SNS JU Program

Presentation to UK Digital Ecosystem

Javier Albares, Head of Program, SNS JU

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Introduction

- Overview of **SNS JU mandate** and **objectives**
- Why **6G matters**
- What **standardisation** signals as horizon-scanning
- What our **program portfolio** looks like
- Orientations of our **AWP 2027**
- How you can **plug in**

Europe's flagship public-private partnership for 6G research

UK's association to Horizon Europe took effect on **1 January 2024**

Public-Private Cooperation

Real-World **Validation with Verticals**

Sustainability
Core Design Principle

Federated Infrastructures
Pan-European

900 Million €
Horizon Europe
2021-27

6GSNS

\+

Global Standards
Influence

Technology Leadership

Scaling up
Pan-European 6G Ecosystem

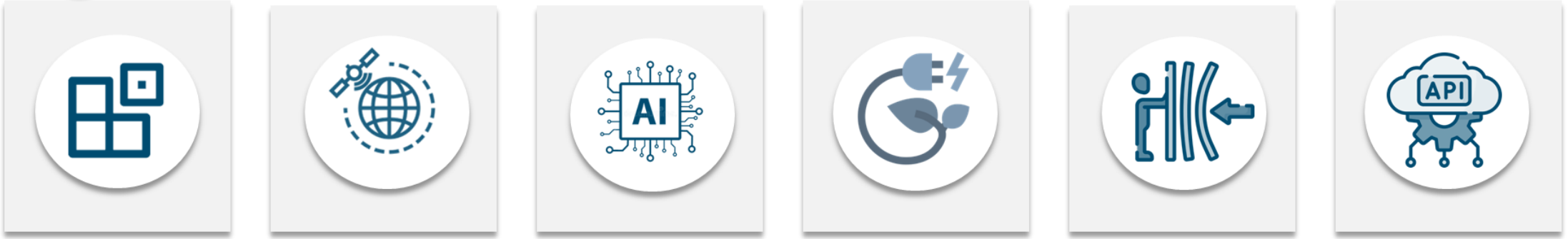
Expand scope into **Adjacent Tech. domains.**

6G is a **key technology for the future** of Europe

Represents a paradigm shift into networks that actively **sense, compute and act** in real time.

Open discussions (examples)

6G is **connectivity** fusing **with AI, sensing, and cloud/edge computing** into a single infrastructure layer



Single Standalone architecture from Day 1

Multi-RAT Modular Design 5G Interoperable

- Migration
- Semiconductors

Ubiquitous Coverage

Multi-Layer integration with NTN , Wi-Fi and other networks

- Strategic autonomy
- Single converged fabric

Multi-Domain AI / ML Orchestration +Sensing +Computing

- AI-Native
- Disaggregation
- Data management

Sustainability + Energy Efficiency

- Relative vs Absolute

Resilience + Secure + Trustworthy

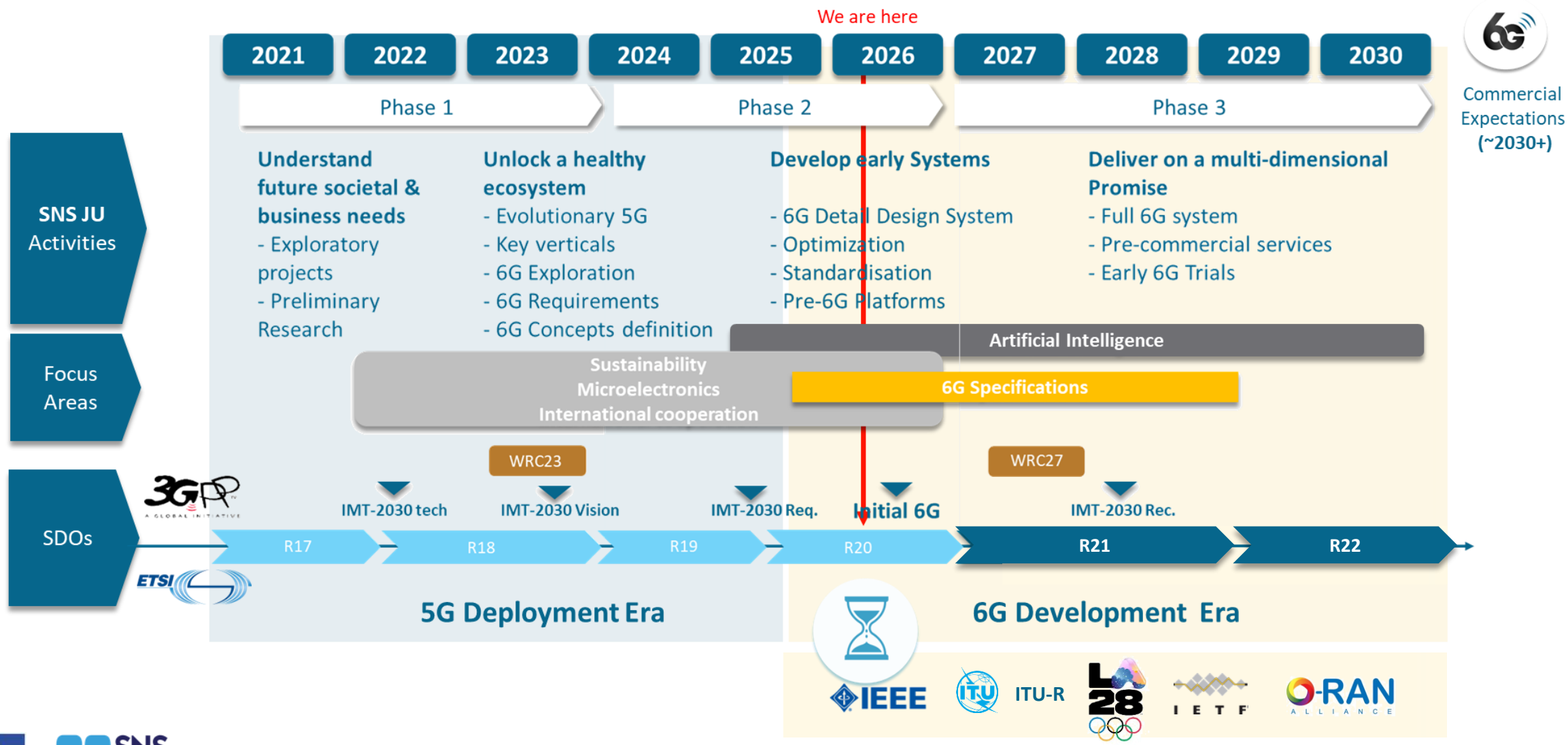
- Supply Chain
- Quantum safe networking

Softwarization Open APIs to manage & expose network assets

- AGENTS
- Openness
- Digital services

Next 3-4 years will be critical

6G infrastructure **standards and open-source activities** will shape a meaningful share of the digital economy for the next two decades



6G Standardisation landscape

6G research must engage with the infrastructure economics and system-balance constraints, not only with radio/protocol design.

Non-exhaustive

Standardisation and open-source are priority activities for openness, security, and industrial competitiveness

01 SDOs

ITU-R
- **IMT-2030** framework
- Spectrum & **WRC-27**
- Sets **global KPIs** for 6G

3GPP
- e2e mobile systems
- **Rel-20:** 6G study items (Aug 2025)
- **Rel-21**: 6G normative (Jan 2027 ?)

ETSI
- NFV, MEC, ENI (**AI for networks**)
- Hosts **3GPP & O-RAN secretariat**
- ZSM (zero-touch management)

IEEE
- **Wi-Fi / 6G convergence**
- Future AI-wireless standards

IETF
- **Global Internet and cloud**
- **Transport & routing protocols**
- 6G backhaul

02 Industry Alliances

O-RAN Alliance
- **Open RAN interfaces**
- Lead 6G lower-layer split (LLS)
- 300+ members; joint 3GPP WS

AI-RAN Alliance
- Led by NVIDIA
- 130+ members incl. Nokia & Ericsson

NGMN
- MNO-led 6G use-case requirements
- White papers feed into 3GPP/ITU
- Focus: sustainability, AI, …

TM Forum
- ODA (Open Digital Architecture)
- **API standards** for **Telco-cloud ops**
- AI/ML in BSS/OSS management

GSMA
- **Operator policy & roaming**
- Global advocacy

03 Software & Open Source

OCUDU
- Open CU/DU stack
- US: AT&T, Verizon, NVIDIA, Ericsson, Nokia.

LINUX Europe
- **Sylva** (Telco Cloud stack)
- **CAMARA** (Network APIs)

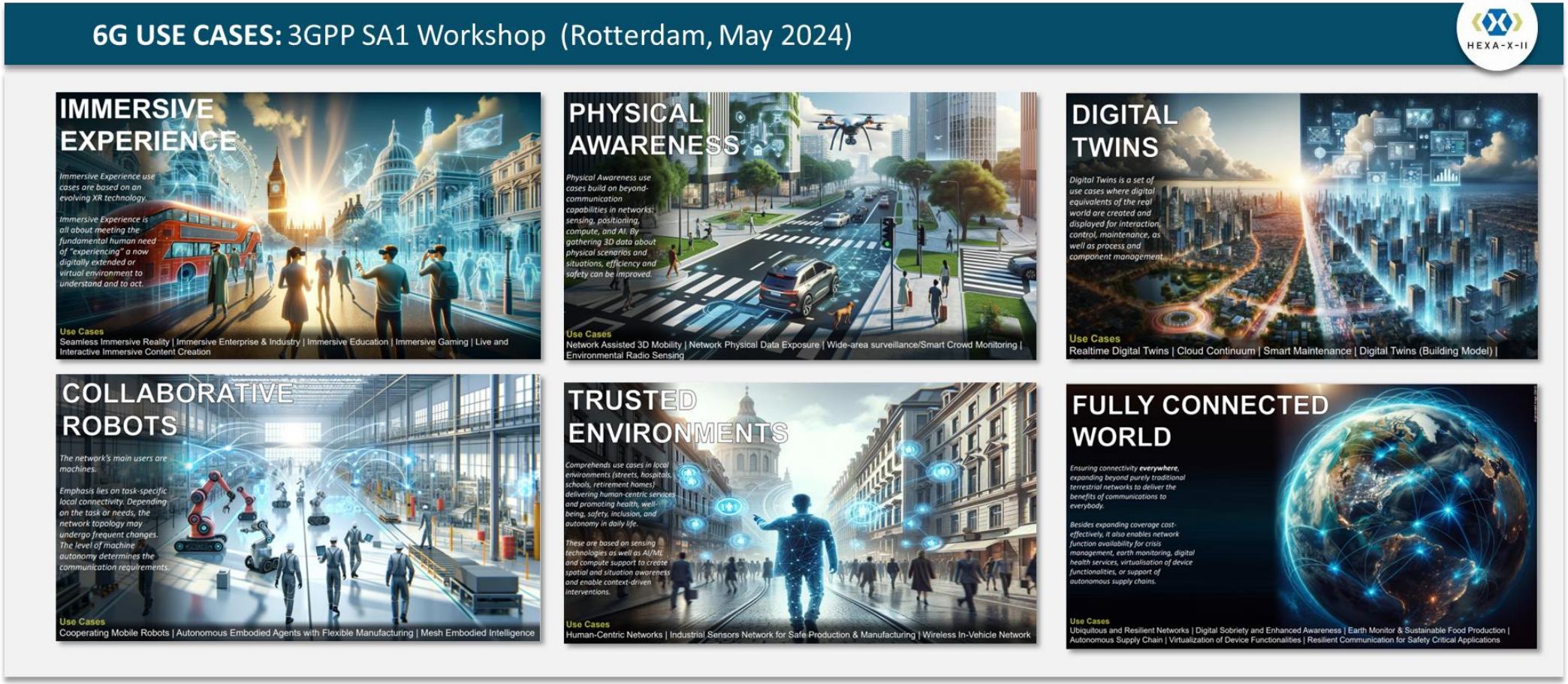
OpenAirInterface
- Open-source 5G/6G RAN
- Eurecom-led; used in SNS JU research
- Reference impl. for 3GPP specs

O-RAN SC
- O-RAN SW Community (Linux)
- Open-source RIC, xApps, O-DU, O-CU
- Reference code base for O-RAN specs

ETSI SDGs
- **Implementation-oriented** frameworks
- **Open Source MANO**
- **Teraflow SDN**

6G use cases signaling business opportunities

3GPP SA1 Use Case/Service Requirements Workshop: A Catalyst for 6G Planning



Implication: New digital opportunities will emerge in the next 5 years

Rel.20 study item: **6G use cases and service requirements**

Analysis of 3GPP **TR 22.870**: **205 use cases** across **8 domains**

Q1 2026

~50%

1 AI

61

use cases

- **AI Agent** collaboration & comms
- **Network digital twin** for AI operation
- **AI-native infrastructure**
- **Retrieval-Augmented Generation (RAG)** for GenAI

2 System & Operational Aspects

46

use cases

- **Security** (quantum-resistant, digital identity)
- **Resilience** (zero-outage, disaster risk)
- **Legacy service enhancement**
- Roaming

3 Industry Verticals

29

use cases

- **Advanced air mobility** (UAM/AAM)
- **Cooperating mobile robots**
- Real-time **digital twins**

4 Integrated Sensing & Communication

25

use cases

- **Search and rescue** coordination (PPDR)
- Vulnerable pedestrian **safety assistance**
- Low-altitude **UAV supervision**

5 Ubiquitous Connectivity

20

use cases

- **NTN/LEO** integration
- **Service continuity**
- **Precise positioning**

6 Immersive Communication

18

use cases

- **Immersive gaming** & XR rendering
- Deterministic **multi-media experience**
- Immersive reality in **education**

7 Other Use Cases

4

use cases

- **Computing services** for XR/ AI agents
- **Network information-as-a-service**

8 Massive Communication

2

use cases

- **Wide-area** coverage
- **Utility infrastructure** monitoring

More than 100 projects in our current portfolio

Current program linked to Horizon Europe – FP 09 (2021–2027)

Project waves **start dates**	Call 1 Started Jan '23	Call 2 Started Jan '24	Call 3 Started Jan '25	Call 4/5 Started in Jul/Sept '26	Call 6/7 To be started in Q1 '27	Call 8 To be started in Jan '28
Stream A 5G Evolution systems Components, systems & networks	**7** projects validate **complete system** view					
Stream B Research for radical technology advancement towards **6G definition** System Architecture; Wireless & Signal; Infrastructure & Devices; Security; Microelectronics; Sustainability; International Collab	**19** projects research **Novel technologies** expected to be adopted in commercial networks in a **mid /long-term horizon**	**24** projects working on Innovative solutions towards real life networks over a **long-term horizon.** Also targets **International Cooperation**	**12** projects targeting a higher TRL range, compared to previous calls, aiming to produce **more mature results** and impact on standardization . Includes lighthouse project on **Sustainability** and targets **International Cooperation**	**15** projects on **Forward looking topics** (advance architectures and IoT), MIMO, AI/ML, Spectrum sharing, Open RAN, **NTN- TN** unification/integration, Optical networks and **Photonics, Security and Resilience**	**1** project on **AI network Datasets** **1** project on **Microelectronics** **+ CSA India**	**Up to 8** projects on **wireless, optical, security and International Cooperation.**
Stream C Experimental Infras/Platforms Platforms; Enablers/ Proof Concept	**3** projects validate **6G technical enablers**	**1** Europe-wide **experimental infrastructure(s)** to support SNS program	**1** project on integration of **microelectronics** components	**1** project on **Telco cloud** and service provision enablers	**1** project on **Experimental Infrastructures**	**2** projects on **Microelectronics and Quantum**
Stream D Large Scale Trials With Verticals Applications & services; Business ecosystems	**4** projects on specific verticals with **high economic and societal importance**	**2** projects focusing on i) **Automotive** ii) **Health, Smart Cities, Farming and Education**	**2** projects on advanced **5G/6G technologies in/for verticals**, with special focus on sustainability	**4** projects on (1) Industry/Manufacturing, (2)Media (3)Transportation/Logistics, (4) Emergency Services and (5) Health	**No projects**	**Up to 7** projects on (1) Smart Industry, (2) NTN, (3) Immersive Comms , (4) Telco AI, (5) AI native services, (6) ISAC and (7) Quantum
	240 MM €	**132 MM €**	**129 MM €**	**116 MM €**	**36 MM €**	**224 MM €**
			CLOSED			OPEN

UK participation in last 3 calls

Analysis of Proposals received vs Grants awarded. Call(s) 4-5-6

	2025 Call(s) 4-5	**2026** Call 6
Participation	148 Beneficiaries 69.4 Million € requested **7.1%**	21 Beneficiaries 10.1 Million € requested **6.8%**
Outcome	26 Beneficiaries/ **12 projects** 10.9 Million € awarded **9.4%**	3 Beneficiaries / **2 projects** 1.5 Million € awarded **6.9%**
	6G-CARE/ 6G-NTN2 Nexus/ Agentic6G/ SHARC/ 6G-Holonet/ QUEST 6G/ SOVEREIGN-6G/ PAISES-6G/ MAGIC-6G/ PROSPERO/ MULTIPLY-6G/ PIONEERS-6G	HEMES 6G / 6G-AID

Annual Work Program 2027
Orientations of Programme Structure

AWP 2027 under consultation

Available funds ~224 M €

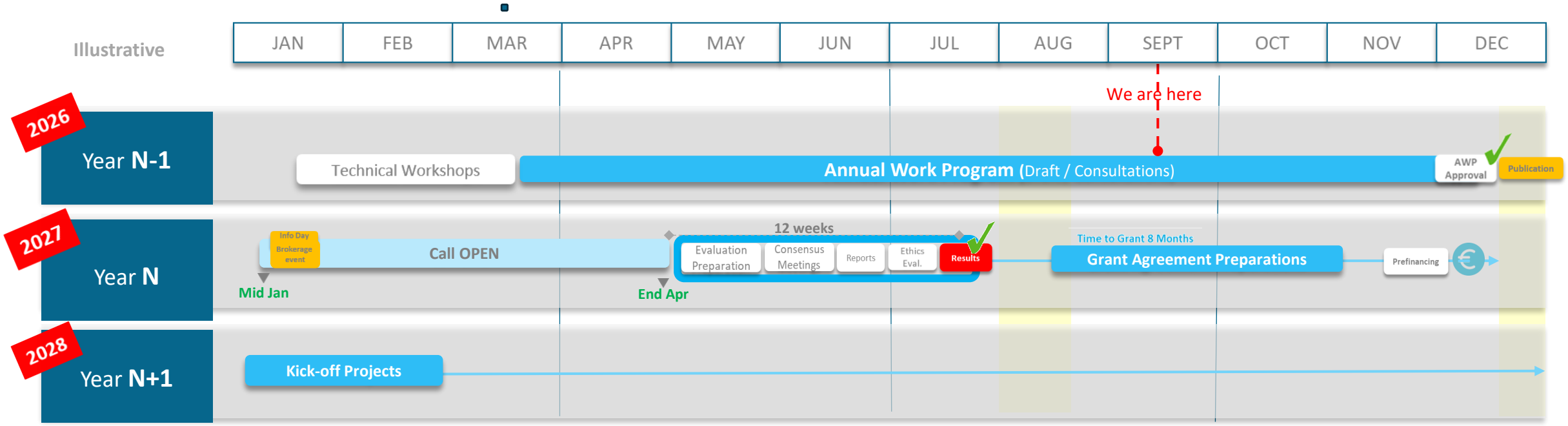
Stream B — 78	Stream C — 30	Stream D — 110	CSAs — 5-6
Revolutionary & Evolutionary R&I	**Strategic Capabilities**	**Large-Scale Pilots** Vertical led and 6G-feature led high-TRL (IAs)	**Coordination & Support**
FLAGSHIP: Beyond 6G TRL 4- 6 — 20	**MICROELECTRONICS FEM 4 6G** /TRL 6-7 — 15	**Telco AI Platform** TRL 7-8* — 20	**Operational** Program Activities — 4-5
Long Term R&I (1) (3-5 projects) / TRL 3-4 — 15	**Quantum Enhanced Connectivity /**TRL 4-5 — 15	**Network Native Media** TRL 7-8* — 15	**ITU-R IMT 2030/** Coordination & evaluation — 1
Wireless Comms TRL 5/6 — 12		**Smart Industry** TRL 7-8* — 15	
Optical Connectivity for Massive AI / TRL 6 — 12		**ISAC** TRL 7-8* — 15	
Security & Resilience by Design/ TRL 6 — 12		**Quantum safe security** TRL 7-8* — 15	
EU-Taiwan Cooperation (AI-RAN) / TRL6 — 7		**E2E AI native smart networks** TRL 6-7 — 15	
		NTN TRL 6-7 — 15	

*under consideration

(1) Cross-Domain AI-Native Autonomous Networks./ Electromagnetic Continuum innovations. / Neuromorphic Comms. / Post-Shannon Comms. / Quantum Internet

Implementation of **SNS JU Programme**

Timeline of Call(s). Multi-year R&I strategy



Annual Work Programme
Consensus on Priorities

Consortia
(>3 countries, >20% SMEs, other conditions….)

Independent Evaluation
3 External experts + panel

Final List Approval
GB decision

~ 3 year projects
Annual reviews

If you want to know more….

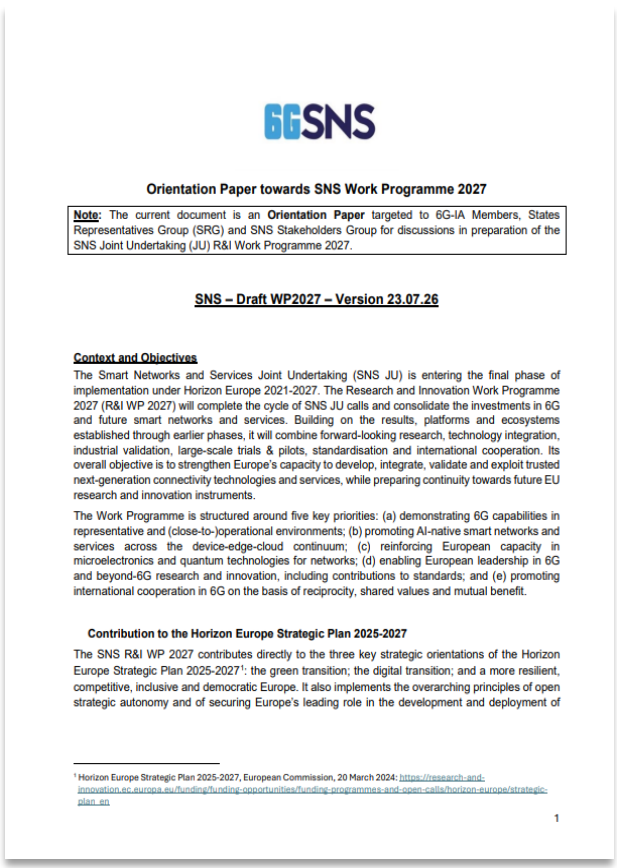
https://smart-networks.europa.eu/

European Commission | EU Funding & Tenders Portal

June 2026

October 2026

December 2026



6GSNS

Orientation Paper towards SNS Work Programme 2027

Note: The current document is an **Orientation Paper** targeted to 6G-IA Members, States Representatives Group (SRG) and SNS Stakeholders Group for discussions in preparation of the SNS Joint Undertaking (JU) R&I Work Programme 2027.

SNS – Draft WP2027 – Version 23.07.26

Context and Objectives

The Smart Networks and Services Joint Undertaking (SNS JU) is entering the final phase of implementation under Horizon Europe 2021-2027. The Research and Innovation Work Programme 2027 (R&I WP 2027) will complete the cycle of SNS JU calls and consolidate the investments in 6G and future smart networks and services. Building on the results, platforms and ecosystems established through earlier phases, it will combine forward-looking research, technology integration, industrial validation, large-scale trials & pilots, standardisation and international cooperation. Its overall objective is to strengthen Europe's capacity to develop, integrate, validate and exploit trusted next-generation connectivity technologies and services, while preparing continuity towards future EU research and innovation instruments.

The Work Programme is structured around five key priorities: (a) demonstrating 6G capabilities in representative and (close-to-)operational environments; (b) promoting AI-native smart networks and services across the device-edge-cloud continuum; (c) reinforcing European capacity in microelectronics and quantum technologies for networks; (d) enabling European leadership in 6G and beyond-6G research and innovation, including contributions to standards; and (e) promoting international cooperation in 6G on the basis of reciprocity, shared values and mutual benefit.

Contribution to the Horizon Europe Strategic Plan 2025-2027

The SNS R&I WP 2027 contributes directly to the three key strategic orientations of the Horizon Europe Strategic Plan 2025-2027[1]: the green transition; the digital transition; and a more resilient, competitive, inclusive and democratic Europe. It also implements the overarching principles of open strategic autonomy and of securing Europe's leading role in the development and deployment of

[1] Horizon Europe Strategic Plan 2025-2027, European Commission, 20 March 2024: https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/strategic-plan_en

1

6G SNS

The European Smart Networks and Services
Joint Undertaking

THANK YOU

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Contact us at: smart-networks.europa.eu