

„Europos horizonto“ programos institucinė partnerystė

Smart Networks and Services Joint Undertaking (SNS JU)

Aktualūs kvietimai:

1. Communication Infrastructure Technologies and Devices – Standardisation and Follow-up/PoCs
2. Reliable AI for 6G Communications Systems and Services
3. International Collaboration – EU-ROK
4. Reliable Services and Smart Security–Standardisation and Follow-up/PoCs
5. International Collaboration – EU-JP
6. SNS Operations and Output optimisation
7. SNS Microelectronics Lighthouse
8. Wireless Communication Technologies and Signal Processing – Standardisation and Follow-up/PoCs
9. SNS Large Scale Trials and Pilots (LST&Ps) with Verticals
10. System Architecture - Standardisation and Follow-up/PoCs
11. Sustainability Lighthouse

Kvietimas:	Komunikacijų infrastruktūros technologijos ir įrenginiai Communication Infrastructure Technologies and Devices – Standardisation and Follow-up/PoCs
Programos kodas:	HORIZON-JU-SNS-2024-STREAM-B-01-03 Nuoroda į kvietimą čia Detalus programos aprašymas ir bendrieji reikalavimai čia
Terminas:	Paraiškas teikti iki 2024 m. balandžio 18 d., 17 val. (Bruselio laiku)
Galimi pareiškėjai:	Any legal entity , regardless of its place of establishment Plačiau čia
Sritis ir galimi sprendimai:	Scope: <ul style="list-style-type: none">• Ultra-high energy efficiency especially in optical networks• 3D networking for 6G networks• Development of low-energy communication solutions• New IoT components and devices• Unified NTN service provision• Integration of Optical and Wireless Technologies Expected Outcomes: <ul style="list-style-type: none">• Advanced solutions and technologies for optical, terrestrial and non-terrestrial networks including the integration of wireless and optical networks.• Energy-efficient solutions for optical networks from an architectural, switching, hardware and software implementation perspective.

	<ul style="list-style-type: none"> • Unification of terrestrial and non-terrestrial networks (3D networking) in the overall architecture and the physical layer for a flexible access to different networks by end users, embedding, where relevant, AI in network and RAN procedures. • Development of low-power communication systems, especially for short-range networks, to increase flexibility compared to cable systems and interconnections of multiparty edge/IoT systems, including support for zero energy devices and related energy-management solutions. • Non-terrestrial – open and disaggregated where relevant – network architecture to optimize ubiquitous service provisioning, flexibility, scalability and cost efficiency. The function split between the ground segment and the space segment should support the technical 6G KPIs and sustainability in terms of energy consumption. • Optimal combination of optical and wireless technologies and their integration in the overall network architecture for the best exploitation of the available frequency spectrum, minimisation of network deployment cost and reduction of the overall energy consumption. • Algorithms, software and hardware implementations where appropriate, which can be used for PoC and later trials systems. • Dissemination of solutions for international consensus building, which can be exploited in standardisation activities. • Contributions to international standardisation.
Technologijų parengtumo lygiai:	Activities are expected to start at TRL 2-3 and to reach TRL 4 by the end of the project, and if/where relevant up to maximum TRL 5 (mature 6G technologies and solutions for verticals). Some parts of the project may only target TRL 3 by the end of the project – see General Annex B .
Paramos tipas, intensyvumas	Type: Grant Amount: 8 000 000 EUR per grant Number of grants: 2 Intensity: 100% for non-for-profit organizations and 90% for for-profit organizations.

Kvietimas	Patikimas DI sprendimas 6G komunikacijos sistemoms Reliable AI for 6G Communications Systems and Services
Kodas	HORIZON-JU-SNS-2024-STREAM-B-01-08 Nuoroda į kvietimą čia Detalus programos aprašymas ir bendrieji reikalavimai čia
Terminas iki kada galima teikti paraiškas	Iki 2024 m. balandžio 18 d., 17 val. (Bruselio laiku)
Galimi pareiškėjai	Any legal entity , regardless of its place of establishment.
Sritis ir galimi sprendimai:	<p>Scope:</p> <p>The focus of this Strand is on several complementary issues and applicants may select several or all the below-mentioned issues. The main goal of this project is to fill the gaps and work on the end-to-end system integration of SNS AI/ML solutions, or national level developed AI/ML solutions and not to focus on dedicated AI/ML problems of specific network domains. The targeted project scope includes:</p> <ul style="list-style-type: none"> • Development of a reference framework for end-to-end AI usage for the telecommunications domain in relation to 6G, including methodologies for centralized, distributed and federated applications, reference use cases, data acquisition and generation, repositories, curated training and evaluation data, as well as the technologies and functionalities needed to use it as a benchmarking platform for future AI/ML solutions for 6G networks.

- Development of appropriate data infrastructure and functionalities that will enable novel AI-based services as well as AI as a Service to vertical industries.
- Models for AI costs and benefits in telecommunications applications. Typical 6G metrics should be able to be evaluated, including but not limited to data rate, latency, density, energy efficiency, flexibility and performance, and/or security and privacy, but other value metrics can be considered as well.
- Solutions that will guarantee reliable use of the technology and build trust in 6G and services enabled by 6G.
- The framework should address a wide range of open issues indicatively and not limited to, e2e AI/ML conflict resolution, placement of AI at appropriate places inside the network (e.g., edge), provide energy friendly AI/ML solutions, how to handle vast amount of data for AI/ML purposes using computing/storage and network resources in a scalable way, and any other advances needed to support the overall goal.
- Where relevant, harmonisation/coordination with Member States or Associated countries 6G initiatives, as well as with the existing SNS EU-US cooperation initiative (HORIZON-JU-SNS-2023-STREAM-B-01-06: EU-US 6G R&I Cooperation).
- Production of data sets should cover as many areas as possible from the actual operation of 6G networks (user mobility patterns, RAN/Transport/Core data traffic patterns, network failures or security attacks, computing usage patterns etc.) including real and synthetic data, or even appropriately adapted data from open free data sets.
- Production of data sets and validation methodologies, contributing to 6G Human Centricity and Societal acceptance and in compliance with the rules of data legislation. Development of guidelines, for ethical considerations, and suggestions to regulatory frameworks are also desirable.
- Development of solutions that will address the need for robust and trustworthy AI/ML validating the “quality” datasets from different scenarios, which influences the outcomes of the AI systems, as well as the corresponding outcome of AI.
- Verification and validation of AI techniques over experimental platforms, additionally providing the associated datasets.

Expected Outcomes:

- Realistic applicability of AI at large scale in 6G networks for natively supporting AI architectures, common data sets and/or federated learning methodologies and assessment models, including re-training of models with the introduction/update of the data sets; AI/ML solutions that will have impactful contribution to standardisation activities; Interpretability solution exploring standard-compliance testing & debugging techniques.
- Development of curated data sets of realistic 6G scenarios (using new real and/or synthetic data sets) for reference usage in telecommunication research and standardisation, targeting their wide acceptance and future usage for benchmarking by future EU R&I activities.
- Analysis, aggregation and harmonisation of results from existing projects and creation of an overall framework for benchmarking and calibration, end-to-end testing and evaluation of AI solutions for 6G networks.
- Metrics and models to assess the pros and cons of AI technologies in telecommunications, including aspects as energy efficiency, explainability, reliability, safety and security, non-discrimination, privacy and performance as well as usability & accessibility for users. Specific focus should be on energy-efficiency and computational complexity that are still open issues for real-time hardware.
- Recommendations for policy and regulatory guidelines on the development and usage of AI solutions for network optimisations and provision of AI as a service.
- Development of a trustworthy AI framework which should be addressed in each stage of the AI system building (from data to model development etc.).
- Focus should be on implementation and connected to current standardization efforts and state-of-the-art Open Source frameworks and tooling.

Technologiju parengtumo lygiai:

Activities are expected to start at [TRL](#) 2-3 and to reach TRL 4 by the end of the project, and if/where relevant up to maximum TRL 5 (mature 6G technologies and solutions for verticals).

	Some parts of the project may only target TRL 3 by the end of the project – see General Annex B .
Paramos tipas, intensyvumas	Type: Grant Amount: 6 000 000 EUR per grant Number of grants: 1 Intensity: 100% for non-for-profit organizations and 90% for for-profit organizations.

Kvietimas	Tarptautinis bendradarbiavimas – EU-ROK International Collaboration – EU-ROK
Kodas	HORIZON-JU-SNS-2024-STREAM-B-01-08 Nuoroda į kvietimą čia Detalus programos aprašymas ir bendrieji reikalavimai čia
Terminas iki kada galima teikti paraiškas	Iki 2024 m. balandžio 18 d., 17 val. (Bruselio laiku)
Galimi pareiškėjai	Any legal entity , regardless of its place of establishment.
Sritis ir galimi sprendimai:	<p>Scope:</p> <ul style="list-style-type: none"> Algorithms for 6G RAN that improve transmission performance and reduce complexity in wireless transmission through machine learning-based channel estimation, channel state information transmission, channel decoding, distributed MIMO and beam management. Procedures and protocols empowered by AI that improve efficiencies of the wireless communications through mobility management, wireless resource management, automated maintenance, and self-optimization of network parameters. Architectural framework addressing the interoperability needs for integrated device-network approaches that will use the specified AI/ML mechanisms demonstrating 6G functional properties. Specific focus will be placed on standardization opportunities to support such interoperability schemes. The project will focus on what the radio access network side will be able to deliver to terminals using AI solutions for demanding 6G application and services. The project should provide hooks that will allow viable streamlining of interfaces and mechanisms that are expected to be developed by mirror R&I activities in ROK where the focus could be on the devices' side. Target would be to streamline views on a) the use of AI and b) potential extensions on the radio interface. <p>Expected Outcomes:</p> <ul style="list-style-type: none"> EU-ROK research collaboration in targeting Radio Access Networks (RAN) and integrated device-network approaches, evolving through 6G standardization discussions and paving the way for future advancements towards AI-native radio access networks. Application of AI/ML algorithms to wireless networks for the automation of base station management, and to user terminal traffic, for optimizing various base station control parameters for network energy saving or network failure recovery. Definition of an architecture framework addressing interoperability needs, that future 6G products have to achieve. Contribution to interoperability specifications through related standardization activities for existing and new interfaces.

	<ul style="list-style-type: none"> Alignment of views on radio interface concepts to support demanding 6G applications and services for future exploitation in international standardization.
Technologijų parengtumo lygiai:	Activities are expected to achieve TRL 2-4 by the end of the project – see General Annex B .
Paramos tipas, intensyvumas	Type: Grant Amount: 3 000 000 EUR per grant Number of grants: 1 Intensity: 100% for non-for-profit organizations and 90% for for-profit organizations.

Kvietimas	Patikimos paslaugos ir sumani apsauga-standartizavimas ir koncepto patvirtinimas Reliable Services and Smart Security–Standardisation and Follow-up/PoCs
Kodas	HORIZON-JU-SNS-2024-STREAM-B-01-04 Nuoroda į kvietimą čia Detalus programos aprašymas ir bendrieji reikalavimai čia
Terminas iki kada galima teikti paraiškas	Iki 2024 m. balandžio 18 d., 17 val. (Bruselio laiku)
Galimi pareiškėjai	Any legal entity , regardless of its place of establishment.
Sritis ir galimi sprendimai:	<p>Scope:</p> <p>The focus of this Strand is on several complementary issues mentioned below and applicants may select one or more of these issues.</p> <ul style="list-style-type: none"> Exploitation of (distributed) trusted AI/ML for 6G infrastructures. Cooperative holistic E2E security and privacy solutions for 6G architectures. Smart and trustworthy service frameworks Efficient security and privacy enablers. Zero-touch integrated security deployment, considering virtualized environments and highly distributed infrastructures. Integration of secured 6G communications via Quantum key distribution and post-quantum cryptography support deals with ensuring long-term security for 6G networks in end-to-end network infrastructure, particularly considering 6G requirements. Timing sensitive, and time responsive software and related hardware technologies for distributed, multi-stakeholder multi-system service provision <p>The target outcomes address consolidation of results on:</p> <ul style="list-style-type: none"> AI technology applied to security and service deployment in different aspects. Beyond perimeter security strategies and disruptive security and reliability scenarios, including energy efficiency aspects. Availability accessibility, and affordability of technologies supporting the necessary levels of trustworthiness, resilience, openness, transparency, and dependability expected under the EU regulations (such as GDPR and Cyber Security Act).

	<ul style="list-style-type: none"> • Availability accessibility, and affordability of technologies ensuring secure, privacy preserving and trustworthy services in the context of a programmable platform for the complete life cycle of services. • Quantum key distribution and post-quantum cryptography support ensuring long term security for 6G networks. • Efficient run-time service development methodologies able to operate across multiple stakeholders in an efficient way, to provide complex, multi-technology, dynamic services. • Service technologies for time-sensitive and computationally intensive applications, able to optimize deployment considering aspects as energy consumption, reliability and security levels. • Algorithms, software and hardware implementations where appropriate, which can be used for PoC and later trials systems Dissemination of solutions for international consensus building, which can be exploited in standardisation activities. • Contributions to international standardisation.
Technologijų parengtumo lygiai:	Activities are expected to start at TRL 2-3 and to reach TRL 4 by the end of the project, and if/where relevant up to maximum TRL 5 (mature 6G technologies and solutions for verticals). Some parts of the project may only target TRL 3 by the end of the project – see General Annex B .
Paramos tipas, intensyvumas	Type: Grant Amount: 16 000 000 EUR per grant Number of grants: 2 Intensity: 100% for non-for-profit organizations and 90% for for-profit organizations.

Kvietimas:	Tarptautinis bendradarbiavimas: Europos Sąjunga ir Japonija International Collaboration – EU-JP
Programos kodas:	HORIZON-JU-SNS-2024-STREAM-B-01-05 Nuoroda į kvietimą čia Detalus programos aprašymas ir bendrieji reikalavimai čia
Terminas:	Paraiškas teikti iki 2024 m. balandžio 18 d., 17 val. (Brukselio laiku)
Galimi pareiškėjai:	Any legal entity , regardless of its place of establishment Plačiau čia
Sritis ir galimi sprendimai:	Scope: The cooperation with Japanese stakeholders targets native and privacy-preserving AI platforms in direct connection to the related research and innovation work in Japan. The scope covers all following topics: <ul style="list-style-type: none"> • AI-enabled radio access network (RAN) solutions including physical layer and signal processing technologies for 6G RAN such as distributed MIMO and user centric network, RIS implementations and AI-enabled integrated RAN/Core network functions. This domain will also allow to leverage the Open RAN/virtualisation experience of Japan towards interoperability alignment of architectural approaches in EU and Japan. • Streamlined views on a) the use of AI and b) potential extensions on the radio interface. • Impactful contributions to standardization bodies are also in scope of this project. Expected Outcomes:

	<ul style="list-style-type: none"> • EU-Japan research collaboration for the evolution of Radio Access Networks (RAN), evolving following 6G standardization orientations, paving the way for future advancements towards AI-native radio access networks. • Development, testing and evaluation of AI/ML algorithms for wireless networks to improve the performance of the system. • Proof of concept architecture framework demonstrating the way forward for the required interoperability specifications, that future 6G RAN and integrated RAN-Core network approaches have to achieve. • Alignment of views on radio interface concepts for future exploitation in international standardisation as well as contributions to standardisation bodies and fora, supporting global views on open standards and interoperability, with particular focus on developments ITU-T, ITU-R, 3GPP and other related standardization organizations.
Technologijų parengtumo lygiai:	Activities are expected to achieve TRL 2-4 by the end of the project – see General Annex B .
Paramos tipas, intensyvumas	Type: Grant Amount: 3 000 000 EUR per grant Number of grants: 1 Intensity: 100% for non-for-profit organizations and 90% for for-profit organizations.

Kvietimas:	SNS operacijos ir produkcijos optimizavimas SNS Operations and Output optimisation
Programos kodas:	HORIZON-JU-SNS-2024-STREAM-CSA-01 Nuoroda į kvietimą čia Detalus programos aprašymas ir bendrieji reikalavimai čia
Terminas:	Paraiškas teikti iki 2024 m. balandžio 18 d., 17 val. (Briuselio laiku)
Galimi pareiškėjai:	Any legal entity , regardless of its place of establishment Plačiau čia
Sritis ir galimi sprendimai:	<p>Scope:</p> <p>The proposed CSA shall liaise with the SNS RIA and IA actions under all SNS Streams and the SNS JU to exploit synergies for:</p> <ul style="list-style-type: none"> • Stakeholder management towards R&I orientation and SNS cross-project coordination and cooperation (implementation of the cross-project cooperation contractual clause). • Europe wide cartography of relevant Smart Network initiatives and identification of strategic cooperation opportunities, in particular with initiatives at Member State/regional level. • Design upgrades and perform maintenance on the European SNS web site and program infrastructure (web sites, mail systems, repositories, etc.). • Working group management and organisation for issues of common interest, supporting a common EU 6G vision and its technological realisation. • Monitoring and communication with related European Member State initiatives (more about the scope). <p>Expected Outcomes:</p> <p>The prime objective of the coordination and support work is to facilitate the activities of the European SNS JU community and the related Work Programmes, building on the first phase activities, to integrate the second phase activities and prepare for subsequent phases.</p> <ul style="list-style-type: none"> • A seamless support from Phase 1 CSA projects for the Smart Networks Services (SNS) institutionalised European partnership and the related programmatic organisation through cross SNS projects coordination.

	<ul style="list-style-type: none"> • Organisation of the SNS as a coherent programme with clear links to the 6G Smart Networks and Services Industry Association and the EC via the partnership board and the JU Office and their strategic policies. • Support for the identification of strategic R&I orientations including at global level, the coordination of R&I results/initiatives at EU scale including Member State level initiatives, the dissemination and web presence, the organisation of Europe's contribution to standards, and the identification of international cooperation priorities across key regions. • Consolidation and further development of strategic promotion and communication activities, both at project and Office level (more expected outcomes).
Technologijų parengtumo lygiai:	Coordination and Support Action
Paramos tipas, intensyvumas	Type: Grant Amount: 4 000 000 EUR per grant Number of grants: 1 Intensity: 100% for non-for-profit organizations and 90% for for-profit organizations.

Kvietimas:	SNS mikroelektronikos kelrodis SNS Microelectronics Lighthouse
Programos kodas:	HORIZON-JU-SNS-2024-STREAM-C-01-01 Nuoroda į kvietimą čia Detalus programos aprašymas ir bendrieji reikalavimai čia
Terminas:	Paraiškas teikti iki 2024 m. balandžio 18 d., 17 val. (Briuselio laiku)
Galimi pareiškėjai:	Any legal entity , regardless of its place of establishment Plačiau čia
Sritis ir galimi sprendimai:	<p>Scope:</p> <p>The main target is the development of new, or evolution of existing, experimental platform(s), where solutions from the microelectronics domain developed either in the context of Phase 1 SNS WP, or Horizon Europe Cluster 4 WP, or the Chips JU will be validated in terms of performance and applicability for 6G networks. Microelectronics developments in the context of 6G national initiatives are also in scope. The experimental platform(s) are expected to mainly focus on the Radio Access Network computing and communication capabilities (potentially including solutions covering a wide spectrum e.g., from cmWave up to THz) providing solutions in key areas identified by the COREnect CSA project (more about the scope).</p> <p>Expected Outcomes:</p> <p>The main outcome will be the availability of an evolvable 6G experimental infrastructure for the duration of the SNS programme that covers as many capabilities as possible to, for example:</p> <ul style="list-style-type: none"> • Validate/demonstrate 6G candidate microelectronics technologies and systems as part of a representative end-to-end 6G architecture building on advanced components/HW technologies, Support where possible the development of synergies with 6G platforms developed in EU Member States (MSs) or Associated countries at national level in the context of 6G national R&I programmes, or other relevant industrial/research centre/academic activities. • Exploit the results and momentum of the EC 5G Infrastructure PPP ICT-42 COREnect CSA project, which has defined a roadmap for Microelectronic components for telecom systems and reinforced synergies with the Chips JU. • Integrate the solutions for the Radio Access part of the network, considering available solutions for future network implementation especially in the context of a future 6G disaggregated RAN and of the 6G convergence/virtualisation of data processing across the complete delivery chain, from RAN to data centre (more expected outcomes).
Technologijų parengtumo lygiai:	Activities are expected to achieve TRL up to 6 by the end of the project – see General Annex B

Paramos tipas, intensyvumas	Type: Grant Amount: 10 000 000 EUR per grant Number of grants: 1 Intensity: 100% for non-for-profit organizations and 90% for for-profit organizations.
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Kvietimas:	Belaidžio ryšio technologijos ir signalų apdorojimas – Standartizavimas ir koncepto patvirtinimas Wireless Communication Technologies and Signal Processing – Standardisation and Follow-up/PoCs
Programos kodas:	HORIZON-JU-SNS-2024-STREAM-B-01-02 Nuoroda į kvietimą čia Detalus programos aprašymas ir bendrieji reikalavimai čia
Terminas:	Paraiškas teikti iki 2024 m. balandžio 18 d., 17 val. (Brukselio laiku)
Galimi pareiškėjai:	Any legal entity , regardless of its place of establishment Plačiau čia
Sritis ir galimi sprendimai:	Scope: The focus of this Strand is on several complementary issues mentioned below and applicants may select one or more of these issues. Topics can be proposed for any existing and potential future frequency band. <ul style="list-style-type: none"> • Machine learning empowered physical layer evolutions to enrich/complement conventional model-based physical layer optimisation. • Novel techniques for integrated sensing and communication to maximise the efficiency of spectrum usage and minimise resources (hardware, energy consumption) including accurate location and positioning. • Cell-free and extreme exploitation of MIMO technologies potentially including reconfigurable surfaces considering but not limited to topics related to channel modelling of ultra-massive MIMO. • Key functionalities and technologies for 6G RAN system design • Seamless integration of multiple frequency bands (more about the scope). Expected Outcomes: <ul style="list-style-type: none"> • Methods for an efficient effective, affordable, and accessible use of frequency spectrum for joint communication and sensing built upon energy efficient radio solutions by meeting 6G technical KPIs. • Optimized radio physical layer solutions increasing availability empowered by machine learning under varying, dynamic and/or unknown channel conditions. Machine learning should adapt physical layer approaches and parameters for best exploitation of the radio channel capacity. • Development of algorithms and energy efficient implementations for massive MIMO systems to increase radio channel capacity, coverage improvements under difficult propagation conditions and very high accuracy in location and positioning. • Further innovative 6G RAN design by combining different physical layer functionalities and antenna concepts to meet challenging 6G technical requirements towards extremely high-throughput/low latency (more expected outcomes).
Technologijų parengtumo lygiai:	Activities are expected to achieve TRL up to 6 by the end of the project – see General Annex B
Paramos tipas, intensyvumas	Type: Grant Amount: 8 000 000 EUR per grant Number of grants: 2 Intensity: 100% for non-for-profit organizations and 90% for for-profit organizations.

Kvietimas	<p>SNS (Išmanaus tinklo ir paslaugų) didelės apimties bandymai ir vertikalieji bandomieji projektai</p> <p>SNS (Smart Network and Services) Large Scale Trials and Pilots (LST&Ps) with Verticals</p>
Kodas	<p>HORIZON-JU-SNS-2024-STREAM-D-01-01</p> <p>Nuoroda į kvietimą: čia</p> <p>Detalus programos aprašymas ir bendrieji reikalavimai čia</p>
Terminas iki kada galima teikti paraiškas	<p>Iki 2024 m. balandžio 18 d., 17 val. (Briuselio laiku)</p>
Galimi pareiškėjai	<p>Any legal entity, regardless of its place of establishment.</p>
Sritis ir galimi sprendimai:	<p>Scope:</p> <ul style="list-style-type: none"> • The target 6G systems validation work through large-scale trials focusses on use cases related to “sustainable 6G” and “6G for sustainability” targeting environmental, economic and societal sustainability goals. The projects are expected to cover at least: • Demonstration of clear benefits with stakeholders of the considered 5G advanced/ 6G technologies and architectures in terms of innovative 6G smart networks and services addressing multiple aspects (e.g., scalability, security, and performance improvements) in line with medium to long-term diverse socio-economic scenarios. • Special focus on targeting and achieving, by the end of the project, tangible results for environmental (e.g., optimize energy consumption, minimize CO₂ emissions, etc.), societal (e.g., inclusiveness, EMF exposure, trustworthiness, privacy, technology acceptance, etc.) and economic aspects (e.g., viability for vendors, network operators and vertical service providers benefits for local economies, potential new business entrants, affordability, etc). <p>The target outcomes address consolidation of results on:</p> <ul style="list-style-type: none"> • Evaluation, measurement and validation of the sustainability impact of advanced 5G/6G technologies in different or complex ecosystems for environmental, societal and economic aspects and for specific use-cases. • Use case specific reference sustainability models with a description, which sustainability parameters are considered. • Contribution to the further refinement of sustainable seamless E2E 6G test infrastructures with fine-tuned capability to integrate vertical use cases specific performance/KPI requirements, as applicable also across public and non-public networks and services. • Validated infrastructure core technologies and architectures across the value chain in the context of vertical large-scale pilot use-case implementations and relevant deployment scenarios targeting tangible sustainability results. • Viable business models for innovative digital use cases tested that will address clear sustainability targets across various vertical sectors. • Support to impactful contributions towards standardisation bodies notably for 6G use cases and technologies, including KVIs. • European 5G Advanced and 6G know-how showcasing. Visible events widely open and inclusively accessible to the public are particularly relevant. • Stimulation of large industrial stakeholders, SMEs and the European Academic and Research community to engage in experimental activities in a timely fashion, aimed to validate technological trends for sustainability. • Collection of requirements from verticals for sustainable solutions and collection of “lessons learned” to prepare for subsequent phases of the SNS programme. • Contribution to a repository of open-source tools and modules that may be openly accessed and used by SNS projects over the programme’s lifetime. • Contribution to SNS programmatic actions related to sustainability, in connection to 6G-IA and SNS Working Groups and contributions to the HORIZON-JU-SNS-2024-STREAM-B-01-07: Sustainability Lighthouse project is expected so that these projects contribute to the SNS wide vision and solutions on “6G for sustainability”.

Technologijų parengtumo lygiai:	Activities are expected to achieve TRL 5-7 by the end of the project – see General Annex B .
Paramos tipas, intensyvumas	Type: Grant Amount: 12000000 to 13000000 EUR per grant Number of grants: 2 Intensity: 100% non-for-profit organizations, 70% for profit organizations

Kvietimas	Sistemos architektūra – standartizavimas ir koncepto patvirtinimas System Architecture - Standardisation and Follow-up/PoCs
Kodas	HORIZON-JU-SNS-2024-STREAM-B-01-01 Nuoroda į kvietimą: čia Detalus programos aprašymas ir bendrieji reikalavimai čia
Terminas iki kada galima teikti paraišką	Iki 2024 m. balandžio 18 d., 17 val. (Briuselio laiku)
Galimi pareiškėjai	Any legal entity , regardless of its place of establishment.
Sritis ir galimi sprendimai:	<p>Scope:</p> <ul style="list-style-type: none"> • The focus of this Strand is on several complementary issues mentioned below and applicants may select one or more of these issues. • New design approaches for 6G system architecture systems in all aspects of control, data and management plane including further advances that emerge out of the collaboration of individual networks or subsystems owned by different stakeholders, at computing and networking levels • Native and trustworthy integration of AI for telecommunications, including edge cloud continuum. • Network exposure to vertical application developers including protocols, algorithms, architectures and solutions for user-to-systems interface. • Mechanisms, leading to partial or complete Digital network twinning, applied in 6G including the dynamic virtual representation of critical components and systems, the simulation and modelling tools for large-scale real-time environments; derivation of network models (digital twins) from traffic analysis. • New Data Transfer Paradigms, considering enhanced data plane (including IP framework evolution) techniques with deep Edge integration. <p>The target outcomes address consolidation of results on:</p> <ul style="list-style-type: none"> • Architectures providing built-in capabilities/mechanisms that enable the seamless integration of multiple system segments (e.g., public and private, terrestrial and satellite, inter-operation among operators, computing and networking) and allow the establishment of innovative business models, including the migration and deployment models. Increased global resilience (at a technical and economical level) is expected to be a key outcome of these architecture innovations. • Innovative solutions for native and trustworthy AI for telecommunication to support end-to-end operational processes. • Mechanisms (e.g., Digital twinning frameworks) to be used for the improved management and operation of 6G networks. • New communication mechanisms and methods that new system level communication concepts and associated protocols and methods that will enable optimized communications such as shared situational awareness and dynamic capabilities among all stakeholders (verticals, service providers and network operators) through appropriate interfaces including APIs. • Enhanced data plane frameworks that guarantee economically and technically sustainable architectures with cross-flow resource management capabilities. • Algorithms, software and hardware implementations paired with organisational processes where appropriate, which can be used for PoC and later trials systems.

	<ul style="list-style-type: none"> Dissemination of solutions for international consensus building, which can be exploited in standardisation activities. Contributions to international standardisation, considering also topics related to backward compatibility and further evolution of the 6G architecture.
Technologijų parengtumo lygiai:	Activities are expected to start at TRL 2-3 and to reach TRL 4 by the end of the project, and if/where relevant up to maximum TRL 5 (mature 6G technologies and solutions for verticals). Some parts of the project may only target TRL 3 by the end of the project – see General Annex B .
Paramos tipas, intensyvumas	Type: Grant Amount: 8 000 000 EUR per grant Number of grants: 2 Intensity: 100% non-for-profit organizations, 90% for profit organizations

Kvietimas	Tvarumo švyturys Sustainability Lighthouse
Kodas	HORIZON-JU-SNS-2024-STREAM-B-01-07 Nuoroda į kvietimą: čia Detalus programos aprašymas ir bendrieji reikalavimai čia
Terminas iki kada galima teikti paraiškas	Iki 2024 m. balandžio 18 d., 17 val. (Bruselio laiku)
Galimi pareiškėjai	Any legal entity , regardless of its place of establishment.
Sritis ir galimi sprendimai:	<p>Scope:</p> <ul style="list-style-type: none"> The Lighthouse project addresses both the “sustainable 6G” dimension and the “6G for sustainability” aspect as two related work areas. “Sustainable 6G” and “6G for sustainability” should be equally addressed and will be considered through three dimensions of which: environmental sustainability, targeting the minimisation of environmental impact, as a prominent issue societal sustainability, aiming at providing value to people and society also thanks to new use cases powered by 6G as well as the need to offer such services in a trustworthy, privacy-safeguarding and accessible way, and economic sustainability, where 6G will be an enabler for business value and could enable new business models. <p>The target outcomes address consolidation of results on:</p> <ul style="list-style-type: none"> Technologies and architectures enabling to offer and manage a systemic approach to sustainability covering at least energy, climate and environmental aspects, considering trust and security, availability, coverage, and accessibility, while targeting economic viability. Consolidation of the work started in the SNS Phase 1 (e.g., Stream B System/Flagship Hexa-X-II project and Enablers projects) and early Phase 2 projects (use cases, KPIs/KVIs, dedicated technologies) and integration of their outcomes. In liaison with the SNS Call 2023 Societal Challenges CSA (HORIZON-JU-SNS-2023-STREAM-CSA-01: SNS Societal Challenges), contribution to the 6G social and societal acceptability with identification of key stakeholders to be engaged in specific interactions / expert groups (e.g., organisation of specific targeted workshops). Co-development of “6G for sustainability” use-cases and business models that consider local, regional, and national economics, jointly with different stakeholders, including verticals, demonstrating and ideally quantifying how 6G contributes to the various aspects of sustainability in non-telecom sectors, including public sector and aspects related to citizen engagement. Reference benchmarking scenarios, especially for implementation and operations, and for both sustainable 6G and 6G for sustainability, in view of further assessing sustainability gains of specific implementations and operations.

	<ul style="list-style-type: none"> • Co-definition of specific 6G implementation models with stakeholders and end-users that considering technical performance, sustainability, economic trade-offs (including e.g., physics laws, network densification, architectural aspects, infrastructure sharing, neutral hosts, brokers...) and societal perspectives, raising sustainability awareness including improved sustainability literacy and education for use of applications, services and platforms and developing related recommendations for 6G implementation, operation and usage. • Derived methodologies, recommendations, guidelines and standardisation requirements covering the full life cycle where appropriate (energy and security in particular) and taking into account existing harmonisation perspectives originating from e.g. the EU Commission, GSMA, ETNO, NGMN. • Integration testing, evaluation and end-to-end validation of the key technical solutions. • Proof of concept on specific promising SNS Phase 1 technologies that will provide tangible results on environmental, societal and economic sustainable objectives. • A strategic roadmap and a European strategy towards sustainability as integral part of the 6G standardisation ("sustainability by design"), furthering the characterisation of KVis, ideally as quantitative indicators, of various projects and aiming at contributing to the global 6G vision.
Technologijų parengtumo lygiai:	Activities are expected to achieve TRL 2-5 by the end of the project – see General Annex B .
Paramos tipas, intensyvumas	Type: Grant Amount: 13 000 000 EUR per grant Number of grants: 1 Intensity: 100% non-for-profit organizations, 90% for profit organizations