6G SNS CO-OP

SNS CO-OP – SNS Collaborative Operations and Output Optimisation

D2.2: Stakeholder Involvement and Interaction: Interim Report

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Abstract

This deliverable provides an overview of the stakeholder engagement activities conducted by SNS CO-OP during the first period (January 2025 – March 2026). The document provides an overview of the progress achieved in strengthening Europe's international 6G position, reinforcing coordination with European partnerships and National Initiatives, deepening collaboration with vertical sectors, and supporting SME participation. The report identifies early insights and challenges arising from these interactions and outlines how they contribute to shaping strategic 6G priorities, strengthening standardisation preparedness, and supporting a more coherent and inclusive SNS ecosystem moving forward.

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Executive Summary

The **SNS CO-OP project results reported in this first period** demonstrate significant progress in strengthening the strategic coherence, visibility and effectiveness of stakeholder engagement across the European 6G landscape. As Europe advances towards next-generation communication systems, the need for structured collaboration, informed dialogue, and coordinated action has become increasingly critical. **SNS CO-OP addresses this need by serving as a central facilitation instrument that connects global partners, European stakeholders, vertical sectors and SMEs** in a coherent and purposeful engagement framework.

A key achievement of the period is the c**onsolidation of Europe's and the SNS JU international presence in the global 6G ecosystem**. Through targeted cooperation supported by Memoranda of Understanding (MoUs) and Letters of Intent (LoIs), and through sustained presence at high-level international events, the project has ensured that SNS JUs programme priorities and results remain visible and influential. These exchanges have also provided valuable intelligence on global research trends, regulatory developments and emerging strategic directions, feeding directly into more informed European positioning and future cooperation opportunities.

Within Europe, **SNS CO-OP has advanced alignment among national and European-level actors by facilitating structured discussions, information exchange and shared learning**. The project has deepened relationships with National Initiatives across Member States, improving understanding of national priorities, challenges and research trajectories. Engagement with peer Joint Undertakings, while inherently complex due to differing mandates and governance models, has yielded tangible results, including coordinated actions that pave the way for future cross-programme synergies. These activities contribute to a more harmonised and strategically grounded European approach to 6G research and innovation.

Another central dimension of the project has been **the systematic engagement with vertical sectors**. Through renewed and expanded partnerships, dedicated workshops, targeted consultations and the development of sector-specific publications, SNS CO-OP has helped ensure that industrial requirements and market-driven needs effectively inform 6G research directions. The project has also strengthened the tools and evidence base required to track vertical needs, assess the maturity of emerging use cases and support informed decision-making on future investment and standardisation priorities.

Small and medium-sized enterprises (SMEs) engagement has also been a strong focus, **recognising the importance of SMEs as innovation drivers within the European ecosystem**. Through continuous collaboration with the NetworldEurope SME Working Group, dedicated visibility actions, targeted consultations and analysis of SME participation, SNS CO-OP has contributed to improving the inclusion, representation and contribution of SMEs in the SNS JU programme. The feedback collected provides clear signals on structural barriers, such as funding models, administrative burden and the growing impact of generative AI on proposal preparation, that should be addressed in future programme design to ensure equitable access and sustainable participation.

The recommendations emerging from this work call for the continued reinforcement of international partnerships, enhanced public-side support for cross-programme coordination, deeper integration of sector-driven requirements into research planning, and a review of structural challenges faced by SMEs to ensure meaningful and sustainable participation. Moving forward, **SNS CO-OP will continue to build on these achievements by intensifying its engagement activities**, expanding evidence-gathering efforts and supporting the preparation of future work programmes and strategic orientations.

Overall, the report shows that through a continuous engagement, clarity in communication and coherence in strategic positioning, **SNS CO-OP is contributing to Europe's ability to shape the development of 6G** in a way that is competitive, inclusive, secure and aligned with European societal and economic objectives.

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Abbreviations

3CN	3C Network – Connected, Collaborative Computing
3GPP	3rd Generation Partnership Project
3GPP SA	3rd Generation Partnership Project Service and System Aspects
5G	5th Generation mobile network
5GAA	5G Automotive Association
5G-ACIA	5G Alliance for Connected Industries and Automation
5GIA	5G Infrastructure Association
5G-MAG	5G Media Action Group
6G	6th Generation mobile network
6GF	6G Forum
6G-IA	6G Industry Association
AI	Artificial Intelligence
AIaaS	Artificial Intelligence as a Service
AIoT	Artificial Intelligence of Things
AIOTI	Alliance for IoT and Edge Computing Innovation
API	Application Programming Interface
AR	Augmented Reality
ARCEP	Autorité de Régulation des Communications Electroniques et de la Poste
ATIS	Alliance for Telecommunications Industry Solutions
B5G	Beyond 5G
B5PC	Beyond 5G Promotion Consortium
B6GA	Bharat 6G Alliance
CAM	Connected and Automated Mobility
CCAM	Connected, Cooperative and Automated Mobility
CCSA	China Communications Standards Association
CEF	Connecting Europe Facility
CHIPS-JU	Chips Joint Undertaking
COTS	Commercial Off-The-Shelf
CSA	Coordination and Support Action
CSO	Civil Society Organisation
DG-CNECT	Directorate-General for Communications Networks, Content and Technology
DIHs	Digital Innovation Hubs
DSOs	Distribution System Operators
DTA	Digital Transformation Accelerator
EERA	European Energy Research Alliance

EC	European Commission
ECCC	European Cybersecurity Competence Centre
ECS	Edge Computing System
ECSO	European Cyber Security Organisation
EDIH	European Digital Innovation Hub
EGDC	European Green Digital Coalition
EIM	European Rail Infrastructure Managers
ENTSO-E	European Network of Transmission System Operators for Electricity
ERTICO	European Road Transport Telematics Implementation Coordination Organisation
ESA	European Space Agency
ETP	European Technology Platform
ETP4HPC	European Technology Platform for High-Performance Computing
ETSI	European Telecommunication Standards Institute
ETSI ISG	European Telecommunications Standards Institute Industry Specification Group
EU	European Union
EuroHPC JU	European High Performance Computing Joint Undertaking
EUTC	European Utilities Telecom Council
FEM	Front End Module
FNS	Future Network Services
FSTP	Financial Support to Third Party
GA	Grant Agreement
GB	Governing Board
GDPR	General Data Protection Regulation
GenAI	Generative AI
HE	Horizon Europe
HiPEAC	High Performance, Edge And Cloud computing
HL7 FHIR	Health Level 7 Fast Healthcare Interoperability Resources
HPC	High Performance Computing
IEEE	Institute of Electrical and Electronics Engineers
IETF	Internet Engineering Task Force
ICT	Information and Communication Technology
IKOP	In-Kind contributions to Operational Activities
IMT-2030	International Mobile Telecommunications - 2030
IPCEI	Important Projects of Common European Interest
ISAC	Integrated Sensing and Communications
ITS	Intelligent Transportation Systems
ITU	International Telecommunication Union

ITU-R	International Telecommunication Union – Radiocommunication Sector
JCAS	Joint Communication and Sensing
JU	Joint Undertaking
KPI	Key Performance Indicator
KSO	Key Strategic Orientation
KVI	Key Value Indicator
MAC	Medium Access Control
MEC	Multi-access Edge Computing
MIMO	Multiple Input – Multiple Output
ML	Machine Learning
MNO	Mobile Network Operator
MR	Mixed Reality
NaaS	Network as a Service
NEM	New European Media
NESSI	Networked European Software and Services Initiative
NGA	Next G Alliance
NGMN	Next Generation Mobile Networks Alliance
NGO	Non-Governmental Organisation
NI	National Initiative
NTN	Non-Terrestrial Network
NWE	NetworldEurope
PAB	Public Authority Board
PHY	Physical layer of the OSI model
PLC	Power Line Communication
PPDR	Public Protection and Disaster Relief
PPP	Public-Private Partnership
PSCE	Public Safety Communications Europe
RAN	Radio Access Network
RF	Radio Frequency
RIS	Reconfigurable Intelligent Surface
R&I	Research and Innovation
R&D	Research and Development
R&D&I	Research and Development and Innovation
ROI	Return On Investment
RP	Report Period
RT	Real Time
SB	Steering Board

SCoDIHNet	Smart Connectivity Digital Innovation Hub Network
SCTWG	Smart Connectivity Thematic Working Group
SME	Small or Medium sized Enterprise
SNO	Satellite Network Operator
SNS JU	Smart Network and Services Joint Undertaking
SoC	System on a Chip
SRG	State Representative Group
SRIA	Strategic Research and Innovation Agenda
TB	Technology Board
TF	Task Force
TN	Terrestrial Network
TRL	Technology Readiness Level
TSDSI	Telecommunications Standards Development Society
UAV	Unmanned Aerial Vehicle
UN SDGs	United Nations Sustainable Development Goals
VET	Vertical Engagement Tracker
VR	Virtual Reality
VSC WG	Vision and Societal Challenges Working Group
VWA	Virtual Worlds Association
WiTaR	Women in Telecommunications and Research
XR	Extended Reality

1   Introduction

This document presents the interim report on **stakeholder involvement and interaction developed** under the SNS CO-OP project. It summarises the activities carried out during the first half of the project with **global, European** and **vertical stakeholders**, as well as targeted actions addressing **SMEs**. These activities contribute directly to the objectives and strategic approach defined in SNS CO-OP D2.1 "Stakeholder Identification & Involvement Strategy" [1].

The report provides a consolidated overview of stakeholder-related actions across the international, European, vertical and SME dimensions, fully aligned with the objectives of WP2. The overarching aim is to **maximise the impact of the SNS JU Programme through structured and continuous engagement at global, European, vertical and SMEs levels**. Acting as the primary interface between SNS JU projects and external ecosystems, WP2 fosters dialogue, coordination and collaboration to ensure that programme outcomes remain visible, relevant and aligned with broader research, industrial, policy and standardisation developments.

Furthermore, the content of this report provides evidence of the successful achievement of WP2 Milestone 1 "*Organization of at least 3 major events (1 international, 1 European and 1 vertical oriented) with active participation of key stakeholders from each section and reporting of the common conclusions*".

The remainder of this document is structured into thematic chapters reflecting the main dimensions of stakeholder engagement addressed by SNS CO-OP during the first half of the project.

- **Chapter 2 – Global Stakeholder Involvement & Interaction** provides a high-level overview of Europe's international engagement activities, outlining how cooperation with global partners supports the visibility and positioning of the SNS JU in the global 6G landscape.

- **Chapter 3 – Peer Joint Undertakings & European National Initiatives Dialogues** summarises the coordination efforts carried out with peer Joint Undertakings (JUs) and National Initiatives (NIs) to reinforce alignment, reduce fragmentation and strengthen coherence across the European R&I ecosystem.

- **Chapter 4 – Vertical & Complementary Domains Engagement** outlines the actions undertaken with sectoral associations and vertical industries, highlighting how structured engagement contributes to aligning 6G research with market needs and cross-domain priorities.

- **Chapter 5 – SME and Entrepreneurship Promotion and Support** presents the activities designed to strengthen SME participation, enhance their visibility and capabilities, and support a more inclusive and balanced SNS JU ecosystem.

- **Chapter 6 – Recommendations** highlights the main insights emerging from stakeholder interactions and provides strategic guidance to inform future engagement activities and programme development.

- **Chapter 7 – Conclusions & Way Forward** offers a short reflection on the progress achieved so far and outlines the planned direction for the second half of the project.

2   Global Stakeholder Involvement & Interaction

2.1   Main objectives and status

The primary aim of the "Global Stakeholder Involvement & Interaction" task is to maintain, broaden, and strategically elevate Europe's global 6G dialogue, building on the strong foundations laid by the previous Coordination and Support Actions such as SNS ICE and SNS OPS. In line with Europe's vision for a sovereign, interoperable, secure, and sustainable 6G ecosystem, the task reinforces Europe's international engagement by nurturing structured collaborations with key regions worldwide, including North America, Japan, South Korea, China, India and emerging innovation hubs. This approach ensures that the technological, regulatory, and societal priorities of the European 6G roadmap continue to be represented and recognised globally.

More specifically, the main objectives of the global stakeholder involvement and interaction strategy of SNS CO-OP are:

First, to maintain, enact (via common actions) and if possible, expand the current list of MoUs/LoIs with major international stakeholders working on 6G R&I activities: A core objective is to maintain and apply the commitments of the established MoUs, Letters of Intent (LoIs), and Liaison Statements (mainly from 6G-IA) with major international stakeholders, industrial alliances, regional 6G fora, and standardisation bodies. These activities will support Europe's ambition to contribute effectively to and advocate for a single, globally harmonised 6G standard, echoing the strategic positions of major European players who increasingly push for coherent global spectrum policies, interoperable architectures, and unified standardisation trajectories.

Second, to be an integral part and strengthen the international dialogue on 6G, to foster consensus on critical aspects, via intensive organisation and participation in relevant events: The task acts as a central point for bi-directional information exchange between the global 6G ecosystem and the wider SNS community (projects, partners, and stakeholders). Building upon the ambassadorial role practised in SNS ICE, the task ensures that relevant global developments—including policy trends, emerging research topics, evolving standardisation needs, and opportunities for cooperation—are continuously captured, analysed, and disseminated to SNS stakeholders. Conversely, the task also ensures that European achievements, testbeds, demonstrators, and research priorities are effectively communicated outward.

Third, to promote the vision, work and insights of SNS JU to international stakeholders and strengthen the EU's position within global associations: Through the active organisation, curation, and participation in international events, high-level fora, technical workshops, and bi-/multilateral meetings, this task promotes the achievements, innovations, and strategic direction of SNS JU projects to global stakeholders. This is fully aligned with the priorities of the private side counterpart of the SNS JU (6G-IA) as well as the internationalisation frameworks of leading industrial partners which are also SNS CO-OP members, and place strong emphasis on pre-standardisation cooperation, open research platforms, sustainability-driven network design, and early alignment on 6G architectural principles. By establishing such visibility and structured engagement, the task aims to attract additional collaborative actions, reinforce scientific-technical leadership, and strengthen the EU's place in the global 6G landscape.

Fourth, to support SNS JU researchers in implementing their standardisation roadmaps to maximise the standardisation impact of SNS solutions on the global stage and advocate for a single, global 6G standard: Another major objective is to support EU researchers and SNS JU projects in implementing and aligning their standardisation roadmaps, helping them maximise their impact in key bodies such as 3GPP, ITU, ETSI, and IEEE. This includes providing guidance on synchronising project-level outputs with industry-driven timelines (e.g., 3GPP Release 20 and beyond), supporting early contributions in pre-standardisation, and identifying opportunities to influence discussions on key 6G themes such as AI-native networks, energy efficiency, zero-touch automation, advanced spectrum use, and novel air-interface design.

Finally, this task is responsible for enhancing the SNS JU Standards Tracker[2] tool—expanding and updating the data collected from international standardisation bodies and global initiatives. In coordination with Task 4.2 and building on the foundations set by SNS OPS, the task will ensure that the tracker becomes a comprehensive and up-to-date reference for the entire SNS community, facilitating informed decisions, coordinated submissions, and shared visibility across Europe's standardisation initiatives.

As stakeholder interactions and bi-directional exchange of information to and from the SNS JU ecosystem permeate the bulk of the work carried out by SNS CO-OP, it is important to clarify the responsibilities of the "Global Stakeholder Involvement & Interaction" (Task 2.1) and the connected activities executed by other affiliated tasks and work packages. Besides the inherent collaborations with the other WP2 tasks in cases of engagement with multi-disciplinary stakeholders (e.g., events with both international and EU stakeholders, or international vertical associations such as 5G-ACIA and 5GAA), Task 2.1 closely collaborated with Tasks 1.2, 4.1 and 6.1. The distribution of responsibilities among these tasks was as follows:

- **T1.2:** 6G landscape analysis based on **desk research** (no direct stakeholder interaction), providing input to T2.1 regarding the 6G vision and similarities and differences with other global regions.

- **T2.1:** Interaction and engagement with global stakeholders, including implementation and renewal of MoUs/LoIs, event organisation and participation and direct exchange of information in events (both physical and online)

- **T4.1:** Dissemination and promotion of events organised/participated in under T2.1.

- **T6.1:** Logistical support of events organised/participated under T2.1 and recording/reporting of overall event participation of SNS CO-OP.

The next section presents the main activities performed and the status/progress of each of these objectives/work areas.

2.2   Main activities

2.2.1   Application of MoU commitments & follow-up

An important part of the global stakeholder interaction activity within SNS CO-OP, is the follow-up and application of the commitments of the various Memorandum of Understandings (MoUs) or Letters of Intent (LoIs) with International Associations and stakeholders, as well as driving the potential renewal of such MoUs/LoIs where applicable. As a CSA project with a limited duration (27 months), SNS CO-OP cannot directly engage in MoU/LoIs with other entities, but is charged with the upkeep of the MoUs/LoIs that the private member of the SNS JU, i.e., the 6G-IA, has signed on behalf of the European Industrial and academic community.

The 6G-IA (the private part of the SNS JU) has signed multiple MoUs/LoIs with international, European and Vertical stakeholders and associations, disclaiming the intent for bilateral or multi-lateral cooperations on matters of 6G Research and Innovation. Currently, there are ten MoUs that are active between the 6G-IA and international stakeholders, as depicted in Figure 7, including stakeholders from almost every geographical region of the world. Task 2.1 of SNS CO-OP has taken the opportunity and organised or participated in several international events with these stakeholders, building on the directions of the signed MoUs. Table 1 in the next sub-section provides a summary of all the international events that SNS CO-OP either (co)organised or participated in during 2025, building on the relationships established by 6G-IA and the guidelines of these MoUs.

During this first period of the project, several MoUs were also up for renewal, or additional stakeholders came to light that constituted significant candidates for the signing of an MoU/LoI. SNS CO-OP facilitate the interaction with these partners, resulting in the signing and renewal of the following MoUs /LoIs:

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[2] https://sns-trackers.sns-ju.eu/standards-tracker

- **MoU renewal** with XG Mobile Promotion Forum (XGMF) (Japan), signed in May 2025 in the context of the 6G-IA - XGMF workshop.

- **MoU renewal** with 6G Forum (Korea), signed in October 2025 in the context of Mobile Korea 2025.

- **New LoI** with CEPT – Electronic Communications Committee (ECC), signed in March 2025

The MoUs/LoIs signed by 6G-IA, opened the door for SNS CO-OP partners to establish regular communication channels with key stakeholders in regions like Japan, Korea, India and more. These interactions would often lead to the co-organisation of events where views, relevant work and the vision on 6G of Europe and the counterpart areas would be shared, facilitating understanding and highlighting commonalities and differences in terms of technological and socio-economic priorities. These interactions have also served as the basis for the creation and publication of the International Cooperation calls of the SNS JU Work Programme, leading to a more structured collaboration with Japan, Korea and India on specific prioritised topics.

Figure 1: Active international MoUs of 6G-IA

2.2.2   Distribution of SNS JU results & achievements

The distribution of SNS JU work, results and vision to international stakeholders constitutes the first direction of information flow of the bi-directional exchange necessary to establish and maintain international relationships (from SNS JU to international stakeholders). In collaboration with other SNS CO-OP tasks (such as T1.3, T3.2 and T3.4) who are responsible for collecting, processing and analysing SNS JU project data, including project vision, use cases and technologies investigated, work carried out, results/achievements, publications, standards contributions and more, T2.1 aggregates the available information and together with WP4 creates the key messages, insights and conclusions to be shared with external stakeholders.

The next step is the most effort-intensive and time-consuming activity of this task, which is the organisation, participation, attendance and reporting of events (both physical and virtual) with the participation of international stakeholders, in order to disseminate the collected SNS JU information and key messages/views of SNS JU stakeholders. Through the extensive organisation and participation in international profile events, SNS CO-OP partners have been able to transmit key messages originating from the SNS JU community, including the prioritisation of 6G features, technologies and use cases by EU stakeholders, the ongoing as well as the future targeted work (including vision), key outcomes from SNS JU R&I activities up to this point and of course key insights and lessons learned so far, which shape the future of the entire SNS JU programme. Figure 2 depicts a few snapshots from key international events in 2025 with organisation/participation credits from SNS CO-OP partners, while Table 1 provides the full list of International-flavoured events with SNS CO-OP organisation and/or

participation. Details about each of these events, including a description of the event, the role of SNS CO-OP and the reached audience, can be found in SNS CO-OP Deliverable D6.1.

Figure 2: International events with SNS CO-OP participation

The steady presence of SNS JU representatives (from SNS CO-OP project) in these major international events is of crucial importance for the maintenance of good working relationships with peer organisations and associations around the world, allowing for the bi-directional exchange of information with key stakeholders. Through the dissemination of SNS JU achievements and vision, paths of alignment with other global organisations can be found, resulting in common activities and actions towards international standards organisations and fora, maximising the impact of joint contributions and ultimately leading towards the adoption of a single global 6G standard.

Active participation and the promotion of the SNS JU work and results to international stakeholders is of utmost importance to achieve the overall goals of the JU, and as such, it is a core activity of the SNS CO-OP project, despite the heavy load it imposes.

Table 1: International Events with SNS CO-OP organisation / participation credits in 2025

Event	Date	Subject	Targeted Region
MWC 2025	March 2025	SNS JU / 6G-IA Event & Networld Europe / CCSA WS	Multi-National & China
INPACE 6G Workshop	April 2025	6G Horizons: Synergies for a Connected Future,	Japan
Test & Measurements Forum	April 2025	Testing next-gen networks: From lad to Field	Multi-National
6G-IA - XGMF workshop	May 2025	MoU renewal between XGMF & 6G-IA	Japan
EuCNC 2025	June 2025	Multi-event organisation / support	Multi-National
Telco AI Forum	June 2025	The role of AI in 6G networks	Multi-National
2nd Bharat 6G Alliance and 6G IA Workshop	July 2025	6G R&I activities in EU and India	India
NetworldEurope/CCSA NTN Workshop	September 2025	Non-terrestrial Networks for 6G	China
10th Bharat 6G event - India Mobile Congress	October 2025	Presentation of SNS JU work & vision at IMC	India

Techritory 2025	October 2025	Multi-event organisation / support	Multi-National
CEATEC 2025	October 2025	Presentation of SNS JU work & vision at CEATEC 2025	Japan
Mobile Korea 2025 / 6G Forum	October 2025	MoU renewal between 6G-Forum & 6G-IA	Korea
Visions for Future Communications Summit	November 2025	Vision on Future Networks	Multi-National
Brooklyn 6G Summit	November 2025	Trends for 6G networks (observation / trend recording)	Multi-National
Workshop with IMT-2030(6G) PG	December 2025	6G R&I activities in EU and China	China

2.2.3   Information analysis from global stakeholders & feedback towards SNS JU

The second direction of information flow of the bi-directional exchange necessary to establish and maintain international relationships is the one from global stakeholders towards SNS JU stakeholders. This information flow ensures that the SNS JU community remains up to date and informed about critical developments in the global 6G R&I arena and understands the priorities and focus of other important global regions, which could lead to potential synergies on subjects of shared interest.

Task 2.1 facilitates this information flow by i) actively participating in the global 6G landscape analysis performed under the umbrella of Task 1.2, and analysing the trends, priorities and vision of global stakeholders, while directly comparing it with that of the SNS JU (in order to find points of convergence and divergence) [1] and ii) by engaging in constructive discussions with the participants at all the above mentioned global events (see Table 1), which allow for on the spot knowledge extraction and an actual exchange of ideas and motivation with other important stakeholders. The knowledge acquired by these events is fed back to all critical instruments of the SNS JU (SNS JU Office, WP2027 core team, etc.) and helps guide the developments of the follow-up SNS JU vision, as well as develop potential international collaborations with like-minded stakeholders (see International Collaboration calls of the SNS JU Work Programme).

Even though the after-event reports for all events with SNS CO-OP participation (including international ones) are provided in SNS CO-OP Deliverable D6.1, a few events with an increased impact on the SNS CO-OP (and SNS JU) international engagement are worth highlighting here.

6G-IA - XGMF workshop (EU-Japan)

This workshop, which took place in Tokyo, Japan, in May 2025, solidified the excellent relationship between the SNS JU (represented by SNS CO-OP partners) and the Japanese counterpart organisation XGMF. The in-person presence of SNS CO-OP partners allowed for an extensive exchange of information regarding the 6G R&I activities in EU and Japan and the F2F interaction with key Japanese stakeholders. These discussions, built on existing collaborations, frame the approach for future common actions that may be pursued in the current or the follow-up European Framework Programme.

The excellent collaboration between the 2 global regions and the synergetic spirit were reaffirmed through the signing of an updated MoU between XGMF and the 6G-IA, which facilitates further collaborations among European and Japanese researchers.

10th Bharat 6G event - India Mobile Congress (EU-India)

SNS CO-OP partners took a leading role at this crucial event for Indian 6G R&I, delivering a keynote speech on the developments of 6G European research and the priorities of EU R&I programmes. The follow-up panel discussion allowed for the exchange of critical information with Indian researchers, revealing both alignment points on specific technologies as well as divergence in the prioritisation of certain use cases due to socio-economic differences. These discussions framed future collaboration on the common understanding of each participant's priorities, and assisted in the shaping of the next International Cooperation calls of the SNS JU WP (such as the EU-India CSA call in SNS JU WP 2026).

One of the most impactful results of SNS CO-OP's participation in this event was the inclusion of 6G-IA (as representative of the EU 6G R&I ecosystem) in a unified statement from multiple leading international research alliances announcing their commitment to shape the future 6G systems as a shared global endeavour[3].

Mobile Korea 2025 (EU - Korea)

SNS CO-OP took a leading role in this event by delivering a keynote speech on "European 6G Research Status and Results", further disseminating the impactful work of the SNS JU community. In the context of this event, SNS CO-OP representatives also engaged in several online and offline discussions, acquiring information about Korea's 6G roadmap, priorities and potential synergy areas, to facilitate further common action between EU and Korea.

Moreover, the relationship between the two regions was further solidified through the signing of an MoU between the Korean 6G Forum and the 6G-IA, acting as representatives of the two global regions. The MoU allows for a tighter collaboration in future work programmes and provides direct lines of communication between the two parties.

Brooklyn 6G Summit (Multi-National)

This event (Figure 3) has become a cornerstone of international 6G R&I activities, as it features researchers and business developers from all over the world, sharing their views, roadmaps and challenges. As such, it constitutes a unique source of information regarding the activities of other regions, which can greatly assist in the understanding of their research priorities. Some highlights and key insights/statements from this year's edition are:

- Important discussions on 6G Spectrum. The US is exploring significant spectrum reallocation under the One Big Beautiful Bill Act, targeting the 800 MHz pipeline. It was mentioned that at least 200Mhz and preferably 400 MHz are needed for 6G.

- The creation of AI datasets is vitally important for 6G. NVIDIA will make Aerial Software open source in early 2026. This (covering PHY and MAC) can be used with other tools like Open air-interface to create datasets. There is room for Europe to lead the work on this, as there are no other regions that will do this in a structured way with vendors, verticals and operators.

- Some alarming indication that global 6G harmonisation may not be likely.

- 6G's Role in the AI super cycle: from connecting information to connecting intelligence. From 12 to 1 DL to UL ratio, it will go to 4x1 to 3x1, and data transmission will be more bursty.

- 6G is expected to be a software update (CotS Hardware can be used with HW abstraction layers).

- 6G must be a global standard - economies of scale.

- The USA is looking for allies to harmonise priorities in the next WRC: To ensure spectrum availability to meet the increasing need for data, the USA plans to auction new spectrum.

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[3] https://6g-ia.eu/single_post/?slug=leading-research-alliances-endorse-shared-principles-for-6g-secure-open-resilient-inclusive-and-sustainable-by-design

Figure 3: Snapshot from Brooklyn 6G Summit 2025

2.2.4 Maximisation of SNS JU impact on standards

As noted earlier, a key objective of SNS CO-OP is to support EU researchers and SNS JU projects in strengthening and maximising their impact within major standardisation bodies such as 3GPP, ITU, ETSI, and IEEE. To this end, on 16 October 2025, during the SNS Technology Board (TB) meeting in Madrid, SNS CO-OP organised a dedicated session titled *"Best Practices for Standards Impact"*.

The session consisted of two parts. The first part introduced foundational concepts of standardisation and provided a structured overview of the telecom standards ecosystem (Figure 4). Emphasis was placed on ETSI, IETF, and 3GPP—three bodies where SNS JU projects are especially active. The presentation highlighted the importance of understanding procedural workflows, engaging early in the process, and providing contributions that are both timely and meaningful.

Figure 4: SDOs & affiliated ecosystem

The second part focused on practical experience drawn directly from the SNS JU project community. Three projects, with established track records in standardisation (based on the SNS JU Key Achievements and the SNS CO-OP annual Questionnaire), presented their lessons learned, challenges, and recommended practices when contributing to organisations such as 3GPP, IEEE, and ETSI Specialist Task Forces/Research Groups. During the subsequent discussion, participants identified several recurring challenges to achieving significant standards impact: misalignment between project timelines and SDO schedules, the financial and logistical burden of travel for in-person meetings, and the need for continuous engagement to remain influential. The community also highlighted the necessity for clearer SNS-level KPIs to measure standardisation impact more effectively.

As a result, the TB agreed to establish a small committee composed of representatives from SNS CO-OP,

standards experts from SNS JU projects, and the SNS JU Office. The committee will develop a proposal on how to maximise project impact within SDOs and define a more comprehensive and harmonised set of KPIs for standardisation activities. The TB will review and validate this proposal once completed.

In parallel, SNS CO-OP is preparing a series of dedicated webinars with representatives from key SDOs (e.g. 3GPP and ETSI). These sessions aim to deepen understanding of organisational structures, timelines, and working methods, thereby strengthening the capacity of SNS JU participants to contribute effectively.

Moreover, on 27th January 2026, the Policy WG of the Smart Networks and Services Joint Undertaking (SNS JU) supported by the SNS CO-OP project, hosted the workshop "*European priorities for Day 1 6G standardisation: business-driven use cases, key features and collaboration opportunities*", with the participation of leading European vertical industries, vendors and operators, the European Commission and ETSI. During the workshop, the European telecom community exchanged views and worked towards harmonising perspectives on the most promising business-driven 6G use cases with high market and societal relevance. The discussion focused on identifying the key technical features required to support these use cases—particularly those necessary for Day-1 standardisation—and on exploring potential collaboration opportunities among European stakeholders to ensure strong and coordinated contributions to international standards bodies. The overarching goal of this effort is to ensure that European priorities are effectively integrated into the initial releases of 6G standards, which will be critical to enabling a successful and economically sustainable 6G deployment across Europe.

Besides the above targeted actions, SNS CO-OP remains connected to all relevant standardisation activities in the SNS JU ecosystem, i.e., regular presence and contribution to the 6G-IA pre-standardisation WGs, guidance and assistance for standardisation activities of other WGs (e.g., contributions to ITU by the 6G-IA Spectrum WG and the SNS JU Reliable SW Networks WG), standardisation activity tracking and reporting (annual questionnaire and Standards tracker) and relevant event organisation (e.g. targeted webinars). By doing so, SNS CO-OP is established as the common link for (pre) standardisation activities, acting as liaison among the different efforts and ensuring the avoidance of duplication of effort and guiding proponents towards the proper outlet.

2.2.5   Update & Upkeep of the Standards Tracker

The SNS JU Standards Tracker continued to be actively maintained and updated as a key support tool for the SNS JU R&I community in monitoring, coordinating, and strengthening its engagement with international standardisation activities. The Tracker is designed to support projects navigate the complex 5G/6G standardisation landscape, align technical contributions with European priorities and roadmaps, and improve visibility of SNS JU impact within major Standard Development Organisations (SDOs).

A core activity during the first period of the project concerned the upkeep of information on SNS JU project contributions to standardisation bodies, with particular attention to ensuring data consistency and completeness around ongoing and completed contributions. The Tracker currently registers **1,094 standardisation contributions**, primarily from 3GPP, ETSI, and IETF (see Figure 5: Standards contributions of SNS JU projects per SDO (January 2026)), reflecting the strong and growing engagement of SNS JU projects in pre-standardisation and formal standardisation processes. Such updates also include alignment with the latest SDO governance developments, such as relevant working group and leadership (GB) elections, where applicable.

The Tracker is structured around three main components, as also depicted in Figure 5:

- **SNS JU Standardisation Contributions,** which provide an overview of project-level inputs to SDOs, supporting transparency, cross-project awareness, and the identification of potential synergies within the SNS portfolio. Approximately 20 inputs have been added in recent months, but more are expected to be added by the end of Q1 of 2026.

- **The Relevant Telecommunications Standards** section offers guidance on key 5G standards that form the technical baseline for future 6G development. While no major updates were introduced to this section in 2025, it remains a stable reference point for projects entering or expanding standardisation activities.

- **SDOs Status Updates,** which are regularly enriched with summaries from 3GPP Plenary meetings presented in the SNS pre-standardisation Working Group telco meetings, as well as

impact-oriented reports from the wider European standardisation ecosystem (including forthcoming 6G-IA inputs).

Figure 5: Standards contributions of SNS JU projects per SDO (January 2026)

Figure 6: SNS JU Standards Tracker and its functionalities

In parallel with content maintenance, SNS CO-OP initiated the conceptual development of new functionalities aimed at enhancing the analytical and strategic value of the Standards Tracker. In particular, a high-level interactive timeline feature is being envisaged to provide a structured overview of past, ongoing, and planned standardisation activities within the main SDOs. The objective of this feature is to better support SNS JU projects by increasing visibility on current and upcoming standardisation work, facilitating informed engagement with relevant bodies and working groups. This functionality is expected to strengthen the understanding of standardisation dynamics over time, improve alignment between project activities and SDO schedules, and offer practical guidance on when and where contributions can achieve the greatest impact.

2.3　　Key insights

The Global Stakeholder Involvement & Interaction task has worked systematically towards strengthening Europe's international position in 6G research and innovation by consolidating and expanding structured engagement with key global regions, including Japan, Korea, India, China, and North America. The activities conducted so far in the global stakeholder engagement domain reveal several key insights:

- **MoUs and LoIs are effective tools for long-term collaboration:** The renewal of agreements with Japan (XGMF) and Korea (6G Forum), as well as the new LoI with CEPT ECC, demonstrate that these instruments create stable frameworks for continued dialogue and facilitate coordinated actions on strategic topics.

- **International events are critical platforms for two-way exchange:** Engagement in major global fora, such as MWC, EuCNC, India Mobile Congress, Mobile Korea, and CEATEC, has enabled the dissemination of SNS JU achievements and vision while simultaneously capturing insights on global priorities, spectrum strategies, research trends and areas of convergence or divergence with partner regions.

- **Robust bi-directional information exchange mechanism that continuously feeds global insights back into the SNS JU community is equally of importance**: Direct engagement with international stakeholders and systematic analysis of global 6G trends revealed both convergence, such as on AI-native networks, energy efficiency, and software-defined architectures, and emerging divergences, particularly around spectrum strategies and socio-economic priorities.

- **Early standardisation alignment is a shared global priority:** High-impact interactions, including those at the EU-Japan XGMF workshop, EU-India Bharat 6G events, EU-Korea Mobile Korea forum, and the Brooklyn 6G Summit, provided actionable intelligence that informed SNS JU strategic planning, international cooperation calls, and standardisation positioning. In parallel, targeted support to SNS JU projects on standardisation timelines, pre-standardisation engagement, and coordination with bodies such as 3GPP, ETSI, ITU, and IEEE helped maximise European influence in shaping future 6G specifications.

Overall, the task has proven instrumental in reinforcing Europe's leadership, fostering trusted global partnerships, and ensuring that European priorities remain influential in the evolving global 6G landscape.

2.4   Next steps. Work plan M16 – M27

For the second period of the project (M16-M27), SNS CO-OP partners plan to continue working along these systematically and strategically drawn pathways, further engaging with international stakeholders and regions across the globe. The goal during this second period is to maintain and further build the existing international relationships, ensuring a smooth handover to the follow-up CSA, with actionable contact points that will help further build the international ecosystem. Moreover, a strategic goal for the next period will be to broadly disseminate the maturing results of the SNS JU projects, which are expected to become more concrete and impressive, as the projects reach maturity and new projects targeting higher TRL results (Phase 2 and 3) are entering the SNS JU community.

To do so, SNS CO-OP partners plan to pursue an equally impressive global presence in all major international events around the world within 2026, making sure that the SNS JU voice is heard across peer partners and that the SNS JU results and priorities are disseminated globally. A preliminary list of targeted major international events has already been identified (i.e., MWC 2026, 17th ITS Congress, India standardisation event, Techritory 2026, Brooklyn 6G Summit, and Mobile Korea 2026).

Besides these events, SNS CO-OP partners are already hard at work organising additional events in collaboration with XGMF and IMT2030-PG, on targeted issues, identified as commonly interesting during previous events.

Moreover, the effort to maximise the impact of the SNS JU community in global standardisation and pre-standardisation bodies will continue in P2. Through the delivery of upgraded functionality of the Standards tracker, SNS CO-OP will facilitate projects to plan their contributions to the appropriate bodies and to investigate existing standards and relevant efforts. Moreover, in direct collaboration with the SNS JU Steering Board and Technology Board, SNS CO-OP will establish commonly acceptable guidelines regarding the assessment of the project's impact on global SDOs and how they can be leveraged to promote the successes of the SNS JU.

3   Peer JU & European National Initiatives Dialogues

3.1   Main objectives and status

The overarching objective of the "Peer JU & European National Initiatives Dialogues" task is to strengthen Europe's internal coherence and strategic alignment in 6G research and innovation, ensuring that national and European-level efforts collectively reinforce the continent's technological leadership. Building on Europe's commitment to a sovereign, interoperable, and future-proof digital ecosystem, the task focuses on consolidating R&I priorities and fostering structured coordination mechanisms across Member States and relevant European programmes. This approach enables Europe to articulate a unified voice in the global 6G arena, while maximising the impact, efficiency, and strategic value of its investments.

Peer Joint Undertakings and National Initiatives constitute essential pillars of Europe's digital innovation landscape. Deepening collaboration of the SNS JU with these actors ensures a diverse and complementary set of perspectives, resources, and strategic insights. Such collaboration enhances Europe's capacity to streamline objectives, avoid fragmentation and duplication, and accelerate progress towards shared technological milestones. Ultimately, this coordinated effort will enable a coherent European approach to 6G development, optimising resource allocation and amplifying the collective impact of European R&I activities.

The main objectives of this task can be distilled into four strategic pillars:

- **Close coordination with European National Initiatives:** Maintain and deepen the links established with previously identified 6G National initiatives and expand those relationships to additional Member States, to coordinate R&I efforts at an EU scale.

- **Close coordination with European Peer Partnerships**: Maintain and deepen the links with peer partnerships and initiatives that were previously identified and broaden them to include other relevant peer partnerships.

- **Identify and align strategic R&I**: Facilitate discussions with both national initiatives and peer partnerships, to align R&I programming and support identification of strategic R&I orientations at EU level.

- **Promote SNS JU views and provide input to work programmes:** Promote the views of the SNS JU and its strategic priorities within Europe whilst providing input to the SNS JU work programme from the inputs received via the National initiatives and peer partnerships, to create a complementary 6G R&I ecosystem.

- **Events and Activities in Europe:** Organization of workshops and other supporting activities for European and Member State stakeholders to facilitate coordination and to promote collaboration.

3.2   Main activities

3.2.1   Engagement with peer partnerships activities

The SNS CO-OP consortium has used the strong network of 6G-IA and other industrial partners to establish connections with relevant peer associations and Jus. These activities allow coordination among JUs and, eventually, contribute to the strategic orientation of future SNS JU Work Programme. More specifically, the following interactions took place within RP1:

CHIPS JU

In the wake of the successful workshops organised by 6G-IA in 2023 with key European stakeholders from the microelectronics and telecom sectors and with representation of the Chips JU and its industry associations, a follow-up workshop was organised in May 2025[4]. Additional complementary sessions

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[4] https://6g-ia.eu/strategic-consultation-workshops/

were also organised during the EUCNC flagship conference of SNS in June[5]. These joint events reconfirmed the priority interest of the telecom/microelectronics stakeholders to work together to develop a 6G Front End Module (FEM) under SNS. The interest for this initiative was followed by a presentation of this SNS work to the Chip JU PAB (Public Authority Board) in June 2025, followed by a successful FEM workshop organised by 6G-IA for the Chips JU in September 2026[6]. As a result, the Chips JU agreed to follow the SNS recommended approach to develop FEM through complementary actions under SNS and the Chip JU. This led to the approval by the Chips JU PAB of a FEM dedicated call in the WP 2026 of the Chips JU[7] under the ECS part that addresses Focused Topics. The FEM budget earmarked by the Chips JU is of € 20 million, which should lead to an overall public support of € 40 million with the contribution of Member States. This is a sizable budget that tops up the € 12 million earmarked under the SNS budget for FEM.

Photonics 21

Photonics 21 and SNS CO-OP (via 6G-IA) have cooperated towards the identification of research topics of common interest, which may be addressed in forthcoming SNS JU Work Programs. Towards that end, 6G-IA organised a virtual photonics workshop on May 7, 2025[4] with invited experts to review the state of the art and to collect information for the identification for future research topics on photonics and optical communication in the scope of SNS JU. A wide area of topics was proposed. Optical communications is regarded as essential to support the huge investments in AI data centres and the necessary interconnects. Key targets for research were agreed on

- Novel use of high-speed, highly integrated electro-optical components, including optical switching, to meet the performance demands of AI-driven applications.

- Exploration of multiband and multifibre optical transmission and switching, including hollow-core fibre technologies to expand capacity and reduce latency.

- Incorporation of advanced sensing and automation capabilities for increased dynamism, environmental monitoring, and energy efficiency.

- Design of resilient and trustworthy infrastructures with enhanced security and tolerance against failures, attacks and natural disasters. Including crypto-agile, post-quantum-resistant frameworks.

- Support for open and disaggregated architectures, enabling modular and flexible deployments across various use cases.

- Embed precise clock-distribution and synchronisation mechanisms to coordinate geographically dispersed AI accelerators.

The workshop results are summarised in a White Paper "Research Priorities Photonics", which is publicly available[8].

In addition, 6G-IA was invited to the Photonics 21 Annual Meeting on May 15 and 16, 2025 in Brussels and to the Working Group meeting on Digital Infrastructure. 6G-IA presented the actual status of photonics and optical communications in SNS JU and the dedicated photonics part in SNS JU Work Program 2025. In addition, an outlook to the 6G-IA targets for the preparation of Framework Program 10 was presented.

ETP4HPC/Euro HPC JU/HiPEAC

In 2025, 2 key activities have been conducted with the ETP4HPC team representing the EuroHPC JU. The first was the development of a white paper addressing the Federation of Computing Infrastructure /

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[5] https://www.eucnc.eu/2025/www.eucnc.eu/programme/workshops/workshop-9/index.html

[6] https://www.chips-ju.europa.eu/Events-detail/?id=c9262acf-bd60-f011-bec3-000d3ab2b856

[7] https://www.chips-ju.europa.eu/File/download.aspx?entity=shv_library&attribute=shv_file&ID=548493e9-2ddc-f011-8544-7c1e5276d834

[8] https://6g-ia.eu/wp-content/uploads/2025/09/6g-ia-position-paper_photonics_workshop-report-may-7-2025_draft-vers-3_clean.pdf

Framework[9] which was published in November 2025, and which is containing a section "Technologies for interconnecting FCI components" provided by SNS CO-OP partners. It gives some solutions to open the HPC infrastructure to any user (HPC as a Service) and to use MEC technologies to optimise the computing continuum. A webinar[10] has been organised on the 24th October to make a presentation of the paper to the HPC community. The second activity was the active participation to the HiPEAC Computing Continuum meetings. The Computing Continuum is a collaborative platform driving Europe's computing systems innovation and alignment. Three online meetings took place in 2025 with the objective to build the Digital Computing Continuum, and SNS CO-OP represented the SNS JU interest in these meeting (ongoing effort).

3.2.2 Engagement of national initiatives

Convened session at EUCNC 2025: A collaborative approach to 6G – unifying the European R&I ecosystem

The project SNS CO-OP, following the actions taking by its predecessor SNS ICE, works establish and maintain structured dialogue with European national 6G initiatives in order to align research and innovation activities, facilitate coordination at EU scale. Several actions have already been undertaken in this direction, including workshops, deliverables, and facilitated conversations amongst the Member States.

At the EUCNC conference in 2025 held in Poznan, Poland, SNS CO-OP organised a Convened Session focusing on how a collaborative approach to 6G taken with the National Initiatives (NIs) of the European member states works towards unifying the European R&I system (see Figure 7). The goal of this convened session at EUCNC was to highlight the work that has been done by SNS ICE and being continued by SNS CO-OP in this regard and to share the main results and recommendations from the project, highlighting the most promising collaboration areas among EU researchers.

Figure 7: Convened session at EUCNC 2025

The event commenced with an opening address by Tambiama Madiega of the SNS JU Office, followed by a strategic presentation from SNS CO-OP outlining key results achieved to date and providing recommendations to strengthen European collaboration. Subsequently, NIs representatives (see Table 2) were given the opportunity to deliver a short pitch supported by a single slide, presenting the core objectives, focus and status for the work performed by the respective initiatives.

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[9] https://etp4hpc.eu/wp-content/uploads/wpfd/preview_files/ETP4HPC_WP_federation-of-computing-architectures_202511-final(e8de67aac98d923eb372575f30568a89).pdf

[10] https://register.gotowebinar.com/register/5635517761845931349

Table 2: Representatives per country

NI representative	Country
Lars Gustafsson	Sweden
Hans Schotten	Germany
Oumaima El Bouhmadi	France
Patrick Kelly	Ireland
Paul Wijngaard	The Netherlands
Ari Pouttu	Finland
Kostas Katsaros	UK

After the presentations, a moderated panel discussion with representatives of the seven National Initiatives was held. The objective of the panel was to foster an interactive exchange among European experts, provide an overview of the current state of 6G-related work across the different EU countries, reflect on how these efforts have evolved since their inception, and identify the key challenges currently faced in advancing a more unified approach to European R&I ecosystem.

The discussion addressed several core questions. Panellists first reflected on what is currently missing in the efforts to better align and unify the European R&I ecosystem, proposing concrete actions such as organising thematic webinars on shared priorities such as resilience and allocating coordinated FTE efforts across multiple National Initiatives for topics of common interest. They also emphasized the value of existing coordination mechanisms, notably the SNS CO-OP moderated online meetings for information exchange, webinars for the National Initiative to showcase themselves and the SNS ICE report. On sustainability, the panel framed the topic broadly, encompassing environmental, societal, and business dimensions. It recommended that European projects explicitly define their sustainability focus and related UN SDGs, involve social scientists to bring additional perspectives, and consider external references such as ARCEP's triennial energy-consumption report. On resilience, the panel drew lessons from the April 2025 Iberian Peninsula blackout, leading to discussions on technologies such as Open RAN, Integrated Sensing and Communications, AI testing frameworks, and the use of Non-Terrestrial Networks.

Finally, the panellists outlined their priorities for the coming period. Germany will focus on dissemination, use-case demonstration, and addressing the "valley of death" between research and deployment. Ireland highlighted the strategic importance of publicly funded research infrastructure, while France announced a new resilience-focused call in 2026 and expressed openness to joint calls, stressing the importance of standardisation and stakeholder alignment. Finland will concentrate on resilience, AI, and computing, the Netherlands on execution and measuring business value, Sweden on AI and autonomous systems, and the UK noted that it is currently in a transition phase, with further details on future research plans to follow.

Podcast on Resilience

At the 5G Techritory conference held in Riga in October 2025, SNS CO-OP recorded a podcast (Figure 8), focusing on the topic of resilience. Representatives from four National initiatives, namely, Finland (Ari Pouttu), France (Hakima Chaouchi), Ireland (Patrick Kelly), and the Netherlands (Tiia Ojanpera) were invited to share their views. The podcast was moderated by Prachi Sachdeva (TNO).

Technology as we know it today plays a huge role in ensuring societal resilience. The National initiatives were asked what resilience means for them and how they are ensuring resilience in their societies through their national programmes. The following were the main questions asked and insights gained through this podcast:

- How are you currently addressing Resilience, and what is the role of 6G in this?

- Sub-question: How do you think we can ensure widespread adoption and implementation of Resilience measures?

- What actions do you believe need to be taken at the European level, and where do you think the National Initiatives can make an impact?

- For European-level measures, how do you think we can find a consensus (with so many member states)?

The panel recognised the urgent need for resilience measures across all member states, amid growing geopolitical conflicts and changing landscapes. Key technologies like AI, Cloud, cybersecurity, and NTN go a long way in this endeavour.

Figure 8: Podcast panel at 5G Techritory 2025

Webinars showcasing the National Initiatives

SNS CO-OP has been organising a set of webinars (Figure 9) where the NIs have showcased their key achievements and share information about their experimental platforms. The goal of these webinars is to provide a platform to the NIs to share information with the broader European R&I community, and to foster collaborations between these National Initiatives and SNS projects by facilitating the exchange of best practices, research findings, and results.

United Kingdom

The webinar took place on 24th January 2025 and featured a series of in-depth presentations on the UK's R&I activities and platforms.

The webinar[11] opened with a welcome address by Colin Willcock, Chairman of the 6G-IA. This was followed by a strategic overview of the UK Government's vision and ambitions for international collaboration in 6G and future networks R&D&I. Subsequent presentations highlighted the UK's key 6G and beyond research platforms and major investments in test and experimentation infrastructures, including UKTL, SONIC, JOINER, NDFF, as well as the broader 6G industry R&D ecosystem. The webinar concluded with a moderated question-and-answer session with participants.

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[11] https://smart-networks.europa.eu/event/uks-6g-achievements-and-experimental-platforms/

Figure 9: National Initiatives webinars

The Netherlands

The Future Network Services (FNS) programme is the national 6G initiative of the Netherlands, with a consortium currently consisting of 60 partners, including leading telecom and semiconductor manufacturers, mobile operators, ICT companies and research institutes. These partners jointly research specific components of 6G: software antennas, AI-driven network software and leading-edge applications. In addition, a nationwide 6G testbed is being built in which components and applications will be tested.

The webinar[12] took place on May 8th, 2025, and was moderated by Prachi Sachdeva (TNO). It included a welcome address by Colin Willcock, Chairman of the 6G-IA, followed by an introduction to the FNS programme. The subsequent presentations provided insights into the 6G FNS research activities on intelligent components and radio access networks, intelligence in core networks, 6G leading applications and verticals, and FNS experimentation facilities. The webinar ended with a moderated Q&A with the audience.

Italy

The research and development program RESTART 'RESearch and innovation on future Telecommunications systems and networks, to make Italy more smART' is the most important public R&D program ever implemented in the Telecommunications sector in Italy. The webinar gave an overview of some of the key initiatives within RESTART and focused in particular on the experimental facilities and labs that have been created in some of the most impactful research activities.

The webinar[13] took place on May 22nd, 2025, and was moderated by Pooja Mohnani (Eurescom). It included a welcome address by Colin Willcock, Chairman of the 6G-IA. This was followed by presentations featuring an overview of the Restart program and experimental labs, followed by presentations on programmable network platforms, experimenting with next-generation wireless, and research platforms for optical communications and wireless. The webinar ended with a moderated Q&A with the audience.

France

France 2030 represents an ambitious national strategy aimed at strengthening the country's technological and industrial sovereignty by supporting innovation across its most critical sectors. France 2030 supports the full innovation chain—from fundamental research to industrial deployment—through a range of instruments including the Future Investment Program (PIA), targeted calls for collaborative R&D projects, and the Priority Research and Equipment Programs (PEPRs). A national acceleration strategy dedicated to future network technologies was launched in 2021 and has allowed the funding of R&D 6G projects and the development of R&D programs led by French universities. A key component of this strategy involves the creation of open experimental platforms, pilot industrial sites, and testbeds

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[12] https://smart-networks.europa.eu/event/national-initiatives-dutch-national-initiative-on-6g/

[13] https://smart-networks.europa.eu/event/the-italian-national-initiative-on-6g-the-achievements-in-the-restart-program/

that enable researchers, startups, and industry players to co-develop and validate cutting-edge technologies.

The webinar[14] took place on June 30th, 2025, and was moderated by Pooja Mohnani (Eurescom). The webinar provided an overview of France's strategic vision for innovation in telecoms, with a focus on some of the major experimental initiatives that are helping to shape the technological landscape of tomorrow. It included a welcome address by Colin Willcock, Chairman of the 6G-IA. This was followed by presentations on RF-NET, Radiofrequency test facility network, SLICES – FR, The French node of SLICES-RI, and NGC-AIoT: Specific testbeds for embedded AI and edge-computing within SLICES-FR. The webinar ended with a moderated Q&A with the audience.

Sweden

The Swedish National Initiative introduced its program and took a closer look at some initiatives within digital infrastructure, with a particular focus on 6G. Representatives from competence centres and a strategic project funded by the program shared insights from their work. The Advanced Digitalisation programme of Sweden, an industry-driven research and innovation program aimed at promoting and accelerating Sweden's and Swedish industry's capacity to create the digital solutions of the future, was also in focus. As an introduction, Vinnova provided an overview of Swedish 6G initiatives.

The webinar[15] took place on 28th October 2025 and was moderated by Uwe Herzog (Eurescom). It included a welcome address by Raffaele de Peppe, Vice – Chairman of the 6G-IA and presentations including an introduction to Vinnova, Sweden's Innovation Agency, and an introduction to the Swedish 6G initiative. This was followed by presentations on the Advanced Digitalisation program, the SweWin competence centre, WiTECH competence centre, and the ISAC tested by Ericsson. The webinar ended with a moderated Q&A with the audience.

Webinars on topics of common interest

Next to the showcase webinars for National Initiatives, the SNS CO-OP project also started organising a series of webinars where various national initiatives address topics of vital importance for them and for the advancement of 6G technology within Europe. These topics of common interest among various national initiatives and SNS JU include topics where emphasis must be placed to achieve our technology goals for 6G. The first webinar of this new set was already held in 2025, while the following ones will be planned in 2026.

Resilience in 6G – the Finnish view

On September 4th, 2025, Finland presented in the 'Resilience in 6G: the Finnish view' webinar[16] which highlighted Finland's significant advancements and strategic initiatives in the realm of 6G technology, particularly focusing on resilience. The relevance of this topic lies in the critical role that 6G technology is expected to play in the future of global communications, ensuring robust and resilient networks that can withstand various challenges and disruptions.

The audience heard from leading experts in the field, including representatives from the 6G Flagship, VTT Technical Research Centre of Finland, and Nokia Bell Labs. The webinar covered lessons learned from the 6G Flagship, insights into Finnish digital resilience, and updates on the European 6G Flagship Hexa-X-II project.

3.2.3   Support for the State Representative Group and SNS office

The SNS CO-OP project, and its predecessor, SNS ICE, have extended support to the SNS office and the State Representative Group (SRG) through regular conversations with the Chair and the Vice-Chair of the SRG and with members of the SNS office. The goal is to keep the SRG apprised of recent developments within the European National Initiatives, and one of the ways this is done is through dedicated reports, sometimes with sensitive information that cannot be shared in public deliverables,

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[14]   https://smart-networks.europa.eu/event/sns-co-op-webinars-on-national-initiatives-the-french-national-initiative-on-6g-a-unique-set-of-facilities-for-the-future-generation-of-mobile-communication-testing-for-new-paradigms-and-applica/

[15] https://smart-networks.europa.eu/event/the-swedish-national-initiative-on-6g-perspectives-from-the-advanced-digitalisation-program/

[16] https://smart-networks.europa.eu/event/sns-co-op-webinar-series-on-national-initiatives-resilience-in-6g-the-finnish-view/

distributed to the State Representative Group. Another way is by assisting in the organisation of dedicated workshops for the SRG members and other invitees on topics of strategic importance, such as on Standardisation (EUCNC 2024), Sustainability (EUCNC 2025), and others.

3.2.4   Discussions on topics of European strategic importance

Under the objective of exploring and facilitating discussion of topics on strategic importance within Europe, the project organised a panel at Techritory 2025 titled "*A European Cloud - Myth or reality?*" (Figure 10). This event, chaired by Collin Wilcock (Chairman, 6G-IA), explored Europe's strategic trajectory in developing a competitive, sovereign, and interoperable cloud and edge ecosystem, as the continent transitions from 5G toward a full Telco-Edge-Cloud continuum integrating connectivity, compute, and control. The event put on the table several key challenges for Europe (such as fragmented regulation, dependence on non-EU providers, and barriers to innovation) that continue to limit progress in the cloud domain while fostering a forward-looking dialogue on how Europe can reconcile technological sovereignty with openness, competitiveness, and sustainable digital transformation through the new 3CN (Connected, Collaborative Computing Network).

The event featured the participation of European Commission, IONOS, Vodafone, and OpenNebula. It was structured in two parts. In the first part, the speakers shared their perspectives representing different sectors: policymakers from the European Commission, a telecommunications operator (Vodafone), a cloud service provider (Ionos), and the open-source community (OpenNebula). Following these presentations, the session continued with a panel discussion chaired by Collin, during which the audience was also invited to contribute.

Figure 10: Panel "A European Cloud - Myth or reality?", Techritory 2025

During the event, the panellists offered complementary perspectives on Europe's path toward digital sovereignty and advanced cloud-edge-AI infrastructure. DG Connect emphasised Europe's commitment to building a sovereign, interoperable cloud-edge-AI ecosystem that reduces dependency on non-EU providers by expanding data-centre capacity, enabling cloud switching, strengthening AI capabilities, and ensuring secure, EU-based solutions for high-risk sectors. Vodafone underscored the need to scale connectivity, telco edge nodes, and data-centre resources to meet Europe's 2030 Digital Decade goals and support emerging 6G and AI workloads, highlighting the potential of a federated telco edge cloud to enable workload roaming, decrease reliance on hyperscalers, and unlock new applications across mobility, logistics, emergency response, and defence. IONOS advocated for a verifiable model of European digital sovereignty grounded in open-source technologies, strict compliance, sustainable data-centre operations, and full legal accountability under EU jurisdiction, noting its contributions through initiatives such as SECA[17] and IPCEI CIS[18] to drive interoperability, sovereign multi-cloud models, and sustainable infrastructure. Finally, OpenNebula presented its open-source, lightweight

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[17] https://www.secapi.cloud/

[18] https://competition-policy.ec.europa.eu/state-aid/ipcei/approved-ipceis/cloud_en

cloud-and-edge platform that enables flexible and cost-efficient hybrid deployments worldwide, playing a key role in EU sovereignty efforts like Virt8ra[19] and IPCEI CIS by supporting virtualisation, telco-cloud innovation, AI-ready infrastructure, and experimentation toward future 5G/6G networks.

3.3   Key insights

Based on the efforts to cooperate with other *JUs and peer associations* in the first year of the project, the following main insights can be extracted:

- **Identifying the correct people and initiating collaborations across JUs or peer associations is a challenging task**: Most JUs/associations had not planned for this, nor do they have the dedicated resources to support it. On several occasions, SNS CO-OP's efforts to cooperate were not met with "enthusiasm" from the other side. As this is completely outside of the sphere of influence of SNS CO-OP, there is no guarantee as to the eventual cooperations that may be created.

- **Setting up common calls or aligning projects with other JUs, is extremely challenging:** Each JU addresses different priorities, mechanisms, operations, funding structures and topics. Even the timing can be challenging due to different roadmaps and timelines. The achievement of the FEM call from Chips JU was an astonishing accomplishment in this regard.

- **Efforts for additional cooperation will continue; however, the necessary political will needs to be present from both sides.** In this regard, the assistance of the SNS JU office to pinpoint the correct contact persons and to pursue active collaborations with other JUs is critical.

Based on work carried out on *National Initiatives (NIs)*, the following main insights can be extracted:

- **SNS CO-OP has successfully maintained close coordination among National Initiatives:** SNS CO-OP has effectively supported sustained coordination among representatives of the National Initiatives. These efforts have not only ensured continued cooperation but have also fostered a close-knit community that regularly exchanges information and explores opportunities for bilateral collaboration.

- **Support to the National Initiatives has generated a positive impact on the European R&I ecosystem:** The activities of SNS CO-OP have enhanced transparency and improved understanding of the work undertaken within the National Initiatives, contributing to greater coherence across the European R&I ecosystem. Regular information exchange and complementary research efforts across European, national, and regional levels are considered essential to safeguarding Europe's technological sovereignty in key strategic technologies, while ensuring alignment of priorities and efficient use of resources.

- **Support to the SRG and the SNS Office has been highly valued and strategically important:** The support provided by SNS CO-OP to the State Representative Group (Chair and Vice-Chair) and the SNS Office has been widely appreciated and is regarded as critical for maintaining a shared understanding of National Initiative activities and their outlook. In addition, these efforts have informed the development of future SNS work programmes, helping to identify underfunded research areas to act and reinforce key technology areas.

3.4   Next steps. Work plan M16 – M27

The SNS CO-OP project will continue to work towards **fostering cooperation and common actions with peer JUs and associations** in the second half of the project, despite the inherent difficulty of this task, and the required political will to make it happen. SNS CO-OP partners have established **contacts with AENEAS and HPC**, where a monitoring of their activities takes place on a regular basis, trying to identify collaboration opportunities. Moreover, **initial contact with the CCAM association** has been established, and the possibility of common actions is currently being explored. The **coordination with the CHIPS JU**, also remains active, trying to follow up on the establishment of the FEM call. SNS CO-

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[19] https://opennebula.io/innovation/virt8ra/

OP partners will pursue the co-organisation of events to exchange information among the different communities, investigating further collaboration options.

During the second review period, SNS CO-OP will deepen its assessment of research activities within the **National Initiatives by focusing on six strategic technological domains** (i.e., microelectronics, cloud computing and 3CN, space and Non-Terrestrial Networks, security, wireless technologies, and photonics) with the objective of mapping ongoing **research across Member States and evaluating how these efforts are translated into market** deployment and economic impact. This work will provide a structured view of Europe's technological sovereignty, highlighting areas of strength and potential gaps. The work will be based on structured interviews with each National Initiative supported by a standardised questionnaire. The results will be consolidated into a dedicated report.

4   Vertical & Complementary Domains Engagement

4.1   Main objectives and status

Vertical & Complementary engagement activities were kick-started by the 5GIA, aiming to influence future adopters in key European sectors while making the telecom sector more knowledgeable about their trends and future needs. It is key to mention that vertical industries are looking for solutions to enhance productivity or lower operational costs more than racing after the latest "G". Focusing on pure connectivity solutions has not proven successful, while a more holistic approach encompassing a continuum with Cloud and AI integrated in 6G networks may result more attractive to vertical adopters.

The main objectives of vertical engagement are both tactical and strategic. Lessons learned from the past have shown that the path to adoption in industrial sectors has proven difficult due to misalignment between expectations and real-world mobile technology implementation. Engagement with verticals from day 1 may mitigate this mismatch for 6G, providing both a more business-driven direction to the research community while making verticals more embedded in the research process.

The strategic objectives guiding SNS CO-OP's engagement with vertical sectors focus on ensuring structured, impactful and long-term collaboration between SNS JU and industry domains. Those objectives, previously defined and detailed in Deliverable D2.1, are summarised next:

- **Foster continuous and targeted communication with vertical sectors:** Maintain sustained, focused dialogue to ensure alignment of 6G developments with sector priorities and to build durable, trust-based cooperation.

- **Strengthen technical synergies through trials, pilots and standardisation:** Involve vertical stakeholders in experimentation and standardisation to anchor 6G research in practical requirements and interoperable, real-world use cases.

- **Expand and diversify the vertical engagement ecosystem:** Broaden sector participation to enhance cross-sector insights, increase programme relevance, and reinforce the resilience and impact of 6G innovations.

- **Harness stakeholder intelligence to inform strategic directions:** Systematically gather and analyse vertical feedback to guide research priorities, anticipate market needs, and support evidence-based policy input.

- **Maximise visibility and influence through strategic events:** Leverage high-level industry and research fora to strengthen SNS JU leadership, reinforce partnerships, and promote cross-domain exchange.

- **Boost the Vertical Engagement Tracker (VET)[20] as a core engagement tool:** Use the VET as a structured, data-driven instrument to monitor participation, enhance transparency, and support strategic planning.

To achieve the strategic objectives, a structured and comprehensive action plan was established during the initial months of CO-OP implementation. The plan was organised around six core activity areas, namely, (i) Strengthening information sharing and dialogue; (ii) Deepening technical engagement and collaborations in standardisation; (iii) Broadening the vertical sector ecosystem; (iv) Stakeholder intelligence and feedback; (v) Use of the Vertical Engagement Tracker as a tool to systematically engage verticals; and (vi) Strengthening information sharing and dialogue. The following section outlines the main activities carried out during the first reporting period across these axes.

4.2   Main activities

4.2.1   Strengthening information sharing and dialogue

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[20] https://sns-trackers.sns-ju.eu/vertical-engagement-tracker

Effective vertical engagement fundamentally depends on clear and targeted communication. The activities implemented include joint webinars, workshops, publications and multimedia initiatives to strengthen vertical engagement and showcase SNS JU results.

Joint webinar of the 6G-IA and 5G-ACIA "Update on recent 5G/6G achievements"

The first joint online Webinar[21] "*5G and 6G Industry/Manufacturing Trials and Pilots (T&Ps) - Highlights, Lessons Learnt, '5G/6G Empowerment' and 'Pain Points'*" (Figure 11) was organised in May 2025, supported by the SNS CO-OP project. The event brought together stakeholders from both communities to share key insights and foster collaboration (see list in Annex A: Participation in webinars and events with verticals).

The webinar programme featured presentations on major achievements in 5G and 6G Industry/Manufacturing Trials&Pilots (T&Ps), including the 6G-IA Brochures, Vertical Engagement Tracker (VET), and Trials Working Group, as well as 5G-ACIA Testbed Brochure and Industrial 5G User Guide. A dedicated session highlighted two SNS and two 5G-ACIA T&Ps, followed by a panel discussion addressing the specific benefits of 5G Advanced and 6G, "5G/6G Empowerment", and the remaining challenges or "pain points" faced in industrial and manufacturing contexts. The event attracted strong interest, with over 60 participants and insightful presentations throughout. This first joint Webinar paved the way for further joint actions and synergies, which are reported next.

Figure 11: First 6G-IA – 5G-ACIA joint webinar focused on Trials and Pilots

Physical meeting in Espoo and 6G-IA/5G-ACIA webinar on "Highlights, lessons learnt and next steps on ISAC/JCAS"

SNS CO-OP participated in the subsequent 5G-ACIA physical meeting held on 23–26 June 2025 in Espoo/Helsinki, including the 5G Industry Day. This enabled further discussions and interactions on the expectations and benefits of 5G and 6G technologies, forthcoming joint activities, and the confirmation of a second joint webinar focused on ISAC/JCAS to be organised by both organisations.

The webinar[22] entitled "*Highlights, Lessons Learnt and Next Steps on ISAC/JCAS*" (Figure 12) took place on 10 October 2025. It brought together more than 100 participants (see list in Annex A: Participation in webinars and events with verticals) from both communities to share progress and align future efforts on ISAC and JCAS, two key enablers for future 6G networks and industrial automation. Speakers from 6G-IA, 5G-ACIA, and several SNS JU projects—including 6G-MUSICAL, 6G-DISAC, iSEE-6G, Multi-X, ECO-eNet, and 6G-REFERENCE—presented current use cases, research challenges, and ongoing standardisation activities. This second webinar was also highly appreciated and strongly valued by both communities.

As a follow-up action, both organisations will jointly engage in the organisation of a dedicated 6G-IA workshop, currently targeted for March 2026, aimed at identifying potential R&I topics to be considered

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[21] https://smart-networks.europa.eu/event/6g-ia-5g-acia-update-on-recent-5g-6g-achievements/

[22] https://smart-networks.europa.eu/event/6g-ia-5g-acia-joint-online-webinars-isac-jcas-online-webinar/

in the forthcoming SNS R&I Work Programme 2027.

Figure 12: Second 6G-IA – 5G-ACIA joint online Webinar focused on ISAC/JCAS

Joint webinar of the 6G-IA and EIM "Workshop FRMCS and 6G"

This workshop (Figure 13) represented the first collaborative activity between 6G-IA and European Rail Infrastructure Managers (EIM) association, representing the railway infrastructure sector (see list in Annex A: Participation in webinars and events with verticals). During the workshop, EIM presented the current state of the art and evolution of railway infrastructure, while the chair of the 6G-IA Architecture Working Group outlined key 6G features of relevance to the railway domain.

Figure 13: 6G-IA and EIM workshop FRMCS and 6G

The railway industry is at a critical turning point. With the planned sunset of 2G, the sector must replace GSM-R (Global System for Mobile Communications – Railways), currently used for railway operations, with a future-proof solution based on 5G, namely FRMCS (Future Railway Mobile Communication System). The workshop highlighted the need for a smooth transition from GSM-R to FRMCS, while ensuring forward compatibility with 6G technologies. Beyond the enhancement of railway operational communications, the discussions also addressed the "Gigabit Train" concept. According to the CEF Strategic Research Agenda "5G Connectivity and Spectrum for Rail", the objective of the Gigabit Train is to ensure that passengers travelling on high-speed trains across borders experience connectivity comparable to that available at home or at work.

The growing number of rail passengers, together with the increasing use of digital applications, is driving a substantial rise in demand for onboard mobile connectivity. Forecasts up to 2030 (Figure 14) indicate traffic requirements of up to 3–5 Gbps per train carrying 1,000 passengers, without yet accounting for additional future applications or increases in per-passenger data consumption.
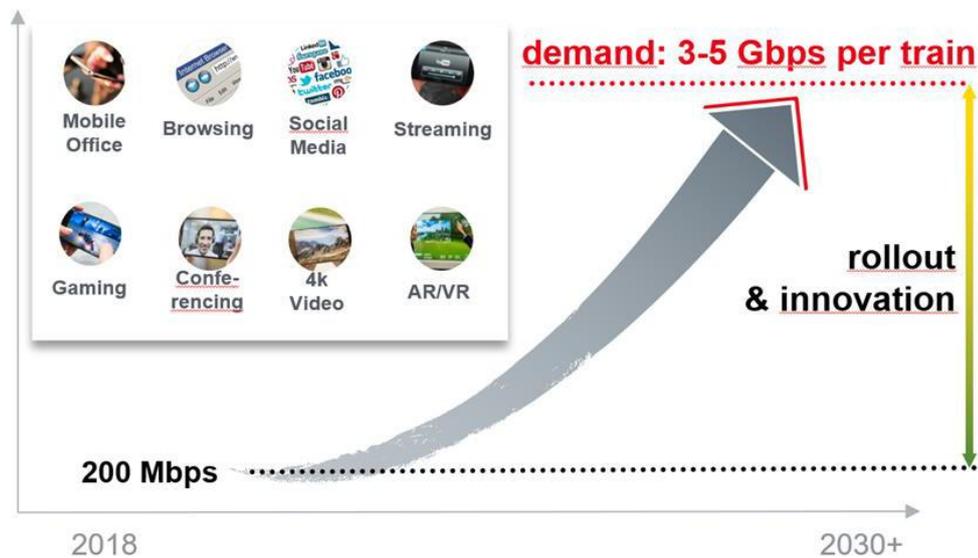
Figure 14: Evolution of throughput demand and key services driving

Brochure: SNS Trials & Pilots Brochure no.1

The *SNS Trials & Pilots (T&Ps) Brochure no.1*[23] (Figure 15) was released on June 1. 2025 as a contribution to EuCNC & 6G Summit 2025. It provides a comprehensive overview of validation and testing activities related to 5G Advanced and emerging 6G technologies across a broad range of vertical sectors, including automotive, manufacturing, media and entertainment, healthcare, public safety, energy, smart cities, and transport and logistics.

The brochure was initiated by the SNS CO-OP project in January 2025 and builds upon the legacy of the 5G Infrastructure PPP, which previously published four T&Ps brochures and one summary edition. These earlier editions documented 322 5G Trials & Pilots conducted between 2015 and 2024.

Developed by a core editorial team with contributions from more than 15 expert evaluators, the brochure features a collection of two-page summaries for each selected project. Each summary outlines the respective trial or pilot, including its network architecture, deployment characteristics, key outcomes, and technical features associated with 5G technologies. The content illustrates how these initiatives validate services and demonstrate the technological advancements of 5G compared to previous network generations.

The brochure serves as a reference document for stakeholders engaged in research, industrial development, and policymaking in the field of digital connectivity. It is widely used to support dissemination and communication activities of the SNS Programme and its projects, including at the international level.

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[23] https://smart-networks.europa.eu/wp-content/uploads/2025/06/sns_tps_brochure_may25_final.pdf

Figure 15: SNS Trials & Pilots Brochure n°1

Whitepaper: "Smart Connectivity Testbeds use by Digital Innovation Hubs"

This paper[24] has been jointly developed by AIOTI and the SNS CO-OP project within the framework of the SCoDIHNet activities. Its objective is to support members of the Smart Connectivity Digital Innovation Hub Network (SCoDIHNet) in identifying experimental facilities located close to their premises, enabling the development and testing of innovative use cases for end users.

Several European-funded projects have deployed experimental facilities across Europe, equipped with state-of-the-art digital technologies. These facilities represent a valuable opportunity for Digital Innovation Hubs (DIHs) to leverage existing infrastructures and accelerate the digitalisation of European industry. However, each experimental platform is managed by an individual organisation and may be subject to specific access policies and conditions. It is therefore the responsibility of the DIHs to address these access modalities when selecting suitable experimental facilities. In addition, experimental facilities often focus on specific vertical sectors. DIHs should take these specialisations into account and assess their alignment with the use cases they intend to develop.

Whitepaper: "6G for Media and Entertainment"

The SNS JU Technical Board initiated the development of a series of white papers to provide a comprehensive overview of project results across key vertical sectors. One of these white papers focuses on the Media and Entertainment vertical[25]. It brings together contributions from 22 SNS JU projects, covering a total of 46 Media and Entertainment use cases, and was published in December 2025.

The paper was developed under the leadership of Pierre-Yves Danet (SNS CO-OP), who acted as Editor-in-Chief and main driver of the activity. The white paper was presented at the NEM Summit 2025 and subsequently submitted to the NEM community for review and comments.

In parallel, a new 3GPP SA4 study item (FS_6G_MED) has been initiated. This study addresses the identification of the impacts of the emerging 6G service architecture on media formats and media protocols. The SNS JU Media and Entertainment white paper has been proposed as an input to this 3GPP study.

Whitepaper: "Towards 6G-enabled Health"

This SNS JU Technology Board white paper[26], with strong involvement from SNS CO-OP participants, shows that B5G and emerging 6G platforms are turning eHealth into a validated reality across Europe. Drawing on 2024–2025 project results, it confirms that advanced architectures, AI, edge computing, and secure data frameworks can reliably support real-world healthcare applications.

Demonstrated use cases include AR-assisted remote surgery, AI-based cardiac monitoring, predictive management of implantable devices, home AR rehabilitation, contactless sensing for vulnerable patients, and XR emergency training. These examples illustrate how high-performance connectivity

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[24] https://aioti.eu/smart-connectivity-testbeds-use-by-dihs/

[25] https://smart-networks.europa.eu/wp-content/uploads/2025/12/white-paper-6g-for-me-v1.0.pdf

[26] https://smart-networks.europa.eu/wp-content/uploads/2026/02/2026-02-19-ehealth-white-paper.pdf

expands access to expertise, strengthens preventive care, and enhances clinical oversight.

The platforms achieved mission-critical targets such as sub-20 ms latency, over 99% availability, centimetre-level positioning, secure network slicing, and GDPR-compliant data protection, while ensuring interoperability with standards including HL7 FHIR and the European Health Data Space.

The paper also highlights social and environmental impact: improved access to specialised care in underserved areas, faster diagnosis, reduced patient and clinician travel, and carbon footprint reductions of 40–60% per clinical episode compared to conventional in-facility models.

While upfront investment in 6G infrastructure and interoperable platforms is required, the long-term clinical, economic, and environmental benefits position 6G-enabled eHealth as a foundational technology for Europe's future healthcare systems, which are safe, secure, and clinically efficient.

Position paper: "Research Priorities in Media & Entertainment"

A position paper has been prepared reporting on the workshop organised on 15 May by the SNS CO-OP project in collaboration with the Networked Electronic Media[27] (NEM) Initiative[28] and the 5G Media Action Group[29] (5G-MAG).

The objective of the workshop was to update the shared vision regarding the connectivity requirements of the Media & Entertainment sector. These identified requirements are intended to inform the preparation of the SNS Work Programme 2026 and Work Programme 2027.

The workshop also provided an opportunity to present related initiatives contributing to the long-term strategic vision of the Media & Entertainment ecosystem. In particular, the forthcoming Virtual World Partnership —currently under definition for implementation within the next FP10 framework programme— was introduced, including its emerging connectivity requirements and their relevance for future network evolution.

Videopodcast: "Challenges and Promises of ISAC for 6G: From Lab to Live Deployment"

This podcast gathered leading experts from European research, industry and economic research to discuss the status, challenges and future prospects of Integrated Sensing and Communications (ISAC) as a core enabler of 6G. The discussion (Figure 16) was moderated by Carles Antón-Haro (CTTC, Chair of the 6G-IA Trials Working Group and member of the SNS-JU Board), with contributions from Antonio de la Oliva (UC3M), Andreas Gavrielides (IMEC), Andreas Georgakopoulos (WINGS ICT Solutions) and Barbara Pareglio (GSMA Intelligence). The recording is publicly available on major streaming platforms[30], enabling broader dissemination of these insights to the 6G community.

The panel framed ISAC as a fundamental evolution of mobile networks, moving beyond connectivity towards infrastructures that can sense, interpret and interact with their environment. Participants emphasized that ISAC is not "radar over telecom", but a new system capability combining waveform design, signal processing, distributed intelligence and network orchestration. From a research perspective, ISAC was described as a cornerstone of future 6G systems, with strong potential to enable new services across mobility, industry, safety and digital twins.

Participants agreed that Integrated Sensing and Communication (ISAC) is moving from concept to practice. Recent trials already show strong sensing accuracy and robustness in controlled settings, but there are remaining technical hurdles before real-world scale: managing interference between sensing and comms, co-designing waveforms and hardware, tight synchronisation, and AI-driven data fusion at scale. A recurring theme was sensor fusion—RF sensing is valuable on its own, but dependable operation in complex environments will hinge on blending RF with cameras, lidar, high-precision positioning, and AI.

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[27] https://nem-initiative.org

[28] https://nem-initiative.org

[29] https://www.5g-mag.com

[30] https://rss.com/podcasts/sns-co-op-podcasts/2461793/

Figure 16: Snapshot from the video podcast recording at Techritory Forum 2025

On the road to deployment, the conversation framed today's high-profile activities (e.g., in China and South Africa) as advanced pilots, not commercial rollouts. The step to scalable services will require deeper integration into network architectures, standardised interfaces, and clear operational responsibilities across operators, vendors, and verticals, with early ISAC use likely in ports, airports, campuses, and industrial sites. Beyond engineering, regulation, privacy, data ownership, and liability, especially around passive sensing, where people can be detected without devices, were flagged as pivotal.

From the business side, monetisation is still unsettled, so operators remain cautious. ROI, service ownership and ecosystem roles are not yet clear, which means adoption must be pulled by outcome-oriented, vertical-specific solutions that prove improvements in performance, safety and operational efficiency. The panel identified short-term opportunities such as Sensing-as-a-Service, network-assisted digital twins, enhanced positioning and safety services, and infrastructure monitoring. In the longer term, ISAC could become a native network capability enabling autonomous mobility, resilient industrial automation and context-aware digital environments.

The podcast concludes that while ISAC is advancing rapidly from laboratory research towards early field validation, large-scale success will depend on alignment across technology, standardisation, regulation and business models.

Video podcast: "Advancing Research and Standardisation Synergies in Emerging Technologies"

This podcast episode[31] (Figure 17) was designed to raise awareness on why the development of 6G technology must be grounded in equity, diversity, and inclusion. As 6G will transform digital infrastructures—powering AI-driven services, advanced cybersecurity frameworks, and next-generation connectivity—it is essential that its design, standardisation, and deployment reflect inclusion and diversity. Inclusive R&D environments are fundamental to ensuring that future technologies are unbiased, transparent, trustworthy, and socially responsible. By bringing diverse voices into research and standardisation, the telecom sector can strengthen innovation capacity and foster public trust. The podcast allows space for personal reflections, practical examples, and success stories to create resonance with a broad professional audience. It talks about challenges and brings tangible strategies that can benefit young professionals. The discussion was moderated by Pooja Mohnani (Project Manager Eurescom) with participation of Hakima Chaouchi, Head of Digital Sovereignty at Institut Mines Telecom, Albena Dimitrova Mihovska, Chief Technology Officer at SmartAvatar BV, Prachi Sachdeva, Senior Consultant at Dutch Organisation for Applied Scientific Research (TNO), Susan Rea, Centre Director at Nimbus Centre MTU. The recording is publicly available on major streaming platforms[32], enabling broader dissemination of these insights to the 6G community.

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[31] https://rss.com/podcasts/sns-co-op-podcasts/2500162/

[32] https://rss.com/podcasts/sns-co-op-podcasts/2461793/

Figure 17: Snapshot from the video podcast recording at 5G Techritory Forum 2025

4.2.2   Deepening technical engagement and collaborations

Beyond communication, SNS CO-OP aims to strengthen the technical dimension of vertical engagement. SNS CO-OP places strong emphasis on continuously monitoring developments across key vertical sectors to maintain alignment between 6G research activities and evolving industrial demands.

In coordination with the 6G-IA, the project is planning a set of dedicated vertical face-to-face workshops (occasionally, virtual) convened to proactively identify sector-specific priorities on the path toward 6G. Each event will address a specific vertical domain and will be steered by a recognised industry or association lead, including Railways (Telecom Italia Mobile, 6G-IA), Smart Industry (Nokia, Ericsson), and Public Safety (PSCE Forum). Attendance will be deliberately limited to approximately 10–20 domain experts per session to foster focused, in-depth, and representative discussions.

The preparatory work started in Q4/2025, and the workshops are planned for the March–April 2026 timeframe and will be organised by SNS CO-OP, with the participation of representatives from SNS and DG-CNECT. This initiative is particularly relevant given that a substantial portion of the WP2027 budget (approximately €230 million) is earmarked for large-scale vertical Trials and Pilots under Stream D. Outcomes from the workshops will be consolidated into a structured report to support the definition of 6G-IA orientations for SNS R&I Work Programme 2027.

4.2.3   Broadening the vertical sector ecosystem

Renewal/new MoUs with Vertical Associations

The renewal and consolidation of the partnership portfolio with key vertical stakeholders is a central activity, aimed at fostering structured collaboration within a trusted "safe harbour" framework. In the current reporting period (2025), Memoranda of Understanding (MoUs) have been renewed or extended by 6G-IA (Raffaele de Peppe as Vertical Engagement Board leader), supported by SNS CO-OP with major industrial associations representing strategic sectors. Initial 6G application domains and usage scenarios have been identified, with further refinement to be carried out jointly with each partner.

- **5G-ACIA (Smart Manufacturing):** The MoU with the 5G Alliance for Connected Industries and Automation (5G-ACIA) was successfully renewed in May 2025 and formally signed at the 5G-ACIA Board Meeting in December 2025. The renewed agreement supports collaboration on Smart Manufacturing, particularly in the integration of IT/OT systems and services during the transition from 5G to 6G.

- **NGMN (ICT):** 6G-IA had an existing MoU with NGMN, which was extended through a prolongation document signed in July 2025. The collaboration focuses primarily on energy efficiency and implementation aspects of future network evolution.

- **AIOTI (IoT):** The MoU with AIOTI was renewed in September 2025, despite AIOTI's departure from 6G-IA membership and its Board. The renewed agreement enables continued cooperation on IoT technologies across multiple sectors. Collaboration has already delivered a well-attended webinar based on a joint white paper on Agriculture and contributed to a recently released white paper on Energy.

- **ESA (Space):** While 6G-IA had previously signed a Letter of Intent with ESA, a broader MoU has now been established between SNS JU and ESA, covering strategic topics such as Non-Terrestrial Network (NTN) integration. SNS CO-OP actively contributed feedback and recommendations to shape the scope and content of this agreement.

- **NEM (Connected Media):** The MoU with the Networked Electronic Media (NEM) initiative was renewed in October 2025, strengthening cooperation on future trends and connectivity needs of the Connected Media sector, including AR/VR, smart glasses, and advanced devices. In parallel, a MoU with the 5G Media Action Group (5G MAG, part of the EBU) remains active, covering broadcasting and traditional media domains. The forthcoming NEM SRIA will include a dedicated chapter on connectivity, building on the 6G-IA white paper, and a following joint workshop with NEM, and 5G MAG and 6G-IA.

- **ERTICO (Transportation & Logistics):** The MoU with ERTICO was renewed in October 2025 to address evolving requirements in transportation and logistics, including passenger mobility, freight transport, urban and suburban mobility, and cross-border/inter-urban transport. As a first concrete implementation, a joint panel and Special Interest Session involving 6G-IA and ERTICO representatives will take place at the ITS Congress in Istanbul in April 2026.

- **PSCE (Public Safety):** The MoU with PSCE was renewed in November 2025. As PSCE is represented on the 6G-IA Board, this collaboration remains strategically important. The focus is on mission-critical communications supporting Public Protection and Disaster Relief (PPDR) services, particularly in the context of increasing geopolitical instability. The partnership will explore 6G features beneficial for PPDR scenarios, including Joint Communication and Sensing (JCAS) and support for autonomous unmanned systems such as drones.

- **ECSO (Cybersecurity):** The renewal of the MoU with ECSO is in its final signature phase. Two developments are noteworthy: ECSO has joined the EURO-3C consortium, reinforcing convergence strategies—particularly on policy and regulatory dimensions—although this activity falls outside the strict SNS JU scope. In addition, ECSO has expressed its intention to join the SNS JU Stakeholder Group, strengthening cross-community collaboration.

- **5GAA (Automotive):** The renewal of the MoU with 5GAA has been cleared by the legal advisor and is currently in the signature phase (expected March 2026). The updated agreement will address existing challenges while incorporating new 6G opportunities for the automotive sector, including standalone 6G architectures, integration of Non-Terrestrial Networks (NTN), Joint Communication and Sensing (JCAS), and AI-enabled edge capabilities.

For completeness, Figure 18 below provides an overview of the comprehensive portfolio of MoUs currently in place with vertical sector stakeholders, irrespective of whether they were renewed during the present reporting period.
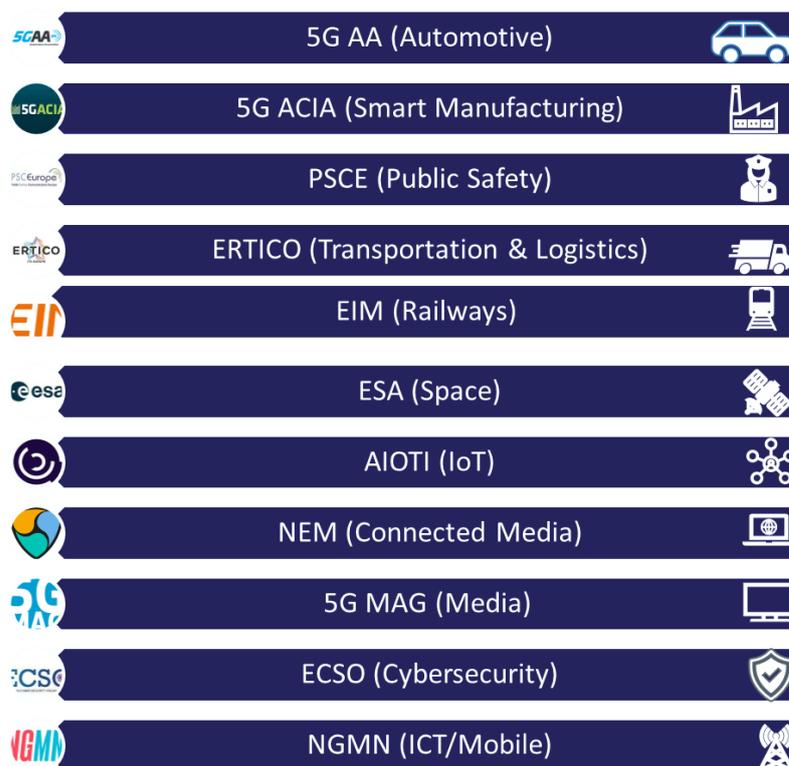
Figure 18: Current portfolio of MoUs with Vertical Associations

Liaison activities

SNS CO-OP has closely monitored developments and conducted liaison activities across several strategic vertical sectors and related organisations, ensuring alignment between sectoral requirements and 5G/6G evolution, contributing to strategic roadmaps, and strengthening cross-sector collaboration.

- **Media & Entertainment:** SNS CO-OP engaged actively with NEM (New European Media) and 5G-MAG (5G Media Action Group) to track and contribute to evolving connectivity requirements for next-generation media services. In 2025, the Virtual Worlds Association[33] (VWA) was established to form a Public-Private Partnership (PPP) with the European Commission supporting innovative XR technologies in Europe. 6G-IA was invited to contribute a chapter on "Infrastructure, Networks and Compute" to the Association's Strategic Research and Innovation Agenda (SRIA), which was endorsed by the European Commission and formally signed on 10 December 2025. Subsequent meetings with the VWA Chair initiated discussions towards establishing an MoU between the two organisations, with the objective of reinforcing cooperation and leveraging the 5G/6G-IA ecosystem's experience and organisational framework.

- **Automotive/Connected and Automated Mobility (CAM):** SNS CO-OP closely followed the GUIDE Support Action and the 5G4CAM Working Group. In 2025, the 5G4CAM WG, together with GUIDE, developed an updated Strategic Deployment Agenda (SDA) for Connected and Automated Mobility, approved by the SNS JU Board at year-end. This SDA builds on the 5G SDA on Connectivity and Spectrum for Rail (December 2024). A complementary paper identifying commonalities between both SDAs is under validation and expected in 2026. In parallel, GUIDE launched a survey to collect technical solutions and best practices from CEF 5G Corridor projects to facilitate replication across Europe. Results were presented at the July GUIDE Advisory Board and at the December event "Shaping the Evolution of CAM Towards Next Generation Networks," organised by the 6G4CAM WG.

- **Energy:** The energy sector has been identified as a strategic vertical for SNS JU, although engagement remains challenging. Attempts to establish cooperation with the European Utilities

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[33] https://www.virtualworldsassociation.eu

Telecom Council (EUTC) were unsuccessful. Discussions with Enercountim indicated stronger potential alignment with research-oriented bodies such as the European Energy Research Alliance (EERA), as well as with ENTSO-E and associations representing Distribution System Operators (DSOs), notably through the ICT Committee and the Digital & Communication Working Group under the RDI Committee. A key challenge is the sector's parallel development of Power Line Communication (PLC), where 6G may be perceived as a competing rather than complementary solution. Engagement efforts will continue in 2026 to identify mutually beneficial cooperation paths and establish structured collaboration. In addition, 6G-IA is collaborating with the European Green Digital Coalition[34] which is collecting use cases and solutions addressing energy optimisation. 34 use cases developed by 10 SNS JU projects have been identified to submit their use cases to the EGDC calls.

4.2.4   Organisation and participation in events and outreach activities

Participation in external events is a key component of the engagement strategy, enabling direct interaction with vertical stakeholders, identification of emerging needs, and promotion of SNS results. Complementing internal communication efforts, this outreach strengthens visibility, builds trust, and reinforces SNS's role as a leading actor in the 6G ecosystem. In the first reporting period, SNS CO-OP organised and contributed to high-level workshops, co-creation events and special sessions at major fora such as EuCNC & 6G Summit and Techritory. Activities addressed large-scale trials, KPI/KVI frameworks, ISAC monetisation pathways, healthcare applications and media sector requirements, combining technical insights with strategic and standardisation perspectives. SNS CO-OP also promoted inclusion and cross-sector collaboration within the emerging 6G ecosystem.

Co-creation event: "Integrated Sensing and Communications in SNS Trials and Pilots: pathway to monetisation of 6G networks"

This co-creation event, organised in October 2025 at Techritory Forum in Riga, brought together leading representatives from European research, industry and standardisation communities to discuss the role of Integrated Sensing and Communications (ISAC) as a core enabler of 6G and as a potential driver of new monetisation models. The workshop was chaired by SNS CO-OP's Carles Antón-Haro (CTTC) and Veronica Vuotto (Trust-IT Services) (Figure 19) and counted with the lineup of speakers shown in Figure 20.

Figure 19: Introduction to the co-creation event by the co-chairs

The first technical session focused on progress in large-scale SNS trials and pilots. Antonio de la Oliva presented results from the MultiX project, demonstrating multiple ISAC approaches based on multi-technology, multi-band and multi-sensor integration, while identifying heterogeneity management across sensing sources and RAN layers as a primary technical challenge. Andreas Gavrielides introduced the iSEE-6G project, centred on Joint Communication, Computing, Sensing and Power (JCCSP), with

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[34] https://digital-strategy.ec.europa.eu/en/policies/european-green-digital-coalition

use cases in UAV corridors, safety enhancement, agricultural and industrial IoT, connected mobility and energy harvesting, supported by proofs-of-concept in Belgium and Romania. Andreas Georgakopoulos presented Hexa-X-II, emphasising the need for advanced infrastructures and cross-sector synergies to enable holistic 6G applications, as well as early concepts for exposure towards verticals through APIs and Sensing-as-a-Service. Veronica Vuotto illustrated the Vertical Engagement Tracker, a data-driven tool linking research activities with market impact by mapping SNS projects and use cases across the 5G-to-6G transition.

Figure 20: Speakers in the co-creation event

The second session addressed standardisation and monetisation aspects. Cristina Ciochina outlined the activities of ETSI ISG ISAC, highlighting Europe's strong contribution to global pre-standardisation, the identification of eighteen ISAC use cases, and the ongoing transition from conceptual studies to concrete requirements feeding future 6G specifications. Barbara Pareglio provided an industry perspective from GSMA Intelligence, stressing that monetisation in the 5G phase remains limited and that technology alone is insufficient to guarantee success. She argued that future ISAC deployment must be demand-driven, solution-oriented and AI-native, with business models focused on outcomes rather than infrastructure, and with targeted deployments in controlled environments such as ports, airports and industrial campuses.

The panel discussion, moderated by Carles Antón-Haro and involving most of the technical speakers, emphasised the need to align standards, trials and markets. Participants agreed that technical convergence is progressing rapidly and that early architectural consensus is emerging, but that market pull remains weak and that stronger engagement from network operators is required. The discussion underlined the importance of timely coordination between SNS pilots and pre-standardisation activities to strengthen Europe's influence in 6G specifications, and highlighted open challenges related to privacy, data governance, liability and data ownership in sensing-based services.

In conclusion, the event confirmed that ISAC is rapidly evolving from a research concept into a technically viable 6G capability, supported by convincing trial results across multiple domains. However, monetisation remains the critical bottleneck: sustainable value creation will depend on targeted deployments, outcome-based business models and strong vertical engagement rather than generic network upgrades. Effective coordination between SNS trials, standardisation bodies and industry stakeholders will be decisive for Europe to translate technological leadership into industrial impact. By 2030, ISAC is expected to emerge both as a network-native function and as a Sensing-as-a-Service offering, provided that operator commitment, trust frameworks and data governance are addressed early.

Workshop: "Results and findings from SNS B5G large-scale trials and experimentations" at EUCNC'25

At EuCNC & 6G Summit 2025, SNS CO-OP actively contributed to a dedicated workshop addressing two key themes, building on SNS JU activities carried out in 2024: (i) large-scale trials and experimentation development, including platform and network solution deployment, and (ii) the definition of appropriate KPI/KVI frameworks to assess and evaluate outcomes.

These topics provided technology providers, operators, application developers, and other stakeholders with a forum to exchange insights on challenges, best practices, and lessons learned in deploying advanced large-scale 5G and beyond infrastructures, as well as innovative and value-added use cases across Europe.

SNS CO-OP delivered the introductory session ("Introduction and Cartography"), presenting a structured overview of major SNS programme developments related to Trials & Pilots. The presentation highlighted key instruments and initiatives, including the Technical Board Interactive Projects Map, the SNS Roadmap v1.0, the SNS Vertical Engagement Tracker (VET), the Trials & Pilots Brochures, the 6G-IA Trials Working Group, and the SNS Test, Measurement and KPIs Validation (TMV) Working Group.

Invited Speech: "Empowering Health Futures: 6G Trials and Pilots in the SNS JU" at EUCNC'25

Special Session 3 at the EuCNC & 6G Summit 2025 focused on how 5G and beyond network slicing can support next-generation healthcare through secure, resilient, and interoperable data infrastructures. The session brought together researchers, healthcare stakeholders, and European initiatives to address technical enablers, regulatory aspects, and concrete use cases. The programme included a keynote, technical presentations from academia and industry, and a final panel discussion on the challenges of deploying critical digital infrastructures for health. It was structured to provide strategic context, applied perspectives, and an open exchange on future directions.

The session opened with a keynote address by SNS CO-OP's Carles Antón-Haro entitled "Empowering Health Futures: 6G Trials and Pilots in the SNS JU". In this keynote, he presented 6G as a strategic enabler for the transformation of European healthcare in response to ageing populations, rising costs, and unequal access to services. He also explained that future health systems would rely on ultra-reliable and ultra-low-latency communications to support applications such as remote robotic surgery, immersive training, and XR-based diagnosis. Integrated AI, massive sensing, and distributed intelligence were identified as key foundations for predictive diagnostics, smart hospitals, and ambient assisted living, while global connectivity would extend care to remote and underserved areas. Antón-Haro emphasised the importance of secure and privacy-aware communications, as well as digital twins for simulating patient-specific treatments. He reviewed the strong presence of healthcare use cases across SNS projects, supported by the Vertical Engagement Tracker. He also introduced upcoming SNS trials and pilots and highlighted the central role of the 6G Trials Working Group in coordinating trials, dissemination, and collaboration. The keynote concluded by positioning 6G as a critical pillar for building resilient, interoperable, and data-driven European health systems.

Networked Media (NEM) session with a presentation of the 6G IA white paper on Media & Entertainment

In 2025, a joint workshop was organised in May by 6G-IA, SNS CO-OP, NEM, and 5G-MAG to capture the evolving needs and connectivity requirements of Media & Entertainment stakeholders, with the objective of feeding inputs into the SNS JU Work Programme 2026. A position paper summarising the outcomes was subsequently developed and shared with the 6G-IA Board.

Building on this collaboration, NEM invited SNS CO-OP to organise a dedicated session at the NEM Summit 2025 (Berlin, 21–22 October), where several SNS JU projects presented their results to the broader media community. During the Summit, a new MoU covering the 2026–2027 period was formally signed. Under this renewed agreement, 6G-IA has been invited to participate in NEM Board meetings, further strengthening strategic alignment between connectivity innovation and media sector requirements.

Joint session: "WiTaR in Focus: Advancing Research and Pre-Standardisation Synergies in Emerging Technologies" at Techritory Forum

At 5G Techritory Forum 2025, SNS CO-OP, together with the Women in Telecommunications and Research (WiTaR) Working Group and the Pre-Standardisation Working Group joined forces for a joint session titled "WiTaR in Focus: Advancing Research and Pre-Standardisation Synergies in Emerging Technologies" (Figure 21). The objective was to strengthen the pipeline from research and innovation (R&I) to standardisation in the emerging 6G landscape, while embedding inclusion as a priority.
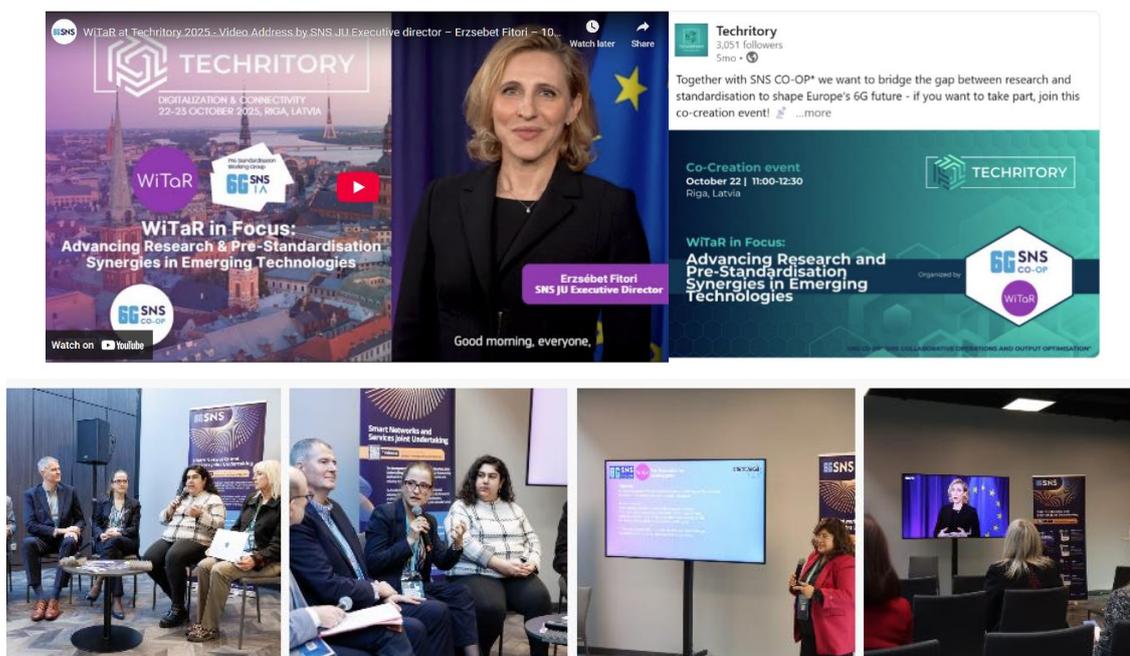
Figure 21: Announcement and pictures from the WITAR joint session at Techritory Forum 2025

Opening the session, Pooja Mohnani of Eurescom GmbH positioned WiTaR's work within the broader framework of the SNS JU and the 6G ecosystem. The central message was clear: purposeful leadership and community-driven innovation are essential to a resilient and inclusive R&I ecosystem. Representing the Pre-Standardisation WG, Veronica Vuotto of TRUST-IT Services addressed the gender gap in standardisation, noting that only one in five experts in technical bodies are women. She outlined efforts to better align R&I outputs with standard development organisations such as European Telecommunications Standards Institute (ETSI), 3rd Generation Partnership Project (3GPP), and highlighted tools like the Vertical Engagement Tracker to strengthen cross-sector collaboration.

Expert interventions reinforced the strategic importance of diversity. Rute C. Sofia from FORTISS stressed that inclusive participation enhances research excellence and policy alignment, while Prachi Sachdeva from TNO underlined the economic and professional benefits of closing the gender gap.

The panel discussion, moderated by Uwe Herzog from Eurescom GmbH, brought together Didier Bourse (Nokia), Prachi Sachdeva (TNO), Hakima Chaouchi (IMT Atlantique), and Albena Mihovska (Aarhus University). The discussion focused on structural barriers limiting women's participation in standardisation. Didier Bourse noted that only 9% of inventors are women, calling for systemic change. Hakima Chaouchi emphasised the role of universities in integrating standards engagement into academic pathways, while Albena Mihovska highlighted the need to bridge research and standardisation to sustain an inclusive innovation pipeline. The overarching message was clear: innovation must reflect the full spectrum of society. The panel concluded with concrete next steps: confirming new Lunch Salon speakers, and deepening collaboration to further strengthen Europe's inclusive 6G innovation pipeline.

4.2.5   Vertical Engagement Tracker

The Vertical Engagement Tracker (VET)[35] is a core instrument designed to support the alignment between 6G research and innovation activities and the concrete needs of industry. Its primary objective is to map, analyse and structure use cases developed within the SNS JU, providing a clear overview of how 6G technologies are being applied across different vertical sectors. By offering a structured framework for engagement, the VET supports collaboration with industry associations, helps identify innovation opportunities, and contributes to bridging the gap between research outcomes and market adoption.

At its core, the VET builds on the concept of Vertical Cartography, a monitoring tool that tracks the progress of Europe's 6G Public–Private Partnership. The SNS JU portfolio includes a wide range of use

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[35] https://sns-trackers.sns-ju.eu/vertical-engagement-tracker

cases, spanning proofs of concept, prototypes, demonstrations and large-scale trials, each addressing specific market segments and societal needs. By consolidating this information, the VET provides industry stakeholders, policymakers and end users with tangible examples of how 6G technologies can be integrated into real-world environments and business processes.

Over the past year, several improvements have been introduced to enhance the analytical value and usability of the tracker:

- Introduction of a replicability dimension for the use cases: This addition captures whether a use case can be replicated beyond its original context and, where applicable, assigns a replicability level. This enhancement supports a more market-oriented assessment of 6G solutions and helps identify use cases with higher potential for scaling and cross-sector adoption, thereby encouraging vertical stakeholders to reproduce validated trials in pre-commercial environments.

- Technology Readiness Level (TRL) information has been refined and clarified: The updated TRL descriptions aim to make maturity levels easier to understand and more consistent across projects, enabling clearer comparisons between use cases and a more transparent view of their development status. Furthermore, TRL information enhances transparency on maturity and deployment readiness, enabling more informed investment and adoption decisions.

To date, the Vertical Engagement Tracker has collected 448 use cases originating from Call 1, Call 2 and Call 3 SNS JU projects, including contributions from Open Calls. This growing dataset strengthens the tracker's role as a reference point for vertical engagement, offering an increasingly comprehensive picture of how 6G research is evolving towards deployable, replicable and industry-relevant solutions.

4.3   Key insights

The following key insights summarise the main findings and lessons learned from the activities described in the previous section. They consolidate the outcomes of structured engagement with vertical stakeholders, joint dissemination and consultation actions, and validation efforts across multiple sectors. Collectively, these insights illustrate how vertical collaboration is increasingly shaping 6G research priorities, technical requirements, and future SNS R&I Work Programme orientations.

- **Structured MoU-based engagement is an effective mechanism to align 6G R&I with vertical needs:** Renewed and newly established Memoranda of Understanding (MoUs) with major vertical associations - including manufacturing, media, transport, public safety, IoT, space, and cybersecurity - have provided a trusted and scalable framework for sustained collaboration. These MoUs enable structured interaction with representative industry bodies, ensuring that vertical requirements are systematically captured and reflected in 6G research and innovation activities. The adoption of standardised MoU templates has further strengthened continuity across project phases and supports long-term engagement that extends beyond the lifetime of SNS CO-OP.

- **Joint webinars and workshops are the most impactful instruments for translating vertical needs into technical 6G requirements:** Co-organised webinars and workshops with key associations such as 5G-ACIA, NEM, and EIM have proven particularly effective in enabling two-way knowledge transfer. These events have facilitated the dissemination of emerging 6G capabilities toward vertical stakeholders while simultaneously capturing concrete business requirements, operational constraints, and use-case expectations for feedback into the SNS JU. High participation levels and the initiation of follow-up actions —including second webinar editions and planned workshops aligned with WP2027—confirm a strong and sustained interest from vertical communities in early 6G dialogue.

- **Industry and manufacturing remain the most mature vertical for early 6G validation:** Close collaboration with 5G-ACIA has highlighted the readiness of the industrial sector to engage in early 6G validation activities. Trials and Pilots, Integrated Sensing and Communication (ISAC/JCAS), and Digital Twins have emerged as key near-term enablers for advanced industrial automation. At the same time, the identification of recurring pain points - such as system integration complexity, performance guarantees, and remaining standardisation gaps - provides concrete and actionable guidance for shaping future SNS calls and prioritising

standardisation efforts.

- **Media & Entertainment is emerging as a strategic 6G vertical driven by immersive services and virtual worlds:** Engagement with NEM and 5G-MAG has confirmed a growing demand from the media sector for ultra-low latency, high uplink capacity, tight synchronisation, and advanced edge intelligence to support immersive and interactive services. The renewal of the MoU for the 2026–2027 period, combined with active participation in the NEM Summit, demonstrates that media-specific requirements are increasingly feeding directly into the shaping of SNS work programmes and influencing the definition of future 6G priorities.

- **Trials & Pilots are a key credibility and dissemination asset across all verticals:** The SNS Trials and Pilots Brochure No.1 consolidates evidence of vertical validation activities across multiple sectors, including manufacturing, media, energy, transport, public safety, and healthcare. This material is widely reused for dissemination, policy dialogue, and international outreach, reinforcing the credibility of SNS results and strengthening the link between research outcomes and real-world impact.

- **Vertical engagement is increasingly influencing future SNS work programmes and cross-JU coordination:** Inputs gathered through sustained interaction with vertical associations are now explicitly informing the definition of WP2027 priorities, particularly in areas such as resilience, ISAC, non-terrestrial network integration, automation, and sector-specific KPIs. In parallel, renewed liaisons with organisations such as ESA, ERTICO, ECSO, and AIOTI reinforce cross-domain convergence—spanning connectivity, compute, security, and space—as a defining characteristic of future 6G systems.

4.4　　Next steps. Work plan M16 – M27

In the coming months, the **SNS Trials & Pilots (T&Ps) Brochure No. 2** will be released as input to EuCNC & 6GS 2026, accompanied by a dedicated communication and marketing document highlighting key outcomes and infographics. The brochure will be widely disseminated within and beyond the SNS community through the 6G-IA and SNS websites, major conferences (e.g. EuCNC & 6GS, Techritory), and the EC 5G Observatory. Dedicated 6G-IA/SNS webinars will also be organised to present the T&Ps results, the Vertical Engagement Tracker (VET), and the brochures to members, stakeholders, and relevant vertical associations. In addition to the PDF version, an enhanced online edition will include hyperlinks to project websites and videos. Projects featured in Brochure No. 2 will be invited to prepare short videos for promotion at EuCNC & 6G Summit 2026.

Regarding **MoUs and liaison with vertical associations**, all expired agreements have been successfully renewed. The next MoU due for renewal is with 5G-MAG (September), with preparatory contacts planned after MWC 2026 to ensure completion by summer 2026. In parallel, efforts will focus on establishing new partnerships beyond the telecom domain, particularly in strategic sectors such as energy, to further strengthen cross-sector collaboration.

Engagement with verticals through major events will continue. A workshop proposal for EuCNC 2026, entitled "Large-Scale Trials and Pilots: The Pathway from SNS JU Call 1 to WP27," is under evaluation for EUCNC'26 (Málaga). The programme foresees institutional remarks, presentation of T&Ps Brochure No. 2, highlights large-scale trials across successive calls, and insights from vertical workshops to be organised in Brussels in March 2026 (rail, CCAM, industrial automation, security/PPDR). A strategic panel will conclude with recommendations for WP2027, particularly regarding large-scale trials and pilots. At the 5G Techritory Forum 2026 (Riga), SNS CO-OP plans to organise vertical-focused sessions or co-creation workshops on large-scale experimentation, building on its established presence since 2023. In addition, a joint session with ERTICO will take place at the ITS Congress (April 2026, Istanbul), enabling a two-way exchange between vertical stakeholders and 6G-IA representatives, with outcomes feeding future work programme priorities.

Several **white papers are under preparation or close to publication**, covering key vertical sectors and cross-cutting business aspects. In the energy domain, an update of AIOTI's "Energy–6G Convergence" paper is planned in cooperation with relevant associations (e.g. EERA or ENTSO-E), integrating SNS JU project results and use cases addressing this sector. For Industry 4.0/Manufacturing,

identified through the SNS CO-OP annual questionnaire as the most represented vertical, the SNS JU Technology Board—supported by SNS CO-OP—has developed a mature draft white paper consolidating project inputs on key use cases, KPIs and enabling technologies. Publication is expected in early Q2 2026. Similarly, a PPDR white paper, led by the Technology Board, is in its final stage and expected by March 2026, analysing the impact of B5G/6G functionalities on mission-critical communications and presenting insights from relevant SNS JU projects. In the Automotive / Connected Mobility domain, the 6G4CAM Working Group plans a 2026 white paper summarising over 50 use cases developed within SNS JU projects, with a presentation foreseen at EuCNC 2026. Finally, the B5G Service Framework white paper, developed within the 6G-IA BVME sub-working group with support from SNS CO-OP, proposes a structured framework for service definition in B5G/6G ecosystems. Addressing the shift towards XaaS models (e.g. NaaS, AIaaS), it clarifies service concepts and supports sustainable business models and long-term ecosystem viability. Publication is expected by the end of March.

5   SME and Entrepreneurship Promotion and Support

5.1   Main objectives and status

The core objective of the SMEs engagement is to further increase and consolidate the SME involvement in the SNS ecosystem. A set of targeted actions addressing specific SMEs needs and challenges were implemented to this end. Creating an inclusive environment guarantees that all actors, including SMEs, have equal access to the available opportunities and can meaningfully engage in driving SNS innovation.

The concrete goals of this task and their status are provided hereafter.

- **Analyse SME involvement in the SNS JU 2025 and 2026 calls for projects:** To promote the participation of SMEs in the SNS JU, a target of 20% SME participation in terms of budget. Since the first SNS call in 2022, the participation of SMEs has steadily increased, accounting for 23.8% on average from 2022 to 2024.

  Support and expand the NetworldEurope SME WG: SNS CO-OP has continued to support the NetworldEurope SME WG, in alignment with the NetworldEurope, the European Technology Platform (ETP) for the telecommunications sector, and SNS JU strategies. In November 2025, an email campaign was launched to raise awareness about the SME WG, reaching almost 100 SMEs in the telecommunications sector. Moreover, the WG activities have been consistently reported in the SNS newsflash and the WGs quarterly reports to boost its visibility.

- **Promote the skills and expertise of SMEs**: The 2025 edition of the brochure "European SME Expertise in 5G and beyond" was released in February 2026. The publication is a cornerstone of the SME WG marketing strategy to boost its visibility. Furthermore, the work and achievements of the WG and its members were continuously promoted through social media, the NetworldEurope website and other channels.

- To **strengthen the engagement with SMEs involved in vertical sectors and in complementary domains** (in liaison with Task 2.3), as well as to **manage specific interactions with European SME initiatives** such as SCoDIHNet.

The close collaboration of the SME WG, as the main representative of the SMEs in telecommunications, SNS JU and 6G-IA remains strong. Leveraging the synergies between the WG and SCoDIHNet continues to be essential to enhance the participation of SMEs in different verticals.

5.2   Main activities

5.2.1   Monitoring SME participation in SNS JU

Analysing the participation of SMEs in the SNS JU calls for projects is essential to assess their level of engagement with the ecosystem. The systematic evaluation of the SME participation across calls enables the identification of general trends, strengths and areas for improvement. For instance, the geographical balance or the distribution of the funds among beneficiaries. It also supports transparency and provides evidence-based insights to inform future planning and decision-making, ensuring that any requirements and incentives set forth consider the specificities of SMEs. Ultimately, continuous monitoring ensures that activities remain aligned with strategic objectives.

Even though the results of the SNS JU 2025 call for projects are public, the grant agreements have yet to be signed. Therefore, the analysis of the SME participation in said call will be included in D2.3.

5.2.2   The NetworldEurope SME WG

Overview of the SME WG

The NetworldEurope SME WG has 230 members, comprising 200 SMEs (87%), 25 research institutions and universities (11%), three large companies (1%) and one association (1%). This accounts for organisations having several members in the WG. Considering the number of organisations instead of

individual members, there are 151 organisations: 126 SMEs, 21 research organisations, three industry members, and one association.

Spain and the United Kingdom (UK) are the countries with the highest number of members, representing 15% and 13% of the total WG membership, respectively. Greece, Italy and France complete the top five, with 10 or more members, as shown in Figure 22. This shows a strong participation from Southern and Western European organisations. Contrariwise, there is little to no representation from Baltic, Scandinavian and Eastern European countries. This geographical imbalance is largely mirrored in the awarded SNS JU projects. Beyond Europe, there are SMEs from India, Israel, Turkey, and the United States of America (USA).
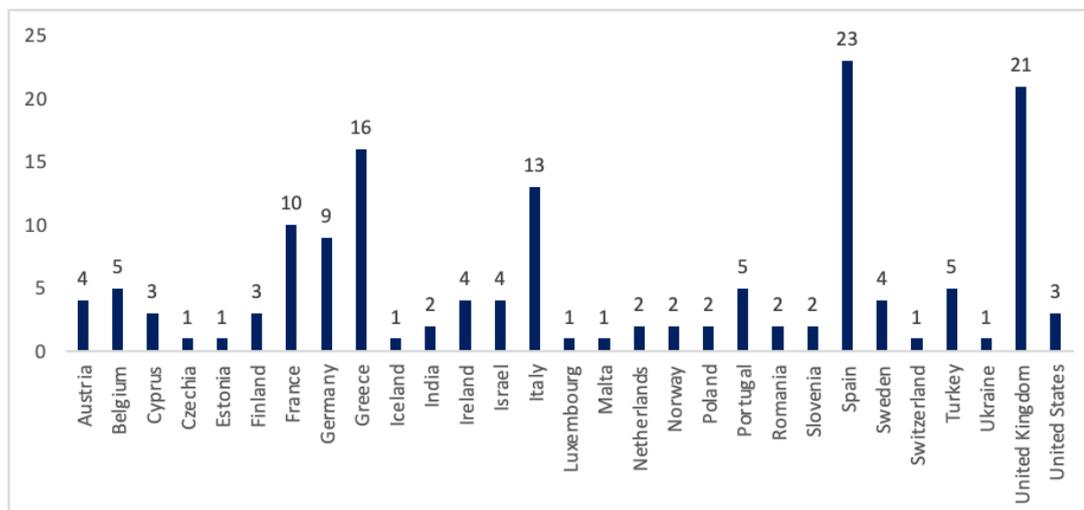

Figure 22: Number of WG organisations per country

The management of the SME WG membership has continued smoothly during SNS CO-OP, with the team handling the registration process as well as the onboarding of newcomers. After a period of stagnation, two new members joined the WG in the past six months.

Support to the NetworldEurope SME WG

The NetworldEurope SME WG is a fundamental piece of the SNS engagement strategy. Q1 2025 activities to support the WG were carried out under the scope of the predecessor project SNS OPS. These were reported in SNS OPS D4.3 "Stakeholder Involvement and Interaction Final Report" [2]. The handover was completed in March 2025, and the provision of support has continued smoothly within SNS CO-OP.

Since April 2025, the WG has met five times, gathering 20-25 participants on average. Highlights of these meetings include presentations from the WG members focused on their work and achievements within R&I projects; the collaboration with ScoDIHnet, especially regarding the replicability catalogue; and the dissemination of funding opportunities and technological developments by SNS projects, i.e. ENVELOPE presented its open call while 6G-SANDBOX showcased a preview of its main achievements and experimental insights. Furthermore, the WG held various strategic discussions regarding the position of SMEs in the SNS community.

In March 2026, the SNS CO-OP project organised a dedicated workshop on standardisation tailored specifically to the needs of SMEs. The workshop, titled **"Standards & 3GPP – A small introduction for SMEs"**[36] was structured in two parts: the first provided an overview of the fundamental concepts of telecommunications standardisation, while the second offered a focused introduction to 3GPP, including its role, outputs, and working methods. Throughout the workshop, standardisation was presented from the practical perspective of an SME, addressing both active participation in standards development and effective monitoring of standardisation activities.

Information is shared on a regular basis via the SME WG mailing list and its social media. On one hand, this helps to promote the WG members' skills, expertise, current activities and achievements and to

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[36] Recording available at:

strengthen the sense of community, facilitating that SMEs connect with one another and with the NetworldEurope and SNS ecosystems and beyond. On the other hand, it is an effective instrument to communicate to the SMEs the latest industry news, events and opportunities.

SME WG annual consultation

In November 2025, conducted its annual consultation to assess the position of SMEs within the SNS JU ecosystem, gather feedback on the WG's operations, and collect insights regarding the current R&I framework in anticipation of FP10.

A total of 20 SME WG members across 12 countries (Austria, Cyprus, Finland, France, Greece, Israel, Italy, Poland, Portugal, Spain, Switzerland and the United Kingdom) participated in the consultation (Figure 23). This approximately represents 16% of the WG.
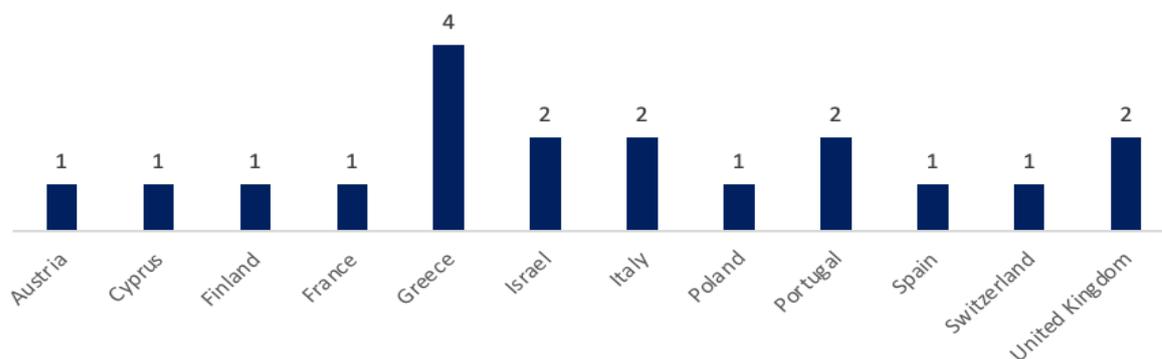
Figure 23: Number of participants in the consultation per country

Of those that responded, 15% were micro-SMEs (less than 10 employees), 70% were small enterprises (less than 50 employees), and 15% were medium enterprises (Figure 24).
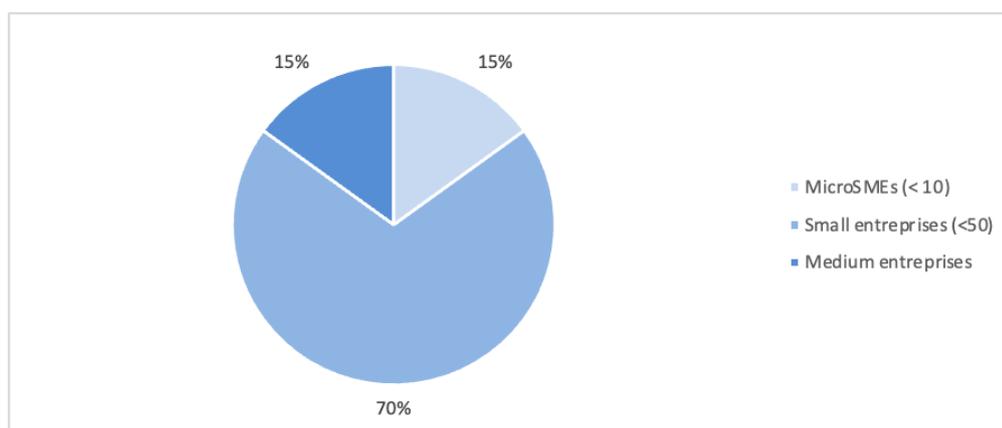
Figure 24: Percentage of participants per category of SME

While the low number of respondents hinders the ability to draw firm conclusions from the consultation, it was possible to identify some trends that were further discussed in the WG meetings. Most of these patterns have been found to be common to the results of previous years. Moreover, the characteristics of the respondents reflect the composition of the WG to a large extent.

A summary of the results concerning the participation and perspectives of SMEs on the SNS JU is presented hereafter.

Participation in the SNS JU

Figure 25 presents SME participation in the 2025 call of the SNS JU programme. Some 75% of the respondents applied to the SNS JU 2025 call for projects. In addition, 10% tried to partake in the call, but in one case, the time was insufficient to submit a competitive proposal, and in the other, it was not possible to access a consortium. Of those that indeed participated, 93% teamed up with other WG members. This shows that SMEs in the sector have a great interest in the SNS JU.
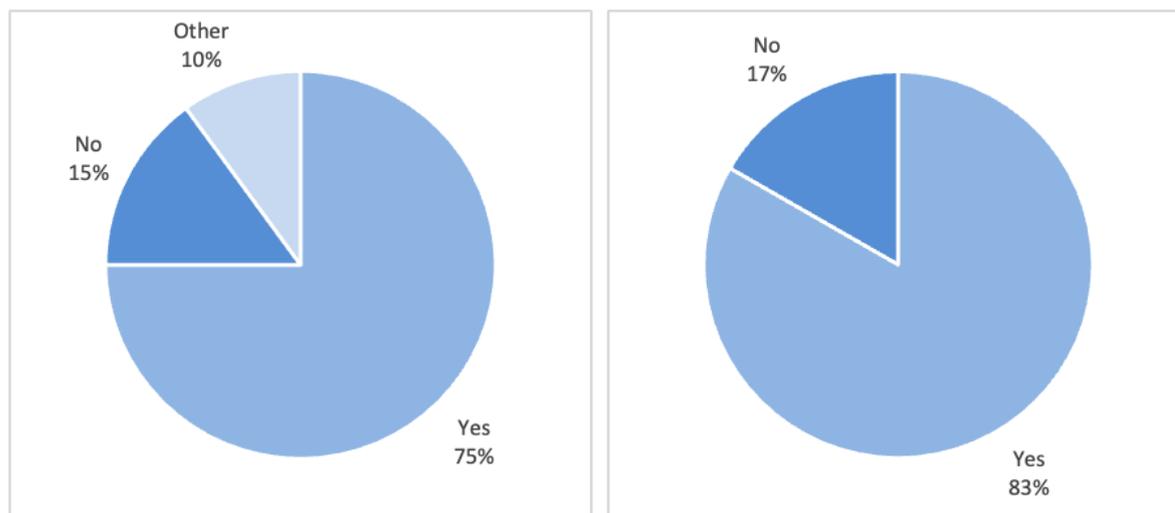
Figure 25: Percentage of SMEs that applied to the SNS JU 2025 call (left) and SMEs that teamed up for the call with other WG members (right)

This high-level of engagement underscores the strong interest among SMEs in the SNS JU. However, the consultation also highlighted persistent challenges. Many SMEs reported difficulties in securing invitations to join consortia, especially newcomers to the SNS JU community. According to SMEs, a primary obstacle is the persistent reluctance among larger organisations, both companies and research centres, to include SMEs in their consortia. This issue is further exacerbated by existing limitations that prevent SMEs from serving as coordinators, thereby limiting their ability to influence consortium composition and leadership. The changes in the calls' timelines were also reported to have introduced a high degree of unpredictability that made difficult for SMEs to effectively plan and allocate their yearly resources. The interval between the official launch of the calls and the deadline was also deemed too short by several respondents.

The imbalance between the significant efforts and resources required to prepare competitive proposals and the comparatively low success rates in funding calls is a well-known problem, especially for SMEs. In this context, the rise in the use of Generative AI (Gen AI) to write proposals is a growing concern. The ability to produce more proposals increases the competition, without necessarily bringing any benefit in terms of quality or innovation. This phenomenon is only expected to increase in the following years, further complicating SMEs' participation in the calls for projects.

Furthermore, it is important to note that SMEs are usually involved in R&I activities that target high TRLs, as these tend to yield results that can be exploited in a shorter timeframe. This is not always a priority with funding programmes such as Horizon Europe, which may discourage the participation of SMEs in an important number of calls and eventually projects that could otherwise drive both innovation and business growth.

During project implementation, SMEs identified bureaucracy is the principal challenge. SMEs noted that abundant resources are spent in "fulfilling complex administrative and funding requirements" instead of in the deployment of the technical and scientific aspects of the project. Moreover, the "integration of technologies, platforms, and tools from different partners into a coherent architecture and demonstrators" is signalled as a notable difficulty. More generally, some SMEs also note the need to further promote the integration of social sciences and humanities aspects in technology development.

Despite these challenges, SMEs recognised substantial benefits from participating in EU R&I programmes and more particularly, SNS projects. First and foremost, **SMEs emphasised the importance of participating in the development of cutting-edge technology**. The investment required to undertake research initiatives makes it very difficult for SMEs to engage in research, especially when immediate business is the priority. Many also lack dedicated research staff and specialised equipment, coupled with time-consuming and demanding complex applications, regulatory requirements and limited access to large companies, universities and research centres.

European R&I programmes are therefore crucial to bridge this gap and ensure that SMEs' equity in accessing the same opportunities as other ecosystem players. SMEs also highlight how this involvement

in **European R&I projects facilitates market access**, both in geographically and in terms of product diversification. It also enhances their competitiveness thanks to a stronger portfolio that allows them to seize new opportunities and solidify their position in the market.

Networking and cooperation are deemed essential for many of these benefits to materialise. European R&I projects provide unique environments to build long-term relationships between different actors in the ecosystem. SMEs have access to top research centres and universities, flagship companies, associations shaping the goals and strategies for the industry, etc. In short, they become fully functional players of the ecosystem. Finally, SMEs indicate that European R&I projects have boosted their visibility, unlocking a wide array of new opportunities.

Most SMEs consulted (85%) are active in other European R&I domains. Almost 30% of the respondents participate in the other Horizon Europe clusters, especially clusters 4 and 5. Various SMEs are also involved in the European Defence Fund (EDF), the European Space Agency (ESA), the EU Agency for the Space Programme (EUSPA), and the European Cybersecurity Competence Centre (ECCC). Some WG members also mention Celtic-Next, Chips JU, euRobotics, Marie Skłodowska-Curie Actions (MSCA) and the EIC Pathfinder. Some SMEs also indicated their participation in national projects.

SMEs perspectives on the SNS JU

SMEs were asked to assess five dimensions of the SNS JU as reflected in the 2020 position paper of the WG, namely:

- Openness of the SNS JU to the participation of SMEs

- Alignment between your SME activities and the topics of the SNS JU calls.

- Representation of SMEs in the SNS JU GB

- Participation in the SNS JU and funding

- Impacts of the incentives implemented to foster SMEs participation

Overall, the views on the SNS JU range from neutral to satisfactory. The representation of SMEs in the SNS JU GB is perceived as the weaker aspect of the SNS JU, closely followed by the impacts of the incentives implemented to foster SMEs participation. The alignment between the SMEs activities and the topics of the SNS JU calls is seen as the most positive dimension (Figure 26).

Most of the SMEs have seen improvements in the SNS JU over the years, whilst 30% consider the situation has remained the same or indicate they cannot answer. Among the positive changes, SMEs mention the increased focus on real-world impact, emphasising pilots, testbeds and exploitation plans; the organisation of the work and circulation of information, i.e., clarity on the topics covered in the calls; and the growing participation of SMEs, particularly through FSTP. Having dedicated funding for SMEs has enabled them to take the role of coordinator; it has helped to enhance their visibility, and consequently, some responders have experienced that consortia are keen to include them, especially if they are 6G-IA members. In this respect, the cost of the 6G-IA membership is deemed rather reasonable.
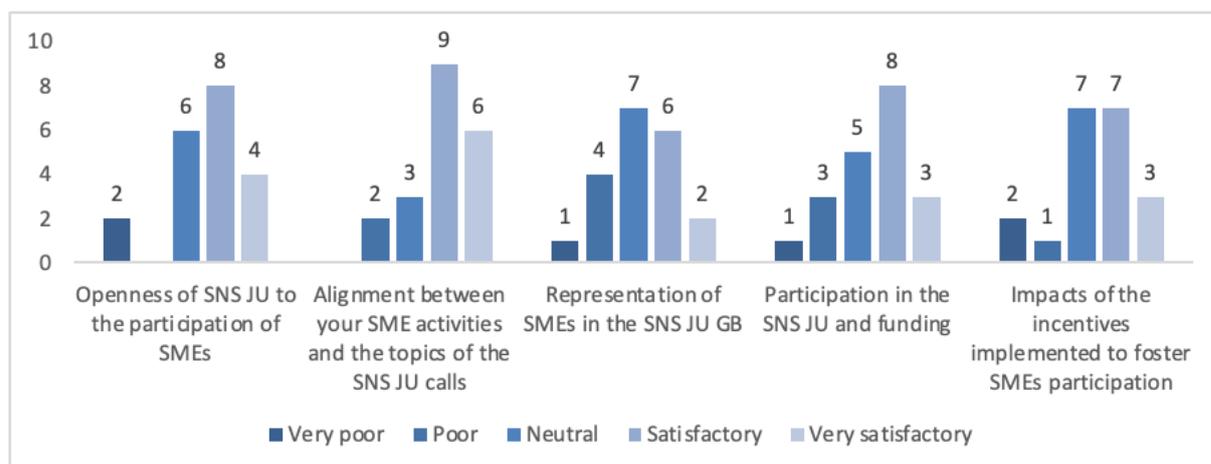

Figure 26: SMEs perspectives on the SNS JU

A SME also highlights the swift integration of the industry feedback into the SNS JU, while another appreciates the "broadening of the call topics across a wider range of domains, which has created more opportunities for diverse organisations to participate, contribute with their unique expertise, and explore innovative ideas in areas that were previously underrepresented". The focus on sustainability and green technology is also welcomed by another SME.

The main flaws relate to the increased difficulty of being invited by consortia, as previously mentioned: "In recent years, we have noticed that it has become more difficult to be invited by consortia preparing proposal submissions. We understand that there is a wide range of SMEs offering various services, and that not all of them meet expectations. However, it should be easier for companies with a solid track record in both commercial and funded projects to be included in consortia during the proposal-building phase". The impact of the use of GenAI is also a concern, as previously indicated. Finally, in the opinion of one SME, some universities use their influence to promote their spin-offs as SMEs in consortia, creating an unfair level playing field.

The main suggestions for improvement concern the current funding model and the collaboration between the different actors of the SNS ecosystem. With respect to funding, the proposed measures include the provision of a 100% payment to SMEs as well as the option to charge for the use of equipment purchased in previous research calls. An SME notes "as smaller organisations often operate with limited resources, full funding would significantly enhance their ability to participate meaningfully in projects, contribute innovative solutions, and sustain involvement throughout the project lifecycle.". Another suggestion is to allocate a minimum 30% budget to SMEs where large enterprises and RTOs provide access to tools, equipment and pilot lines.

The support to SMEs, especially micro and small companies, in coordination roles is also stressed. The current financial capacity required is a "barrier, especially in specific call topics with limited budget (EUR 1 million) that are not of interest for large industries". This would enable building consortia composed of innovative SMEs and building projects around their vision and objectives. Likewise, more calls and projects only for SMEs and academia would facilitate their involvement while balancing it out those for Tier 1 companies, which constitute the majority as of now. Having multiple winners and increasing the acceptance of shortlisted proposals would also be positive. SMEs also suggest introducing "blind evaluations" so that proposals are judged only on their technical merit, which would help to eliminate any potential bias towards the consortium members.

More opportunities for matchmaking would also be very valuable to improve cooperation between academia, large companies and small enterprises. In this regard, an SME proposes introducing a "matchmaking quota" where large industries need to onboard a number of new SMEs, not just recurring partners. It is also noted the importance of engaging with citizens and civil society organisations in the development of new technologies to ensure their alignment with key ethical values and responsible innovation, laying the ground for their acceptance and future adoption.

More generally, SMEs advocate for more flexibility to adapt work plans and KPIs when technology or market conditions change, as well as for simplifying IKOP reporting. This would allow "to focus more resources on technical innovation rather than compliance" as noted by one SME. Another WG member indicates, "The monitoring body should ensure that funds provided to SME are primarily used for employing and retaining skilled personnel, rather than being consumed by administrative tasks, reporting requirements, and multiple meetings."

The need for strengthening the impact of the SNS JU and its governance and coordination are also mentioned.

Events and publications

The SME WG hosted a convened session at EuCNC 2025 in Poznan, Poland. The session, titled "SMEs in the spotlight: driving innovation in next generation of communication networks", addressed the strategic role played by SMEs in the development of the SNS 6G during the past years. In addition to various keynotes, it showcased the specific contributions made by various WG members, as well as a panel discussion on how SMEs are shaping the future of connectivity[37].

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[37] More information is available in SNS CO-OP D2.1 "Stakeholder Identification and Involvement Strategy"

The SME WG Chair attended the **NetworldEurope Steering Board General Assembly** on the 22 of September 2025, where it presented the main WG activities in the past year as well as those envisaged for the upcoming months. A presentation summarising the key points of the GA was then translated to the WG members for further discussion.

The **"2025 European SME Expertise in 5G and Beyond"** brochure was released in February 2026 (Figure 27). It comprises 81 company profiles and 14 success stories, as well as editorials by Jessica Carneiro and Nicola Ciulli, Chair and vice-Chair of the SME WG, respectively; Rui Aguiar, NetworldEurope Chair; and Colin Wilcock, Chair of the 6G-IA Governing Board and SNS JU.

Figure 27: Example of an SME profile in the Brochure

The brochure is available for download on the **"Find My SME webpage"**[38] of the NetworldEurope website, where individual success stories[39] can also be accessed separately. As of March 2025, the brochure had been downloaded more than 320 times and the individual stories registered more than 230 downloads.

The Brochure was presented during the **SNS Steering Board meeting** on the 9 of March 2025 alongside some of the main takeaways from the WG annual consultation and upcoming activities.

The SME WG Chair also contributed to the **"SNS Journal 2026"**, which will be released later this year. Moreover, articles on topics being addressed in the SME WG are regularly published in the **SNS newsflashes**.

Detailed information about the NetworldEurope SME WG dissemination and communication activities, including the development of the brochure, will be available in SNS CO-OP D4.3 "Second SNS Dissemination and Communication Strategy and Plan".

5.2.3   Engagement with relevant SME initiatives: SCoDIHNet

In 2025, SCoDIHNet has continued to support the DIHs which are addressing Smart Connectivity. Three main activities were targeted:

- The replicability with the integration of the replicability level in the vertical engagement tracker (VET). Now, DIHs could easily identify the replicable use cases on the main page, and projects could easily determine the replicability level using the online replicability assessment tool.

- Cooperation with other initiatives, such as the European Enterprise Network with SMEs or the SEADE project with African DIHs, is going on with webinars and workshops where members

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[38] www.networldeurope.eu/find-the-sme-you-need-new-page/

[39] www.networldeurope.eu/find-the-sme-you-need-new-page/#SUCCESS_STORIES

of the groups are invited to facilitate collaborations between stakeholders.

- A new cooperation with the Digital Transformation Accelerator (DTA) Smart Connectivity Thematic Working Group (SCTWG) has been set up, members from the 2 groups are invited to both bi-monthly meetings. SCoDIHNet is focussed on the collaboration with the SNS JU projects and technology providers, and the SCTWG is dealing with the cooperation between DIHs. A common survey has been initiated at the end of 2025 in order to update the expectations and requirements from members of the two groups. The idea is to share the corresponding services among the two groups.

Finally, the EDIH 2.0 is starting for two additional years. Today, 459 EDIHs are running and funded by the Digital Europe Program and the Member States, 71 are addressing Communication Networks. A new Digital Transformation Accelerator project has been selected and will start to manage and support EDIHs until the End of Horizon Europe. The cooperation with the SCTWG is being discussed in early 2026 in order to help exchanges with the SNS JU projects.

5.3   Key insights

The SME WG consultation on the SNS JU shows a positive outlook. Here there are some key insights emerging from this consultation and other SME-related activities:

- SMEs consistently report that **participation in SNS projects enhances visibility, competitiveness and access to strategic partnerships:** Those able to overcome entry barriers benefit from increased exposure, access to advanced R&I activities, stronger positioning in European value chains and long-term growth opportunities.

- SMEs remain **highly motivated to participate in SNS initiatives, although challenges persist** in consortium formation, evaluation fairness and administrative workload: Nevertheless, there are important challenges related to the current funding model, the involvement of SMEs, especially newcomers in the ecosystem, and the evaluation of proposals.

- Consultations reveal **growing concern about proposal pressure, particularly for smaller companies with limited resources:** SMEs highlight increasing competition and the rapid rise of generative AI in proposal preparation, raising questions around fairness, quality and the ability of newcomers to compete without dedicated proposal-writing capacity.

- Active engagement through the SME WG provides a **valuable platform for collaboration, information exchange and contact with relevant initiatives such as DIHs:** Participation in SME-focused networks, including SCoDIHNet, strengthens SME visibility and helps identify replicable use cases and concrete opportunities for integration with vertical sectors.

The results of the consultation provide very valuable feedback to introduce changes that better meet the specific SME needs in R&I and therefore, should be considered in the definition of Framework Programme 10 to ensure a fair and equitable access for SMEs. Furthermore, the feedback obtained on the functioning of the SME WG will serve to define its roadmap for 2026. The focus will continue to be on promoting SMEs, advocating for their interests, and identifying opportunities to strengthen the impact of the WG.

5.4   Next steps. Work plan M16 – M27

In the coming months, **analysing the results of the SME participation in the SNS JU 2025 call for projects will be a priority**. These will be compared with the previous years to produce a comprehensive picture of the SMEs' involvement in the SNS projects and overall ecosystem. The outcomes will be discussed with the SME WG to gain a more nuanced understanding, particularly with regard to factors that may be hindering SMEs in order to explore solutions. A specific analysis of the WG members' participation will also be carried out.

In 2026, **SNS CO-OP will continue to provide support to the SME WG** in terms of organisation and logistics, visibility and the implementation of its activities. The WG has submitted a proposal to host a convened session at the EuCNC & 6G Summit 2026 that will take place in Malaga, Spain. The session

is titled **"The SME Factor in Europe's Sovereignty"** and aims to highlight the strategic role of SMEs in strengthening European sovereignty and resilience in the advent of 6G. In addition, a set of actions have been devised to enhance the visibility of SMEs during the event, including the distribution of the brochure and the recording of testimonials.

The SME WG will continue to work alongside SCoDIHNet whilst exploring new cooperation avenues with other initiatives dedicated to SMEs. JOINER[40], one of the Smart Internet Lab's flagship projects at the University of Bristol, has shown interest in partaking in one of the meetings to talk about how it helps to bridge the gap between lab trials and real-world deployment narrows through the platform's virtual facilities.

The WG continues to work on a position paper about the role of SMEs in the SNS JU, including a set of recommendations to facilitate the participation of SMEs as outlined in the WG annual consultation. It is also foreseen for the WG to present the brochure and the main results of the consultation during the next SNS Steering Board meeting.

In 2026, **SCoDIHNet** will work more and more closely with the SCWG from the Digital Transformation Accelerator (Digital Europe Programme) with the objective of supporting EDIHs in their day-to-day operational journey. Following a recent survey, five key services have been identified; the next steps will be to put in front of each of these services a list of concrete actions that will help EDIHs. These actions will be shared by the 2 groups. SCoDIHNet will support the liaison and collaborations between EDIHs and SNS JU projects in order to bridge the gap between R&I and end users. Regular updates of the existing catalogues (Replicability, Stakeholders, experimental facilities).

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[40] JOINER website: https://www.bristol.ac.uk/research/groups/smart/projects/joiner/

6   Recommendations

Based on the key insights from the different interaction areas, the following recommendations may be provided:

Global Stakeholder Engagement and Interaction

1. *Continue to strengthen and enlarge international partnerships:* International cooperation frameworks (MoUs/LoIs) have proven effective and should be sustained, while remaining flexible to geopolitical changes and evolving global 6G priorities.

2. *Reinforce alignment on spectrum and standardisation:* Coordination at the policy level is critical to address diverging spectrum strategies and to preserve the objective of a globally harmonised 6G standard.

3. *Systematise bi-directional information exchange with global partners*: Global trend analysis and structured feedback loops should be further embedded to ensure SNS JU priorities remain aligned with international technological and socio-economic developments.

Peer Joint Undertakings and European National Initiatives

4. *Enhance public-side support for cross-JU collaboration*: Given structural differences between JUs, stronger involvement from the public side is essential to enable alignment of timelines, priorities and complementary funding mechanisms.

5. *Continue and deepen the coordination among National Initiatives*: The effective collaboration with National Initiatives should be continued and expanded, ensuring sustained exchange of information and complementary European and national investments.

6. *Continue leveraging National Initiatives to inform European strategic programming*: Insights gained from interactions with National Initiatives should continue to be systematically fed into future SNS work programmes, to address underfunded areas and reinforce Europe's technological sovereignty.

Vertical and Complementary Domains Engagement

7. *Foster additional collaboration activities leveraging new MoU frameworks to* : New MoU-based partnerships should be supported with concrete joint activities, such as targeted workshops, pilots and standardisation-oriented exchanges. Collaboration in existing ones should continue, as well

8. *Strengthen the role of vertical needs in shaping 6G priorities*: Continuous and structured collection of vertical requirements is essential to ensure 6G research remains business-driven and aligned with real-world adoption pathways.

9. *Promote distinctive 6G capabilities through proven use cases*: Successful formats such as joint webinars and trials should be leveraged to showcase key 6G features, including native AI, ISAC and resilience, with a clear go-to-market perspective.

SMEs and Entrepreneurship Promotion and Support

10. *Address structural barriers in SME participation and funding models*: Challenges related to funding mechanisms, administrative burden and access to consortia should be considered to ensure fair and effective SME involvement in SNS JU projects.

11. *Introduce safeguards in proposal evaluation processes*: Mitigation measures are needed to address the growing impact of widespread GenAI use in proposal writing, preserving fairness and quality in project selection.

12. *Continue supporting the strategic role of the SME Working Group*: Feedback from SME consultations should be actively leveraged, with continued focus on visibility, advocacy and maximising the impact of SMEs within the SNS ecosystem.

7   Conclusions & Way Forward

The activities reported in this document demonstrate that **SNS CO-OP has firmly established itself as a central coordination and facilitation instrument for stakeholder engagement across the SNS JU**. Through structured, sustained and multi-layered interactions, the project has strengthened Europe's position in the global 6G research and innovation landscape while enhancing coherence across European, vertical and SME dimensions. Overall, SNS CO-OP has shown that **stakeholder engagement is a strategic enabler of alignment and impact for the SNS JU programme**, laying robust foundations for the next phases of the programme and for future Framework Programme actions.

At the **global level**, the project has strengthened Europe's strategic position by cultivating structured, high-impact engagement with key international regions through MoUs, LoIs and coordinated participation in major global events, ensuring that European positions remain visible, credible and influential. These actions have enabled continuous two-way exchanges that not only promote the achievements and priorities of the SNS JU but also provide critical insight into global 6G developments, regulatory trends and standardisation agendas. Furthermore, the analysis of global trends the project has performed and stakeholder feedback have further strengthened the strategic plans for positioning the SNS JU and future international cooperation initiatives.

Within **Europe**, the project has played a central role in strengthening coordination across National Initiatives and interaction of the SNS JU with peer Joint Undertakings by fostering structured dialogue, regular exchanges and shared understanding of priorities. **Collaboration with peer JUs remains challenging** due to differing mandates, timelines and funding frameworks, yet concrete success stories, such as the coordinated actions among SNS JU and Chips JU, demonstrate the value of sustained engagement and the need for strong public-side support to unlock deeper synergies. Likewise, **consistent interaction among National Initiatives** has enabled the collection of meaningful insights and synergies on national strategies, research priorities, and possible collaborations, supporting more informed dialogue and complementarity at European level.

Engagement with **vertical industries and complementary domains** has proven to be a cornerstone of SNS CO-OP's impact. The extensive portfolio of MoU-based partnerships, combined with targeted workshops, webinars, trials and pilots, and sector-specific white papers, has enabled the systematic integration of business-driven requirements into 6G research and innovation. These activities have strengthened the relevance, credibility, and adoption potential of SNS JU outcomes, while providing concrete inputs to standardisation, large-scale experimentation, and future work programme design. The use of dedicated tools such as the Vertical Engagement Tracker has further enhanced transparency, traceability, and strategic planning across vertical domains.

The project has also delivered **tangible progress in strengthening SME participation and entrepreneurship** within the SNS ecosystem. Through continuous support to the NetworldEurope SME Working Group, targeted dissemination actions, and structured consultations, SNS CO-OP has amplified the voice of SMEs and generated evidence-based insights into both the benefits and challenges of SME engagement in large-scale European R&I programmes. While the overall outlook from SMEs is positive, the findings clearly highlight structural issues, particularly related to funding models, proposal evaluation, administrative burden, and the growing impact of generative AI, that require careful consideration in future programme design.

Looking towards the next phase, **SNS CO-OP will continue to strengthen and expand its stakeholder engagement activities across global, European, vertical and SME ecosystems**, ensuring continuity on the second half of the project. **Internationally**, the project will maintain a strong presence in major global events and deepen cooperation with strategic partners, while further supporting alignment on standardisation and leveraging upgraded tools such as the Standards Tracker. At **European level**, efforts will intensify to reinforce collaboration with peer JUs and deepen the assessment of National Initiatives, providing structured insights that inform future work programmes. Engagement with **vertical sectors** will advance through targeted workshops, renewed MoUs and the next edition of the Trials & Pilots Brochure, ensuring that sectoral needs continue to shape 6G priorities. **SME-focused** actions will enhance visibility, consolidate participation analysis and strengthen the role of the SME WG in supporting Europe's innovation capacity.

8   References

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[2]   SNS OPS, "Deliverable 4.3 – Shareholder Involvement and Interaction – Final Report", Available https://smart-networks.europa.eu/wp-content/uploads/2025/04/ops-d4.3_stakeholder-involvement-and-interaction-final-report_v1.0.pdf, [Accessed: 2026].

8   References

Annex A: Participation in webinars and events with verticals

Joint webinar of the 6G-IA and 5G-AICIA "Update on recent 5G/6G achievements"

- **Date**: 19 May 2025

- **Number of attendees**: 76 (actual)

- **Affiliations (non-exhaustive):**

    o Telecom ecosystem**:** Ericsson, Nokia, Telecom Italia Mobile, Telenor, Deutsche Telekom, Orange, SOFTBANK, Radisys, EVIDEN, Vitanty, Ltd, iDATE, EURESCOM, Gilat, Skynet, TaiwanMobile, Acceleran, CAP Gemini, ChinaMobile, etc.

    o Industrial automation ecosystem**:** Siemens, ABB, Bosch, ifak, IKERLAN, AMRC, Moxa, NXP, Yokogawa, etc.

    o Research & academia**:** CTTC, IMEC, UC3M, ITRI, Fraunhofer IPT, ENSEA, Fraunhofer IPT, Instituto Telecomunicaçoes, ITI, Vicomtech, Digital Catapult, IIT Madras, Hochschule Anhalt etc.

    o Associations, policy, and coordination**:** EC, 6G-IA, 5G-ACIA, XGMF, Bharat 6G Alliance, ARIB, etc.

6GIA/5G ACIA webinar on "Highlights, lessons learnt and next steps on ISAC/JCAS

- **Date**: 10 October 2025

- **Number of attendees**: 108 (actual)

- **Affiliations (non-exhaustive):**

    o Telecom ecosystem**:** Ericsson, Nokia, Telecom Italia Mobile, Orange, Telia, Turkcell, BT, Vodafone, VIAVI, Intracom, InterDigital, Huawei, Vitantu, Ltd, Ubiwhere, Level7, Ubiwhere, eBOS, Australo, iDATE, Belden, EURESCOM, IMST, CityMesh, Trust-IT, etc.

    o Industrial automation ecosystem**:** Bosch, Siemens, ifak, Mitsubishi, AMRC, Infineon, etc.

    o Research & academia**:** CTTC, ITRI, IMEC, Fraunhofer, FORTH, INESC Tec, Jožef Stefan Institute, NKUA, Trinity College Dublín, Trust IT, U. Hannover, U Thessaly, U. College London, U. Malaga, VTT, SAL, U. Twente, U. Aegean, FAU, U. Thessaly, Chalmers, U. Athens, Gradiant, U. Pisa, etc.

    o Associations, policy, and coordination**:** EC, 6G-IA, 5G-ACIA, SNS JU, AIOTI, ESA, AIOTI, VINNOVA, etc.

Joint workshop of the 6G-IA and EIM "Workshop FRMCS and 6G"

- **Date**: 30 September 2025

- **Number of attendees**: 29 (actual)

- **Affiliations (non-exhaustive)**:

    o Telecom ecosystem**:** Nokia, Telecom Italia Mobile, NEClab.

    o Railway ecosystem**:** BANE, Pro-rail, Infrabel, ADIF, BaneNor, NetworkRail, SNCF, CPK, PLK-SA, Vayla, Infraestruturas de Portugal etc.

    o Research & academia**:** CTTC.

    o Associations, policy, and coordination**:** 6G-IA, EIM.