

**ANNEX I TO DECISION No 13/2021 OF THE GOVERNING BOARD OF SMART
NETWORKS AND SERVICES JOINT UNDERTAKING**

**SMART NETWORKS AND SERVICES JOINT UNDERTAKING
(JU)**



2021-2022

WORK PROGRAMME

In accordance with the Council Regulation (EU) No 2021/2085 and with Article 33.4(e) of the Financial Rules of the Smart Networks and Services Joint Undertaking.

The work programme is made publicly available after its adoption by the Governing Board.

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1. LIST OF ACRONYMS, DEFINITIONS AND ABBREVIATIONS

6G IA 6G Industrial Association

AAR Annual Activity Report

AWP Annual Work Plan

CA Commitment Appropriations

CAS Common Audit Service

CSA Coordination and Support Action

CSC Common Support Centre

EC European Commission

ECA European Court of Auditors

EDPS European Data Protection Supervisor

FP7 European Framework Programme 7 (2007-2013)

FWC Framework Contract

GB Governing Board

HE Horizon Europe

HR Human Resources

IA Innovation Action

IAS Internal Audit Service

ICF Internal Control Framework

ICS Internal Control Standards

IKAA In Kind Additional Activities

IKOP In Kind Operational Activities

KPI Key Performance Indicator

KVI Key Value Indicator

NCPs National Contact Points

MEP Member of the European Parliament

PA Payment Appropriation

PPP Public-Private Partnership

RIA Research and Innovation Action

SC Scientific Committee

SRIA Strategic Innovation and Research Agenda

SLA Service Level Agreement

SNS JU Smart Networks and Services Joint Undertaking

SO Strategic Orientation

SRG States Representatives Group

SMEs Small and medium-sized enterprises

TA Temporary Agent

TRL Technology Readiness Level

TTG Time To Grant

TTI Time To Inform

TTP Time To Pay

2. INTRODUCTION

2.1. Mission statement of Smart Networks and Services Partnership

The Smart Networks and Services Joint Undertaking (hereinafter “SNS JU”), established by the Council Regulation (EU) 2021/2085 (hereinafter “Regulation”), aims to ensure technological sovereignty as regards smart networks and services value chains. In this context, the aim is to enable European players to develop the R&I capacities for 6G technologies as a basis for future digital services in the period to 2030. The initiative also aims to foster the development of lead markets for 5G infrastructure and services in Europe. Both set of activities (for 5G infrastructure deployment and 6G R&I) will foster the alignment of future smart networks and services with EU policy and societal needs, including energy efficiency, privacy, ethics and cybersecurity.

Background and link with the Strategic Research Agenda.

According to Article 16 of the Regulation, the governing board adopts the Strategic Research and Innovation Agenda at the beginning of the initiative and amend it throughout the duration of Horizon Europe, where necessary. The Strategic Research and Innovation Agenda shall identify the partnership’s targeted impact, foreseen portfolio of activities, measurable expected outcomes, resources, deliverables, and milestones within a defined timeframe. It shall also identify the other European partnerships with which the SNS JU shall establish a formal and regular collaboration and the possibilities for synergies between the SNS JU’s actions and national or regional initiatives and policies based on information received by the participating states or the states’ representatives group as well as synergies with other Union programmes.

The NetWorld2020 European Technology Platform (ETP), organisations representing more than 1000 entities, representing 5 % of European GDP, are contributing to the definition of research areas especially in the domain of communication systems and networks. This effort has also benefited from the notable help of the 5G Infrastructure Association (5G-IA), and from contributions from the Alliance for Internet of Things Innovation (AIoTI) and from the Networked European Software and Services Initiative (NESSI). Other external organizations provided inputs in different stages of the development of the Strategic Research and Innovation Agenda (SRIA). Strategic Research and Innovation Agenda 2021-27 “Smart Networks in the context of NGI”.

This document provides a summary of the key areas that the European R&D Community believes relevant for the future of communications technology to meet the objectives of the SNS JU. This analysis has been anchored in the challenges identified by the United Nations, the Sustainable Development Goals, and in the current policies inside the European Union, notably the European Green Deal. It has identified research and innovation directions for the communications technologies, in order to realize these high-level societal objectives. These research and innovation directions are implemented into the first SNS JU research Work Programme and its call for tender in 2022. It also develops the monitoring framework for the evaluation of its activities and deliveries meeting the SNS objectives.

2.2. Foreword- Message from the Executive Director

Recent years and in particular the COVID-19 crisis have shown the potential that 5G networks have to provide the connectivity basis for the digital and green recovery in the short to mid-term, and the need to build technology capacities for the following generation – 6G – in the long term.

The growth potential in economic activity enabled by 5G and later 6G networks and services has been estimated to be in the order of €3 trillion by 2030. For such critical services, we need to ensure that 5G networks will be sufficiently secure.

6G systems will move us from Gigabit to Terabit capacities and sub-millisecond response times. This will enable new applications such as real-time automation or extended reality sensing (“Internet of Senses”), collecting data for a digital twin of the physical world.

Research and Innovation (R&I) initiatives on 6G technologies are now starting around the world, with the first products and infrastructures expected for the end of this decade.

In Europe, a first set of 6G projects worth €60 million was launched under the 5G-PPP, with the Hexa-X flagship developing a first 6G system concept complemented by eight projects investigating specific technologies for 6G. These technologies will form the basis for a human-centric Next-Generation Internet (NGI) and address Sustainable Development Goals (SDGs).

All parts of the world are starting to be heavily engaged in 6G developments. There will be opportunities and challenges concerning new business models and players through software networks with architectures such as Open Radio Access Networks and the convergence with new technologies in the area of cloud and edge computing, Artificial Intelligence, as well as components and devices beyond smartphones.

Firstly, success in 6G will depend on the extent regions will succeed in building a solid 5G infrastructure, on which 6G technology experiments and, later, 6G deployments can build.

Secondly, Europe will need to take a broader value chain approach, ranging from connectivity to components and devices beyond smartphones with the massive development of edge clouds and connected objects like cars or robots.

Global standardization and spectrum harmonization are important success factors for 6G technology. Both future users and suppliers need to shape key technology standards in the field of radio communications based on existing and future spectrum bands for wireless broadband, but also in next-generation network architecture to ensure the delivery of advanced service features, e.g. through the effective use of software technologies and open interfaces, while meeting energy-efficiency requirements.

The issues at stake call for a strategic research and innovation (R&I) roadmap for Europe and a Joint Undertaking co-led by industry and the Commission with close involvement of Member States.

Against this background, we are now launching the activities of this Joint Undertaking on Smart Networks and Services (SNS) to enable European players to build the technology capacities for 6G systems and develop lead markets for 5G infrastructure as a basis for the digital and green transformation. It will include a formal governance structure that will jointly define a consolidated European approach towards strategic R&I and deployment agendas.

I am looking forward to the close cooperation with the 6GIA, the Commission colleagues and representatives in the SNS Governing Board, the States Representatives, all interested stakeholders and the whole R&I community to shape the new generation of communication technology throughout this decade.

Peter Stuckmann

Head of Unit, Future Connectivity Systems, European Commission

Interim Executive Director of the Smart Networks and Services Joint Undertaking

3. WORK PROGRAMME 2021-2022

3.1. Executive summary 2021-2022

Operations:

In 2021, the SNS JU will start preparing all necessary actions to launch in early 2022 the call for research and innovation proposals, including all documents, procedures and configurations of the IT systems.

In 2022, the SNS JU will launch one call for proposals, SNS Phase 1, with 4 streams:

- **Stream A** (RIA): Smart communication components, systems, and networks for 5G Evolution systems.
- **Stream B** (RIA): Covers research for radical technology advancement (in preparation for 6G and radical advancements of IoT, devices and software).
- **Stream C** (RIA): SNS Enablers and Proof of Concepts (PoCs), including development of experimental infrastructure(s) that could be further used during later phases of the SNS.

- **Stream D (IA):** Large Scale SNS Trials and Pilots with Verticals, including the required infrastructure to explore and demonstrate technologies and advanced applications as well as advanced services in the vertical domains.

These four Streams will be complemented by SNS Support Actions (CSA) aimed at supporting EU wide synergies and directionality as well as international cooperation.

The estimated EU expenditure for this call is EUR 244.826.610. The budget is subject to its adoption by the budgetary authority and may be updated accordingly.

Annex 1 details the call “SNS Phase 1”.

Other activities include:

- Various supporting activities related to communication, administration, finance.
- Preparation of the Work Programme 2023 and related SRIA update
- Running the programme: portfolio analysis, KPI tracking, audit support, etc.
- Coordination of stakeholder activities in relation to the CEF2 Digital Programme in particular assessing the need for reviewing the Strategic Deployment Agenda for 5G for Connected and Automated Mobility and facilitating the establishment of project pipelines.
- Support to the 2022 edition of the EUCNC & 6G Summit conference.
- Information sessions: coordinate info sessions on the first SNS R&I work programme, information session on IKOP, information session for new coordinators, information session for CEF2 Digital (in cooperation with the Commission), etc.
- Liaising with the different services of the CSC and implementing the IT Sygma-Compas tools.
- Support to audits and audit processes.
- Support the other departments: administration, finance and communication.
- The implementation of the JU office operational environment in view of reaching autonomy by April 2023.

Communication:

1. Events.

a. In addition to the annual EUCNC & 6G Summit conference, some other events will be organised to ensure stronger branding of the SNS JU.

b. To advertise publicly the Call for 2022, Information day and presentation activities will be organised.

c. The cooperation with SNS JU Members States programmes will be developed.

2. Dissemination Support

a. Provide support to the SNS JU projects in their dissemination activities (project posters and flyers, events, publications).

b. Specific support to SNS JU supported technologies events or clustered/combined projects events. These can be in the form of presentations at publicly accessible parts of review meetings, networking opportunities, awards, or prizes to improve and accelerate the synergies amongst the stakeholders.

c. Implement Coordinators' Info day. In addition, a Webinar format will be used, minimising the need to travel and to broaden the audience.

3. Public Communications

a. Continued attention to press releases, to be issued timely at key points in the annual calendar.

b. Website: Developing the visual aspects and content of the site.

c. Social Media primarily via Twitter and LinkedIn, others to be evaluated.

Administration and Finance:

In 2021, the SNS JU will prepare all necessary documents to be discussed and adopted at the first meeting of the Governing Board.

The budget is established in accordance with the provisions of the Regulation.

The budget includes the description of human and financial resources deployed by the SNS JU for the implementation of its programmes and plans in 2022. Budget execution is a key performance indicator on progress towards SNS JU's objectives.

Budget payments will be dedicated for the main part to payments of participants in the selected projects (see chapter 5 Operational expenditures) and for the minor part to the running costs (see chapter 5 Administrative expenditures).

Human Resources:

In 2021, the SNS JU will start preparing the procedures to recruit the first SNS JU staff in 2022.

The recruitment of the staff will be progressive done over the year 2022, targeting 13 full-time equivalents (FTE) recruited until end 2022. In 2023, recruitment will continue with 4 additional FTES planned in order to reach the necessary HR capacities to deal with all tasks of the JU office in line with the Legal and Financial Statement as part of the Commission proposal of the Regulation.

The SNS JU is planned to reach autonomy by 2023. In that context, 2021 and 2022 are transitory years and the operational implementation of the JU work programme will mainly be carried out by the European Commission staff (DG CONNECT), and in particular the implementation of the R&I call for proposals.

3.2. Operations

3.2.1 Objectives, indicators and Risks

In 2022 the first phase of the SNS Partnership will commence. This means in practical terms that in 2022 several SNS related KPIs (e.g., input in standardisation, scientific excellence, input to family patents, market share etc.) cannot be accounted for this year as projects are expected to start early 2023.

Objective	Indicator(s)	Risk and action plan (if relevant)	Comments
SME Innovation & participation	KPI1: 20% of SMEs participation	Although the SNS R&I WP provides explicit hints for the participation of SMEs in various Streams, dedicated webinars for SMEs (e.g., through NetworkEurope's SME WG, or open Information days) will be used to mobilize European SMEs	Based on the evaluation process selection and contractual agreements expected by the end of 2022. The projects are expected to start in 2023
High risk research funding	KPI2: % of total funding: 50%	The risk for not meeting this objective is minimum as low TRL activities are planned for both Stream A and Stream B projects that constitute more than 65% of the overall funding	Based on the evaluation process selection and contractual agreements expected by the end of 2022. The projects are expected to start in 2023
Reach an appropriate balance between research, innovation, and deployment	KPI3: RIA 78% IA 20% CSA 2%		The SNS R&I WP has been designed in a way to focus on research activities during the first phase of the SNS while work in parallel in large scale trials. This % will be reevaluated during the following phases to maximize the impact of the SNS results at a global level.
Accelerate the development of energy efficient networks	KPI4: # of related projects investigating to a significant extent energy efficiency topics: >=3	Based on the first SNS R&I WP, energy efficiency has a prominent place in multiple streams. Still to ensure that proposals will keep energy efficiency in the core activities may	Based on the evaluation process selection and contractual agreements expected by the end of 2022. The projects are expected to start in 2023

		require dedicated sessions during Information Days.	
Ensure research on secure future digital services	KPI5: # of related projects: >=3	Based on the first SNS R&I WP, topics related to the security toolbox and privacy support have a prominent place in multiple streams. Still to ensure that proposals will keep security and privacy in the core activities may require dedicated sessions during Information Days.	
Collaboration and synergies with other Partnerships	KPI6: # collaborations: >=3	6G-IA has proactively engaged in discussions with SNS related topics. This activity will be further strengthen via the SNS office and 6G-IA	
Technological solutions consensus building	KPI7: Work on the production of white papers: 1	Working towards this direction, activities are planned for 2022 (e.g., public consultation for 6G-IA's vision white paper on 6G technologies)	The target is to have a first consensus by the end of SNS' first phase (2023).
Advanced 6G solutions for verticals	KPI8: #of different vertical sector engaged in phase 1 trials of the SNS: >=3	In the first phase of the Partnership the key engagement of verticals will be in Stream Stream D where it is expected that 3-4 large-scale trials will be implemented. Even if the same vertical sectors are selected in Stream D, vertical industries are expected to be engaged in other SNS R&I WP Stream projects that will demonstrate the results of B5G and 6G solutions	Based on the evaluation process selection and contractual agreements expected by the end of 2022. The projects are expected to start in 2023
Foster emergence of new actors in the 6G supply chain	KPI9: # of related projects or cross-projects WGs dealing with the investigation and potential adoption of open ecosystem principles in B5G	Based on the first SNS R&I WP, topics related to disaggregated architectures has a prominent place in multiple streams. Still to ensure that proposals will keep this topic in the core	

	and 6G networks: >=2	activities may require dedicated sessions during Information Days	
Reach Programme level consensus on 6G KPIs	KPI10: Work on the production of white papers: 1	Working towards this direction, activities are planned for 2022 to compile results from 5G PPP projects as well as supporting organizations (e.g., NetworldEurope) and 6G-IA WGs.	The target is to have a first set of widely accepted 6G KPIs by the end of SNS' first phase (2023).
Uptake of digital solutions within verticals	KPI11: Number of large-scale trials >=3	In the first phase of the Partnership the key engagement of verticals will be in Stream Stream D where it is expected that 3-4 large-scale trials will be implemented.	Based on the evaluation process selection and contractual agreements expected by the end of 2022. The projects are expected to start in 2023

The monitoring of the above-mentioned KPIs (Table 1) will be based on data collected from a) the evaluation and contractually agreement process (e.g., number of projects per topic, funding for low TRL topics, participation of SMEs etc.). The quantitative KPI information (e.g., KPIs 8-10) will be completed by the annual report information of the SNS Partnership.

Other risks

Risk	Action Plan	Comments
<p>SNS being a new JU, two risks have to be considered for the year 2022</p> <p>1) Mobilisation of the stakeholders and understanding of the JU model;</p> <p>2) slow start and delays in launching calls</p>	<p>Risk 1 is mitigated through planned information events and public presentations of the programme. In 2021, several informal events already took place to raise awareness of stakeholders and to increase their preparedness. This has been amplified through Member States informal meetings, in view of relaying information and awareness at national level</p> <p>Risk 2 is taken care of by a structured dialogue between Commission Services, States Representative groups and private stakeholders in view of making all call documentations available in time for an early start in 2022.</p>	<p>Failure to launch a call early 2022 may entail loss of 2021 budget that has already been integrated to the 2022 budget.</p>

3.2.2. Scientific priorities, challenges and expected impacts

The priorities, challenges and expected impact are developed in the SNS R&I Work Programme “Phase 1”. It supports the following Key Strategic Orientations (KSO), as outlined in the HE Strategic Plan:

This first Work Programme (WP) of the Smart Network and Services (SNS) Partnership¹ supports the following Key Strategic Orientations (KSO), as outlined in the Horizon Europe (HE) Strategic Plan:

- **KSO 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.’
- **KSO C**, ‘Making Europe the first digitally led circular, climate-neutral and sustainable economy through the transformation of its mobility, energy, construction and production systems

In addition, the Work Programme is expected to contribute to the following goal:

- **Foster Europe’s technological leadership** in digital technologies and in future emerging enabling technologies, by strengthening European capacities in key parts of digital and future supply chains, allowing agile responses to urgent needs, and by investing in early discovery and industrial uptake of new technologies.

The SNS Partnership targets reinforced European leadership in the development and deployment of next generation network technologies, connected devices and services, while accelerating the digitalisation of European industry and public administrations. It aims at positioning Europe as a lead market and positively impact the citizen’s quality of life, by supporting key Sustainable Development Goals (SDGs), boosting the European data economy, and contributing to European technological sovereignty in relevant critical supply chains.

Within this broader context, the first SNS WP is expected to progress towards the technological and business realisation of the 6G vision developed notably under the 5G Infrastructure PPP and targeting massive digitisation of societal and business processes through intelligent connectivity across the human, physical and digital world. This covers several related objectives, and in particular:

- Moving beyond a simple increase in speed or performance of connectivity platforms, bringing unique new service capabilities with wider economic implications. It requires capabilities for completely new services and applications, aligned with sustainability targets and a human-centric approach. This will eventually lead to 6G solutions, like the “Internet of Senses”, realising a fusion

1 https://ec.europa.eu/info/files/european-partnership-smart-networks-and-services_en

between the communication and sensing environment, massively scalable immersive environments, like XR/VR, digital twins, and holographic communication.

- Supporting key United Nations Sustainable Development Goals (SDGs)², with SNS aiming to directly align to:

- **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
- **SDG 13:** 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)

This alignment serves as an example to proposers. It is expected that proposals will also identify any other SDG that their work will contribute to. In addition, complementary societal issues, such as ethical issues in the context of privacy or Electric and Magnetic Fields (EMF) awareness and reduction, are targets of the SNS WP.

Supporting Key Societal Value indicators (KVI) such as safety, security, trustworthiness, inclusiveness, and sustainability are described in further detail below. Several factors form the basis for new research and innovation targets underpinning the evolution of 5G and the design of 6G networks. Some of them include full industry digitalisation, supply chain resilience, and the need to address European and global societal challenges.

Moreover, the SNS WP targets a strong European impact at future downstream 6G standardisation stages, including a Europe wide consensus of 6G Key Performance Indicators (KPIs) that will frame future developments. Additionally, it targets the integration of concepts and technologies originating from the Cloud/IT environments to support massive device (IoT) connectivity and ultra-reliable communications and services on top of enhanced mobile broadband services. This is an important target towards a complete value chain to serve an IoT device-connectivity-service platform where Europe can successfully compete.

The stimulation of strategic alliances is a key objective, with vertical sectors to build and offer powerful and persuasive Business to Business (B2B) and Business to Consumer (B2C) propositions. This should leverage upon general, local, regional, or even universal and global smart interconnected public and private networks and services. In this WP, the industry is

² <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>

described in terms of vertical sectors. A strategic goal of the SNS Partnership is to empower many vertical domains further beyond current 5G capabilities. Participation and contribution of these actors to the SNS WP are considered important, both to drive the requirements and to validate the technologies in specific business contexts.

The SNS WP aims to contribute to several European policies³, and notably:

- Green Deal⁴
- Resilient Communication Privacy via Developing Proper Security Strategies⁵
- Artificial Intelligence (AI)^{6 7 8}
- Data & Cloud Computing
- Blockchain Technology
- High Performance Computing (HPC)
- Internet of Things⁹
- Microelectronic components

To that end, the SNS JU targets appropriate mechanisms to allow the close collaboration with other relevant partnerships, notably in the areas of HPC, micro-electronics, photonics, AI and data analytics and Cooperative, Connected and Automated Mobility (CCAM) as appropriate. Relevant proposals in these domains are expected to support these goals.

Additional goals of the SNS WP are to

- Develop strategies and technologies for the integration of future connectivity and service platforms into larger globally applicable infrastructures, whilst preserving European competitiveness and sovereignty.
- Define trust, security and communication privacy enhancing technologies, process and architectures that will be required for massively heterogeneous, virtualised and software platforms of the future.

3 <https://digital-strategy.ec.europa.eu/en/policies>

4 https://ec.europa.eu/info/sites/default/files/european-green-deal-communication_en.pdf

5 <https://digital-strategy.ec.europa.eu/en/policies/cybersecurity-act>

6 <https://digital-strategy.ec.europa.eu/en/policies/artificial-intelligence>

7 https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=75787

8 <https://digital-strategy.ec.europa.eu/en/policies/regulatory-framework-ai>

9 <https://digital-strategy.ec.europa.eu/en/policies/iot-policy>

- Bring new actors from, and beyond the verticals. Contributions from industry, research centers, academics and Small and Medium-sized Enterprises (SMEs) actors in the connectivity, IoT and cloud/IT domains are expected to be 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).

The SNS WP hence offers opportunities to European stakeholders in industry, research and academia to build innovation capabilities to achieve a leading position in the standardization process (e.g., 3GPP, ETSI, and similar organisations addressing the broader scope of Smart Systems and Networks), securing a leading position for Europe in the global ICT market, over the coming 8-10 years.

The scope of the SNS WP considers the broader value chain. The NetWorld Europe Strategic Research and Innovation Agenda (SRIA)¹⁰ and the related implementation Annex D¹¹ are the foundation for the definition of the R&I technical themes of the SNS WP. The SRIA was developed by R&I stakeholders under coordination from NetWorld Europe, including contributions from the 6G Smart Networks and Services Industry Association (6G-IA), the wider cloud (NESSI and CISPE.cloud), IoT and edge (AIOTI) and Satellite Communications (SATCOM) communities. It indicates the core technological topics to be addressed by the SNS Partnership underpinning the higher-level objectives and the implementation of the 6G roadmap.

The proposed WP includes the following four complementary streams:

- **Stream A (RIA)** : Targets the development of smart communication components, systems, and networks following the evolution of 5G systems. It follows an evolutionary path towards the development of 6G networks, relying on the development of an intermediate technology point. The proposed research topics are complementary and altogether support a complete system view. They cover:

Topic	Indicative Budget	Objective
Research and Innovation Actions (RIA)		
SNS-2022-STREAM-A-01-01	EUR 6 Million	Green Radio Technologies
SNS-2022-STREAM-A-01-02	EUR 6 Million	Ubiquitous Radio Access

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

11 <https://bscw.5g-ppp.eu/pub/bscw.cgi/d392313/Annex%20v2.3%20-%20Public.pdf>

SNS-2022-STREAM-A-01-03	EUR 6 Million	Sustainable Capacity Networks
SNS-2022-STREAM-A-01-04	EUR 6 Million	Evolved Architecture for Global Green Systems
SNS-2022-STREAM-A-01-05	EUR 6 Million	Edge Computing Evolution
SNS-2022-STREAM-A-01-06	EUR 6 Million	Trustworthy and Reliable End-to-end connectivity Software platforms
SNS-2022-STREAM-A-01-07	EUR 6 Million	Real-time Zero-touch Service Technologies
Total	EUR 42 Million	

- **Stream B (RIA)** : Covers research for revolutionary technology advancements, in preparation for 6G and revolutionary advancements of IoT, devices and software. This Stream targets Low Technology Readiness Level (TRL) technologies that are expected to deliver innovative solutions towards real life networks in the long term and covers following topics:

Topic	Indicative Budget	Objective
Research and Innovation Actions (RIA)		
SNS-2022-STREAM-B-01-01	EUR 24 Million	System Architecture for 6G
SNS-2022-STREAM-B-01-02	EUR 30 Million	Wireless Communication Technologies and Signal Processing for 6G
SNS-2022-STREAM-B-01-03	EUR 25 Million	Communication Infrastructure Technologies and Devices for 6G
SNS-2022-STREAM-B-01-04	EUR 20 Million	6G Secure Service development and Smart Security
SNS-2022-STREAM-B-01-05	EUR 23 Million	6G Holistic System Definition
Total	EUR 122 Million	

- **Stream C (RIA)**: Focuses on SNS Enablers and Proof of Concepts (PoCs) used to develop experimental infrastructure(s), ideally aiming at being used during later phases of the SNS. The topic covers:

Topic	Indicative Budget	Objective
Research and Innovation Actions (RIA)		
SNS-2022-STREAM-C-01-01	EUR 25 Million	SNS experimental Infrastructure
Total	EUR 25 Million	

- **Stream D (IA)** : Aims at large-scale SNS trials and pilots with verticals, including the required infrastructure. The aim is to explore and demonstrate technologies and advanced applications and services in vertical sectors. Phase 1 Stream D projects should incorporate technologies that currently appear as key enablers for 6G networks, e.g., AI/ML,

cybersecurity, high performance computing, advanced IoT solutions, etc.. During the subsequent SNS phases, Stream D infrastructures will mostly rely on SNS phase 1 technologies and especially the infrastructures to be developed from Stream C projects. The goal is to gradually incorporate innovative 6G functionalities. The topic covers:

Topic	Indicative Budget	Objective
Innovation Actions (IA)		
SNS-2022-STREAM-D-01-01	EUR 46 Million	SNS Large Scale Trials and Pilots with Verticals
Total	EUR 46 Million	

These four Streams will be complemented by SNS Support Actions (CSA) aimed at supporting EU wide synergies and directionality as well as international cooperation.

Topic	Indicative Budget	Objective
Coordination and Support Actions (CSA)		
SNS-2022-STREAM-CSA-01-01	EUR 3 Million	Operational and Programmatic support
SNS-2022-STREAM-CSA-01-02	EUR 2 Million	International co-operation and event.
Total	EUR 5 Million	

3.2.3. Calls for Proposals

3.2.3.1. Calls

The EU contribution is based on the budget foreseen for JUs in the general Union budget. The total EU contribution for the 2021-2022 SNS JU operational expenditure is MEUR 244.826.610. The amount deriving from the 2022 estimated general Union budget is subject to its adoption by the budgetary authority and may be updated accordingly.

In 2022 the SNS JU will launch one call with 4 streams described in the first SNS R&I Work programme (R&I WP). About 40 projects are expected to be selected mid-2022 and launched end of 2022. All details on this first R&I WP can be found in the Annex 2.

The first SNS R&I work programme will be addressed in one call covering 4 stream complemented by 2 CSA's.

Call: **HORIZON-SNS-JU-2022**

Stream A (RIA): Smart communication components, systems, and networks for 5G Evolution systems: Follow an evolutionary path towards the development of 6G networks, relying on the development of an intermediate technology point. The proposed research topics are complementary and altogether support a complete system view.

Stream B (RIA) : Covers research for radical technology advancement (in preparation for 6G and radical advancements of IoT, devices and software). Low Technology Readiness Level (TRL) technologies that are expected to deliver in real life networks in a long-term time period.

Stream C (RIA): SNS Enablers and Proof of Concepts (PoCs), including development of experimental infrastructure(s) that could be further used during later phases of the SNS.

Stream D (IA): Large Scale SNS Trials and Pilots with Verticals, including the required infrastructure to explore and demonstrate technologies and advanced applications as well as advanced services in the vertical domains.

SNS Support Actions (CSA) aimed at supporting EU wide synergies and directionality as well as international cooperation

3.2.3.2. Measures for Newcomers

Several actions are planned to publicise the SNS JU activities, the first R&I WP and the call launched in 2022. It includes, web briefings, webinars, a dedicated infoday in January 2022 and a range of presentations and materials available through the website of the EC and the 6G IA.

3.2.3.3. Conditions and management of the calls

The call conditions are outlined in Appendix 1 of Annex 2 that defines the R&I call for proposals

3.2.4. Follow-up activities linked to past calls: monitoring, evaluation and impact assessment

H2020 ICT52 projects from the 5G PPP which are related to beyond5G and 6G research are not transferred to the SNS JU and the follow-up including the evaluation and monitoring activities remain with the European Commission.

3.2.5. Cooperation, synergies and cross-cutting themes and activities

The SNS JU will exchange best practices with other JUs. It will organise workshops on scientific topics of common interest and assess the opportunity of coordinated or joint calls. Notably, with the KTD and HPC JUs, and with the Photonics PPP. The SNS JU will also explore potential synergies with national initiatives and policies.

3.3. Support to Operations

3.3.1. Communication, dissemination and exploitation

The SNS JU communication activities will support the priorities identified in the annual work plan and agreed by the SNS JU Governing Board. A strategic communication will ensure that all stakeholders will be duly informed, in an accurate, clear and accessible way about the activities and results of the SNS JU.

Communication objectives

The communication objectives for 2022 will raise awareness on research and innovation activities on B5G and 6G networks, increase knowledge of the SNS JU, and promote participation in the SNS JU activities by engaging with prioritised stakeholder groups.

The communication activities will focus on the programme achievements that have a strong impact, on the scientific advancements and their market uptake potential, which translate into concrete benefits for European industries, authorities and citizens.

In order to do so the SNS JU will:

- Highlight the programme's relevance, impact and contribution to related EU policies areas;
- Showcase the programme achievements progress and benefits;
- Leverage project communication and promote projects' success stories to build on the results obtained and to demonstrate the impact of its outcomes;
- Communicate the benefits of the technology with real-life use cases and projects' results;
- Mobilise strongly committed applicants to continue to ensure excellence in our call for proposals/grants;
- Increase communication synergies with other programmes and instruments;
- Highlight technology potential and market readiness;
- Increase public awareness of the SNS JU beyond the programme stakeholders, reaching out to new audiences.

Target audiences

- Policy-makers: EU institutions (European Commission, European Parliament, Council of the EU, Committee of the Regions), individual Member States (relevant representatives of governments and permanent representations), municipalities and regional authorities;
- SNS stakeholders and their governance structure: 6G IA, European Commission, National Contact Points, technical experts;
- SNS JU current and potential new beneficiaries;
- Financial actors (e.g. investors);
- General public.

Outreach activities

The SNS JU will work on its brand recognition, as well on promoting its core activities, such as the 2022 Call for proposals. The vision of the current initiative and of the Joint Undertaking itself will be communicated via campaigns that will concentrate on its concrete added value in the daily lives of the EU citizens.

The JU will develop SNS success stories and adapt them to different audiences and channels, and back up SNS JU's key messages, while maintaining close contacts with ongoing projects to gather and promote their latest news and results.

In addition, the SNS JU will work in close collaboration with the communication unit of the European Commission's Directorate-General for Research and Innovation, responsible for services such as the Horizon Magazine, Futuris and the webpage for EU research success stories.

Communication channels

SNS JU will develop content for the following channels with the aim of providing all interested stakeholders with access to relevant and specific information on the work of SNS and its projects:

- Website;
- Newsletter;
- Social media (Twitter, LinkedIn);
- Videos;
- Events;
- Multipliers (e.g. European Commission, Coordination and Support Actions, States Representatives Group, National Contact Points, etc.);
- Media;
- Direct mailings;
- Publications.

Key events in 2022

- Mobile World Congress 2022
- EuCNC + 6G Summit 2022
- Info Days
- Member States National Contact Points trainings
- R&I Days
- 5G Techritory 2022
- 5G Conference

3.3.2. Procurement and contracts

For the year 2022, the SNS JU will implement its administrative budget also by means of procurement procedures and contracts, supporting the administrative and support services in accordance with its Financial Rules.

It is essential that the SNS JU makes the most efficient use of its resources by using existing framework contracts and service level agreements (SLA) with EC services. The extensive use of the existing contracts provides a lighter solution in terms of workload and the possibility to rely on quality service providers.

When framework contracts or SLAs are not available, SNS JU will launch individual procurement procedures to obtain desired services and implement its AWP effectively.

3.3.3. Other support operations

IT

The priorities for IT are to ensure a stable and secure IT system, provide IT support to staff in the use of IT applications and equipment and to cooperate with the Commission to ensure synergy and efficient use of resources.

Main activities include:

- Follow-up and monitor implementation of the contract with IT supplier, notably service delivery plan; ensure maintenance and upgrades are done as necessary
- Monitor stability of the IT system
- Participate in coordination meetings with the Commission and other Jus and take action follow-up on the adjustments needed to allow and ensure smooth functioning of Horizon Europe IT tools
- Ensure adjustment of IT tools to the SNS needs (expansion, upgrade, etc.)

In 2022 special focus will be put on the following:

- Keep in place the full access for the SNS staff to the set of IT applications related to the Horizon Europe programme.
- Set-up external communication through the website
- Preparation of the Framework Contract for IT service

Achievement will be measured by the following indicators:

- Compliance by contractors/ service providers with the Service Level Agreements

Logistics

In addition, logistical support will be provided in the context of General Administration. It encompasses the management of supply and maintenance of equipment namely stationery,

goods and services for administration and includes monitoring of services provided in particular through the OIB, the translation centre and the publication office.

In the context of the reflection on the new ways of working that was accelerated by the COVID-19 situation, changes in the organization of the workplace will be considered taking into account less presence in the office, increased hybrid modes of working as well as health and safety requirements.

Data protection

The SNS JU will apply Regulation (EU) 2018/1725 on the protection of natural persons with regard to the processing of personal data by the Union institutions, bodies, offices and agencies¹².

The role of the Data Protection Officer (DPO) is exercised by the Legal Officer. The DPO together with all staff members involved in data processing activities, will continue to ensure an effective application the data protection legal framework.

In 2022, the following actions will be taken:

- Implement and follow up the implementation of the mitigation measures decided in Data Protection Impact Assessments;
- Raise awareness for staff with regard to the data protection related tools, keeping an update records, as well as on the different aspects in implementing the data protection legislation through annual sessions to be organised by the DPO;
- General and ad-hoc advice to the controller in fulfilling its obligations;
- The DPO will continue to provide support for the preparation of any new records and corresponding privacy statements;
- Continue to participate in the data protection working groups of the EU institutions and bodies for maintaining up-to-date the necessary documentation relating to data protection in the framework of Horizon Europe;
- Ensure follow-up with guidelines provided by the EDPS, the European Data Protection Board, CJEU decisions affecting the field of data protection in the context of SNS JU's activities.

Access to documents

The SNS JU will address requests for access to SNS JU documents according to Regulation (EC) No 1049/2001, in a spirit of openness and transparency in order to bring its activities and outputs closer to the public in line with the policy developed by the Programme Office. The SNS JU will

¹² OJ L 295, 21.11.2018, p. 39–98. Regulation (EU) 2018/1725 of the European Parliament and of the Council of 23 October 2018 on the protection of natural persons with regard to the processing of personal data by the Union institutions, bodies, offices and agencies and on the free movement of such data, and repealing Regulation (EC) No 45/2001 and Decision No 1247/2002/EC

implement the standard operating procedure (SOP) on Access to documents and the training of the staff on access to documents issues.

Furthermore, the objectives of actions will aim to keep a high-level of public confidence in SNS JU by giving the opportunity to the public to monitor its work.

Feedback to policy

The SNS JU will contribute to the activities of a number of services in the European Commission (EC). Contributions vary in content and format, but they all share the common goal of providing fact-based information on the state-of-the-art of 5G/6G technologies and their contribution to the EU initiatives and policies especially in the telecommunication sector as well as to competitiveness and growth.

In practical terms, this means taking part in a number of technical groups organised by the EC and other international bodies, and active participation in the meetings. It includes also feedback from projects and studies to the EC in contribution to relevant connectivity files.

In 2022 the SNS JU Programme Office will ensure a close collaboration with policy makers in the European Commission, specifically (but not exclusively) within the new framework for feedback to policy in Horizon Europe, prepared and piloted by the Common Implementation Centre to support evidence-informed policy design and evaluation.

3.3.4. Human Resources

3.3.4.1. HR Management

In the HR domain, the SNS JU aims to achieve its goals through effective recruitment procedures, proper allocation and administration of resources and in developing, motivating and retaining valuable/high qualified staff while maintaining a motivating and efficient working environment.

The recruitment of the staff will be progressively done over the year 2022, targeting 13 full-time equivalents (FTE) recruited until end 2022. A further 4 FTEs is planned for 2023 onwards.

Therefore, in 2023, we will complete recruitment for all the 17 posts that have been planned for the JU. As well as ongoing recruitments, a staff training and wellness at work plan will be developed in order that the team can perform its duties efficiently and professionally.

The Interim Executive Director will ensure that all HR functions are managed well and ensure that all staff work in a safe, respectful and rewarding environment.

During the first year of the SNS JU no appraisals, promotions, retirements or mobility exercises are foreseen.

Proper actions have been set up to ensure schooling services for children of the SNS JU staff in the European Schools system.

3.3.4.2. Staff Establishment Plan

The Staff establishment plan gives an overview and forecast of annual staff positions for the years 2022 and 2023.

From a general point of view, the Staff of the JU shall consist of temporary staff (TA) and contract staff (CA) whose contracts will be governed by the Staff Regulations of officials and conditions of employment of other servants of the European Union.

The JU may also make use of seconded national experts and trainees, the selection and working conditions of which are subject to a decision of the Governing Board.

The staff policy followed by the SNS JU shall consists of:

- a set of implementing rules giving effect to the Staff Regulations of officials and conditions of employment of other servants of the European Union, to be adopted by the Governing Board with prior agreement of the Commission),
- a set of internal rules organising the day to day administration of the Office and responsibilities and tasks entrusted to staff, to be notified by the appointing authority.

PLANNED POST

	2022	2023 estimated
Establishment plan posts: TA-AD	6	7
Establishment plan posts: TA-AST	0	0
Total establishment plan posts	6	7
Contract Agents	7	10
Seconded National Experts		
Traineeships		
Total Staff	13	17

CATEGORIES AND GRADES	2022	2023 estimated
AD 16		
AD 15		
AD 14	1	1
AD 13		
AD 12	1	1
AD 11		
AD 10		

AD 9		
AD 8	4	5
AD 7		
AD 6		
AD 5		
Total AD	6	7
Total AST/SC	0	0
TOTAL	6	7

Contract Agents	2022	2023
Function Group IV	4	5
Function Group III	2	4
Function Group II	1	1
Function Group I		
Total Staff	7	10

	2022	2023
Seconded National Experts	0	0

Note: Staff recruitments for 2022 are estimated to start progressively along 2022, i.e. only a *pro-rata* calculation is taken into account for that year.

ROLE DESCRIPTIONS

Executive Director (TA-AD14)

The Executive Director is the chief executive responsible for the day-to-day management of the SNS Joint Undertaking providing leadership at the strategic and operational level ensuring the achievement of the Joint Undertaking's objectives. The Executive Director is its legal representative and he/she shall perform his/her tasks with independence and shall be accountable to the Governing Board.

This position is presently vacant, occupied temporarily by the Head of Unit of DG CONNECT E1 in the capacity of Interim Executive Director.

Head of Programmes (TA-AD12)

The Head of Programs has responsibility for the scientific and technical work of the Programme Office, for programming, coordinating and communicating the activities of the JU. In particular he/she has a key coordination role to establish the draft R&I Work Programmes, to oversee the Working Groups of the JU, and to steer the Strategic Research

and Innovation Agenda and the Strategic Deployment Agendas in close cooperation with relevant stakeholders. He/she also oversees the operational tasks leading to proposal selection.

Team Leader Administration and Finance (TA-AD8)

The Team Leader of Finance and Administration has responsibility for Human Resources, Budget and Finance, Legal affairs, Governance implementation, Internal Control and Audits, ICT, Housing, Security and Infrastructure.

Program Officer (TA-AD8)

The Program Officer will contribute to the preparation and implementation of the scientific, technical and administrative activities of the annual work programme of the JU and, consequently, for the entire life cycle of a portfolio of projects that cover research, innovation and demonstration activities of technologies under the scope of the JU. He/she will also be responsible for monitoring of the key performance indicators (KPIs) and associated targets in his/her projects portfolio, while maximizing the impact of the JU overall program implementation through dissemination of projects results and achievements, including feedback to policy. He/she also contributes to Working Groups of the JU, and to the steering of the Strategic Research and Innovation Agenda and the Strategic Deployment Agendas in close cooperation with relevant stakeholders. He/she also develops the draft communications strategy of the JU and the related communications activity plan and oversees all communication activities of the JU.

Financial Officer (CA-FGIV)

The Financial Officer works under the direct supervision of the Coordinator of Finance and Administration and is responsible for the proper functioning of the budgeting and financial aspects of the JU, including the financial management of individual projects, the compilation of the overall budgets, their implementation, forecast and overall execution of sound financial management.

Legal Officer (CA-FGIV)

The Legal Officer provides the JU with all relevant legal advice and support for the smooth operation of the activities of the JU, monitors the implementation of contractual obligations of the JU, drafts the legal documents of the JU and is the JU's Data Protection Officer. She/he ensures that the legality of the procedures in place, provides recommendations to improve the efficiency, effectiveness of the JU and is the liaison with auditing bodies.

Financial Assistant (CA-FGIII)

The Financial Assistant supports the financial management of individual projects, verifies the financial and administrative compliance of the grants and contracts, performs the administrative quality checks on files for signature, monitors the operational and administrative expenditures, provides budget planning and reporting for operational and administrative expenditures.

Financial Assistant (CA-FGIII)

The Financial Assistant is meant to primarily provide support to the Finance and Administration team and reports to the Finance and Administration Team Leader. He/she supports the financial management of individual projects as well as other financial aspects of the R&I programme. Furthermore, she/he is responsible of the proper functioning of the IT systems and the webpage.

Administrative Assistant (CA – FGIII)

This post is meant to assist the JU on determining an HR strategy and tasks, on supporting the event management and providing administrative support to the finance and administration team.

The HR Assistant manages HR personal files and assists in the implementation of the staff policy.

He/she also supports the office assistant and acts as his/her backup.

Programme Management Assistant (CA– FGIII)

This post is meant to primarily provide support to the Programs and Communication team in the full lifecycle of the R&I Work Program. She/he will support the JU's communication activities, including managing the JU website, developing and monitoring the execution of a communications activity plan implementing the Communications Strategy of the JU. Moreover, he/she will support the organisation and management of events.

Administrative Support Assistant (CA-FGII)

This post of office assistant provides the secretarial support to the Executive Director and the whole office of the JU, provides the planning of the activities, provides administrative support in the relations with JU Bodies, and does the general coordination of the document management within the JU.

3.4. Governance activities

The Governing Board (GB) of the Smart Networks and Services joint Undertaking will kick-off its activities in December 2021. The main challenge for the first months of activities will be to setup all the necessary rules and operational procedures in order to ensure that the SNS JU is able to start its operation as soon as possible.

The European Commission (EC) shall be responsible for the establishment and initial operation of the SNS JU until it has the operational capacity to implement its own budget. The Regulation also foresees that the Commission shall carry out all necessary actions in collaboration with the other members and with the involvement of the competent bodies of the SNS JU. In order to do so, the GB must adopt a number of decisions regarding the SNS JU structure and functioning as soon as possible, and must also ensure on time support to the European Commission and to the interim Executive Director during the whole year.

The main target of the SNS JU for 2022 is to launch a first call for Horizon Europe research and innovation proposals in the first quarter of the year. Considering the current global race for the launch of 6G R&I initiatives, in addition to the transition of the Union funding between the Horizon 2020 5G-PPP actions (projects) and the start of the first SNS JU actions, minimising the delays for all the steps from the opening of the call up to the signature of the grant agreements is extremely important.

For that reason, the Governing Board will ensure fast, effective and efficient decision making on all required aspects, and will be flexible in planning its meetings or in using written consultation when possible. It will also facilitate the exchange of information with the SNS states representative group (SRG) in order to allow regular updates and obtaining the required opinions of the SRG.

In order to prepare the JU activities for 2023, the GB will also initiate and pursue during the whole year a number of activities, like the development of the updated Strategic Research and Innovation Agenda, the preparation of the Horizon Europe 2023 SNS R&I Work Programme, as well as relevant Strategic Deployment Agendas in view of CEF2 Digital and national recovery plans.

Regarding the relationship with the SNS stakeholders communities, the GB is planning to highly contribute and support the relevant conferences, workshops and stakeholder engagement events in the scope of the SNS JU through the active participation of representatives from the JU members (6G-IA and EC) and their constituent entities, in close collaboration with the staff of the SNS JU. Among these events, the 2022 edition of the EUCNC & 6G Summit, being the flagship annual conference for the European research and innovation in the area of communication networks, will be of a particular attention.

3.5. Internal Control framework Plans

A. Financial procedures

SNS projects:

The financial procedure for projects under Horizon Europe depends on the Horizon Europe IT tools developed by the European Commission. These IT tools encompass the full cycle of the process, including workflows, check-lists, etc.

B. Ex-ante and ex-post controls

The internal control processes and methods will be subject, from the first days of existence of the SNS JU, to a decision of the Governing Board adopting the internal control standards for efficient management.

With regard to financial matters, ex-ante and ex-post controls are organised in accordance with the Financial Rules of the SNS JU (Decision SNS JU to be taken in 2023)

SNS projects

The current developments for the electronic management of calls and selected projects shall be complemented in cooperation with the Common Support Service of the Commission, in charge of the applications.

C. Audits

Audits are organised both on an internal and external basis:

C1 Internal audits are operated by the internal auditor of the JU (the competent service of the Commission) and by the staff member appointed by the Governing Board for performing the SNS Decision 2021.xyzz internal audit capability, in accordance with the provisions of Chapter xy of the Financial rules of the SNS JU.

C2 External audits are operated by the European Court of Auditors, reporting to the European Parliament and the Council, responsible for the discharge procedure.

C3 Ex-post audits of beneficiaries are also operated by or on behalf of the SNS JU, with methods which are adapted to the specificities of the programmes for the SNS projects:

The SNS JU will define in 2022 the needs and methods for the ex-post audits, in close cooperation with the Common Support Centre of the European Commission, in view of a coordinated approach of audits of beneficiaries. A common audit plan for all EU services involved in the programme Horizon Europe will be implemented by the CSC of the Commission, acting on behalf of the SNS JU. The first audits will be launched in 2023.

4. BUDGET 2021-2022

In accordance with the provisions of the Regulation, the contributors for its budget are:

- The European Union, covering administrative and operational costs.
- The Private Member of the Joint Undertaking, which shall make or arrange for their constituent entities and affiliated entities to make financial contributions to the JU's administrative costs.

The Union budget indicated in Table 1 (Statement of Revenue) will constitute a ceiling for the actual Union contribution, in accordance with Article 10 of that Council Regulation.

Budget Revenue

Title 1 and 2: The SNS JU will receive Union's funding for its administrative and operational expenditure, as foreseen in the Council Regulation. The Private Member will contribute only to the SNS JU's administrative costs.

Title 3: As shown in Table 1 ('Statement of Revenue'), the financial contributions from EFTA¹ countries are included into the SNS JU budget, proportionally to the EU budget. Being additional to the general EU budget, they are represented separately from the specific EU contributions. The EFTA rate is the same for administrative and operational budgets.

In line with Article 3 ('Flexibility Clause') of the Commission Decision on the financing of the Union financial contribution to the Smart Networks and Services Joint Undertaking and the adoption of the work programme for 2021/2022, C(2021)9131, the original estimated budget distribution, indicated in its Annex, was revised to take into account the late adoption of the Council Regulation establishing the Smart Networks and Services Joint Undertaking. Therefore, in this 2021-2022 Work Programme, the operational commitment appropriations are reinforced with an amount of €2,038,029 from the administrative commitments appropriations.

The EU financial contribution (including the contribution from EFTA countries) for the 2021-2022 Work Programme is estimated on €246,379,155. This amount is based on:

- A 2021 budget amount of €121,128,000 – foreseen for the Smart Networks and Services Joint Undertaking in the the general budget of the European Union for the financial year 2021 – to be fully used in 2022. This amount, which includes the contribution from EFTA countries, is still subject to final approval by the Commission services.
- A 2022 budget amount of €124,940,646 – foreseen for the Smart Networks and Services Joint Undertaking in the the draft general budget of the European Union for the financial year 2022. This amount, which includes the contribution from EFTA countries, is still subject to its adoption by the budgetary authority and may be updated accordingly.

Table 1: Statement of Revenue

STATEMENT OF REVENUE					
Title Chapter	Heading	Financial 2022			
		Estimate Commitment Appropriations	In %	Estimate Payment Appropriations	In %
ESTIMATE TOTAL REVENUE		246.379.155		170.617.698	
EU contribution (excl. third countries contribution/EFTA)		239.918.480		166.199.227	
of which Administrative		1.204.612		1.204.612	
of which Operational		238.713.868		164.994.615	
Third countries contribution (including EFTA)		6.150.166		4.107.962	
of which Administrative EFTA		37.423		37.423	
Of which administrative third countries excluding EFTA					
of which Operational EFTA		6.112.743		4.070.539	
Industry (financial) contribution		310.509		310.509	
of which Administrative		310.509		310.509	
of which Operational					

¹ 2021 EFTA rate – 2.66%, 2022 EFTA rate – 2.47%.

Table 2: Statement of Expenditure

STATEMENT OF EXPENDITURE					
Title Chapter	Heading	Financial 2022			
		Estimate Commitment Appropriations	In %	Estimate Payment Appropriations	In %
1- Staff		991.085		991.085	
2-Other administrative		561.460		561.460	
Reactivations of prior year unused administrative budget (if relevant)					
TOTAL ADMINISTRATIVE (1+2)		1.552.545		1.552.545	

3-Operational		244.826.610		169.065.153	
Reactivations of prior year unused administrative budget (if relevant)					
TOTAL OPERATIONAL (3)		244.826.610		169.065.153	
ESTIMATE TOTAL EXPENDITURE		246.379.155		170.617.698	

¹ 2021 EFTA rate – 2.66%, 2022 EFTA rate – 2.47%.

5. ANNEXES

5.1. IKKA Plan

OVERVIEW ESTIMATED AMOUNT OF IKAA FOR YEAR 2022 ¹³					
Additional Activities category ¹⁴	Description of the Additional Activities ¹⁵	Country of establishment of the contributor	Link to JU objectives / KPIs ¹⁶	Link to JU project/ topic (if relevant)	Estimated annual value (in M€) ¹⁷
1. Support to additional R&I					
	TBD ¹⁸	TBD	TBD	TBD	TBD
2. Scale up of technologies					
	TBD	TBD	TBD	TBD	TBD
3. Demonstrators					
	TBD	TBD	TBD	TBD	TBD
4. Creating new business opportunities					
	TBD	TBD	TBD	TBD	TBD
5. Training & skills development					
	TBD	TBD	TBD	TBD	TBD
6. Contribution to the development of new standards, regulations and policies					
	TBD	TBD	TBD	TBD	TBD
7. Supporting ecosystem development					
	TBD	TBD	TBD	TBD	TBD
8. Communication, dissemination, awareness raising, citizen engagement					
	TBD	TBD	TBD	TBD	TBD
9. Others					
	TBD	TBD	TBD	TBD	TBD
TOTAL ALL PLANNED IKAA					
IKAA BREAKDOWN PER COUNTRY					
Country	Estimated value				
TBD	TBD				

¹³ One table per year concerned in case of multiannual WP

¹⁴ Please provide the reference to the specific provision in the scope of additional activities for the joint undertaking ;

¹⁵ Please provide more information on the envisaged Additional Activities

¹⁶ to be selected from the SRIA

¹⁷ Costs incurred by contributors in implementing additional activities less any contribution to those costs from the Union and from the participating states of that joint undertaking

¹⁸ Amounts and other table information will be considered throughout the year once the certification approach has been agreed upon with the 6G IA. Specific amounts will be defined in Q3 2022.

SNS JU IKAA Plan classification key

1. Support to additional R&I:

- Spin off research and development activities (all research activities aligned with the goals of the SNS partnership, namely research into the evolution of 5G systems and research into 6G systems which is not funded by the SNS partnership).
- Activities financed by loans of the European Investment Bank and not funded under a grant by the Union; (e.g. establishment of new R&D centers, loans for R&D activities).
- Activities related to the preparation of, and participation in, research and innovation projects funded by private or public bodies other than the Union.
- Provision of experts (e.g., to assess economic / societal impact of SNS technologies).
- Acquisition of R&D lab equipment and infrastructures funded by own resources.

2. Scale up of technologies:

- Investment in start-ups and new products in the advanced networks and services domains.
- Investment in new infrastructures in conjunction with CEF2 proposals and projects.
- Orchestration and support of projects in related peer programs such as the EUREKA Clusters, and specifically the CELTIC-NEXT cluster where there is a lot of future networks and applications investments.

3. Demonstrators:

- Trials, demos, pilots and Proof of Concepts (PoCs), go to market, early deployment of technologies; (not funded by SNS projects like customer trials).

4. Creating new business opportunities :

- Activities related to patent Filing not funded under a grant by the Union (the costs associated with all Patent filing activities aligned with the goals of the SNS partnership, namely IPR in the area of 5G and 6G. This includes both the costs associated with IPR preparation as well as submission costs).

5. Training and skills development:

- R&D training programs (e.g., PhD programs) not being funded by the EC in the advanced networks and services domain.

6. Contribution to the development of new standard, regulations, and policies:

- Contributions to standardization (all standardization activities aligned with the goals of the SNS partnership, namely standardization of 5G and 6G in SDOs like 3GPP, O-RAN Alliance, ITU etc. which is not funded by the SNS partnership. This includes both the costs associated with participation in standardization as well as any necessary technical preparatory work such as research or simulation).
- Contributions to regulatory processes; (all regulatory activities – e.g. ITU-R; CEPT, national processes, contributions to preparation of WRC – aligned with the goals of the SNS partnership, namely related to 5G and 6G which are not funded by the SNS partnership).

7. Supporting ecosystems development:

- Activities to develop the ecosystem including building cooperation with verticals; (e.g., creation of specific interest groups, International cooperation not funded under a grant by the Union).

8. Communication, dissemination, awareness raising, citizen engagement:

- Dissemination activities of results globally to achieve consensus on supported technologies as preparation of future standards; (publications, workshops, conferences).
- SNS related education and events to promote future ICT technologies.

9. Others:

- Investment in environmental and Green deal evolutions.
- Contributions to activities of the 6G Smart Networks and Services Industry Association (6G-IA) and any other group or association of stakeholders in the area of the Smart Networks and Services Joint Undertaking, not funded under a grant by the Union; (e.g., working groups, white papers).