SNS JU Phase 1 projects

Webinar #1 *– 6G Holistic system, SNS Experimental Infrastructures and SNS Large-Scale Trials and Pilots with Verticals*

Dr. Colin Willcock, Chairman of the Board 6G Smart Networks and Services Industry Association (6G-IA)

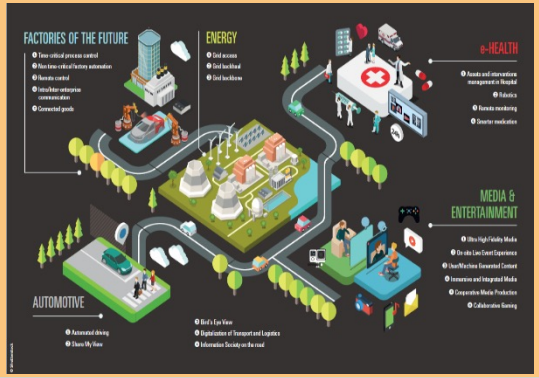
Pavlos Fournogerakis, Program Officer, Smart Networks and Services Joint Undertaking

5G Research (5G PPP)

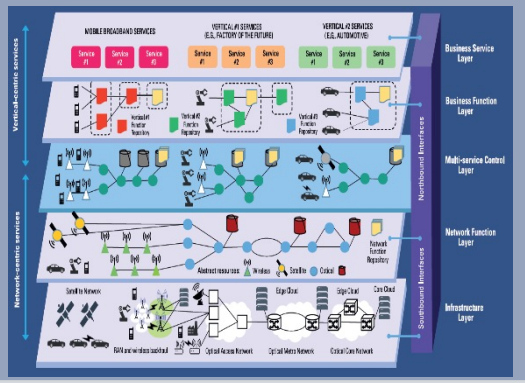
PHASE 1: 5G Core Research

- 5G system design & evaluation aspects
- 5G air interface innovations
- Network management & security innovations
- Virtualisation & service deployment innovations

PHASE 2: System development & application in vertical industries



PHASE 3: Large scale trials and innovation infrastructures



2015 2016 2017 2018 2019 2020

- 95 R&I projects since the beginning of the Program
- Overall, 700 stakeholders participating in the projects
- Over 1000 contributions to standardization activities
- Over 3000 scientific publications
- Over 40 white papers
- Over 500 innovations in the Innovation Radar
- Design, evaluated, and validated multiple technological breakthroughs

Smart Networks and Services two pillars

5G R&I, trials and deployment

6G R&I in Europe has started

5G PPP bridging phase

- The Hexa-X flagship + 9 B5G/6G exploratory projects = 65 M€

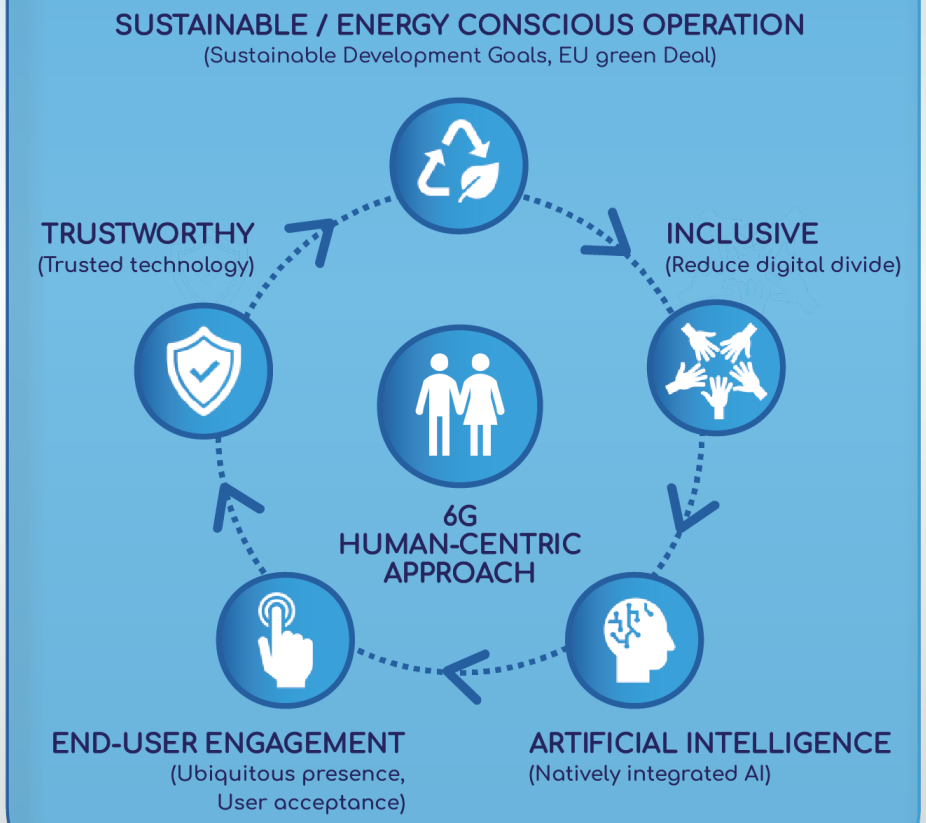
Accelerating 5G Deployment Connecting Europe Facility (CEF2)

6G Vision and R&I across the broader supply chain

- Tasks set by Council Regulation (2021/2085)
- EU upfront commitment of **€900M** between 2021-2017 (to be at least matched by industry)
- Close involvement of Member States for strategic guidance
- Dedicated Programme Office i.e., SNS JU Office (https://smart-networks.europa.eu/our-team/)

Societal, policy and business drivers for 6G

SOCIETY



POLICY

- BASED ON EU VALUES
- SECURE INFRASTRUCTURE & DATA
- TECHNOLOGICAL SOVEREIGNTY
  (Strong position in Global market with International collaborations)

BUSINESS

- BOOSTING EU ECONOMY
  (6G to improve the economy of member States)
- NEW BUSINESS
  (Emergence of novel business models)
- CHALLENGES/CRISIS PROTECTION
  (Cope with pandemics & other crisis)

A JOINT UNDERTAKING FOR 6G NETWORKS AND SERVICES

To facilitate and develop industrial leadership in Europe for 5G and 6G networks and services by 2030

ENABLERS

• Flexible Architecture • Advanced Radio Access • Cloudfication • Native AI • Holistic Cybersecurity

DRIVERS

- EU technological excellence
- Competitive global business placement
- Ensure Security and Privacy
- Address Green Deal and SDGs
- Need for globally accepted standards

EXPECTED RESULTS

- Technological Leadership
- EU industry competitive global value propositions
- Meet demanding KPIs
- Meet demanding KVIs
- Sustainable and interoperable communication technologies

SMART SERVICES

Such as: advanced services for verticals, Metaverse, digital twin, holographic communications, etc.

INTERNATIONAL COLLABORATION

Media & Entertainment

Gaming & Metaverse

PPDR security-safety

Industry IoT

Energy

Automotive

Smart Cities

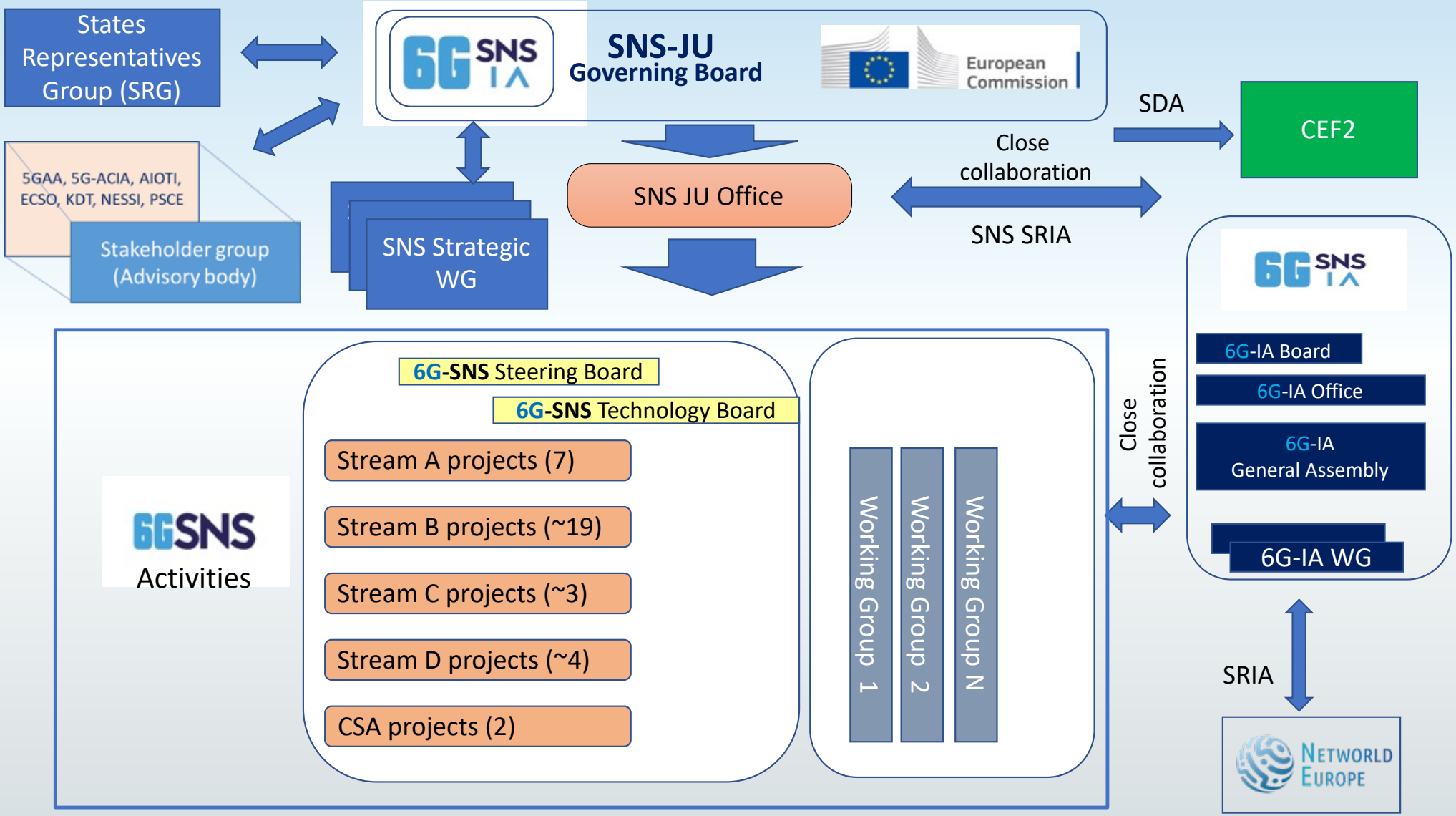
E-Health

Tourism &Culture

Smart Farming

EU R&I funding of € 900 million for the period 2021-2027, at least equally matched by private side resources

Governance


States Representatives Group (SRG)
SNS-JU Governing Board
European Commission
SDA
CEF2
Close collaboration
SNS SRIA
5GAA, 5G-ACIA, AIOTI, ECSO, KDT, NESSI, PSCE
Stakeholder group (Advisory body)
SNS Strategic WG
SNS JU Office
6G-SNS Steering Board
6G-SNS Technology Board
Stream A projects (7)
Stream B projects (~19)
Stream C projects (~3)
Stream D projects (~4)
CSA projects (2)
Activities
Working Group 1
Working Group 2
Working Group N
Close collaboration
6G-IA Board
6G-IA Office
6G-IA General Assembly
6G-IA WG
SRIA
Networld Europe

6G-IA and 5G PPP Work Groups (current status)

6G-IA WGs

- Open SNS WG
- 5G Vision and Societal Challenges WG
- Trials WG
- Spectrum WG
- Security WG
- 5G for Connected and Automated Mobility WG
- 5G Pre-standardization WG

6G-IA Verticals Task Force

5G PPP WGs

- 5G Architecture WG
- Software Networks WG
- Test, Measurement and KPIs Validation WG

WGs and Collaboration during the SNS era

- The SNS Collaboration agreement is ready. The signing process has started in the following order
  - 6G-IA Board members – ongoing
  - SNS JU projects – not started yet
  - 6G-IA members – not started yet

- Three types of WGs are envisioned
  a. SNS Projects WGs (similar to the 5G PPP WGs)
  b. 6G-IA WGs
  c. SNS Strategic WGs (To be created by the SNS GB)

A plan is being prepared – SNS WGs will be discussed/decided involving the Projects

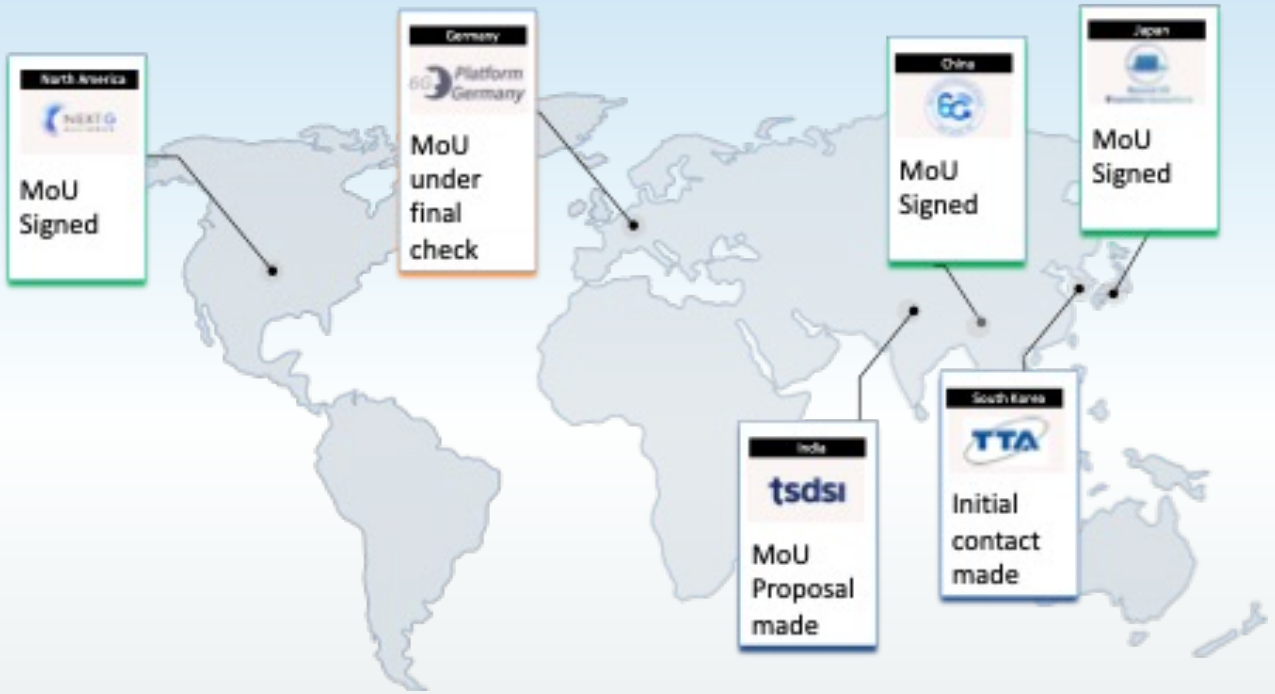
A webinar will take place (May 2023) to present the plan and open a consultation

Target to present the final structure at EuCNC 2023

Guarantee continuity from the 5G PPP era

- Next steps:
  - Until the collaboration agreement is signed by a critical mass of projects/project members an unofficial pre-SB will be setup to start the coordination among projects
  - When a 70% of projects will have signed the CA, an election process will open to select the Chairs for the SB/TB
  - After the SB is officially formed, the formal decisions for the SNS Project WGs will be taken

6G SNS International Networking

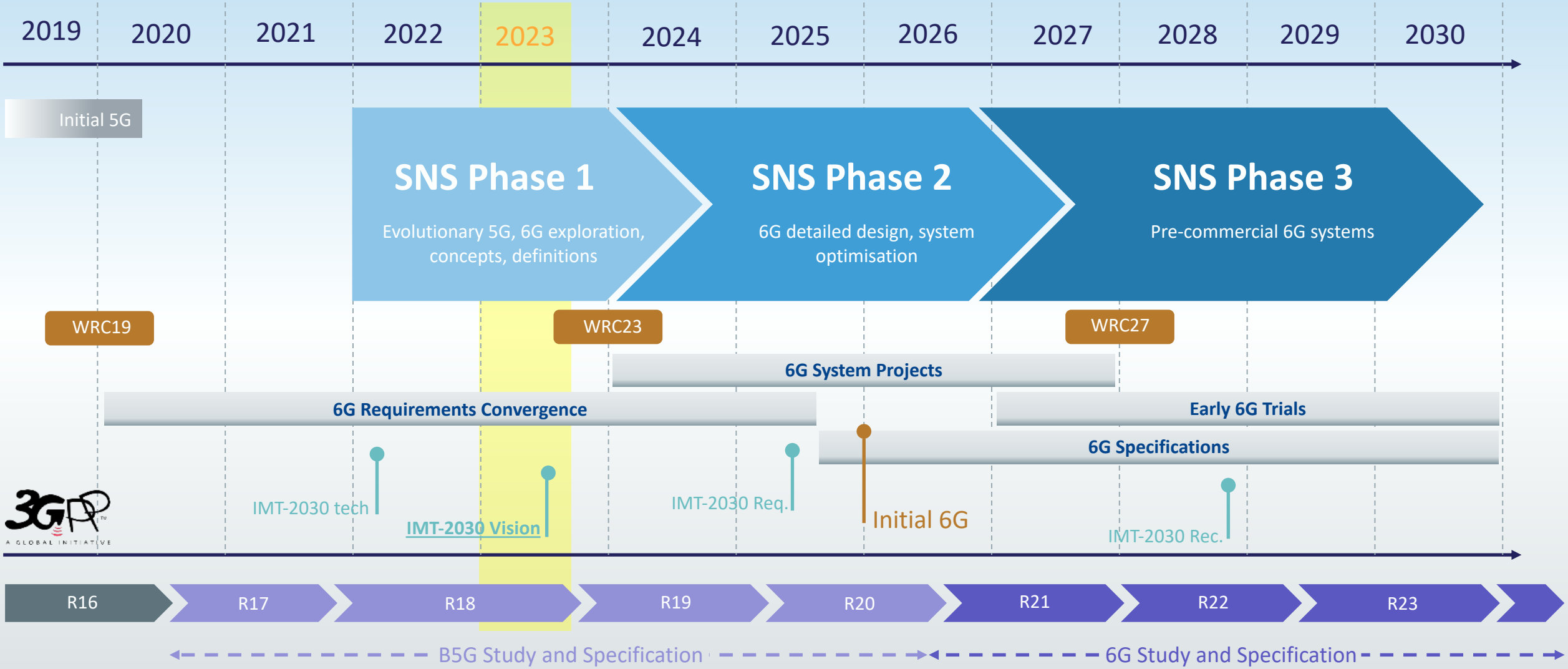


- **5G AUTOMOTIVE ASSOCIATION** — Automotive
- **5G ALLIANCE FOR CONNECTED INDUSTRY AND AUTOMATION** — Smart Manufacturing
- **EUROPEAN BROADVCASTING UNION** — Media
- **EUROPEAN CYBERSECURITY ORGANIZATION** — Cybersecurity
- **EUROPEAN INTELLIGENT TRANSPORTATION SYSTEMY AND SERVICES** — Transportation
- **EUROPEAN SPACE AGENCY** — Satellite
- **NEW EUROPEAN MEDIA** — Media
- **Public Safety Communications Europa** — Public Safety

6G SNS ICE 6G SNS OPS

SNS CSA Projects

Beyond 5G/6G Timeline



6GSNS Your projects in SNS R&I Work Programme 2021-22

5G Evolution

6G

Stream A (RIA): Smart communication components, systems and networks for 5G mid-term Evolution systems

Radio:
Building Blocks and Systems

Architecture:
Evolved Design
Advanced Cloud/Edge
Converged Optical Transport

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

Stream B (RIA): Research for Revolutionary 6G Technology and systems

System Architecture

Wireless Communication Technology and Signal Processing

Holistic System Perspective

Trustworthy and Secure Service Development and Provision

Communication Infrastructure Technologies

Stream D (IA): Large Scale SNS Trials and Pilots with Verticals

Stream C (RIA): SNS experimental infrastructures

See Results: **Europe scales up 6G research investments and selects 35 new projects worth €250 million**

6G SNS IA

SNS JU First Call 2022: Funding and results

STREAM A (RIA): Smart communication components, systems and networks for 5G mid-term Evolution systems

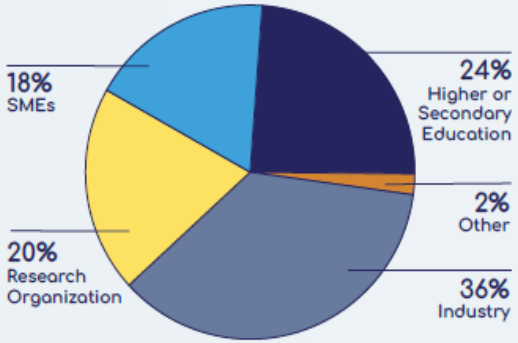
STREAM D (IA): Large Scale SNS Trials and Pilots with Verticals

STREAM B (RIA): Research for Revolutionary 6G Technology and systems

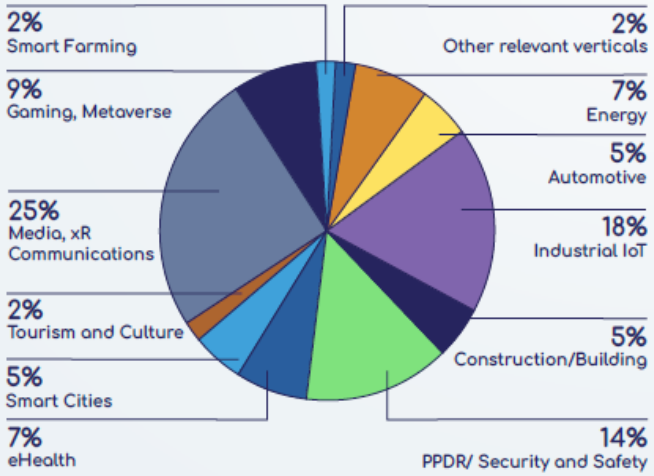
STREAM C (RIA): SNS experimental infrastructures

PHASE 1 PROJECTS TO START 1/1/2023

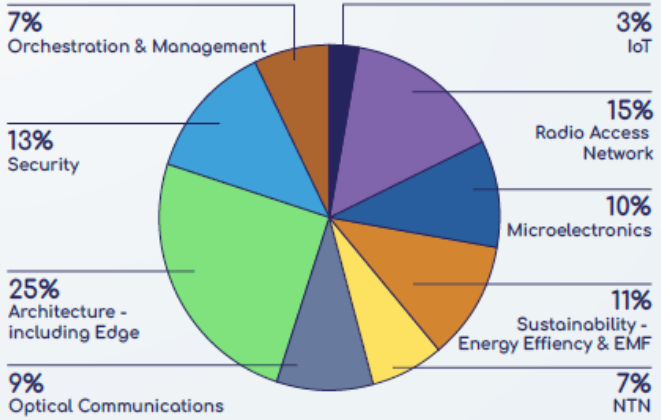
35 R&I Projects, 9 Key Technological Areas, 250 M€ Investments



BENEFICIARIES DISTRIBUTION



PHASE 1 SNS VERTICALS COVERAGE

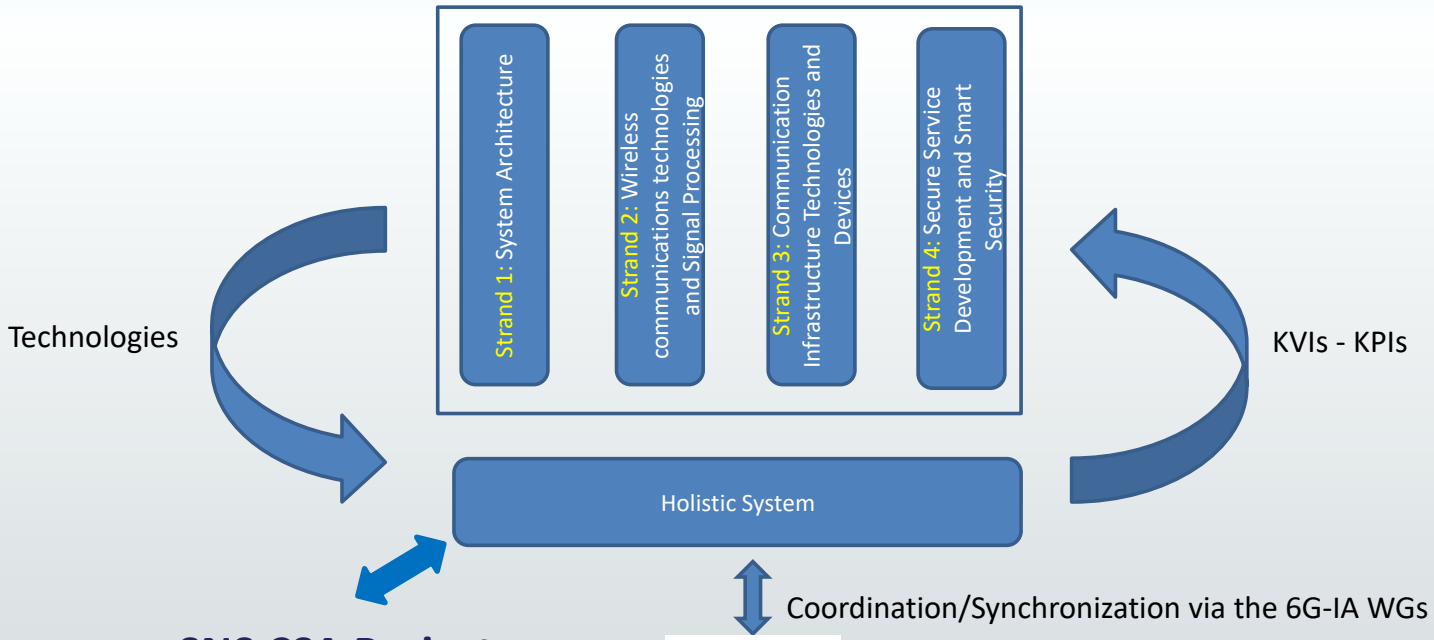


PHASE 1 SNS TOPICS COVERAGE

- 288 unique beneficiaries
- ~30% not 6G-IA members
- Covering 10+ different Vertical Industries

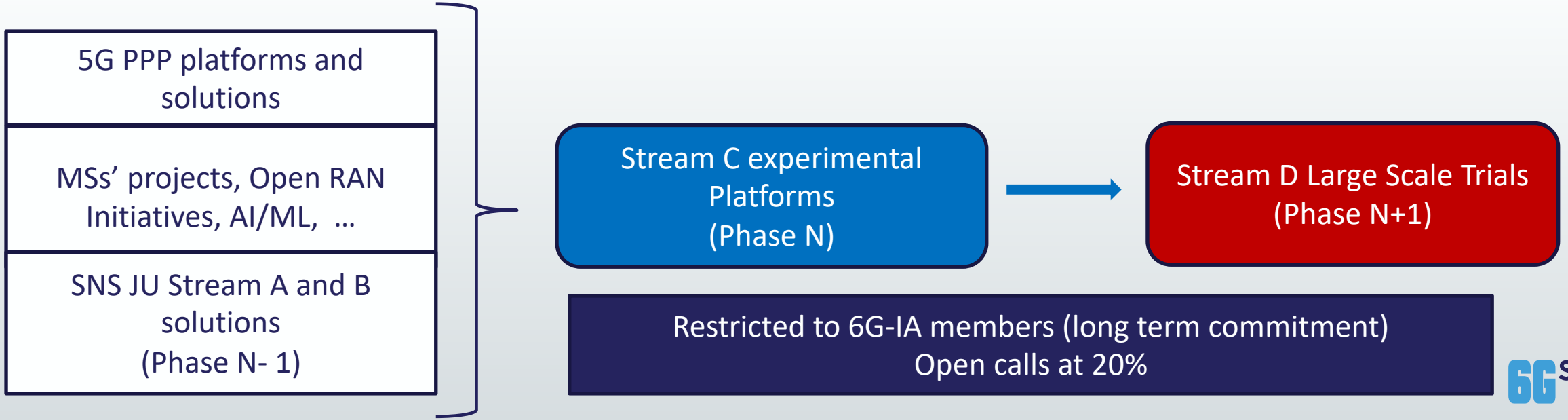
Stream B-01-05: A holistic system

- A complete system perspective of future 6G SNS platform, from an E2E architectural and functional perspective
- To integrate key results of other strands of Stream B as they become available
- For consolidation of 6G KPI's and KVI's, identification of 6G use cases
- Sustainability and societal aspects
- Coordination role in Stream B standardization work



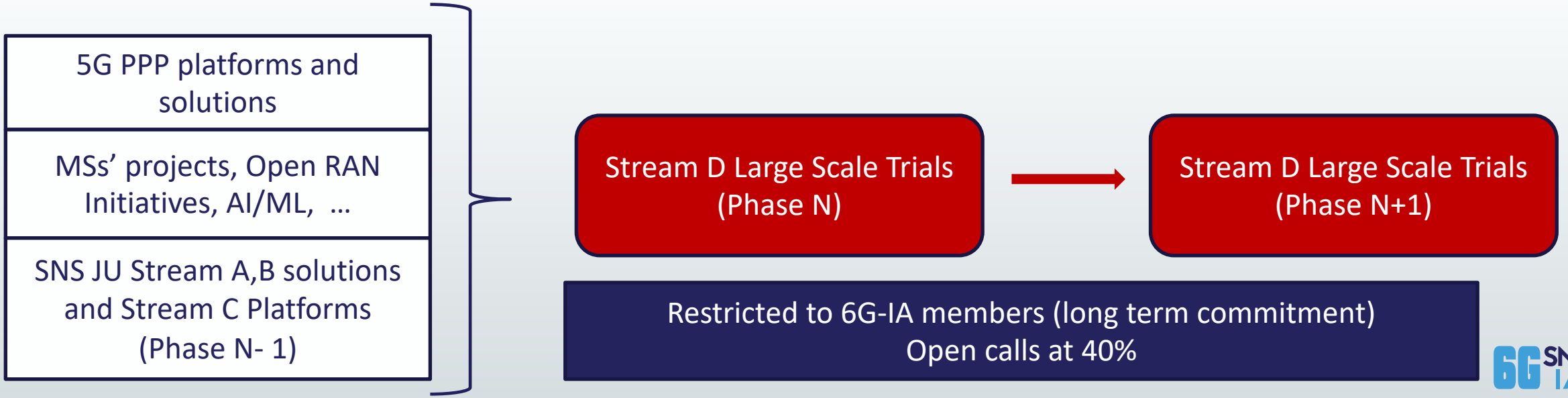
Stream C highlights

- **SNS experimental infrastructures:**
  - To develop EU wide e2e, disruption friendly, experimentation platforms that can validate candidate 6G technologies
  - To host advanced pilot “6G” use cases during the subsequent SNS implementation phase
  - Reusability and evolvability of the platforms over the lifetime of the SNS programme
  - Accessibility and openness (e.g., modular implementation, open-source solutions, well-defined interfaces, complete documentation, etc.).
  - Directionality and optimisation of previous and related European investments



Stream D highlights

- **SNS Large Scale Trials and Pilots with Verticals:**
  - to validate 5G Advanced and 6G technologies (KPIs and KVIs) in a user context early in the process
  - Business validation in close collaboration with verticals
  - SMEs, scaleups and startups are expected to play a key role
  - leverage available experimental facility capabilities and provide new requirements, in line with the spiral approach
  - Like in Stream C, reusability/evolvability, accessibility and openness, directionality and optimization are key points



6GSNS Projects are instrumental to SNS communication!

Press releases

LinkedIn

NEW

SNS brand and Projects communication guidelines... (to come)

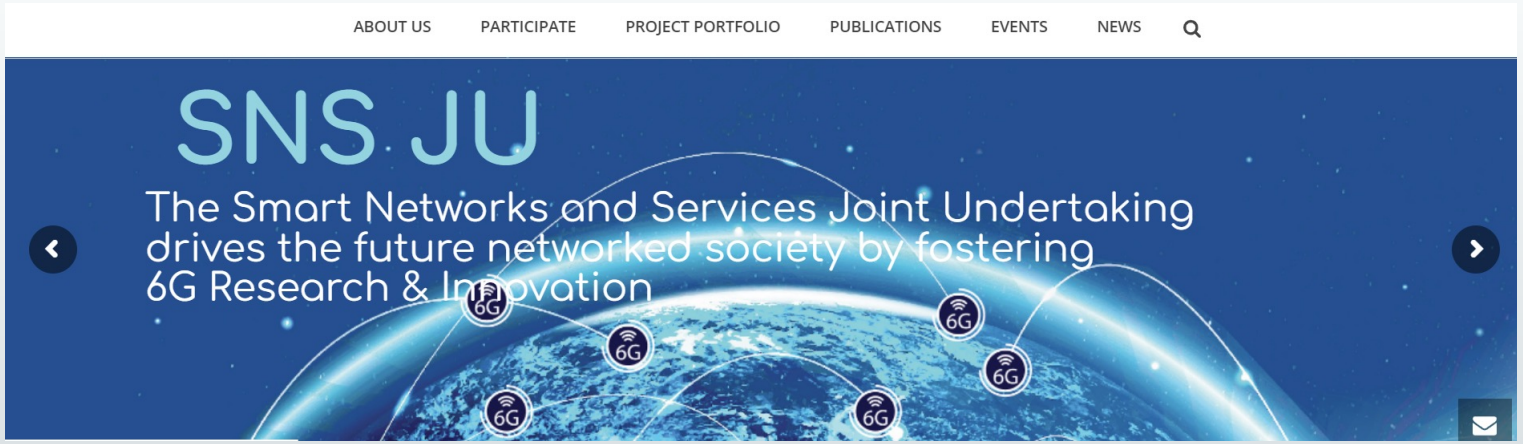
Twitter

Website

6GSNS

Thank you!

Visit SNS JU website: https://smart-networks.europa.eu/



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