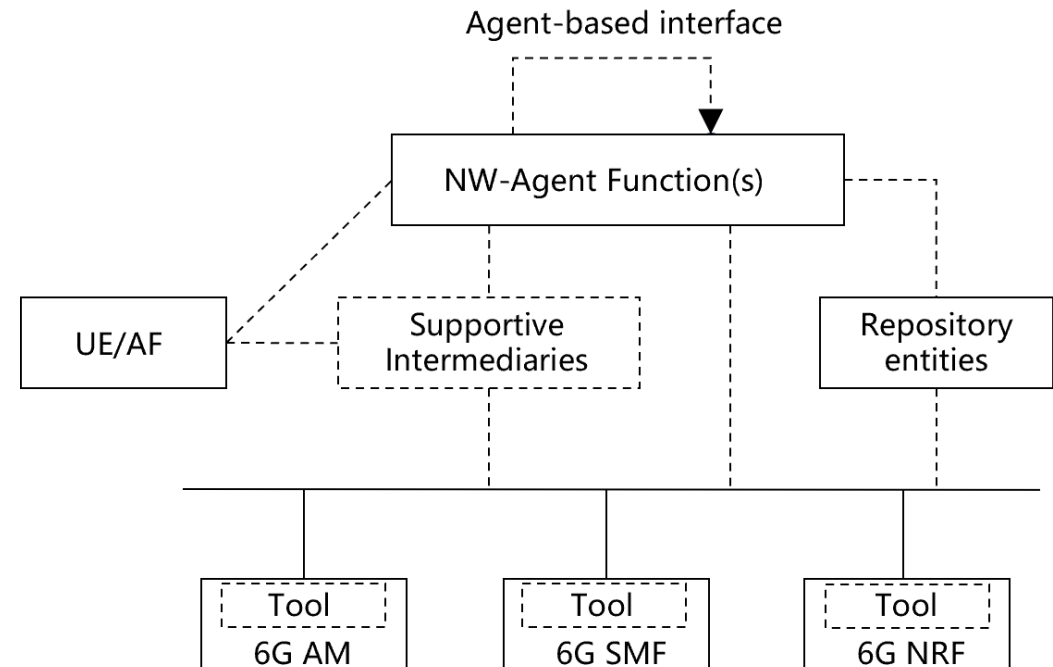




# Dedicated NW-Agent Functions (V18.1)

- New 6GC NFs called NW-Agent Functions (Brain NFs) live within the core network
- They receive intent requests from UE/AF, decompose them into goals, plan action sequences, and invoke existing 6G NFs (6G AM, 6G SMF, 6G NRF) as Tools via agent-based interfaces
- Intent transport may occur over CP (NAS), UP (PDU), or Service/AI Plane

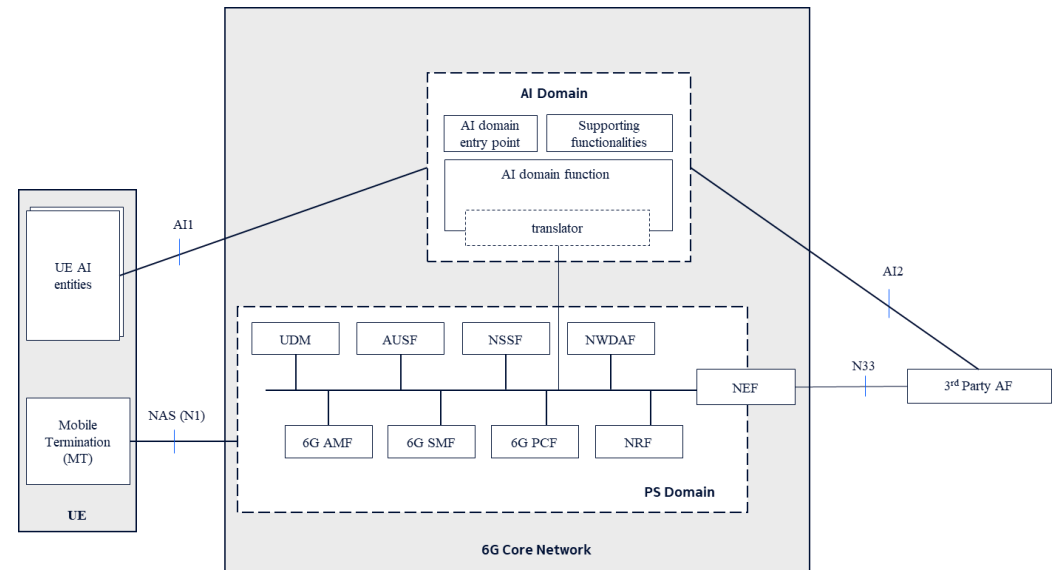
**Variant #18.1 (S2-2605617)**



# Separated AI Domain (V18.3)

- A new AI Domain within the 6GC which is physically and logically separated from the Packet-Switched (PS) domain.
- This introduces a logical or functional separation for AI capabilities, enabling independent evolution and control
- All AI processing, intent translation, and AI service delivery happens inside the AI Domain. PS domain NFs remain deterministic and AI-free.
- A Translator Function bridges the AI Domain to the PS Domain

**Variant #18.3 (S2-2605619)**



# Key Questions to Explore

- **Unresolved question (V18.3):** Should the AI domain have its own interface primitives, or inherit from the existing SBA?
- **Separate AI domain (V18.3):** Requires new inter-domain interfaces, like how the PS domain and IMS interact today through defined reference points. Does this add design complexity?
- **Dedicated NF inside CN (V18.1):** Avoids new domain boundaries but may risk constraining AI autonomy, as NF registration, discovery, and service operations were built for deterministic functions rather than goal-oriented agents?
- **Next steps:** Capture common aspects and key architectural differences across the variants and better understand the implications of each solution

# Operator Control of AI Capabilities in the 6G Core Network Architecture (V18.22)

- **What is the Operator Control concept:**
  - Defines how operators configure, govern, and override AI behaviour across the 6GC
  - Covers control at three levels: domain, network, and individual network function
  - Includes fallback (safety) mechanisms for when AI is disabled or underperforms
  - Explicitly preserves the option to operate with no AI capabilities at all
  - Operator Control is not a competing architecture option. It is somehow a mandatory safety gate that must apply regardless of whether V8.1 or V18.3 is chosen. Every AI-driven network action must pass through an Operator Control gate
- **Current state:**
  - 14 papers have been consolidated into a contribution, S2- 2605560, which has been approved at SA2#175 (including three approved principles with some ENs to resolve)

# Thank You!

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