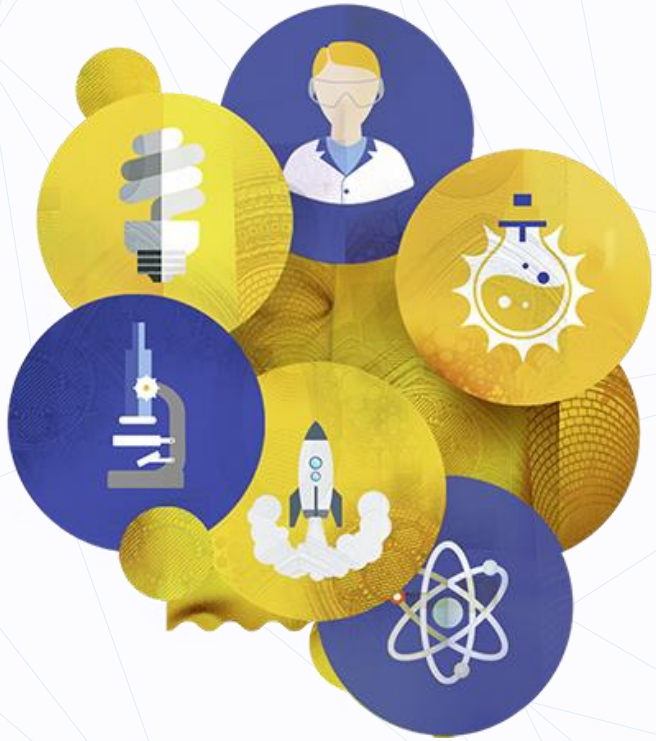
Horizon Europe
Smart Networks & Services Partnership

Németh Edina
Nemzeti Kutatási, Fejlesztési és Innovációs Hivatal



DIGITAL IN THE NEXT MFF: OVERVIEW

Digital Europe

1. High Performance Computing (HPC)
2. Artificial Intelligence (AI)
3. Cybersecurity
4. Advanced digital skills
5. Digital transformation and interoperability

~ 7.5 B €

Digital in Horizon Europe

1. Digital under "global challenges"
   - Digital and industry cluster
   - Digital in other clusters - health, mobility, energy, environment,..
2. FET Open under Open Innovation
3. Research Infra under Open Scienc

~ 12 B €

CEF - Digital

Connectivity

- Synergies with Transport /Energy
- WIFI/BB 4EU
- 5G roll out

~ 2 B €

MEDIA under Creative Europe within Cohesion and Values

- Distribution of works
- Creation

~ 1 B €

EUs IKT források – több csatornán

- **Digitális technológiák az EU következő többéves költségvetési keretében**

  Digital Europe | Horizon Europe | Connecting Europe Facility | Creative Europe / Media

- **Horizon Europe**
  - **2. Pillér: Digitális gazdaság, ipar és űrkutatás klaszter**
    (e.g. Kutatási és innovációs projektek, innovációs projektek, koordináció)
  - **2. Pillér: Globális kihívásokat célzó klaszterek**
    Globális társadalmi kihívások (egészségügy, kultúra, biztonság, közlekedés, környezet, energia, mezőgazdaság, élelmiszeripar, biogazdaság stb.)
  - **3. Pillér: Innovatív Európa** (Pathfinder (multidiszciplináris kutatás), Transition, Accelerator (KKV))
  - **1. Pillér: Kiváló tudomány** (ERC, MSCA nyitott felhívások + kutatási infrastruktúra)

- **Partnerségi konstrukciók** – KDT, HPC, SNS, ….
- **Harmadik feleknek szóló finanszírozások: kaszkád pályázatok**
  (pl. nagy pilotok, I4MS, IoT EU platformok, AI4EU platform,
  FET zászlóshajó programok, digitalis innovációs központok stb.) + kifutó ERA-NET felhívások

HORIZONT EURÓPA

1. pillér
Kiváló tudomány

- Európai Kutatási Tanács
- Marie Skłodowska-Curie-cselekvések
- Kutatási infrastruktúrák

2. pillér
Globális kihívások és az európai ipar versenyképessége

Klaszterek

- Egészségügy
- Kultúra, kreativitás és befogadó társadalom
- A társadalmat szolgáló polgári biztonság
- Digitális gazdaság, ipar és világűr
- Éghajlat, energia és mobilitás
- Élelmiszerek, biogazdaság, természeti erőforrások és környezet

Közös Kutatóközpont

3. pillér
Innovatív Európa

- Európai Innovációs Tanács
- Európai innovációs ökoszisztémák
- Európai Innovációs és Technológiai Intézet

A részvétel bővítése és az Európai Kutatási Térség megerősítése

- A részvétel bővítése és a kiválóság terjesztése
- Az európai K+I-rendszer megreformálása és megerősítése

Partnerség

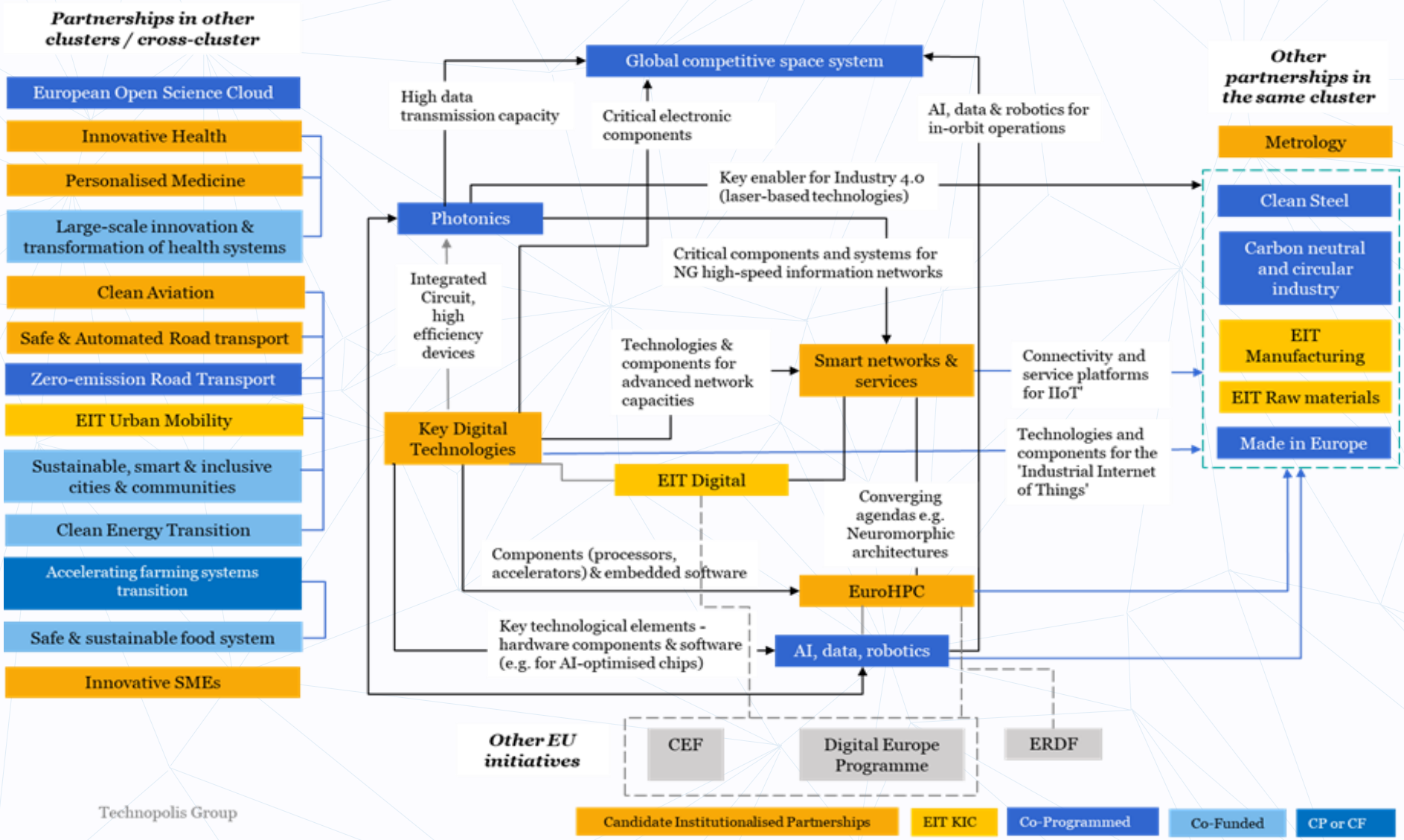
vezérelt program

https://ec.europa.eu/info/horizon-europe-next-research-and-innovation-framework-programme/european-partnerships-horizon-europe_en

4. klaszter

Digitális technológiák

Horizon Europe



Partnerships in Horizon Europe

- **Co-programmed European Partnerships**
  These are partnerships between the Commission and private and/or public partners. They are based on memoranda of understanding and/or contractual arrangements.

- **Co-funded European Partnerships using a programme co-fund action**
  Partnerships involving EU countries, with research funders and other public authorities at the core of the consortium.

- **Institutionalised European Partnerships**
  These are partnerships where the EU participates in research and innovation funding programmes that are undertaken by EU countries.

Digital Centric Partnerships

- **Key Digital Technologies** (proposed as institutionalised) addressing the technological challenges and emerging opportunities for Europe on key digital technologies. This include microelectronics, embedded software and smart microsystems enlarged with elements of photonics, higher-layers of software and complex system integration

- **High Performance Computing** (proposed as institutionalised) to develop and deploy highly competitive and innovative HPC ecosystems in Europe. It will build on the experience gained in EuroHPC for achieving world-class exascal eand post-exascale (HPC) technologies in Europe, including their integration with Quantum computing

- **Smart Networks and Services** (proposed as institutionalised) to strengthen the position of the European industry in the global race on digital connectivity infrastructures including “5G and beyond” and later "6G" network systems and associated services

- **Artificial Intelligence, data and robotics** (proposed as co-programmed) with a strong socio-economic transformational potential with impact in sectors like health, manufacturing, ship-building, construction, service industries and farming, etc.

- **Photonics** (proposed as co-programmed) with a strong and growing impact on a broad variety of end user industries, developing next-generation photonics components and systems fostering synergies and coordination amongst research and industrial actors.

Smart Networks & Services

Joint Undertaking

https://ec.europa.eu/info/horizon-europe-next-research-and-innovation-framework-programme/european-partnerships-horizon-europe_en

6G SNS

6G SNS IA
www.6G-IA.eu
The VOICE of EUROPEAN INDUSTRY for the DEVELOPMENT and EVOLUTION of 5G&6G
5G PPP
PUBLIC-PRIVATE PARTNERSHIP
6GSNS
The 5G PPP is co-funded by the Horizon 2020 programme of the European Union

Smart Networks & Services Proposal

6G networks, new applications and end devices

5G IA INFRASTRUCTURE ASSOCIATION

Alliance for Internet of Things Innovation

CISPE.cloud

2020 NETWORLD

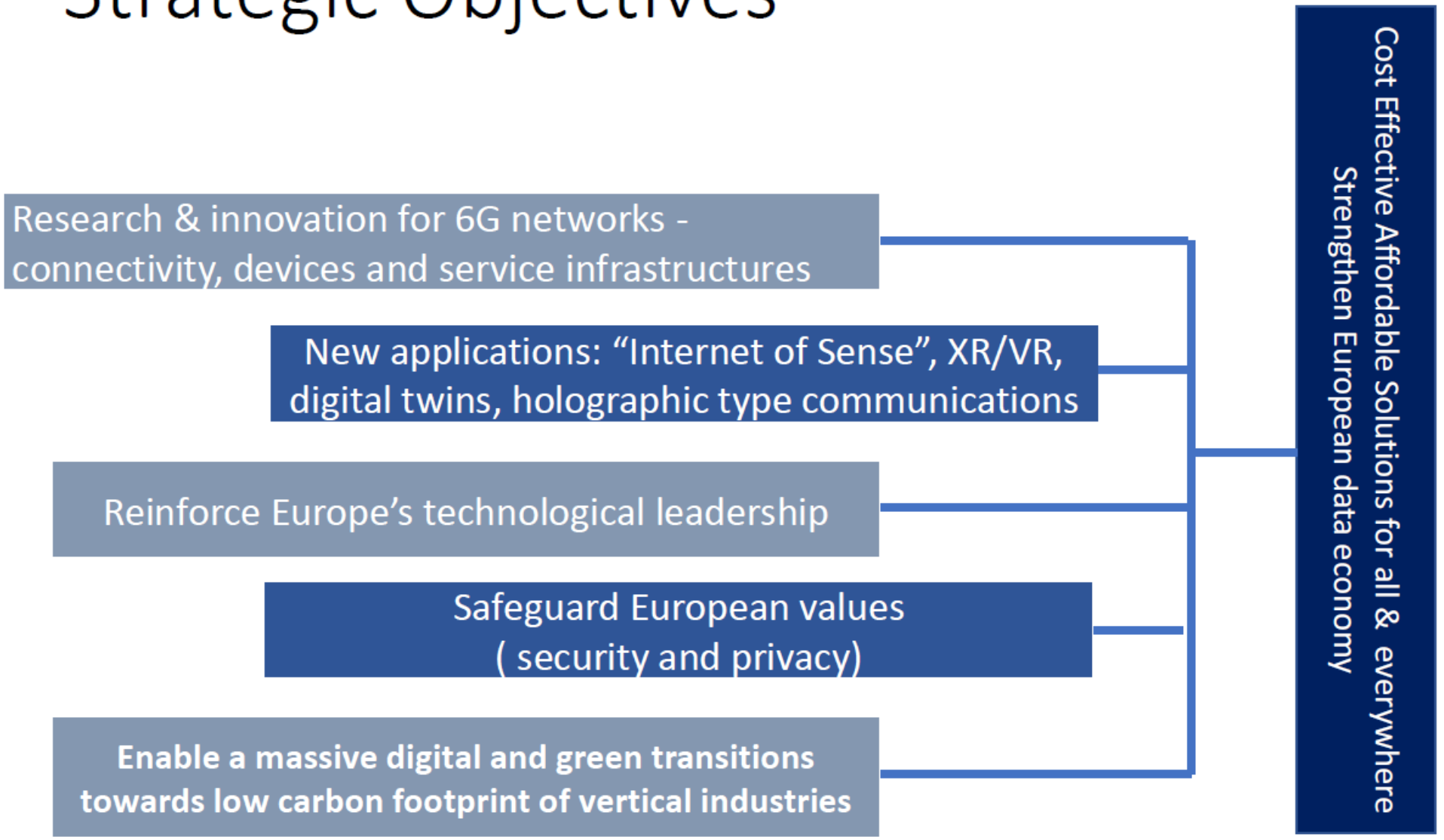
NESSI

Proposal supported by more than 1.000 organisations: Industry, SMEs, R&D centers and Universities)

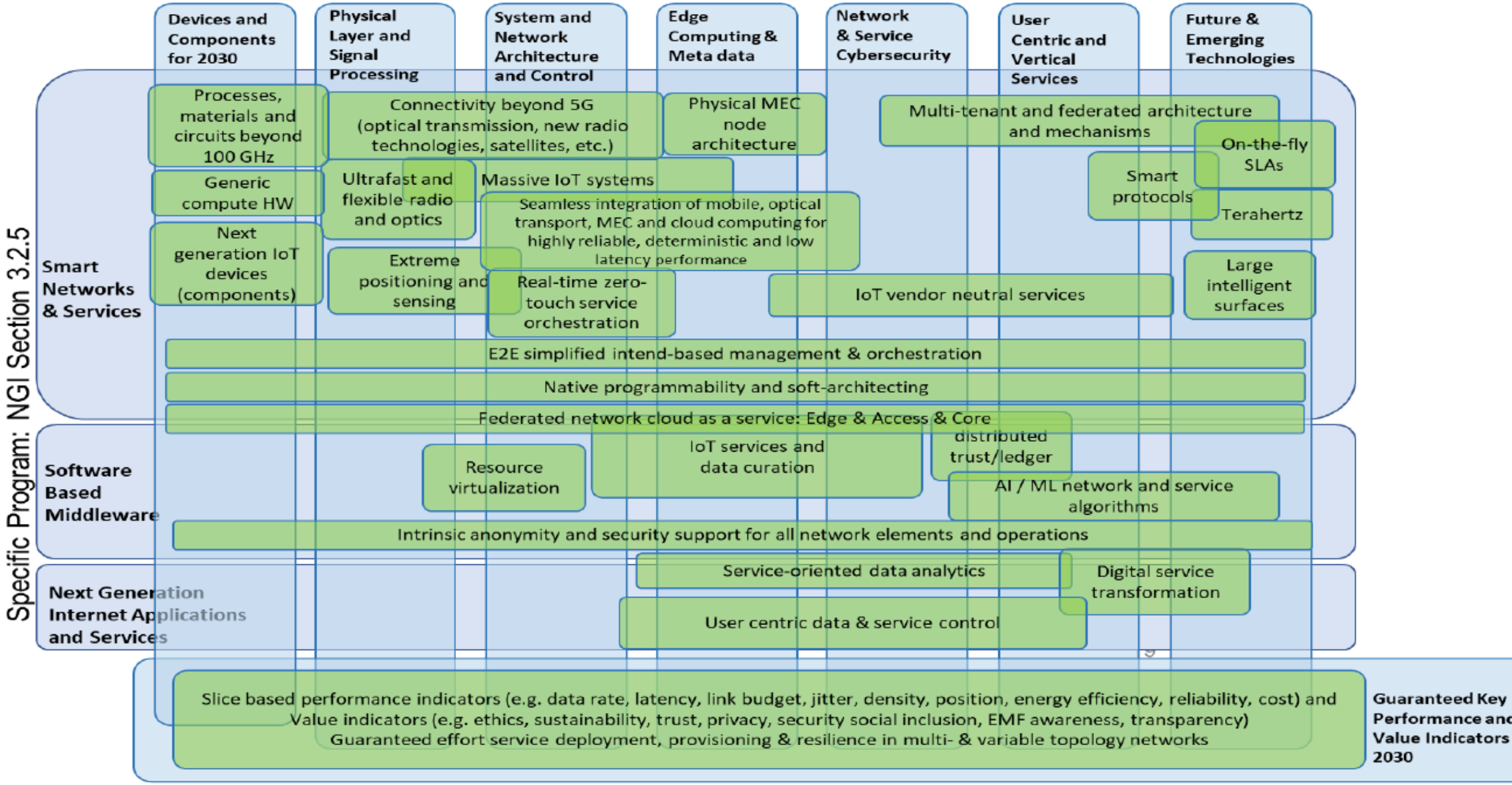
900 M€ public funding
+
900 M€ private funding

SNS Work Groups

SNS – Strategic Objectives

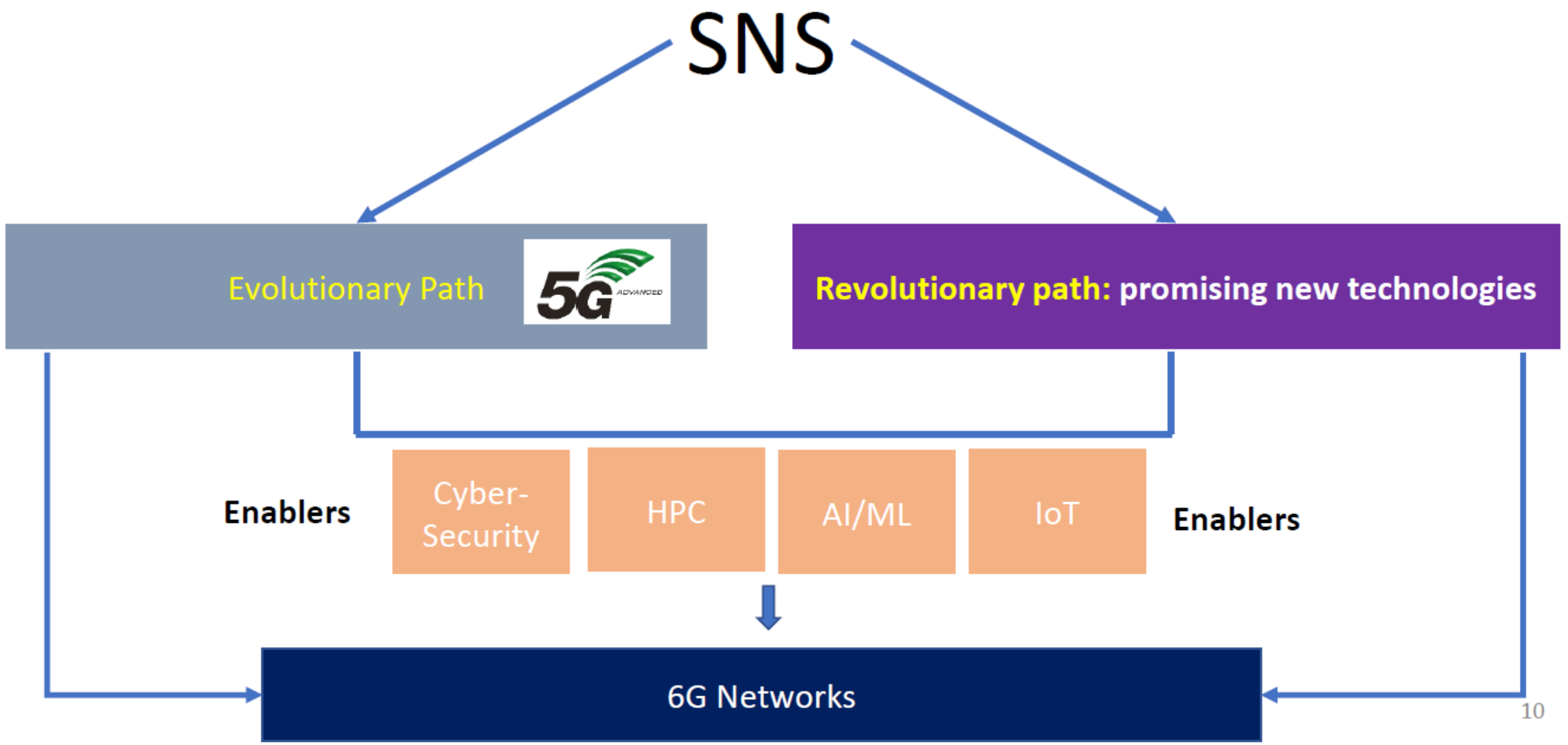


Research Areas



The SNS framework

SNS Goals: Increased Network Performance, Energy Efficiency, Serve EU policies, address KVIs, strengthen EU's position, stimulate new business ecosystems, …



Public & Private contributions

- EU upfront commitment of €900M between 2021-2017
- 6G-IA commitment to match the amount from
  - In-kind contributions to Operational Activities (IKOP)
  - In-kind contributions to Additional Activities (IKAA)
- 6G-IA to contribute to Joint Undertaking office cost out of association membership fees
  - **Membership fees to be kept at reasonable level** to make membership attractive, in particular for SMEs, Research Centers and Universities
  - Need for sufficient membership -> **beneficiaries receiving significant EU funding expected to become member of the association**

NetWorld 2020

Sep 2020

Strategic Research and Innovation Agenda 2021-27

European Technology Platform NetWorld2020

"Smart Networks in the context of NGI"

2020

5G IA

The 5G Infrastructure Association

European Vision for the 6G Network Ecosystem

Date:	2021-06-07		Version:	1.0

DOI: 10.5281/zenodo.5007671

Key information

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

Key information

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

Structure

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

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

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

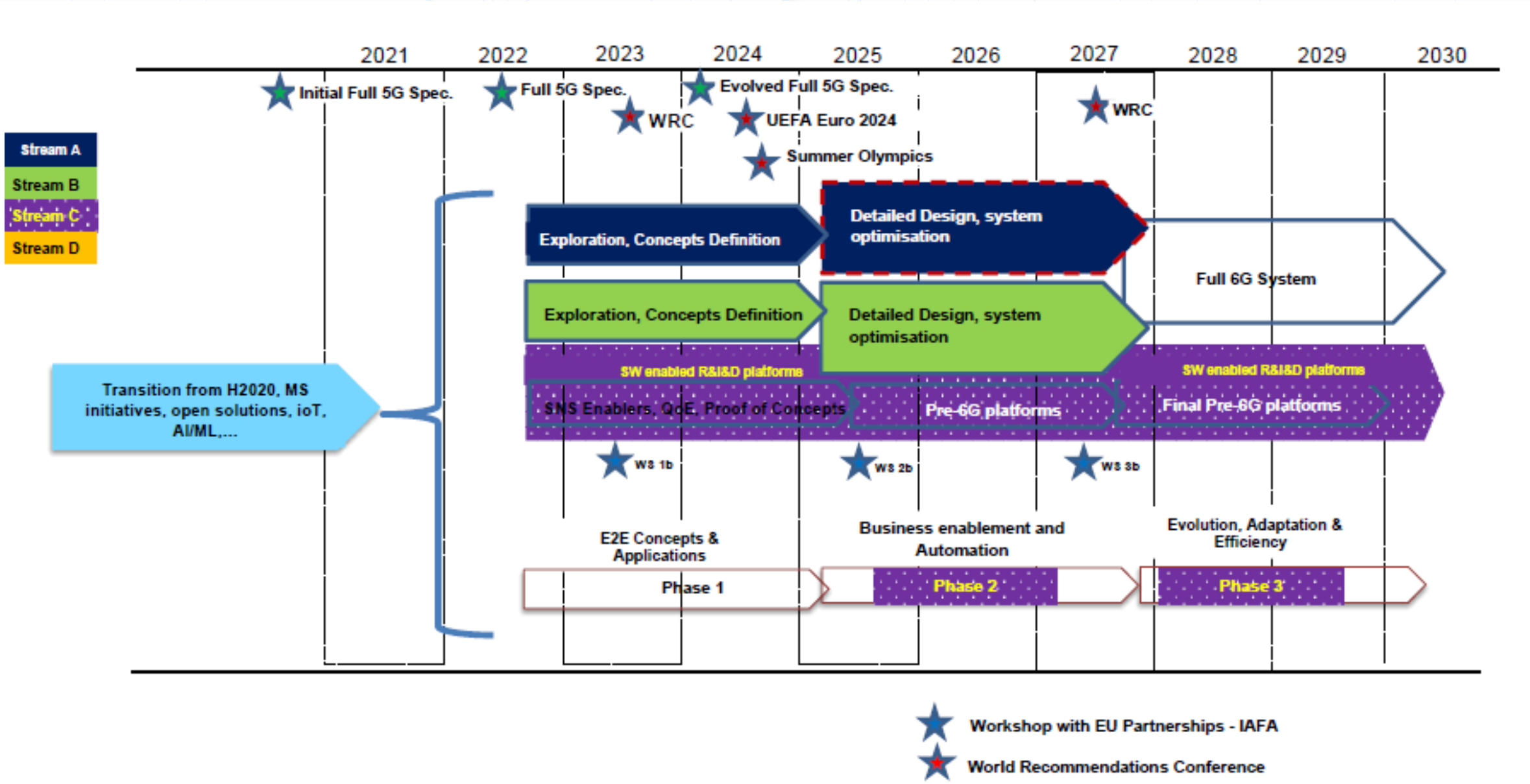
6G (60%) → **revolutionary path**

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

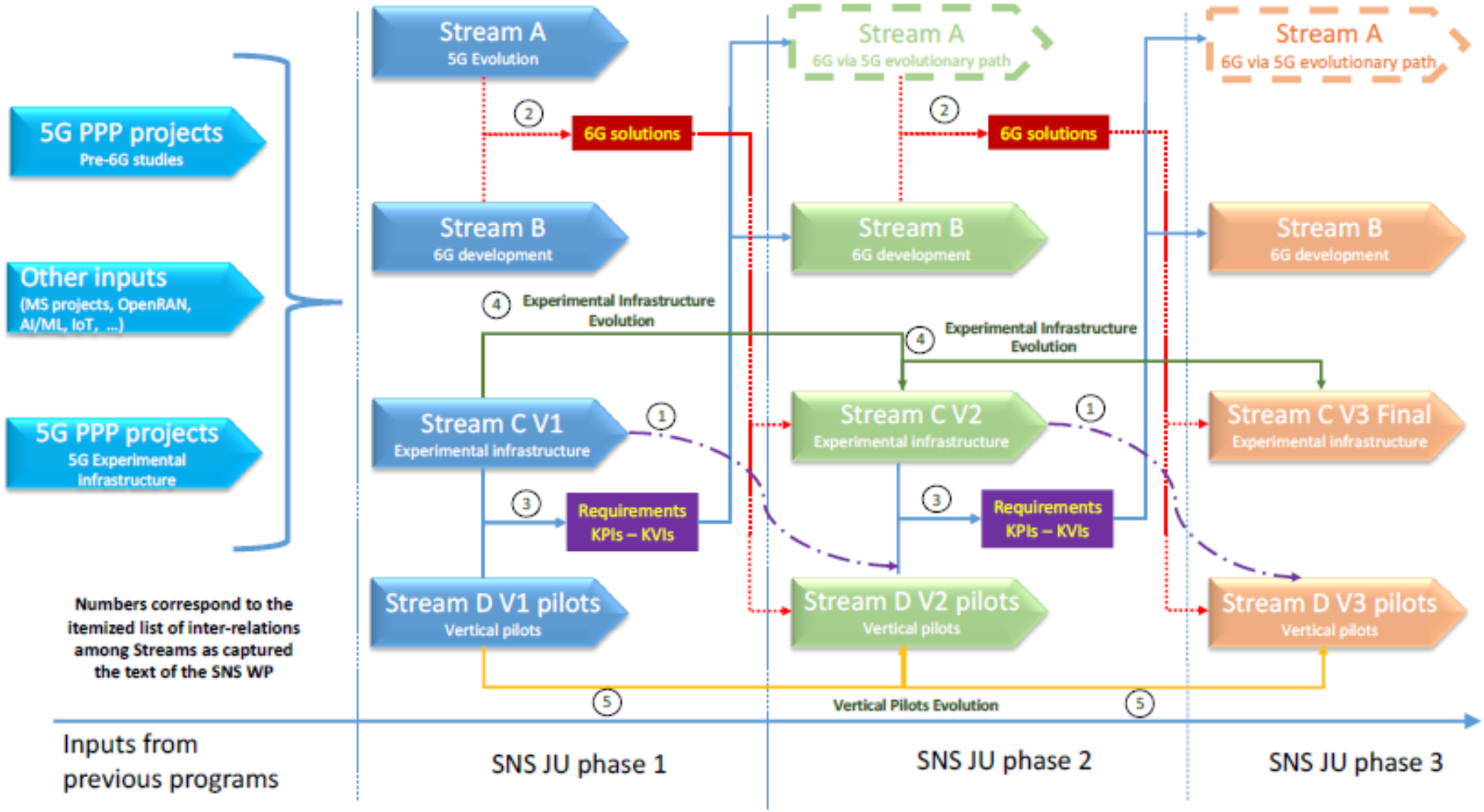
Stream C (~10% - RIA): SNS experimental infrastructures

CSAs – 2%

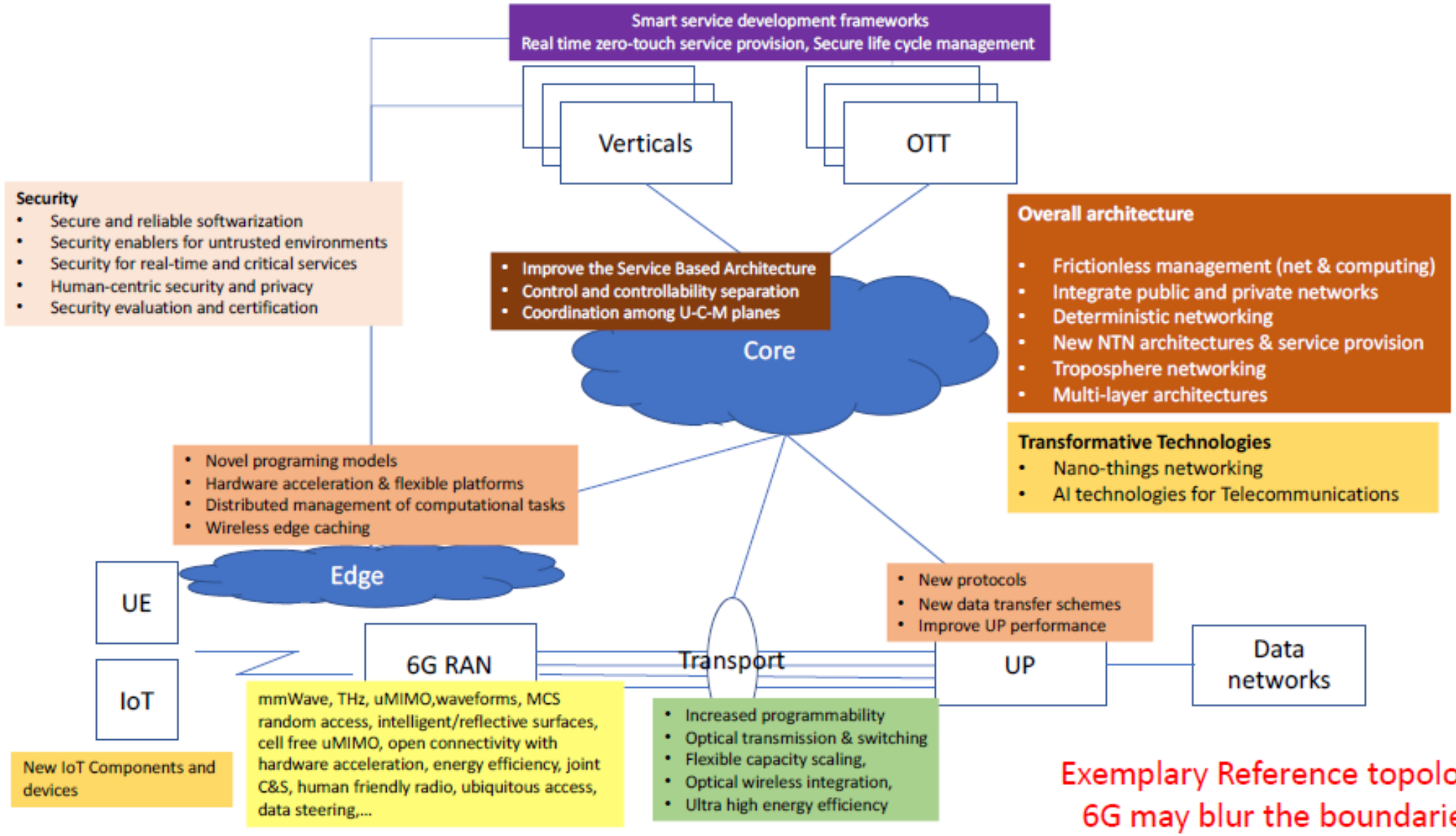
SNS Roadmap


2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
Initial Full 5G Spec.
Full 5G Spec.
Evolved Full 5G Spec.
WRC
UEFA Euro 2024
Summer Olympics
WRC
Stream A
Stream B
Stream C
Stream D
Exploration, Concepts Definition
Detailed Design, system optimisation
Full 6G System
Exploration, Concepts Definition
Detailed Design, system optimisation
SW enabled R&I&D platforms
SW enabled R&I&D platforms
Transition from H2020, MS initiatives, open solutions, ioT, AI/ML,...
SNS Enablers, QoE, Proof of Concepts
Pre-6G platforms
Final Pre-6G platforms
WS 1b
WS 2b
WS 3b
E2E Concepts & Applications
Business enablement and Automation
Evolution, Adaptation & Efficiency
Phase 1
Phase 2
Phase 3
Workshop with EU Partnerships - IAFA
World Recommendations Conference

SNS R&I WP: Linking between Streams and Phases



A high-level view



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

Key information

Funding and tenders (16)

Need help? | Sort by: Submission status

SNS Large Scale Trials and Pilots (LST&Ps) with Verticals

HORIZON-JU-SNS-2022-STREAM-D-01-01

Call for proposal | Grant

Programme	Horizon Europe (HORIZON)	**Status**	Open for submission
Type of action	HORIZON JU Innovation Actions	**Deadline model**	single-stage
Opening date	18 January 2022	**Deadline date**	26 April 2022 17:00:00 Brussels time

Real-time Zero-touch Service Technologies

HORIZON-JU-SNS-2022-STREAM-A-01-07

Call for proposal | Grant

Programme	Horizon Europe (HORIZON)	**Status**	Open for submission
Type of action	HORIZON JU Research and Innovation Actions	**Deadline model**	single-stage
Opening date	18 January 2022	**Deadline date**	26 April 2022 17:00:00 Brussels time

6G Holistic System

HORIZON-JU-SNS-2022-STREAM-B-01-05

Call for proposal | Grant

Programme	Horizon Europe (HORIZON)	**Status**	Open for submission
Type of action	HORIZON JU Research and Innovation Actions	**Deadline model**	single-stage
Opening date	18 January 2022	**Deadline date**	26 April 2022 17:00:00 Brussels time

Call topic

- SNS Large Scale Trials and Pilots (LST&Ps) with Verticals
- Real-time Zero-touch Service Technologies
- 6G Holistic System
- SNS experimental Infrastructure
- SNS External Cooperation and Global 6G Events (G6GE)
- Ubiquitous Radio Access
- Edge Computing Evolution
- Green Radio Technology
- SNS operational CSA
- Evolved Architecture for Global Green Systems
- Communication Infrastructure Technologies and Devices
- Sustainable Capacity Networks
- Trustworthy and Reliable End-to-end connectivity Software platforms
- Wireless Communication Technologies and Signal Processing
- Secure Service development and Smart Security
- System Architecture

Topics at glance

h and Innovation Actions (RIA)			
A			
-STREAM-A-01-01	EUR 6 Million	TRL 3->5 by the end of the project	**Open,** IKOP incentive applies
-STREAM-A-01-02	EUR 6 Million		
-STREAM-A-01-03	EUR 6 Million		
-STREAM-A-01-04	EUR 6 Million		
-STREAM-A-01-05	EUR 6 Million		
-STREAM-A-01-06	EUR 6 Million		
-STREAM-A-01-07	EUR 6 Million		
B			
-STREAM-B-01-01	EUR 24 Million (6)	TRL 2->4 by the end of the project	**Open,** IKOP incentive applies
-STREAM-B-01-02	EUR 30 Million (6)		
-STREAM-B-01-03	EUR 25 Million (5)		
-STREAM-B-01-04	EUR 20 Million (5)		
-STREAM-B-01-05	EUR 23 Million (23)	TRL 2->5 (eop)	**Restricted (6G-IA)**
C			

Funding Rate:

- 100% for non-for-pro organisations,

- 90% for profit organis

Topics at a glance

Topic	Indicative Budget	TRL	Type
Innovation Actions (IA)			
STREAM D			
SNS-2022-STREAM-D-01-01	EUR 46 Million (10-15)	TRL 5->7 eop	**Restricted**
Coordination and Support Actions (CSA)			
SNS-2022-STREAM-CSA-01	EUR 3 Million	N/A	**Open**
SNS-2022-STREAM-CSA-02	EUR 2 Million	N/A	**Open**
Total	**EUR 240 Million**		

Funding Rate:

Stream D

- 100% for non-for-profit organisations,
- 70% for profit organisations

CSA's

- 100% for non-for-profit organisations,
- 90% for profit organisations

In Kind Contribution to Operational Costs (IKOP)

In Kind Contribution to Operational Activities(IKOP) are defined in Article 2 (8) of EU Council regulation establishing the Joint Undertakings under Horizon Europe (SBA) as follows:

i*n-kind contributions to operational activities means contributions by private members, constituent entities or the affiliated entities of either, by international organisations and by contributing partners, consisting of the eligible costs incurred by them in implementing indirect actions less the contribution of that joint undertaking and of the participating states of that joint undertaking to those costs.*

Estimated value of the IKOP by the members other than the Union or their constituent entities:

Minimum EUR 12 million. **A minimum programme level IKOP contribution of 5% is targeted and proposals are expected to significantly contribute to this target**

-In Kind Contribution to Operational Activities is an important tool to stimulate private investments in addition to public investments as requested by the JU implementation;

-IKOP can only be generated by entities belonging to the «Member other than the Union» signatory to the JU. In that case, itisthe 6G-Infrastructure Association

Private entities belonging to the 6G-IA will naturally generate IKOP due to the reduced funding Rate (90% RIA/CSA, 70% IA)

IKOP generation at 5% level per project is **not an eligibility criterion** per se

IKOP specific Impact sub-criterion: *Extent to which the members of the proposed consortium contribute to the expected level of in-kind contribution to operational activities to help reaching the target additional investments*

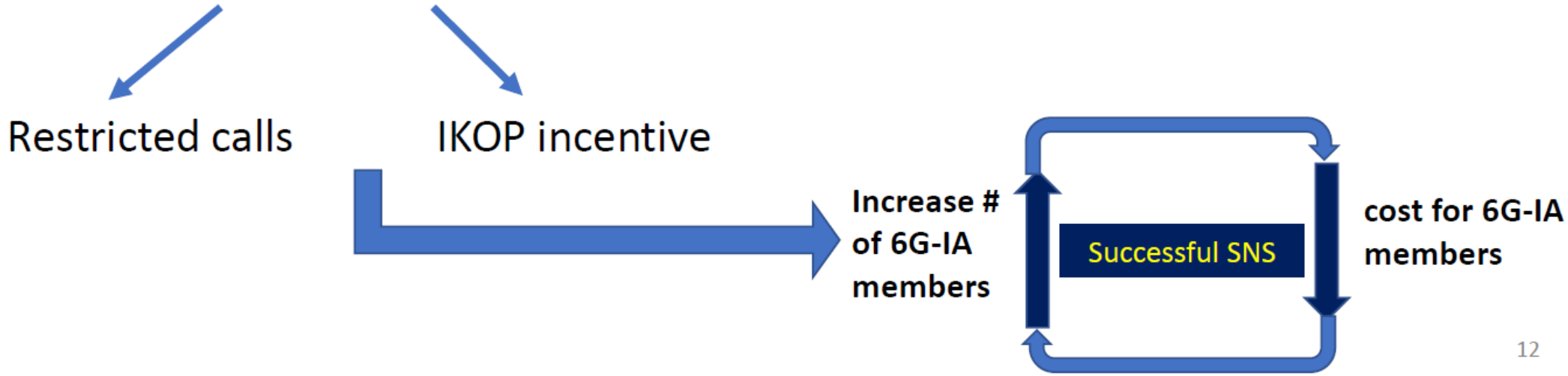
SNS Consortium Building

Most of the calls are open

- First priority in forming a proposal is excellence, **BUT**

Consider joining the 6G-IA

- Most of the EU key players are members – good chance for networking
- Work in parallel (inside the 6G-IA) for the formation of the 6G vision
- Participation in all calls



Key information

SNS R&I WP Phase 1 –	**All Streams**
Publishing Date:	**13 January**
Closing Date:	**26.04.22 at 17:00 Brussels time**
Call 1 budget:	**240 M EUR**

Horizon Europe finanszírozás
Harmadik felek felhívásai
(más néven Kaszkád támogatások)

https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/competitive-calls

Munkaprogram / felhívás → **Projekt** → **3. fél felhívása** → **Kaszkád támogatás**

SNS Cascading grants are planned for:
SNS-2022-STREAM-C-01-01, RIA implemented under Stream C: 20 % of the budget will be reserved for third party financing;
SNS-2022-STREAM-D-01-01, IA implemented under Stream D: 40 % of the budget will be reserved for third party financing;
The third party financing contractual clause of Article 6 D.1 of the MGA will apply.

The first SNS Information Day

jointly organised by the EC and the 6GIA

Introduction:

The Smart Networks and Services Joint Undertaking was formally established on the 15th of December and the **SNS JU work programme** has been published.

It is now time to present the SNS Work Programme and to discuss the opportunities for projects under the **SNS JU 1st Call (click for more info)** which opens on the 18th January with a submission date on the 26th April.

The latest official information about the SNS JU will always be available on the commission website via this link:

https://digital-strategy.ec.europa.eu/en/policies/smart-networks-and-services-joint-undertaking.

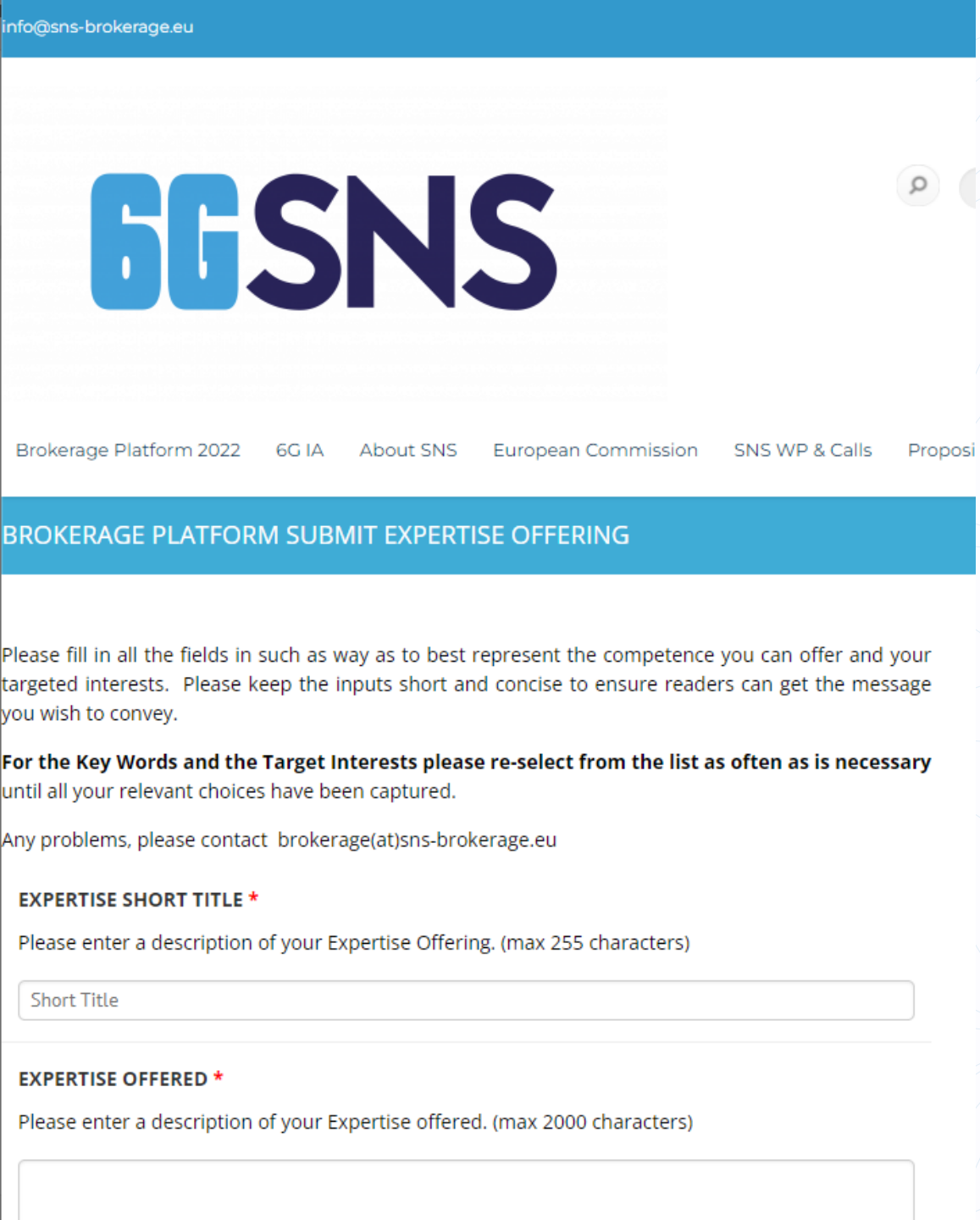
Recordings and presentation slides are available.

R&I Work Programme and Calls for Proposals The Smart Networks and Services Joint Undertaking

SNS-R&I-Work-Programme-2021-2022 (.pdf)

The first SNS calls for proposals are now open.

Moreover, the Connecting Europe Facility Digital (CEF Digital) provides funding possibilities for 5G deployment. Find out more information as regards CEF Digital.



SNS BROKERAGE PLATFORM 2022 has been launched and is available at https://sns-brokerage.eu

The SNS BROKERAGE tool resource can be used in 4 ways:

1. For offers of Expertise: (participants looking for projects) To post your profile and indicate your interests so prospective partners can find you.

2. For Idea owners or proposal leaders: (projects looking for participants) To post your project ideas so prospective partners can ask to join with you.

3. To browse Submitted Expertise Offerings To browse or search up loaded profiles to find the competence you need in your proposal(s)

4. To browse Submitted Proposal Ideas: To browse or search project ideas to see if there are any you would like to offer your participation to.

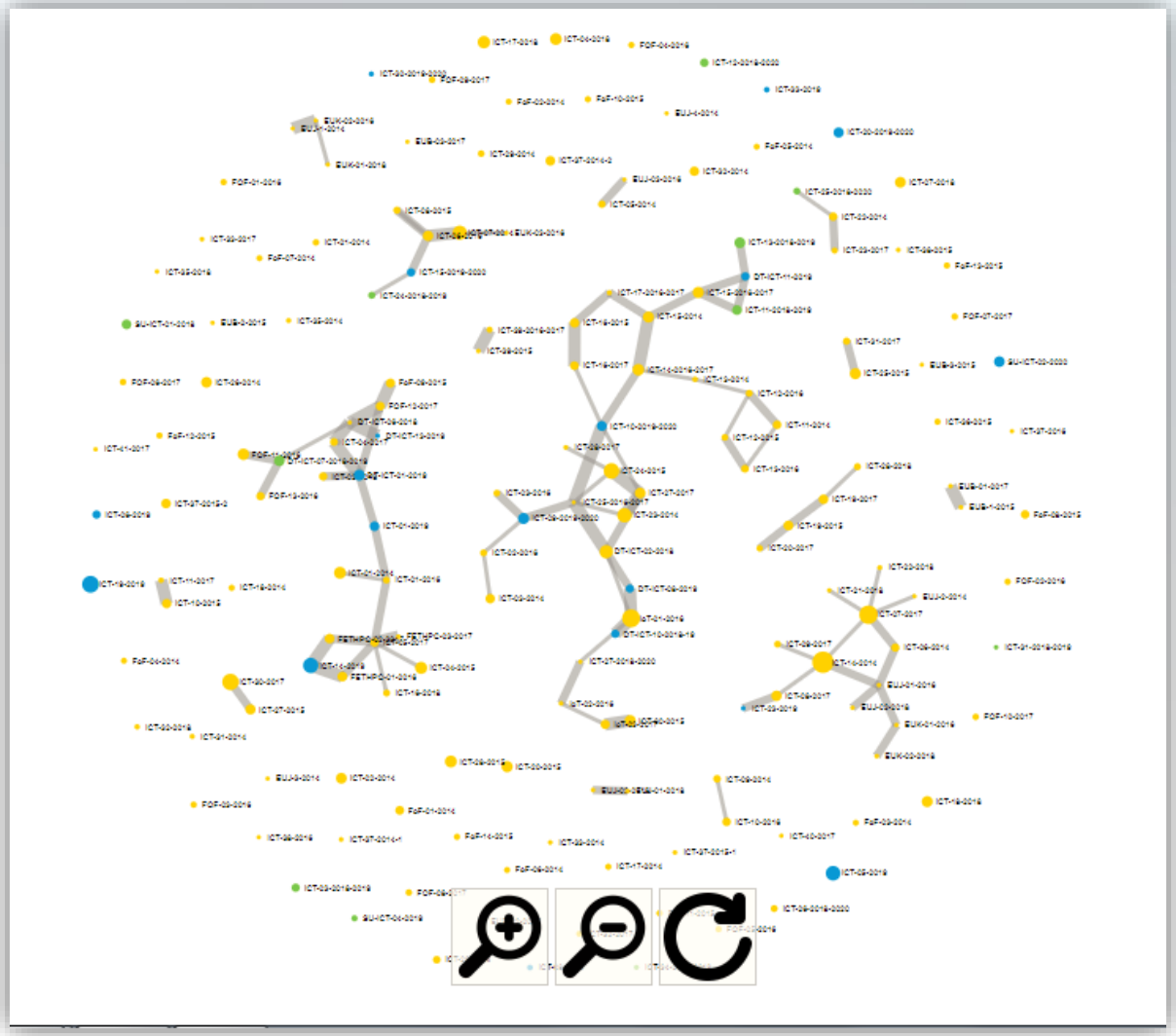
PHASE 1 SNS JU CALLS ARE NOW OFFICIALLY OPEN

Topic Tree

How are call topics linked?

How have these areas evolved over the years?

What is the new focus this year?



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 645216

IDEAL-IST

Horizon Funding & Tenders Portal
Brokerage Events
Information days and Relevant Events
Digital Innovation Ecosystems
Re
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Digital Innovation Ecosystems
Are you looking for a faster and easier way to get involved in Horizon programmes and the European research and innovation ecosystem?
Many running projects offer funding opportunities for innovative ideas embedded in dynamic digital ecosystems. In addition, these initiatives offer access to facilities and competence centers to help you experiment with the latest digital technologies.
Find out more on our Other Funding Sources

CONNECT | DIGITIZE | TRANSFORM

Edina Nemeth

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Horizon Europe, Digital, Industry & Space (Cluster 4)
European Innovation Council (Pillar 3)

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