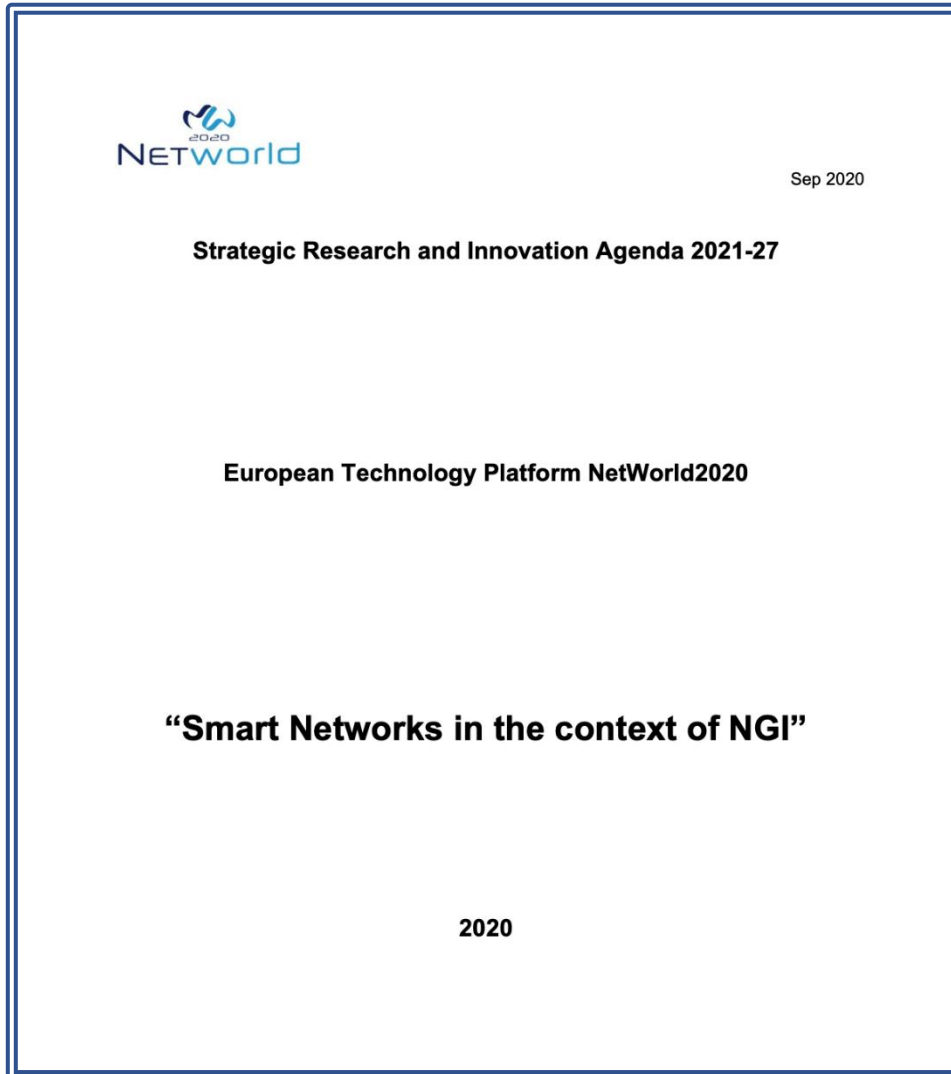
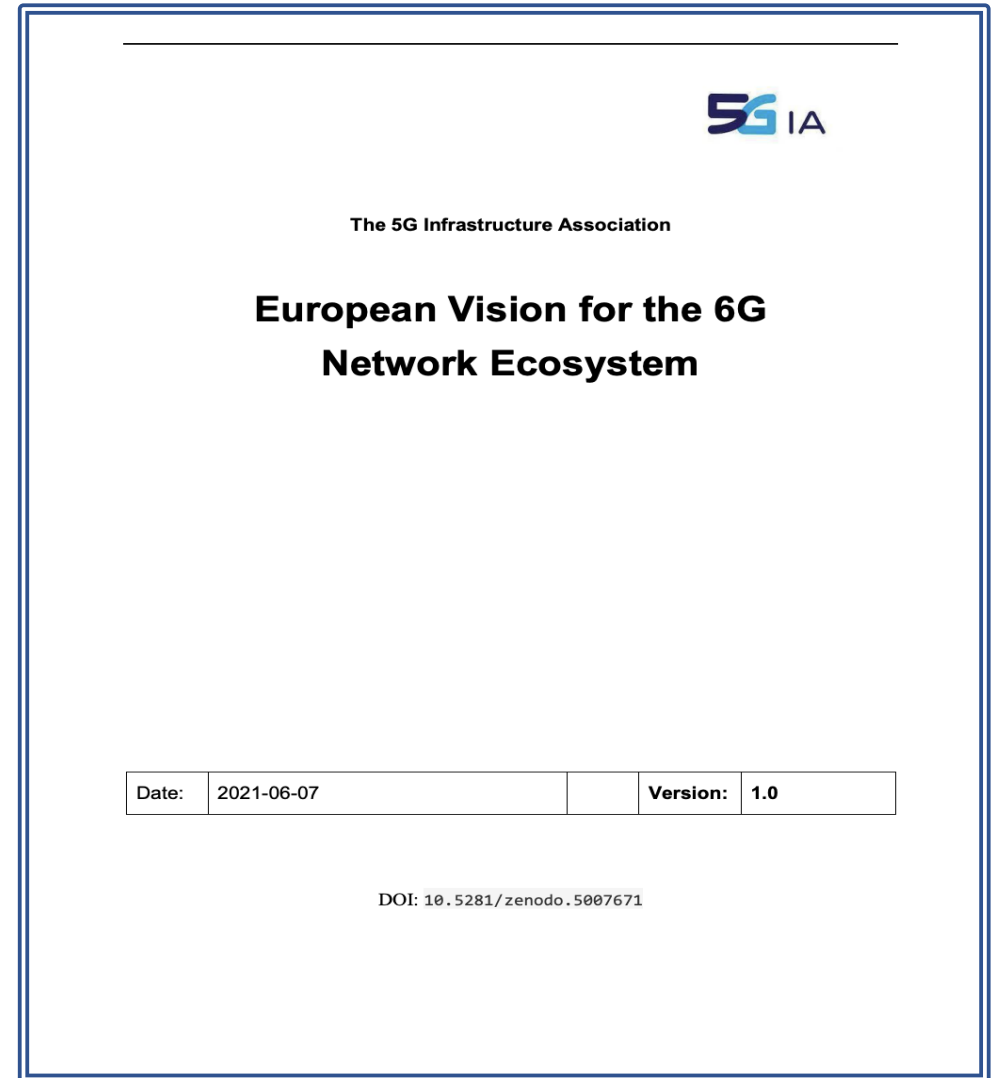


# Introduction to the SNS R & I Work Programme



Source: <https://bscw.5g-ppp.eu/pub/bscw.cgi/d367342/Networld2020%20SRIA%202020%20Final%20Version%202.2%20.pdf>



Source: <https://5g-ppp.eu/wp-content/uploads/2021/06/WhitePaper-6G-Europe.pdf>

➤ Objectives

- **HEU Key Strategic Objective A:** *“Promoting an open strategic autonomy by leading the development of key digital, enabling and emerging technologies, sectors and value chains to accelerate and steer the digital and green transitions through human-centred technologies and innovations.”*
- **HEU Key Strategic Objective C:** *“Making Europe the first digitally led circular, climate-neutral and sustainable economy through the transformation of its mobility, energy, construction and production systems.”*
- **Foster Europe’s technological leadership** in digital technologies and in future emerging enabling technologies

- Broader scope than simply improving the network performance
- Bring new service capabilities with wider economic implications (e.g., Internet of senses, digital twins, immersive environments, holographic communications)
- Target several EU policies (e.g., Green deal, cyber security, etc.)
- Consider a full value chain approach from end-devices to cloud solutions and services
- Consider requirements and advancements in various related technological fields (e.g., AI/ML, HPC, micro-electronics, photonics, IoT, blockchain technologies)

➤ **Related UN sustainable Development Goals**

- ✓ **SDG 8:** Promote sustained, inclusive, and sustainable economic growth: achieve higher levels of economic productivity through diversification, technological upgrading, and innovation.
- ✓ **SDG 9:** Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation, upgrade infrastructure and retrofit industries to make them sustainable with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes.
- ✓ **SDG 11:** Make cities and human settlements inclusive, safe, resilient, and sustainable
- ✓ **SDG13:** Climate Action: Support smart low carbon lifestyles, monitoring emissions, and shaping demand in transport and energy, enabling resilient mission critical communications in extreme weather (vertical markets: transport, health, and public safety)

- **Complementary Issues:** Privacy, EMF Awareness and transmission power reduction
- **Target 6G KPIs** (throughput, reliability, delay, jitter, spectral efficiency, etc.), **but also**
- **Target KVIs:**
  - Democracy (privacy, fairness, digital inclusion, trust),
  - Ecosystem (Sustainability, Business value, economic growth, open collaboration, new value chain),
  - Innovation (Safety Security, Regulation, Responsibility, Energy Consumption)

## ➤ Additional Goals of the SNS

- ✓ Preserve European competitiveness and sovereignty.
- ✓ Bring new actors from, and beyond the verticals.
- ✓ Contributions from industry, Research and Technology Organizations (RTO), academics and Small and Medium-sized Enterprises (SMEs) actors in the connectivity, IoT and cloud/IT domains
- ✓ Complemented where applicable, by adequate participation of the micro-electronics industry from the onset of the partnership, in view of their potential impacts at downstream standardisation level.
- ✓ Provide a stable experimental framework towards minimising risks and validating core technologies.
- ✓ Provide a unified consensus framework promoting a European approach towards 6G, facilitating international cooperation and placing Europe on par with other regions having started significant 6G initiatives (USA, China, Republic of Korea, Japan).

Mobilize EU ICT sector

Build experimental frameworks

Achieve unified global consensus

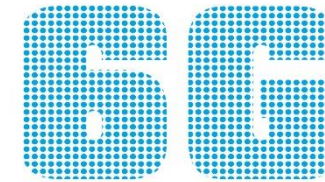
Preserve EU competitiveness and  
sovereignty



**5G Evolution (40%) → evolutionary path**

**Stream A (17,5% - RIA):** Smart communication components, systems and networks for 5G mid-term Evolution systems

**Stream D (~20% - IA):** Large Scale SNS Trials and Pilots with Verticals



**6G (60%) → revolutionary path**

**Stream B (~50% - RIA):** Research for revolutionary technology advancement towards 6G

**Stream C (~10% - RIA):** SNS experimental infrastructures

**CSAs – 2%**





5G Evolution (40%) → evolutionary path

→ revolutionary path

**Stream A (17,5% - RIA):** Smart communication components, systems and networks for 5G mid-term Evolution systems

**Stream B (32,5% - RIA):** Research for revolutionary technology advancement towards 6G

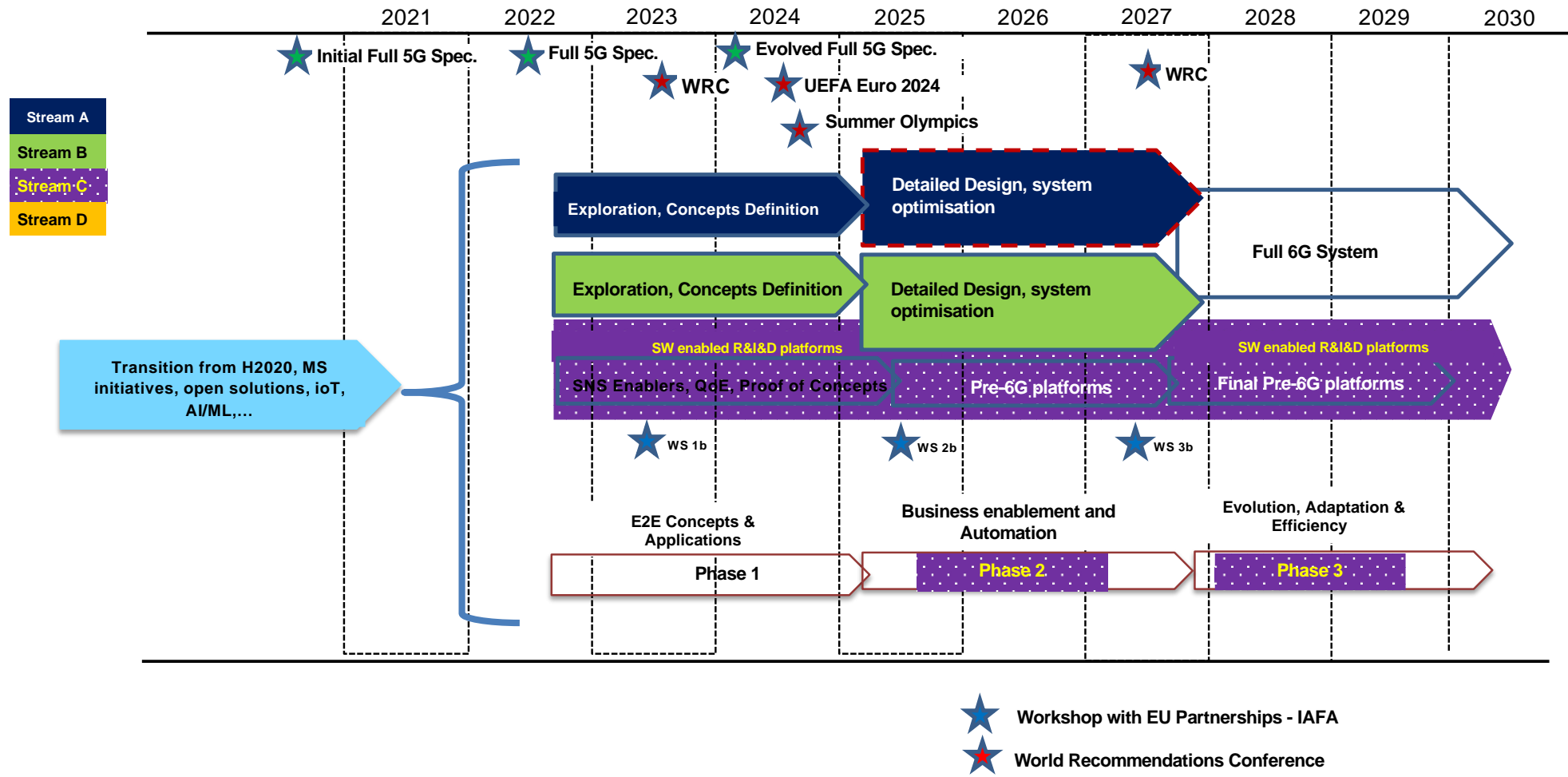
**Stream D (~20% - IA):** Large scale trials and Pilots with

**Stream C (~10% - RIA):** SNS experimental infrastructures

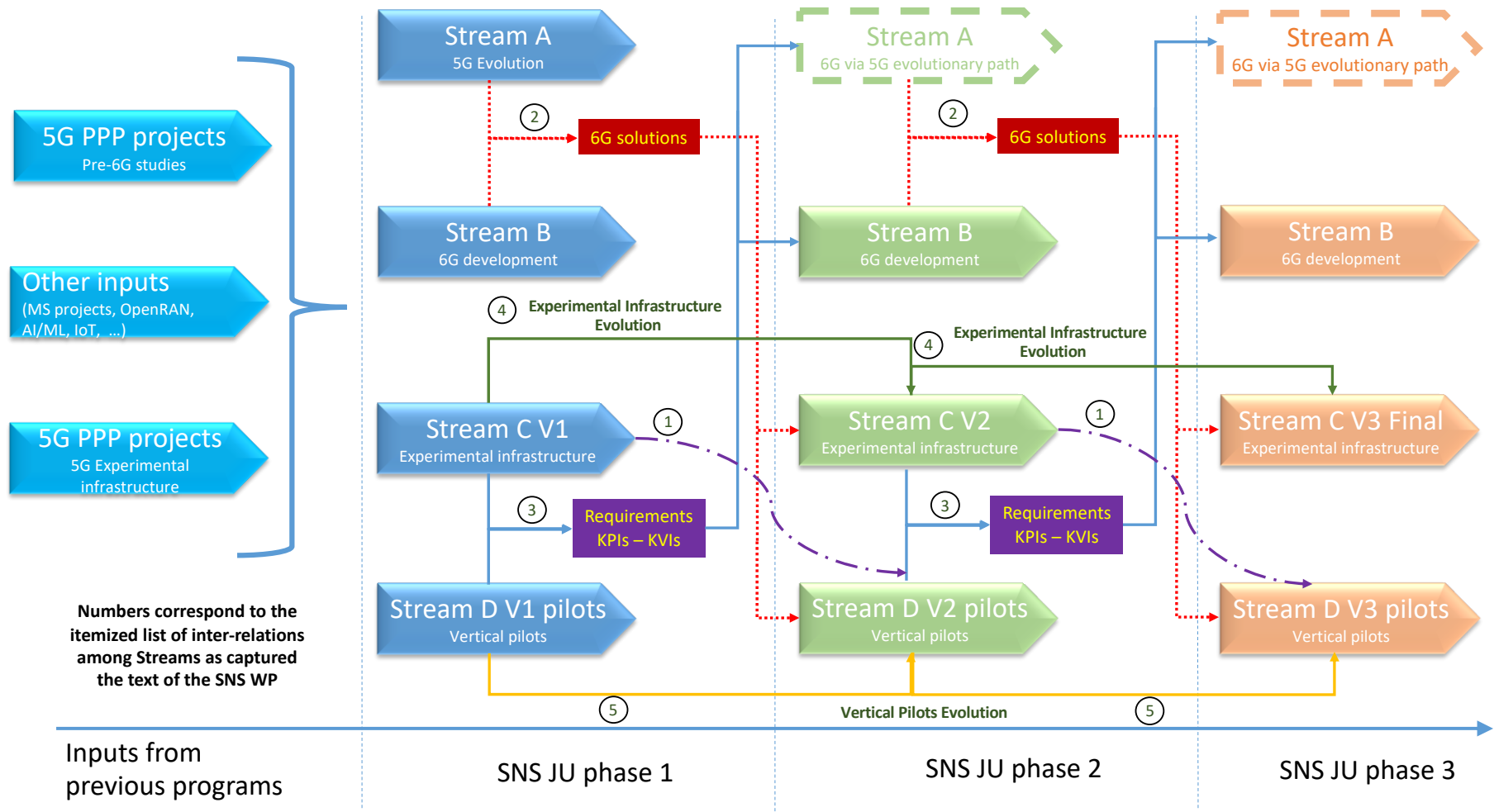
**CSAs – 2%**

Content-wise it is an ambitious and inclusive WP accepted by the community

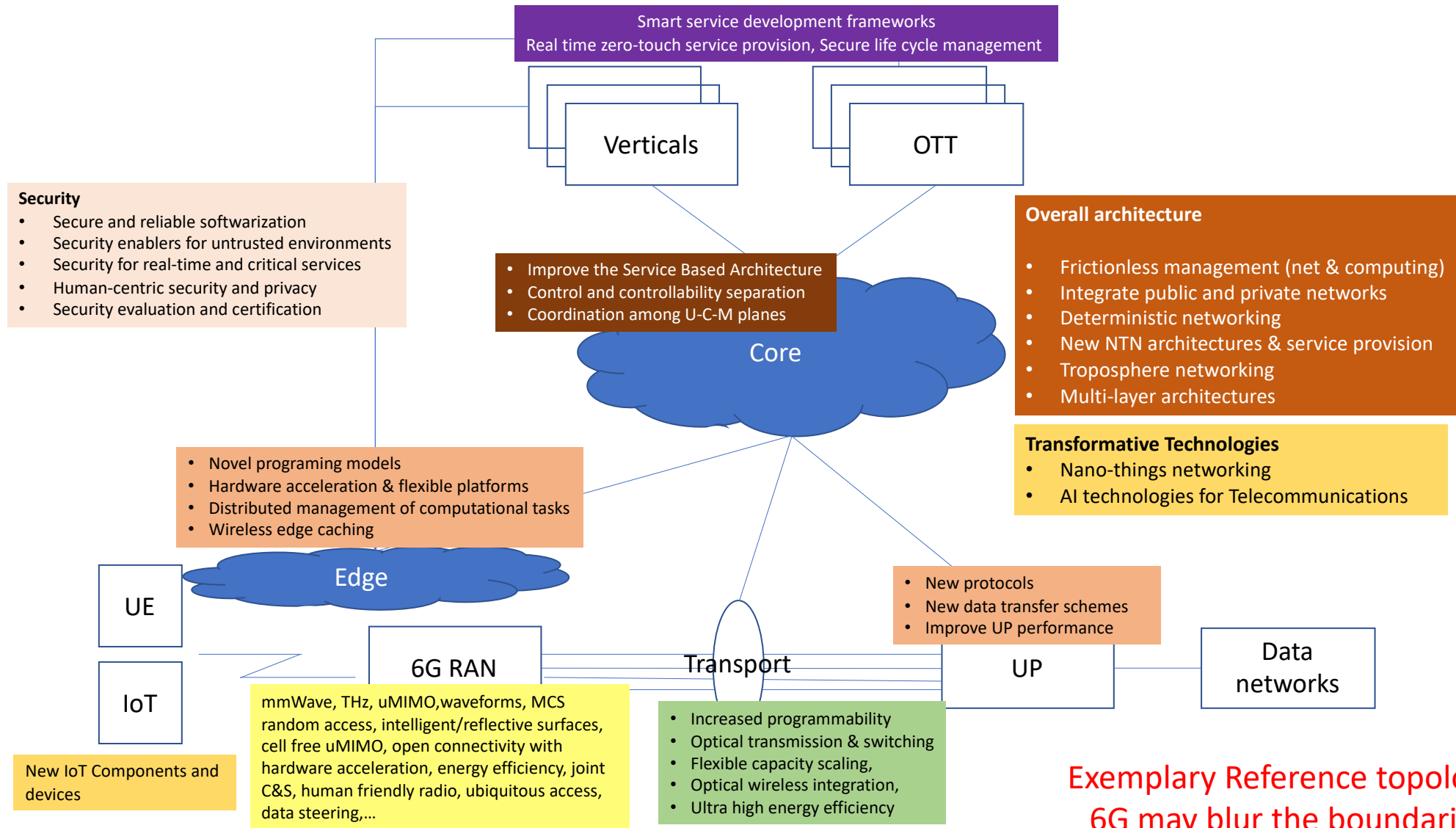
# SNS Proposed Roadmap



# SNS R&I WP: Linking between Streams and Phases



# A high-level view



Exemplary Reference topology domain –  
6G may blur the boundaries between  
network domains

6G will not be a sprint but a marathon

It will take 10 years from first research to deployment  
=> Long term commitment

Need continuity and stable ecosystem for some topics  
=> Maximize long term commitment of key actors

Balance between openness and need for continuity