



6G Trials Working Group

Overview, recent achievements and upcoming activities

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EU-Taiwan 6G Joint Workshop, 22 September 2026



6G TRIALS WG - OVERVIEW

- To develop a 5G, 5G Advanced and [6G European Trial Roadmap](#) and leverage on the knowledge gained [...] in the context of Smart Networks and Services (SNS) partnership in Horizon Europe.
- To [facilitate the involvement of verticals](#) in the Trials and Pilots roadmap.
- To [discuss and define business principles](#) underpinning the economic viability of trials.
- To consider and [coordinate](#) the activity on trials and verticals with relevant [initiatives at international level](#).
- To investigate and propose how [to link trials to upcoming calls for project proposals](#) to be addressed in the context of the Horizon Europe (HEU) SNS Partnership.
- To increase the [visibility of the trials and pilots](#) carried out by SNS projects [...].
- To keep track and [disseminate](#) to the broadest possible audience the [work with verticals](#) done by EU funded projects.
- To [support](#) the development of European [strategic research and innovation agenda](#) and liaise [preparation of SNS R&I workprogrammes](#) in relation to trials and experimentations.
- To facilitate the [transfer](#) of the developed and experimented [solutions to the market](#) using the Digital Innovation Hub (Digital Europe Program)
- To [identify Smart Connectivity Experimental facilities](#) [...] to support pilots and trials

- [5G Private Trials / Observatory](#), led by Didier Bourse (Nokia) & Carole Manero (iDATE).
- [5G and Towards 6G Verticals](#), led by Valerio Frascolla (Intel).
- [5G Trials Cities](#), led by Jyrki Huusko (VTT).
- [5G International Cooperation](#), led by Mir Ghoraishi (Gigasys Solutions).
- [The Smart Connectivity Digital Innovation Hub Network - SCoDIHNet](#), led by Pierre-Yves Danet (6G-IA)

WG chair: Carles Antón-Haro (CTTC)

WG vice-chair: Paul Harris (VIAVI Solutions)

RECENT ACHIEVEMENTS

- Successful series of 2 brochures under SNS + 5 under 5GPP (2019-2026)
- Boost the visibility of selected T&Ps conducted by SNS projects.
- Joint activity between the 6G-IA Trials WG and the 6G Initiative Technology Board.
- Dissemination beyond the R&D community: politicians, decision makers, general audience.
- Large-scale dissemination via newsletter, website, social networks, EC services, events (e.g., IEEE 5G World Summit), 5G observatory, member states, etc.



Available from: <https://smart-networks.europa.eu/the-second-trials-and-pilots-brochure-is-out-now-june-2026>

Table of Contents

Introduction	3
Selected Trials and Pilots	4
FIDAL Open Call - SwarmCatcher	5
IMAGINE-B5G: Autonomous Boat for Safety & Security with 5G (AbySS-5G)	7
IMAGINE-B5G: Connectivity on Upper 6 GHz (n104) Proof of Concept	9
IMAGINE-B5G: Smart Component Analysis through Novel XR Environments and Robotics (SCANNER)	11
TrialsNet: Remember Ascari	13
TrialsNet: Service Robots for Enhanced Passengers Experience	15
TrialsNet: Mass Casualty Incident (MCI) and Emergency Rescue in Populated Areas	17
6G-XR: IMS Control Plane Optimisations for Holographic Communications	19
RIGOUROUS: Protection of 6G-enabled Services against Cyber Threats	21
6GPATH: XR Rural Schools	23
6GPATH: B5G for Precision Agriculture Highlights	25
6GPATH: Bioprinted Patch for Chronic Wounds Patients	27
Highlights	29
Conclusion and Next Steps	33
Trials & Pilots Brochure n°2 Editors and Champions	34



IMAGINE-B5G
Autonomous Boat for Safety &
Security with 5G (AbySS-5G)
Website: <https://imagineb5g.eu/>



Demonstrating how B5G connectivity enables safe, cost-efficient and fully unmanned maritime surveillance, search and rescue, and pollution detection using autonomous surface vessels.

Overview

The AbySS-5G Trial/Pilot demonstrated the **use of public and private 5G networks to enable remote and autonomous operation of an Unmanned Surface Vessel (USV) for maritime surveillance, search and rescue, and pollution detection**. The pilot validated reliable low-latency connectivity, real-time video streaming and precise navigation between the USV and a ground control station.

The final demonstration took place at the Port of Valencia and Patacona Beach (Spain), with trials completed in July 2025. The trial involved UTEK, Nokia, UPV and Telefónica, under the IMAGINE-B5G Open Call.

The trial contributes to the SNS JU Programme by validating 5G capabilities for vertical maritime applications and autonomous systems, with relevance for future 5G Advanced and 6G trials involving unmanned vehicles and mission-critical communications.

Architecture

The trial architecture was divided into components related to **USV Kaluga** and the **Ground Control Station (GCS)**.

The USV includes the components required for navigation; this includes a 5G Router and a Starlink antenna to prevent connectivity losses. On the other hand, the GCS is formed with two suitcases containing the navigation software and the necessary routers to connect to the 5G Nokia router. Several 5G antennas were placed on the beach to provide the boat with a 5G connection to the Nokia router. Additionally, a Virtual Private Network (VPN) was set between the router located inside of USV Kaluga and the GCS router.

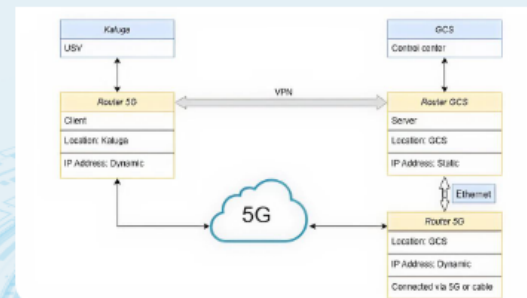


Figure 5 - AbySS-5G Architecture

Deployment

The deployment of the USV Kaluga was performed using a crane available at the port. Before that, part of the team spent time arranging the correct configuration in the USV to be able to perform the operations.

Meanwhile, the rest of the team deployed the Ground Control Station in the proper location of the port and its antennas. The following photos show how the USV was deployed, UTEK planner and UTEK Viewer with the software to control and monitor the USV and the proper connectivity systems.



Figure 6 - AbySS-5G Deployment

Results

The trial/pilot achieved positive Key Performance Indicators (KPI) and Key Value Indicators (KVI) results. Key outcomes include a **30% reduction in deployment time**, **50% reduction in operational costs**, **zero crew risk**, **navigation precision of 1 m**, and **stable 5G connectivity** with Reference Signal Received Power (RSRP) values around -80 dBm over ranges up to 4 km. The system successfully demonstrated maritime surveillance, suspicious vessel detection, search and rescue support, and pollution detection.



Figure 7 - AbySS-5G Results

5G Advanced / 6G Empowerment

The trial demonstrated how 5G enables reliable low-latency communication, high-bandwidth video streaming and extended coverage for autonomous maritime operations. Features such as network slicing, International Mobile Subscriber Identity (IMSI) prioritisation and stable Reference Signal Received Power (RSRP) values allowed safe remote control and autonomous navigation, capabilities not feasible with legacy RF systems. The results highlight the relevance of 5G as a foundation for future 5G Advanced and 6G autonomous and mission-critical services.

SNS Trials (TRL5/6) and Pilots (TRL7) in 2025

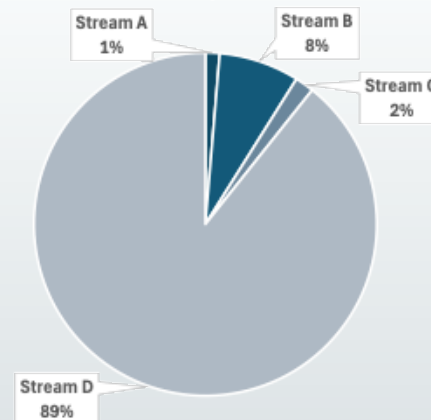
Key Insights

- **224 Trials / Pilots** conducted in 2025
- **16 SNS JU projects** conducted Trials / Pilots within 2025
 - Highest # of Trials/Pilots = **111**
 - Average # of Trials/Pilots $\approx$ **14**
 - Lowest # of Trials/Pilots = **1**
- Trials/Pilots were conducted in **21 countries** in 2025
- **192** of the use cases (85%) have been declared replicable
- **Call 1** projects conducted the most Trials/Pilots (188)
- **Stream D** (Experimentation) projects conducted the most Trials/Pilots (200)

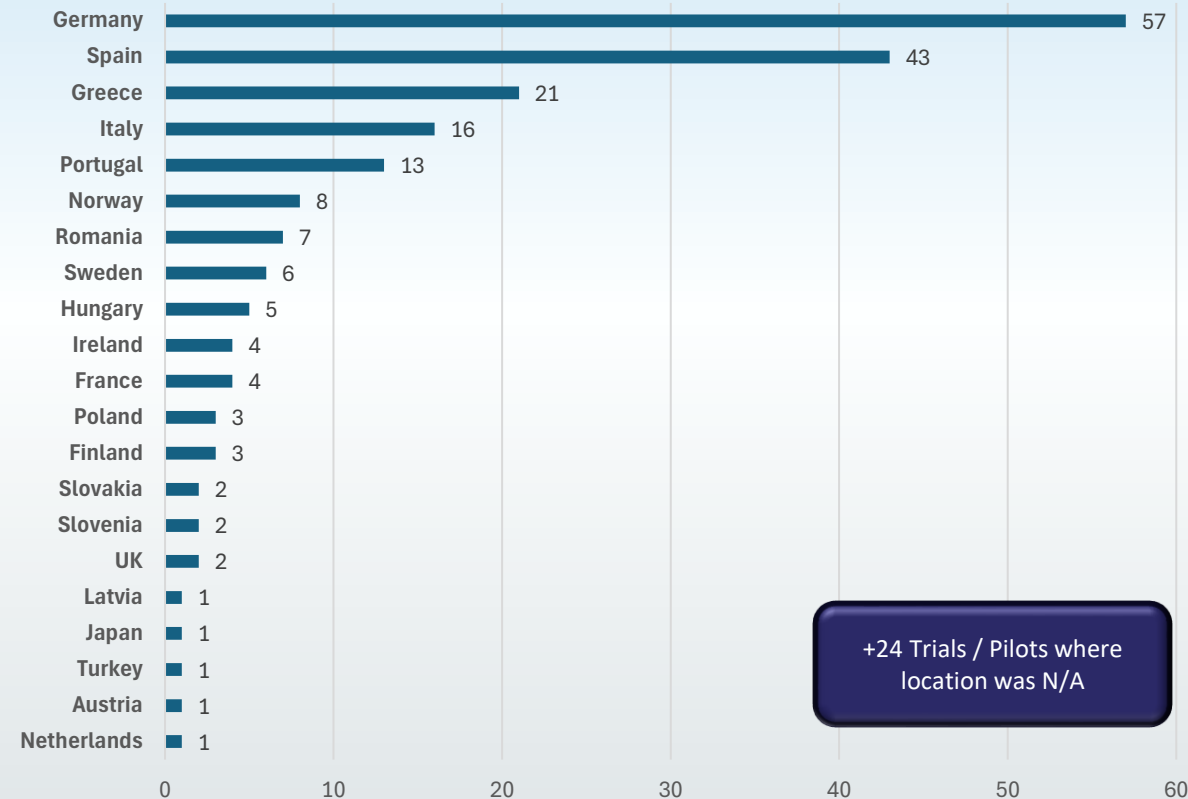
No of Trials/Pilots per SNS JU Call



No of Trials / Pilots per SNS JU Stream



No of Trials / Pilots per Country



+24 Trials / Pilots where location was N/A

<https://sns-trackers.sns-ju.eu/vertical-engagement-tracker>

<https://sns-trackers.sns-ju.eu/vertical-engagement-tracker/vertical-cartography>

6G SNS

VERTICAL ENGAGEMENT TRACKER ▾ STANDARDS TRACKER ▾ KPI RADARS ▾

Home / Vertical Engagement Tracker /

Verticals Cartography

The Verticals Cartography is a monitoring tool that tracks the advancements of Europe's 6G Smart Networks and Services Joint Undertaking (SNS JU) Public Private Partnership. This initiative focuses on developing 6G technology enablers and applications for various market segments. With a collection of use cases, from proofs of concept and prototypes to demonstrations and trials, the Verticals Cartography provides consumers and industry end-users with practical examples of 6G integration into daily life and business.

How to use the Verticals Cartography

Contained within this cartography is a structured mapping of R&D endeavours that address the frontier of 6G technologies. This includes a spectrum of trials, pilots, and use cases executed under the auspices of the SNS JU initiative. These use cases are based on criteria like 1) targeted vertical sectors, 2) location of the experiment, 3) nature of the experiment, and 4) functionalities employed.

To explore the available use cases, simply engage with one of the filters and make your selection, or utilise the search bar for a more directed exploration. If you wish to add your SNS JU project's use cases, click the below button and fill the questionnaire.

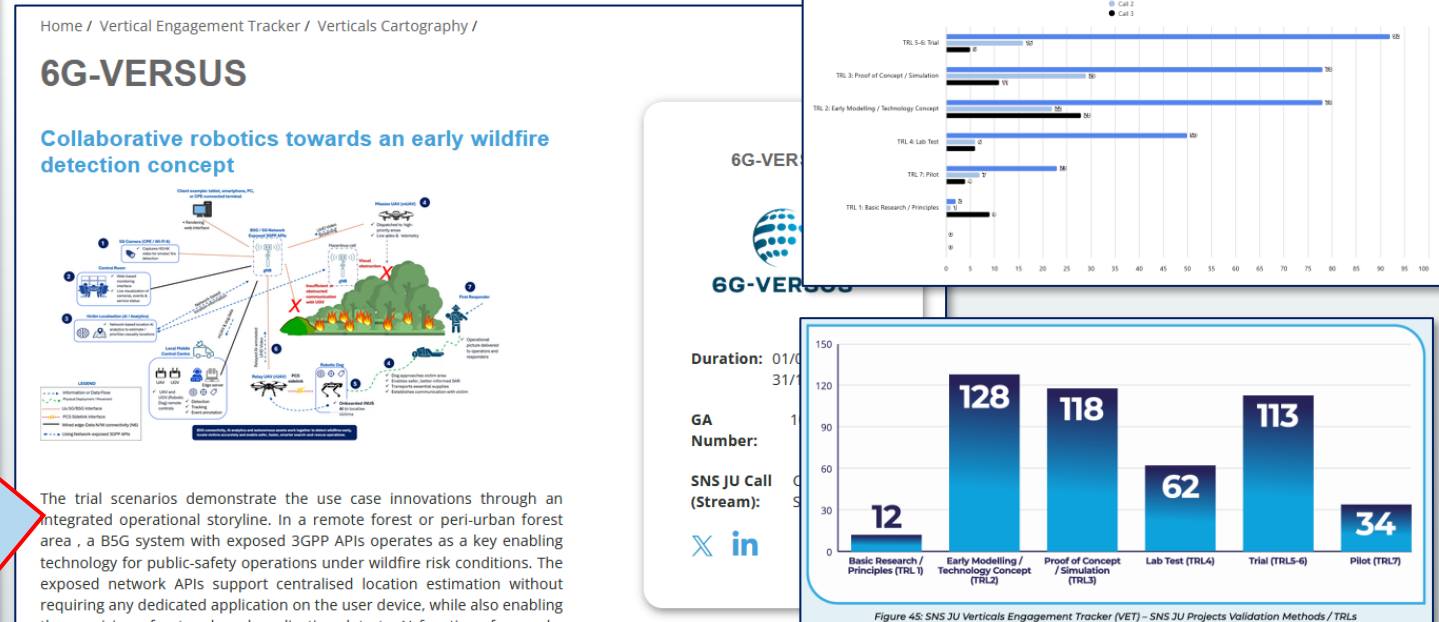
Submit your use case

Displaying 1 - 12 of 468

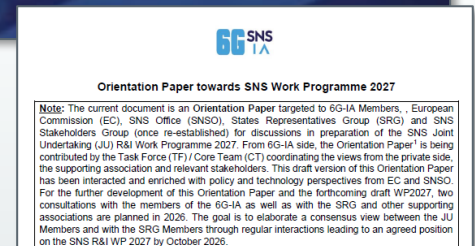
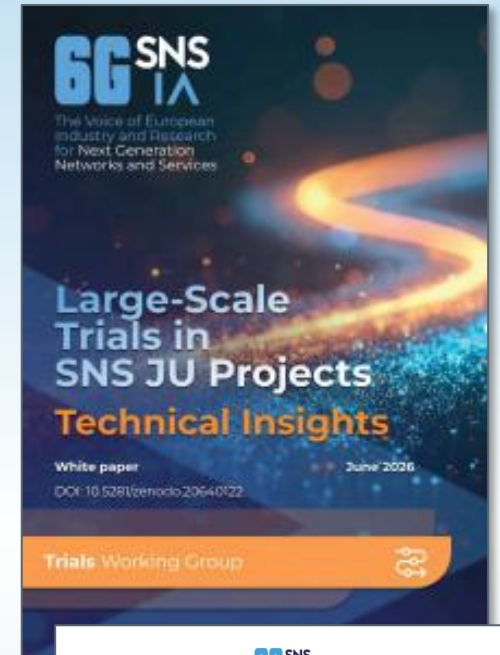
6G-VERSUS **IMAGINE-B5G** **IMAGINE-B5G**

Data:

- 469 Inputs / UCs including all TRLs
 - 202 Project Open Call 3rd Party Inputs
- 113 Trials Inputs (67 from 3rd Party)
- 34 Pilots Inputs (18 from 3rd Party)
- **Filters:** vertical sector, country, functionality, TRL,..
- **T&P details + interactive charts**



- **White Paper: “Technical Insights from Large-Scale Trials and Pilots under SNS Projects”:**
 - Trials & Use Case descriptions including enabling B5G technologies
 - Technical insights and statistical analysis based on Trial results
 - Lessons learned from Large-Scale Trials: **aggregate learnings** across projects, identify convergent **patterns**.
 - Recommendations for future 6G Trials
 - Available from: <https://6g-ia.eu/plans-papers>
- **Workshop with Stream D&C projects on needs/gaps towards WP2027 (02.07.26)**
 - Slidesets from projects + summary: key **achievements**, **benefits/painpoints**, **recomms.** for WP2027.
 - Live Brainstorming (Slido Questions): **open calls**, “large” T&Ps, role/engagement of **verticals**, preferred TRL levels, gap toward monetization,..
- **Definition of Stream D calls in the SNS R&I Workprogramme:**
 - Network-Native **Media Services**:, **Smart Industry**, **NTN**, **Telco AI Platform**, End-to-end **AI native Smart Networks and Services**, **ISAC for public policies**, **Post-Quantum Security**...for verticals !!
 - Discussions **on-going** about final list, scope and budget.
- **Webinar on Industry 4.0 vertical, joint with 5G ACIA**
 - Connecting SNS Projects with **vertical associations**:
 - Presentations from SNS Projects (2) and 5G ACIA Trials/WGs
 - One **panel discussions** chaired by Trials WG chair
 - **+80 registered attendees**



SNS – Draft WP2027 – Version 26.05.26

Context and Objectives

Services (SNS) Institutional Partnership² is in the last phase of its and Innovation Work Programme 2027 will complete the cycle of call, the draft orientations include a number of actions that will be R&I topics under Stream B, both for forward looking topics of 6G-TRL for wireless, optical networks, security and short-range so proposed to allocate resources for a flagship project that will be future funding instruments under the next MFF. In Stream B with other regions is also proposed. Currently, a collaboration with ration to complete the coordination of activities between SNS JU and pment of a FEM (Front-End-Module) for 6G. This topic is related ceo call from Chips JU as well the updated SNS JU call that of the call considered for the R&I WP 2025. The overall related e 6G / SNS Microelectronic success story. the last call for the SNS JU, the current orientation suggests by the activities on Stream D (Large Trials and Pilots) focusing a number of topics for specific vertical areas (i.e., Public safety,



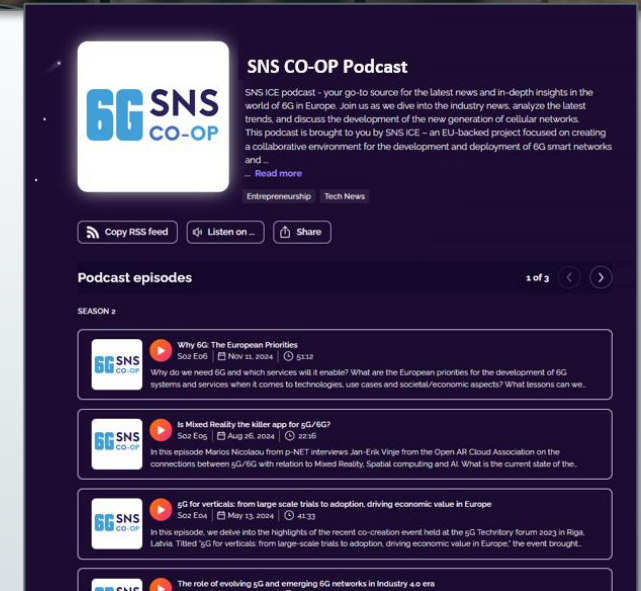
UPCOMING ACTIVITIES

“6G Trials for Resilient Europe: from SNS pilots to FP10 pre-deployment”

- **Scope:**
 - Explore various dimensions of 6G network resilience: SNS projects, pre-commercial trials.
 - Provide an estimate of the impact of 6G in our economies and societies (GDP, jobs)
 - How 6G trials can accelerate Europe’s transition from SNS pilot projects to large-scale pre-deployment activities under FP10
- **Agenda (draft):**
 - Session 1: Opening Session
 - Welcome
 - Keynote Speech by Didier
 - Session 2: Resilience in pre-commercial 6G Trials and Pilots and their evolution into FP10
 - Presentation of Trial & Pilots results by on-going SNS project
 - Presentation of private trial by MNO/vendor
 - Presentation on the evolution of Trials and Pilots under FP10 by 6G IA.
 - Session 3: Network resilience in commercial networks: economic and business aspects
 - Presentation on socio-economic aspects by GSMAi
 - Session 4: Panel discussion
 - With a selection of previous presenters as panelists

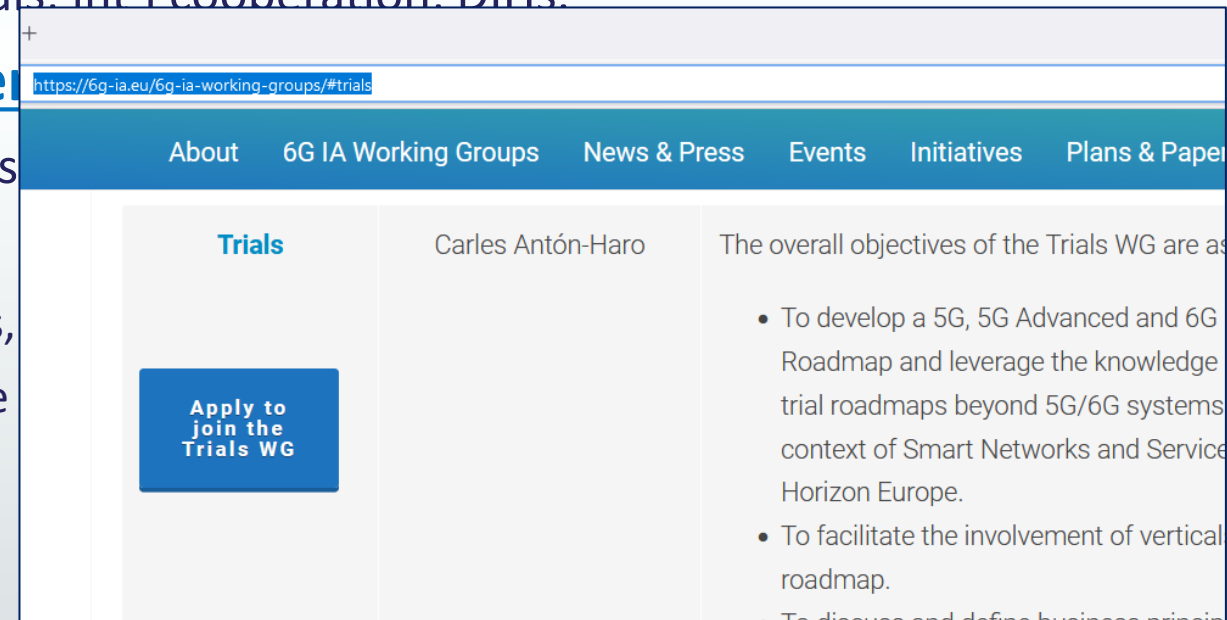


- Recording of **videopodcast** on T&P/vertical-related activities @ Techritory Forum'26:
 - Title: "What should Europe test before 6G is deployed?"
 - Scope:
 - Explores the large-scale trials Europe should conduct before 6G deployment
 - Focus: performance, interoperability, security, and real-world resilience.
 - Connected Digital Fabric to support seamless connectivity across networks, sectors, borders.
 - Moderator: CTTC; Panelists: work in progress
 - To be **uploaded to streaming platforms**, SNS CO-OP website
- Kickstart of SNS T&Ps Brochure n°3:
 - **Process definition/up-date** for the forthcoming SNS T&Ps Brochure n°3
 - To be released as input to **EuCNC & 6GS 2027**.



KEY TAKEAWAYS

- Active WG with large number of on-going activities: presentations, webinars, events, brochures, whitepapers, etc.
- Regular pattern of quarterly meetings.
- Selected place for networking: vendors, MNs, verticals, EC, research, SMEs (+300 members in general email reflector).
- Dedicated activities to private trials, cities, verticals, int'l cooperation, DIHs.
- Open WG: no need to be a 6G-IA member
- Increased dissemination opportunities for projects
- Get updated information on
 - Recent trials by SNS projects, national programmes,
 - Upcoming calls for proposals under Horizon Europe
 - Project-related events.
 - Elaboration of SNS Workprogramme.
 - ..and much more!



<https://6g-ia.eu/6g-ia-working-groups/#trials>



Thank You! Questions?

The Voice of European Industry and Research for Next Generation Networks and Services



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