Key orientations of the SNS R&I Work Programme 2023

Pavlos Fournogerakis, Programme Officer, SNS JU
SNS JU Work Programme 2021-2022
~250 M€: 35 R&I Projects selected
⇒ Some Gaps of Coverage

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

**Stream B (RIA):** Research for revolutionary 6G technology and systems

**Stream C (RIA):** SNS experimental infrastructures

**Stream D (IA):** Large-scale SNS Trials and Pilots with Verticals
SNS JU Call 1 (2022): Funding and results

PHASE 1 PROJECTS TO START 1/1/2023
35 R&I Projects, 9 Key Technological Areas, 250 M€ Investments

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

Gaps Stream B:

- Wireless for below 100 GHz communication and L2 solutions
- Spectrum re-farming and re-utilization
- Nano-things networking
- Troposphere networking
- Visible light communications
- Missing aspects in Architecture and Security Strands (e.g., energy efficiency enablers, new communication paradigms with enhanced intelligence, service deployment for complex services, secure time sensitive and computation intensive applications, zero-touch integrated security deployment)

Stream C and D main gaps:

- Federating/holistic test platform; some use cases (e.g. automotive)
Towards SNS Phase 2 and 2023-(24) Work Programme

• Stream A discontinued as comes too late to further influence 5G Advanced standardization). Remaining topics all focused on 6G relevance (long term)
• Closing the gap with phase 1;
• New issues:
  • Microelectronics coverage (2023, 2024), KDT cooperation (focus topic)
  • Sustainability (2023 general objective, 2024 flagship)
  • Policy oriented topic (2023, societal challenges)
  • International cooperation (2023 US, 2024 JP, RoK- TBC)
• Continuity and expansion of Streams B, C, D topics
Stream B orientations

• Still early phases of 6G ➔ keep focus on low TRL topics
• Phase 1 topics architecture, wireless, security, com technologies still relevant with some adaptation to avoid overlap with Phase 1 projects
• Importance to mobilize the microelectronics sector, especially if new radio tech is needed (but not only radio)
• Expand International cooperation with the US (Trade and Technology Council conclusions, 6G-IA MoU of cooperation with NextG Alliance)
• Start preparing for standardization phase (indicative opening around 2025)
Stream C orientations

- Selected phase 1 projects quite focused per application/technology
- May need a more holistic project, with large set of potential service offering
- Federation of platforms as a next step towards a pan European, cross platform framework
- Potential to open federation to non-EU platform for global experiments
- Potential synergies with developments from Member States initiatives
- Potential to integrate KDT Projects outcomes into SNS Platforms
- Reusability & evolvability, accessibility & openness, E2E, full value chain…
Stream D orientations

• The validation of SNS KPIs and KVIs in the context of very advanced use cases
• Open vertical pilots to focused set of use cases, either because specifically important or because not so well covered by Phase 1 projects
• Allow vertical pilots using technologies developed in phase 1, following the spiral model.
• Leverage existing (accessible & open) platforms (e.g. developed under Stream C).
• Evaluation of sustainability aspects
• Create a strong link with vertical industries from the onset
CSA orientations

• Address public policy objectives as well as existing and future legislation and guidance notably in the area of societal benefits, security/trust/resilience, sustainability and industrial competitiveness
• Identify potential non technological roadblocks towards wider acceptance of 6G technologies
• Raise awareness on the relevant framework taking into account various societal/policy issues
• Support other EU projects and SNS Working Groups on the relevant topics
**SNS R&I Work Programme 2023-2024**

2023:
- Low TRL topics including those not covered during the 1st call
  - Architecture
  - Wireless
  - Infrastructure & devices
  - Security & Service Provision
  - Micro-electronics for 6G
  - Collaboration EU - USA
  - 1 federation & possible extension with national testbeds
  - Automotive
  - Health, Smart Cities, Farming, Education (one or more)
  - Societal Challenges

132M€ in 2023

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

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

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

CSA (1M€): Support Action

2024:
- PoC and Standardization
  - Architecture
  - Wireless
  - Infrastructure & devices
  - Security & Service Provision
  - Microelectronics for 6G lighthouse
  - Collaboration EU with JP&SK
  - Sustainability lighthouse

- Vertical use cases implementing 6G Vision
- SNS Operational Support

Eligibility Criterion: at least 50% of the budget implemented by 6G-IA members
Eligibility Criterion: restricted to 6G-IA members with provision of 20% for cascade funding (open to all)

Min IKOP as one evaluation criterion
SNS R&I Work Programme 2023-2024

<table>
<thead>
<tr>
<th>Stream</th>
<th>Percentage</th>
<th>Cumulative Budget</th>
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<tbody>
<tr>
<td>Stream B</td>
<td>~68%</td>
<td>Research for technology advancement towards 6G</td>
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<tr>
<td>Stream C</td>
<td>~9%</td>
<td>SNS experimental infrastructures</td>
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<tr>
<td>Stream D</td>
<td>~21%</td>
<td>Large Scale SNS Trials and Pilots with Verticals</td>
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<tr>
<td>CSA</td>
<td>~2%</td>
<td>Support Action</td>
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2023 EC Budget: 132 M€
2024 EC Budget: 129 M€
## Call 2 budget

<table>
<thead>
<tr>
<th>Streams / Topics</th>
<th>Topic (Aggregated) Budget (in M€)</th>
<th>Targeted number of projects</th>
<th>Indicative EU contribution per project</th>
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<tbody>
<tr>
<td><strong>HORIZON-JU-SNS-2023-STREAM-B (RIA)</strong></td>
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<tr>
<td>01-01: System Architecture</td>
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<td>01-02: Wireless Communication Technologies and Signal Processing</td>
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<td>01-03: Communication Infrastructure Technologies and Devices</td>
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<td>01-04: Reliable Services and Smart Security</td>
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<td>01-05: Microelectronic-based solutions for 6G networks</td>
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<td>01-06: EU-US 6G R&amp;I Cooperation</td>
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<td><strong>HORIZON-JU-SNS-2023-STREAM-C (RIA)</strong></td>
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<td>01-01: Complementary SNS experimental Pan-EU federated Infrastructure</td>
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<td><strong>HORIZON-JU-SNS-2023-STREAM-D (IA, with FSTP)</strong></td>
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<td>01-01: SNS Large Scale Trials and Pilots (LST&amp;Ps) with Verticals (IA) – Focused Call</td>
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<td>10 to 14</td>
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<td><strong>HORIZON-JU-SNS-2023-STREAM-CSA (CSA)</strong></td>
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<td>01-01: SNS Societal Challenges</td>
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<td><strong>Total (M€)</strong></td>
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**Total (M€)**: 132