6G in Europe, Status and Perspectives

6GSNS

The Networking Channel series **15 March 2023**

What is 6G and What are the research Challenges?

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DG CONNECT - European Commission

6G: a new global framework

Important changes since 5G early days (~2012)

Geopolitics:

- Cybersecurity and strategic importance of connectivity platforms
- Amplified by recent crises

➔ EU: Reinforced need to ***address a complete supply chain***, including micro-electronics (Chips Act)

Industry:

- Regional policies to reconstruct a strategic industry
- Set of new players (incl. hyperscalers) in the wake of software/cloud/open interfaces

➔ EU: Need to consolidate its ***leadership with cloud and edge supply capabilities***

Sustainability/Societal:

- Emerges as top priority, both from industrial and policy side
- Climate change, but not only
- Security, accessibility, affordability…

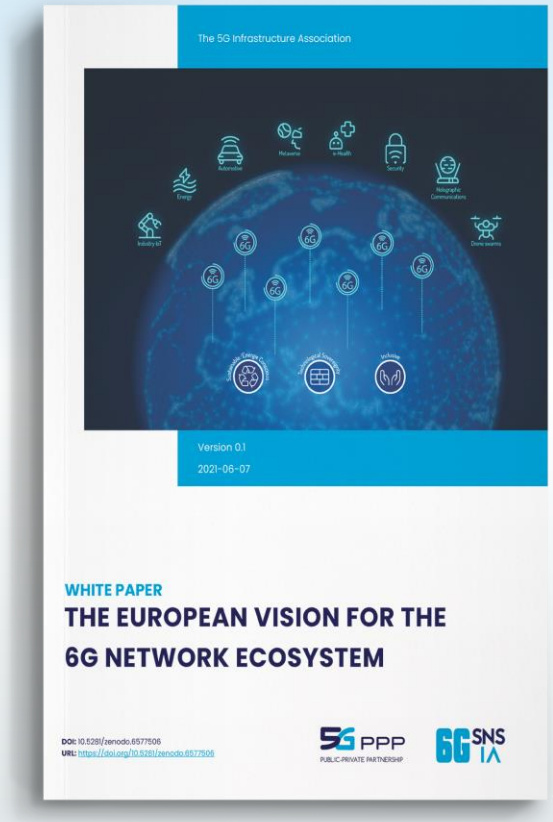
➔ EU: Strong ***links with other policies***, eg. Green Deal

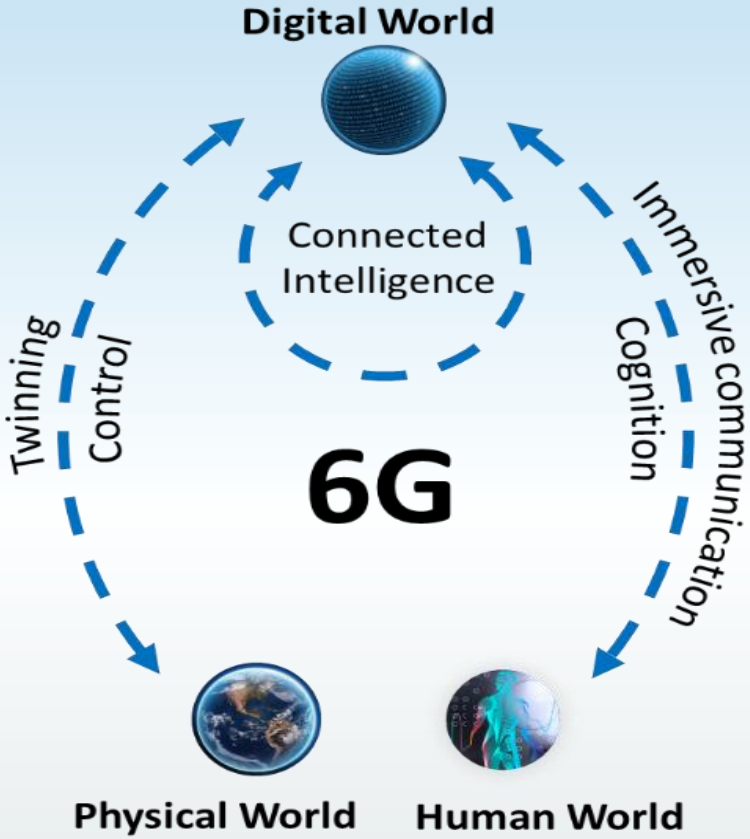
Users

- New business models and value chains
- Rising importance of verticals and users beyond classical MNOs

➔ EU: Address a ***holistic perspective*** from the onset (not add on)

6G Vision from Smart Networks & Services





Massive Digitisation:
Phy representation

+

Connected Intelligence:
Awareness, RT status

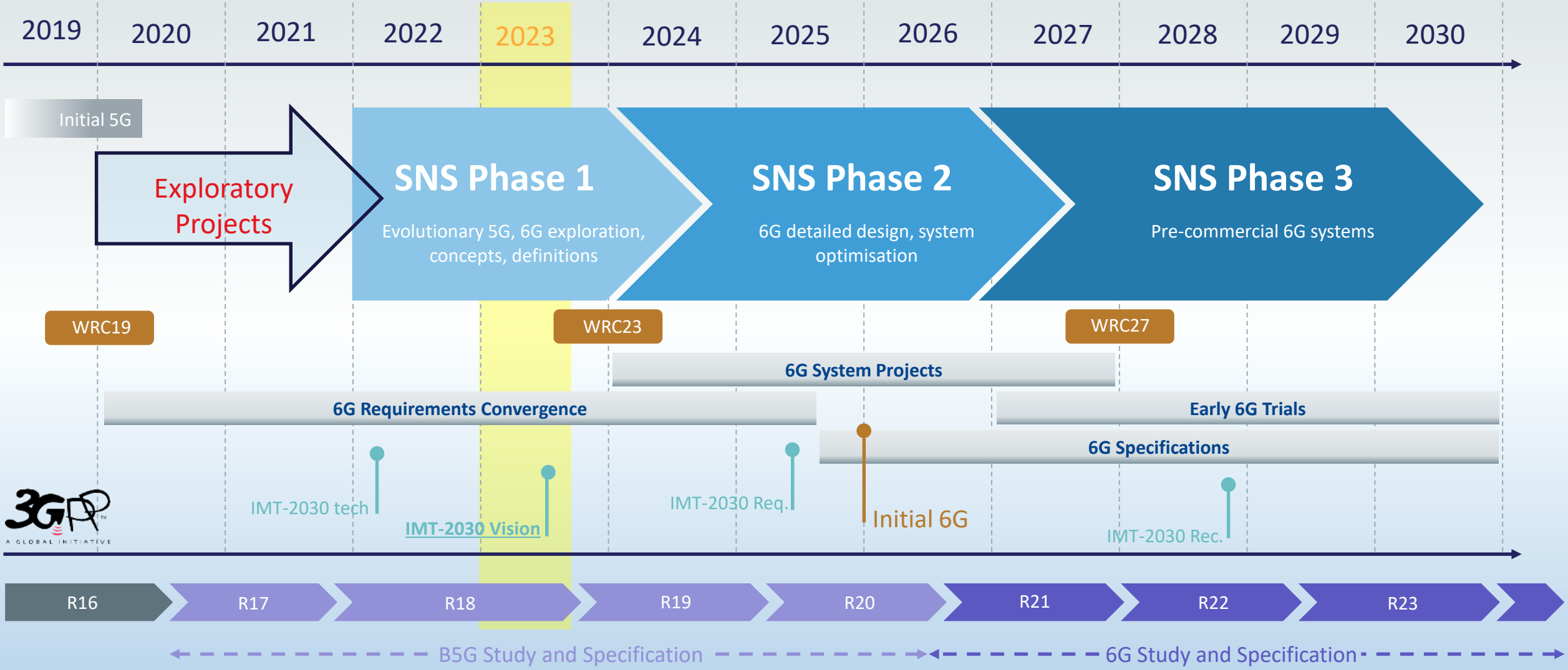
+

Network Compute Fabric
Decision, action

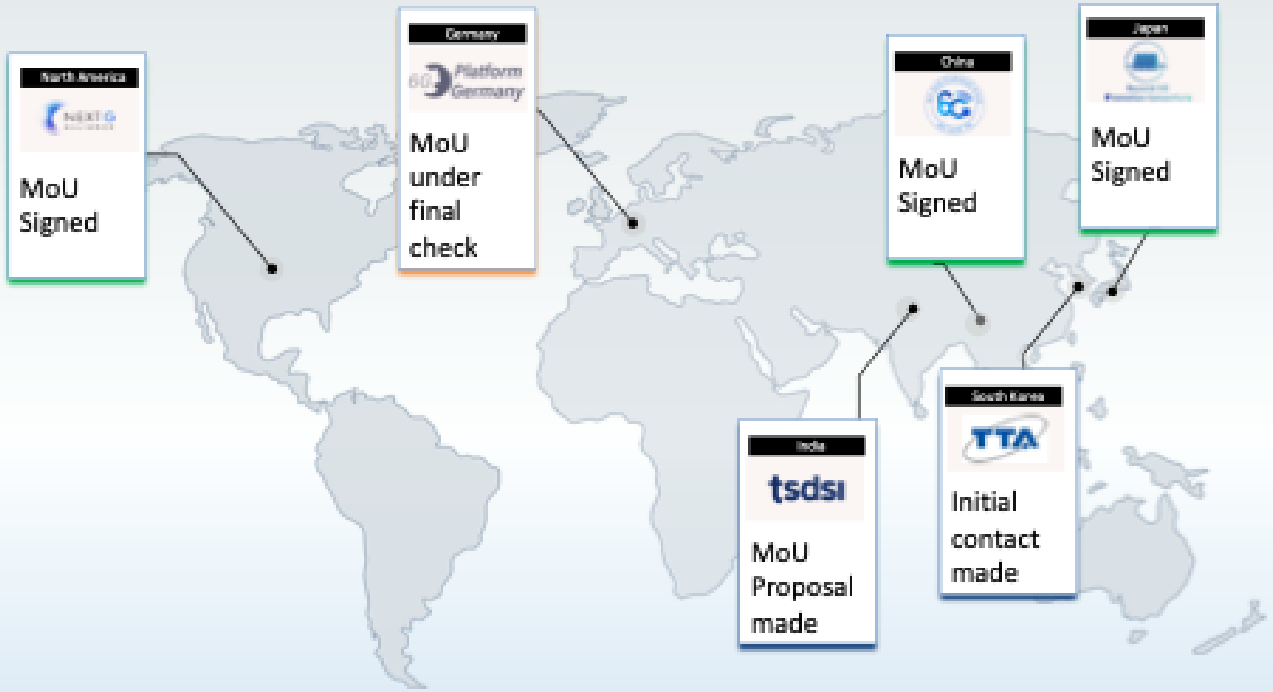
Sustainability /SDG's + Security/Trust/Resilience

- https://hexa-x.eu/deliverables/ ➔ **USE CASES, TECHNOLOGIES**
- https://5g-ppp.eu/wp-content/uploads/2021/06/WhitePaper-6G-Europe.pdf

Beyond 5G/6G Timeline



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

SNS JU First Call 2022: Funding and results

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

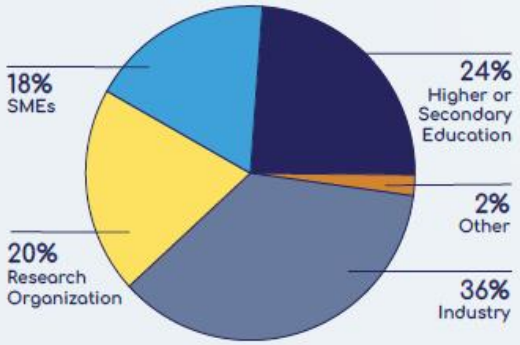
STREAM D (IA): Large Scale SNS Trials and Pilots with Verticals

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

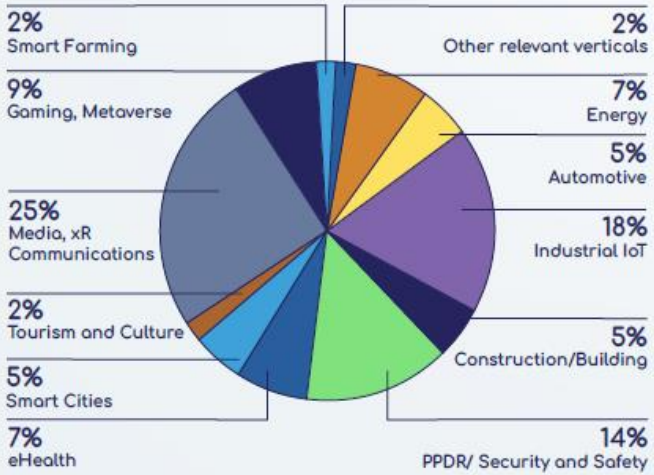
STREAM C (RIA): SNS experimental infrastructures

PHASE 1 PROJECTS TO START 1/1/2023

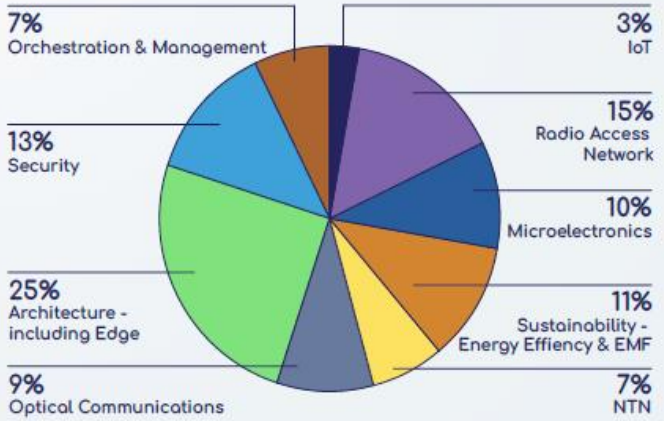
35 R&I Projects, 9 Key Technological Areas, 250 M€ Investments



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

SNS R&I Work Programme 2023-2024

✓ SNS R&I Work Programme 2023 available online

✓ Call 2 to open on 17 January 2023

✓ InfoDay on 23 January 2023

132M€ in 2023

2023

Low TRL topics including those not covered during the 1st call

- Architecture
- Wireless
- Infrastructure & devices
- Security & Service Provision
- Micro-electronics for 6G

Additionally

- Collaboration EU -USA

Stream B (90M€ - RIA): Research for technology advancement towards 6G

2024

PoC and Standardization

- Architecture
- Wireless
- Infrastructure & devices
- Security & Service Provision

Additionally

- Collaboration EU with JP&SK
- Sustainability lighthouse

- 1 federation & EU-US cooperation

Stream C (14M€ - RIA): SNS experimental infrastructures

- Microelectronics for 6G lighthouse

- Automotive
- Health, Smart Cities, Farming, Education (one or more)

Stream D (27M€ - IA): Large Scale SNS Trials and Pilots with Verticals

- Vertical use cases implementing 6G Vision

❖ Societal Challenges

CSA (1%): Support Action

❖ SNS Operational Support

More Information

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

SNS Lunchtime Webinar 1: Stream B5, C & D projects addressing 6G Holistic System, SNS experimental Infrastructures & SNS Large scale Trials and Pilots**;**

SNS Lunchtime Webinar 2: Stream A Smart Coms Components, Systems and Nets. for 5G Evolution

SNS Lunchtime Webinar 3: Stream B1 & B4 projects, Architecture & Secure Services and Security:

SNS Lunchtime Webinar 4: Stream B2 & B3: Wireless Coms and Signal Processing & Coms Infrastructure and Devices;

https://www.eucnc.eu/