6G-IA General Assembly

14 December 2023

Erzsébet Fitori, Executive Director, SNS JU

SNS JU : The European collaborative path towards 6G

Governance Structure

Smart Networks and Services Joint Undertaking

JU Members

- **Representation of Private & Public Sector (50/50)**
- Governing Board: Strategic orientation and roadmap
- Long term commitment (planning and implementation)

States Representatives Group

- **Synergies with national investments and 6G R&I plans** , through a coordinated approach.
- Consultation and Strategic Guidance.
- Strategic coordination of EU piloting and deployment initiatives

Stakeholders Group

- **Synergies with other partnerships and associations**
- Advisory body

International Partnerships

- **Cooperation in mutually relevant domains**
- Associated Countries / multilateral participation
- Long-term collaborative cross-roadmaps possible

Collaboration and Partnerships are strategic priorities for the SNS programme

SNS JU is fully aligned with Europe's Strategic Priorities

Strategic Priorities

EU-wide collective effort

Creating a human-centric digital world reflecting European values

New Applications

Seizing a fair share of the "Trillion €" opportunity in future network-based industrial sectors

Industrial leadership

Starting the 6G race with an **aspiration to leverage EU technological leadership**

Sustainable Development

Support EU Green Deal targets Building on a **clear promise of Sustainability**

Societal Impact

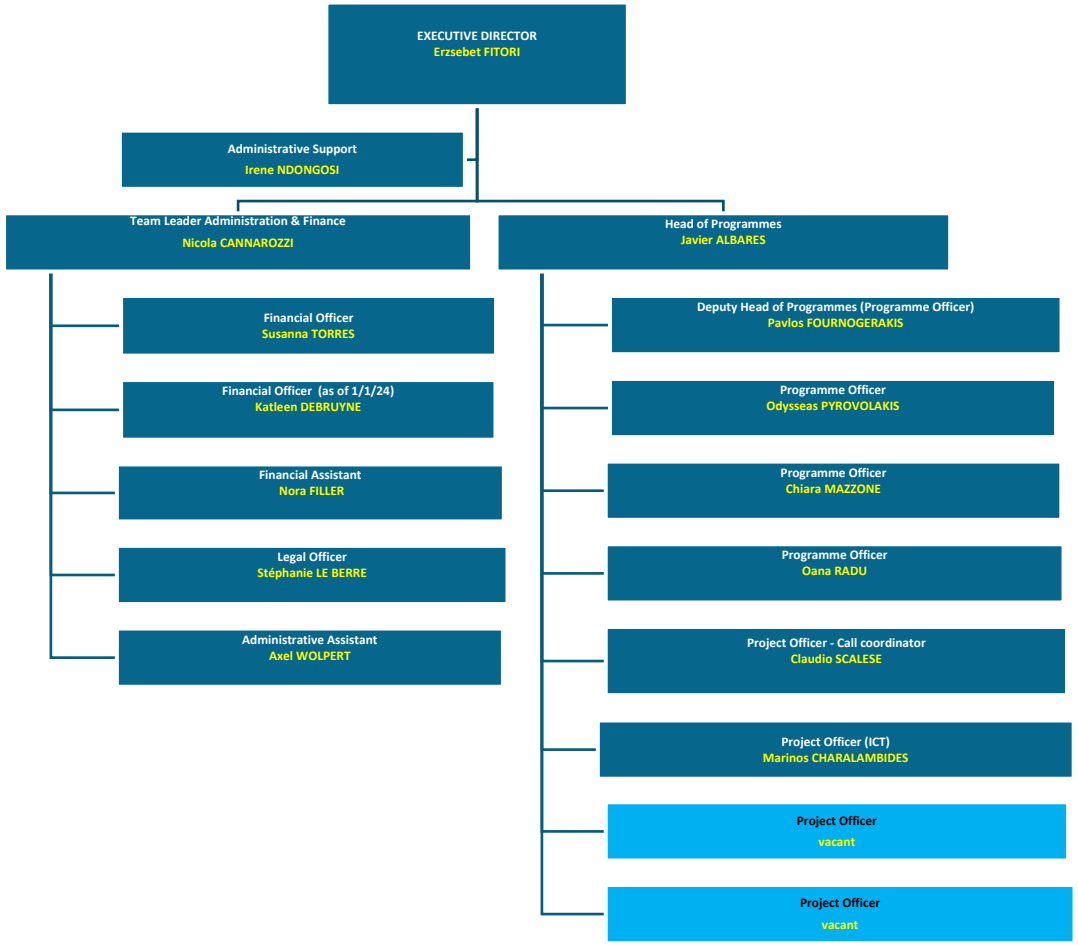
Smart connectivity underpinning key societal issues such as **Inclusion and Trustworthiness**

Technological Sovereignty & Security

Value chain approach for a comprehensive EU supply capacity, from components to cloud services, in line with the 5G cybersecurity toolbox

Collaboration and Partnerships : Our response to the magnitude of the challenges

SNS JU team is growing!



New office in White Atrium

SNS JU autonomy state of play and next steps

SNS JU financial autonomy (24/10/2023)

Annual Work Programme 2024 adopted

GB

Financial Aspects

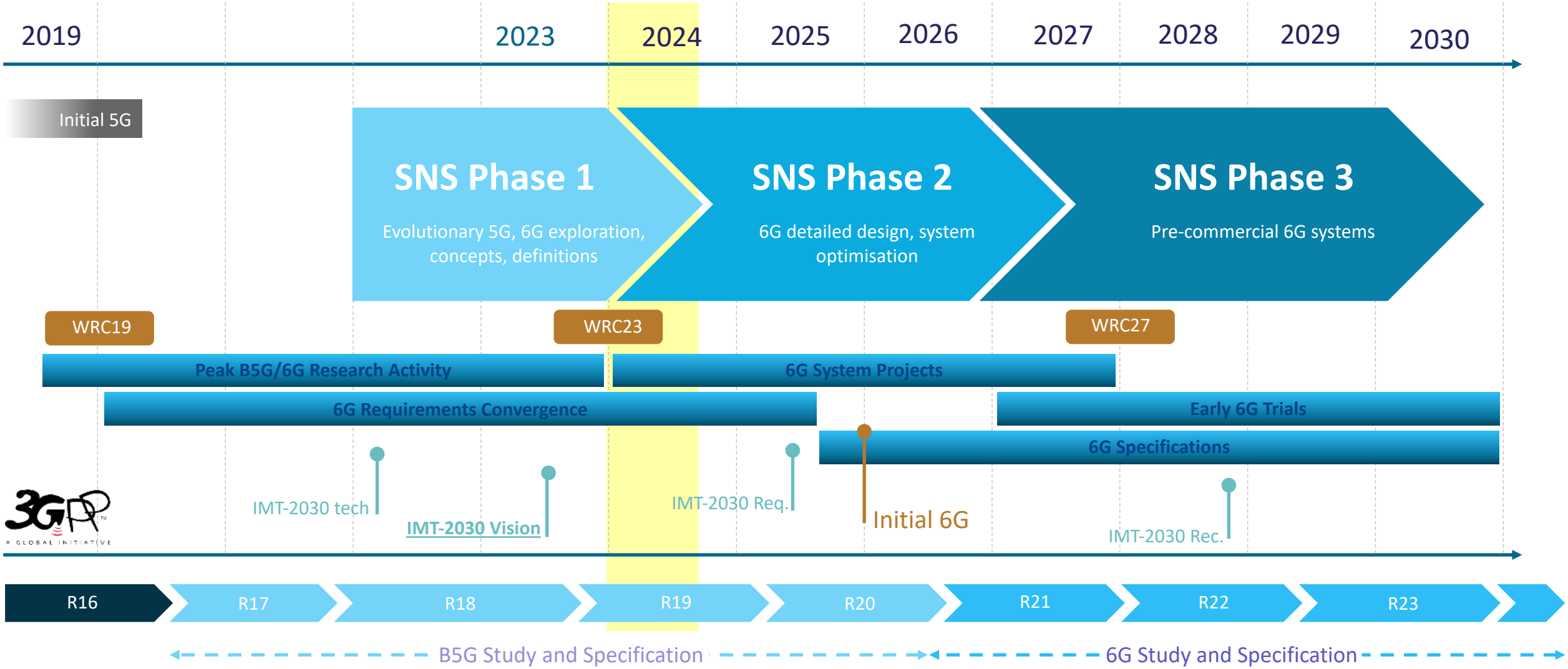
FFPA, CA, Internal Control systems and processes, anti-fraud strategy….

Service Level Agreements, Back-office arrangements (Accounting procurement, HR, IT)

IT onboarding

key corporate EC IT tools onboarded; full autonomous IT environment by Q2 2024

SNS phased approach: where we are



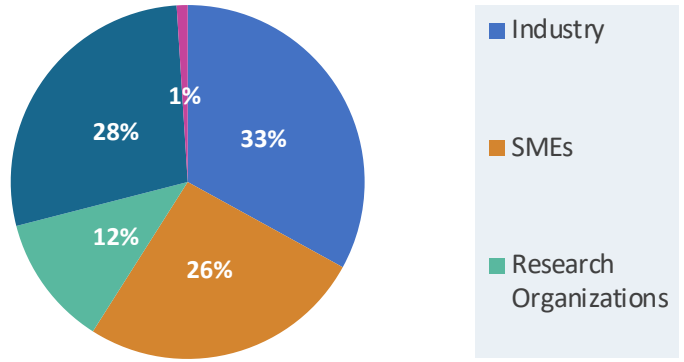
SNS Call 2 projects are about to start!

2nd Call
of projects
(Q1-2024)

27 projects
216 beneficiaries
SMEs 26%
Non-6G-IA 33%
IKOP 12,1 M €

130 Million €

Beneficiaries distribution



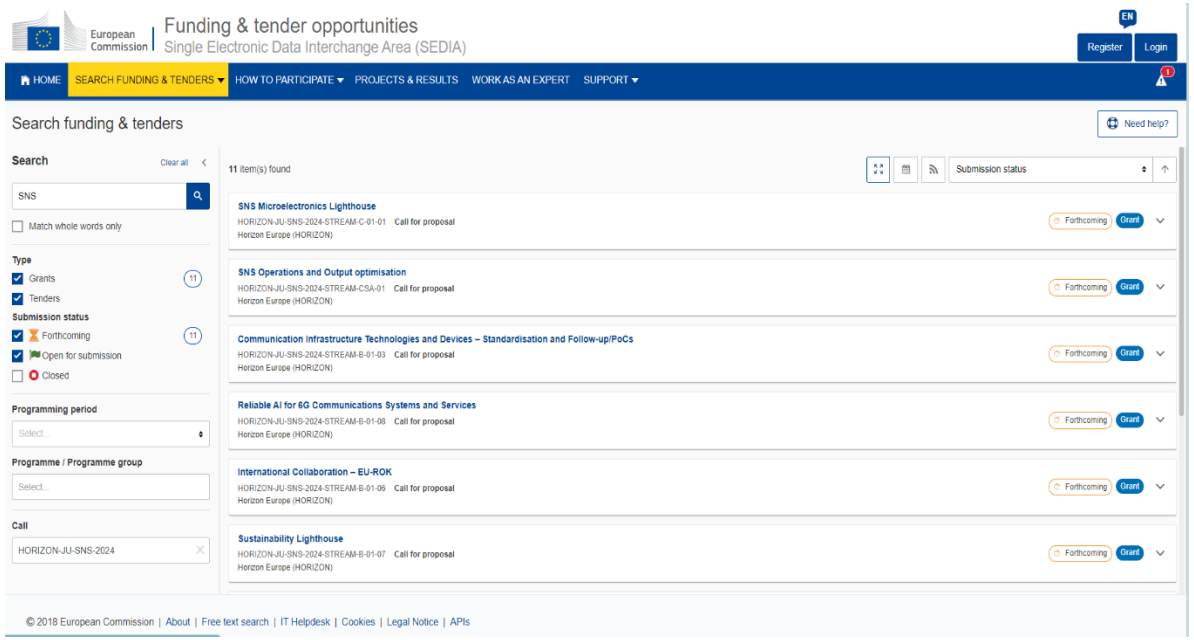
Call 2 Selected projects announced at 5G Techritory Event

- **Grant Agreement Preparation** ongoing: 19 projects GAs fully signed, pre-financing has started
- **A new project (ELASTIC)** invited for GAP

6G research gets a 130 million EUR EU funding boost in Europe - SNS JU (europa.eu)

SNS R&I WP2024 published!

F&T portal publication on 5/12



R&I WP 2024 adopted by GB on 23/11 and published on SNS website

Strong community interest with >300 participants at the SNS R&I WP 2024 Briefing Session on 13/12/2023!

SNS Call 3 is under configuration

Call 3 IMPORTANT DATES

Planned Opening date: **16 January 2024**

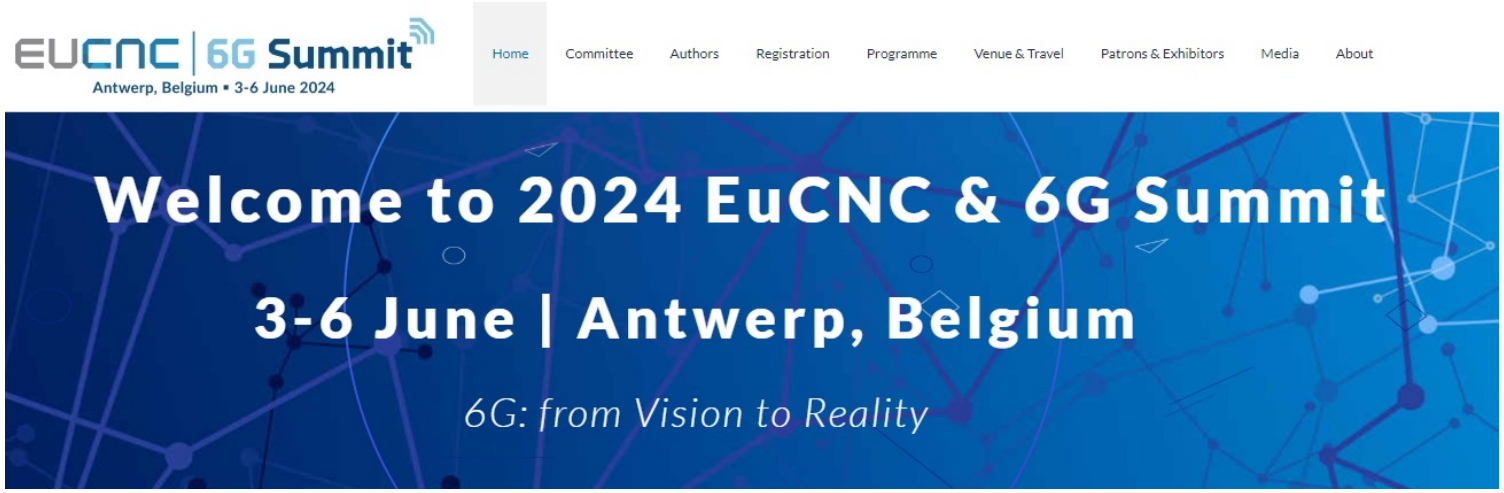
Proposal submission deadline: **18 April 2024 17:00:00**
(Brussels local time)

Forthcoming Call 3 Events:

- SNS Call for Proposals 2024 – Information Day on 22 January 2024, Agenda and registration link available here.
- Brokerage Event: (date and registration TBC)

Important upcoming Events

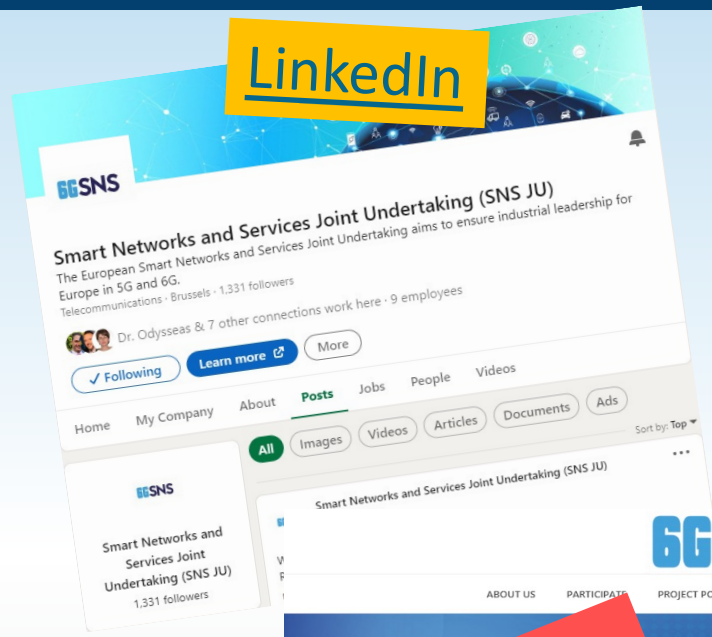
SNS JU will be present at



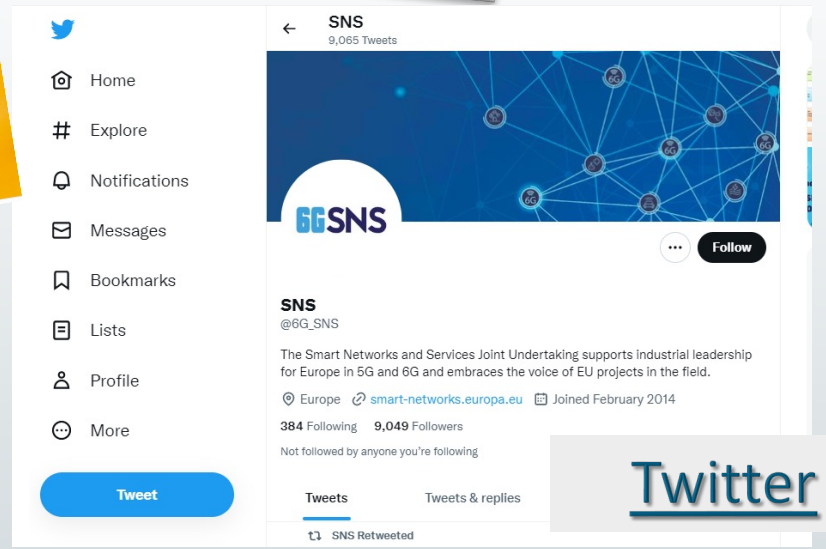
Transparency and visibility are crucial!

Press releases

LinkedIn



YouTube



Twitter

Website

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

6GSNS

SMART NETWORKS AND SERVICES
JOINT UNDERTAKING

THANK YOU FOR YOUR ATTENTION

Contact us: smart-networks.europa.eu

Back-up slides

Entering a new phase in EU research and development

EU upfront commitment of €900M up to 2027

Stream A
Smart communication components, systems and networks for
5G Evolution systems

Architecture:
Evolved Design
Advanced Cloud/Edge
Converged Optical Transport

Radio:
Building Blocks and Systems

System and Security:
Secure Softwarisation
Real-time/ Zero touch Services

Stream B
Research for radical technology advancement towards
6G definition

- System Architecture
- Wireless Communication Technology and Signal Processing
- Communication Infrastructure Technologies
- Transformative Technologies
- Trustworthy and Secure Service Development and Provision

HEXA-X-II

Stream C
Experimental infrastructures and Platforms

- Microelectronics Lighthouse
- Federation of platforms towards a pan European, cross platform framework

Stream D
Large Scale Trials and Pilots with Verticals

Vertical Use Cases
1) Automotive
2) Health, Smart Cities, Smart Agri, Education

Evaluation of Sustainability

Current area of focus
Work Programme

2024 R&I Work Program Highlights

129 MM €

What is new?

- Higher TRL
- Focus on 6G Standardisation
- Extended PoCs
- International Collaboration
- Lighthouse Projects
- Artificial Intelligence
- Trials with Verticals

Stream B
Research for radical technology advancement towards **6G definition**

- B1. System Architecture
- B2. Wireless Tech
- B3. Infrastructure & devices
- B4. Reliability & Security
- B5. Japan
- B6. South Korea
- B7. Sustainability
- B8. Reliable AI

Stream C
Experimental infrastructures and Platforms

- C. Microelectronics

Stream D
Large Scale Trials and Pilots with Verticals

- D. Large Scale Trials

Other
Synergies and CSA

- CSA. Operations
- Synergy EU-Rail FRMCS

Key technology areas for SNS

Examples
Non-exhaustive

Smart Network Infrastructure (6G capabilities)

Convergence with other adjacent/horizontal technologies, e.g. AI/ML

6G will require significant technological breakthroughs to enable its ambitious goals

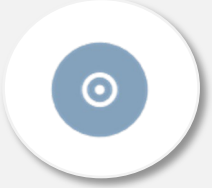
System Architecture

- Comms/compute
- AI governance
- Programmability and Control
- Deterministic networking

Radio & Signal Processing

- THz bands, VLC
- 6G RAN modulation
- Beamforming, RIS
- Harmonized Comms and Sensing
- Disaggregated RAN

Optical Networks



- Intrinsically secure, green and flexible transport networks

Ubiquitous Computing

- Edge-Cloud Integration
- Responsiveness, reduced data flows
- Distributed microservices

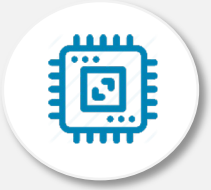
Security

- Network and Services
- Larger attack surface
- Micro-segmentation
- Security as-a-Service

Non-terrestrial Networks

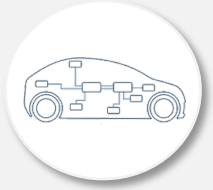
- (LEO) networks
- UAM services
- Integration with TN
- Edge flying nodes

Devices & Components



- Efficient Tx/Rx modules
- Optical & hybrid transceivers
- Advanced micro-electronics
- Neural processing units

Special purpose (sub)-networks



- Vertical sub-networks such as in-body, in-robot, in-car networks, etc

Future Emerging Technologies

- May have deep impact in the future
- Do not have a clear industrial path yet

Source: Networld Europe SRIA - https://www.networldeurope.eu/sria-and-whitepapers/

- Align technological efforts
- Enable a coherent HE
- Strengthen European efforts
- Mobilize stakeholders
- Promote SNS vision & results

SRG

SNS Stakeholder group

Related Partnerships

National Initiatives

Vertical Stakeholders

International Activity

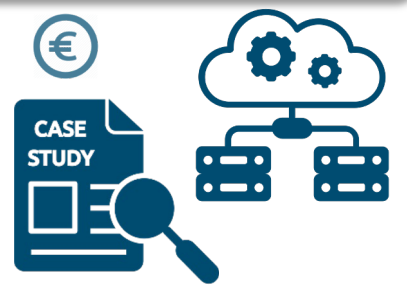
Standardization bodies

… and new challenges to consider

Realistic analysis of trade-offs

Performance/Redundancy/Security/Utility/TCO/ Power

Business and Societal



Deployment of 6G infrastructures will require significant resources and careful planning (including equitable and inclusive urban-rural connectivity dimensions)

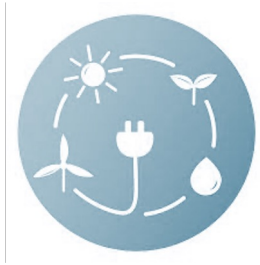
Regulatory and Ethical

Future spectrum regulation, data privacy, IPRs and ethical use of AI will pose new challenges to ensure trustworthiness that require thoughtful solutions.

Security and Resilience

Protecting against cyber threats and ensuring network resilience will be critical for the success and safety of 6G technology.

Sustainability



Innovations in energy-efficient network infrastructure, ambient IoT and power management solutions to reduce the environmental impact of 6G

Technological Sovereignty

…the ability for Europe to develop, provide, protect, and retain critical technologies required for the welfare of European citizens and prosperity of businesses, and the ability to act and decide independently in a globalised environment …

Source: https://www.europarl.europa.eu/RegData/etudes/STUD/2021/697184/EPRS_STU(2021)697184_EN.pdf

In Summary …..

We must be prepared for a hyperconnected future that reshapes industries, lifestyles, and economies on a global scale

- Building a **shared vision of 6G** with an agreed roadmap
- Learning from **5G experience**, validating business perspectives early-on
- **Ecosystem view** with end-to-end initiatives (research-standards-industry)
- **Collaboration** via public-private partnerships, and internationally
- **Understanding future trade-offs** to guide decision making