SMART NETWORKS AND SERVICES PARTNERSHIP - OVERVIEW -

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Smart Networks and Services Task Force

AIOTI Webinar, September 29, 2020

SNS PROGRAMME PROPOSAL

Draft proposal for a

European Partnership under Horizon Europe

Smart Networks and Services
Version 30 June 2020

Summary

The European communication networking and services sector is proposing the Smart Networks and Services Partnership to secure European leadership in the development and deployment of next generation network technologies and services, while accelerating European industry digitization. It will position Europe as a lead market and positively impact the citizens' quality of life, while boosting the European data economy and contributing to ensure European sovereignty in critical supply chains.
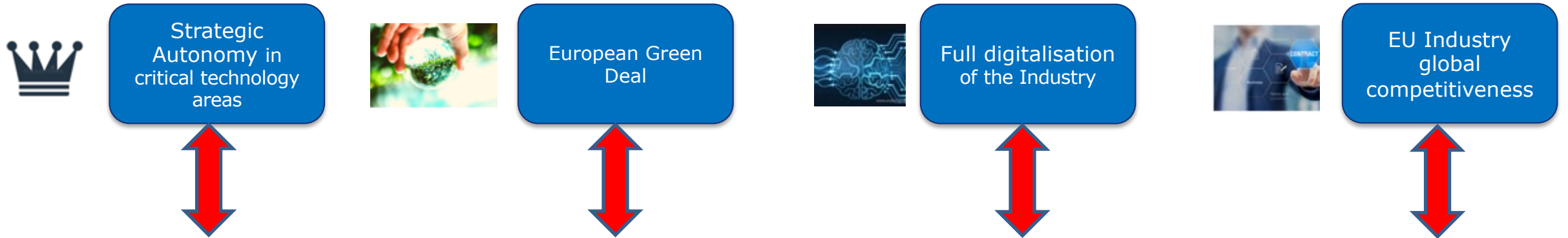
This document is supported by

- Proposal supported by different communities
  - representing significantly more than 1000 organisations from
    - Industry
    - SMEs
    - Research community (R&D centers and universities)
- Proposal is allocated to
  - Horizon Europe
    - cluster "Digital, Industry and Space"
    - area of Intervention "Next Generation Internet" as the center of gravity
    - with some links to other areas such as "Key Digital Technologies" and "Artificial Intelligence" in other Areas of Intervention
  - CEF – Connected Europe Facility, sub-program on 5G deployments at major European transport routes
- All partnership proposals published at
  - https://ec.europa.eu/info/horizon-europe-next-research-and-innovation-framework-programme/european-partnerships-horizon-europe_en
  - https://ec.europa.eu/info/sites/info/files/research_and_innovation/funding/documents/ec_rtd_he-partnership_smart-networks-services.pdf

Towards a 6G European Initiative

Modernised EU Connectivity Framework:
FDI, International cooperation, investment tools...

Strategic Autonomy in critical technology areas	European Green Deal	Full digitalisation of the Industry	EU Industry global competitiveness

Industry 6G Partnership Proposal

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

5G IA INFRASTRUCTURE ASSOCIATION   CISPE.cloud   NETworld 2020   NESSI   Alliance for Internet of Things Innovation

Accelerating 5G Deployment: CEF2, pan European corridors for Connected Cars

6G Vision and technologies across a comprehensive supply chain

European Commission

SNS PROGRAMME PROPOSAL: CHALLENGING AREAS AND EXPECTED IMPACT

SMART — NETWORKS & SERVICES

SNS Partnership Impact

Full industrial digitization and support of vertical industries	Smart buildings, smart manufacturing, smart transportation, healthcare, connected and automated mobility, media & entertainment, smart agriculture, public safety, smart cities, …
Research, Development and Validation of B5G systems	Input to SDOs, improve KPIs, enhance overall architecture to support needed enablers, mid and long-term research activities over all network domains, services and devices
Integrate new Technologies and support emerging applications	- AI & ML, HPC, cybersecurity, IoT - Holographic media, multi-sense networks, time engineered applications, critical infrastructure support applications
Business Aspects – Europe's share on the global market	- Retain Europe's completive edge in telecommunications - Strengthen Europe's vertical industries - Unleash innovation and economic opportunities
Societal and Political Aspects	- Support Green Deal objectives - Enable the achievement o SDGs goals via ICT solutions - Target digital autonomy and European sovereignty - Cater for social inclusiveness and create high-value jobs.

SWOT ANALYSIS

Strengths

- Investment grade regulation (EECC)
- **Two out of three of major telecommunications' vendors**
- **Wide manufacturing industry**
- **Vertical industry ready for adoption**
- **Privacy regulation (GDPR) now a worldwide benchmark**
- High awareness of network security issues
- **Strong research ecosystem in industry, R&D centres and universities**
- **Highly skilled personal in ICT (incl. wireless, network, AI, IoT, etc.) and many vertical sectors**
- Growing footprint of 4G/5G coverage and penetration
- In some EU countries strong start-up scene
- Research Programmes for cooperation among different stakeholders
- 3 world-wide satellite operators are based in Europe
- High number of telecom operators per country ensures competition

Weaknesses

- Regulation not clearly oriented to data economy compared to US and Asia (e.g., latest draft of the ePrivacy Directive makes it difficult for network operators to process personal data)
- Fragmented European market and regulatory environment
- **Lack of strong European Cloud providers**
- Lack of highly reliable, secure, intelligent, flexible and open multi-service Internet
- **Lack of a platform industry in Europe**
- **Weak European industry in the micro- and nanoelectronics industry (components)**
- No European mass market devices industry
- Weak European IT industry
- Lack of investment in newest technology
- **Slow and delayed deployment of newest technology compared to other regions**
- Less skilled personnel in computer science and software technology

Opportunities

- Smart connectivity and network services supporting all types of applications,
- **Strong SNS driven enablement for digital transformation of industry/verticals and public sectors**
- Create a data driven economy for automation of industry by distributed computing
- **Unfolding of a data driven economy in the EU with EU data (over 500 Million population under coverage), reap full benefit of AI on EU data**
- Need to boost data driven public policies (e.g., Data for Smart Mobility and SDGs), consolidate Verticals digital transformation
- Enhanced dependency on micro- and nanoelectronics industry to improve supply chains for communication and computing components
- **Arrival of new range of connected devices (IoT) opening device industrial opportunities for Europe**
- European values and ethical principles to improve security and user-controlled privacy as drivers of innovation, which is becoming attractive also for other regions
- A strong European drive for advanced use of smart network and communication solutions for the mitigation of climate change and other societal challenges (e.g., aging population, urbanization, EMF etc.)
- Emergence of new computing paradigms like fog, edge and core cloud processing under European data security law and secure communication networks providing end-to-end security for applications
- **Explosion of content generated by industry towards end users that need to be forwarded**
- Enhance public safety through advanced communications and by building the link between IoT and emergency communications

Threats

- **EU unable to keep pace with US and Asia economies which will be largely AI driven in the next decade (now largely data driven)**
- Benefits of EU data leveraged outside EU by non-European players. Verticals and SMEs may lose competitiveness
- Single stakeholder platform industry from outside of Europe dominates markets and business models
- **The industrial value chains increasingly rely on digital infrastructure that is susceptible to be hacked or sabotaged. The EU's high reliance on imports and technology can expose it to supply chain disruptions penetrating its critical infrastructure**
- Foreign companies (largely) controlling European data networks (because of equipment and/or operation)
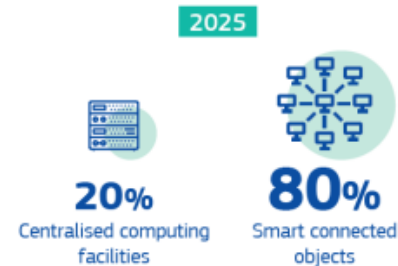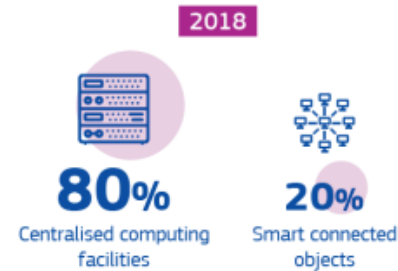- High number of telecom operators across Europe creates a fragmented digital market

Source: SNS proposal. June 30, 2020, https://ec.europa.eu/info/sites/info/files/research_and_innovation/funding/documents/ec_rtd_he-partnership_smart-networks-services.pdf

OBJECTIVES
GENERAL OBJECTIVE

- A key goal of the SNS Partnership is

  – to define and implement the research, innovation and deployment roadmaps that will enable Europe to lead in the creation of the next generation of smart network technologies and services.

  – These will be designed and implemented in such a way that European values like security and privacy are safeguarded and European technological sovereignty is further strengthened.

  – The Partnership will also focus on the full digitization of European society including vertical industries and public administration.

  – Thereby, the SNS Partnership targets to have a positive impact on the quality of life for European citizens and boost the European data economy.

Source: SNS proposal. June 30, 2020, https://ec.europa.eu/info/sites/info/files/research_and_innovation/funding/documents/ec_rtd_he-partnership_smart-networks-services.pdf

OBJECTIVE 1 – FULL INDUSTRY DIGITIZATION AND SUPPORT OF VERTICAL INDUSTRIES

- To provide and validate (in trials and pilots) the enablers and solutions for full digitization of the European vertical industries in order to improve the business operation.

a) Worldwide Web Data   b) Data Processing   c) Data Economy

WORKING ON B5G AND 6G

B5G and 6G is mainly about verticals

Industry 4.0 | Agriculture & agri-food | Automotive | Transport & logistics | Smart Cities & utilities | Public Safety | Smart (air)ports | EnergY | eHealth & wellness | Media & entertain.

Verticals Benefits	Automotive (€ mn)	Healthcare (€ mn)	Transport (€ mn)	Utilities (€ mn)	Total (€ mn)
Strategic	13,800	1,100	5,100	775	19,770
Consumer	13,900	207	-	3,000	17,110
Third Party	13,700	72	-	-	13,770
Total	42,200	5,530	8,300	6,470	62,500

Totals may not correspond due to rounding

# OBJECTIVE 2 – SOCIETAL AND POLITICAL ASPECTS

- To foster the development and adoption of technologies and solutions that will help to address societal challenges that can directly or indirectly contribute to

  1. Achieve EU Green Deal's targets and United Nations SDGs' goals.
  2. Enable Europe to reach digital autonomy and technology sovereignty.
  3. Ensure that digitization of our society will be done in a secure way to retain Europe's leading position in trust and privacy.
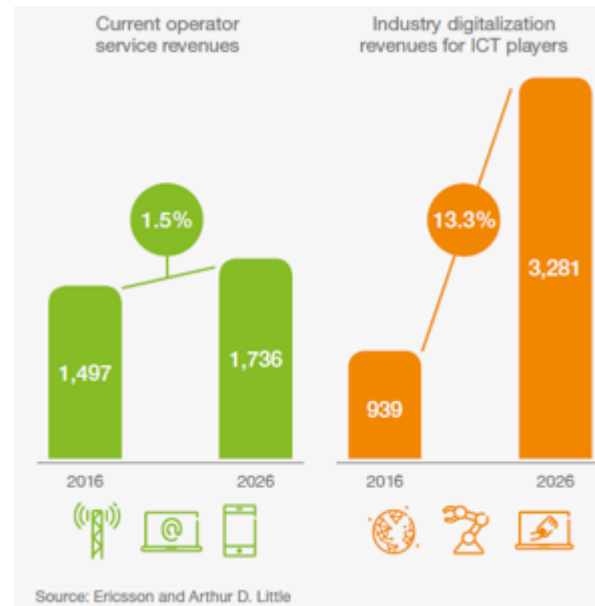 4. Create high-skill jobs and social inclusive technologies.
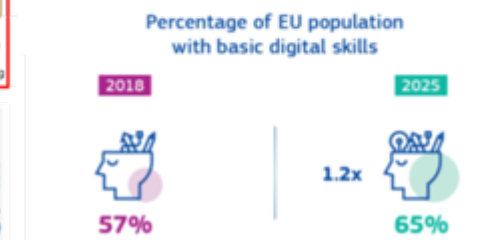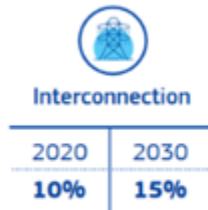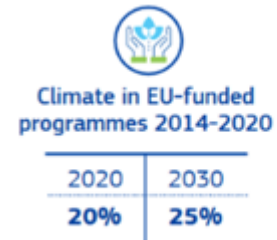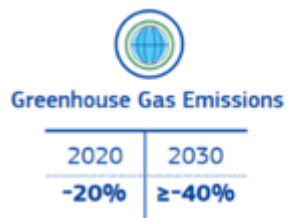
Source: SNS proposal. June 30, 2020, https://ec.europa.eu/info/sites/info/files/research_and_innovation/funding/documents/ec_rtd_he-partnership_smart-networks-services.pdf
and [14], [17], [19], [51] to [53] in the SNS proposal

OBJECTIVE 3 – BUSINESS ASPECTS – EUROPE'S SHARE ON THE GLOBAL MARKET

- To ensure European leadership in the ICT sector and mobilize cross-disciplinary private sector forces to build solutions that will improve the operation of European vertical industries.
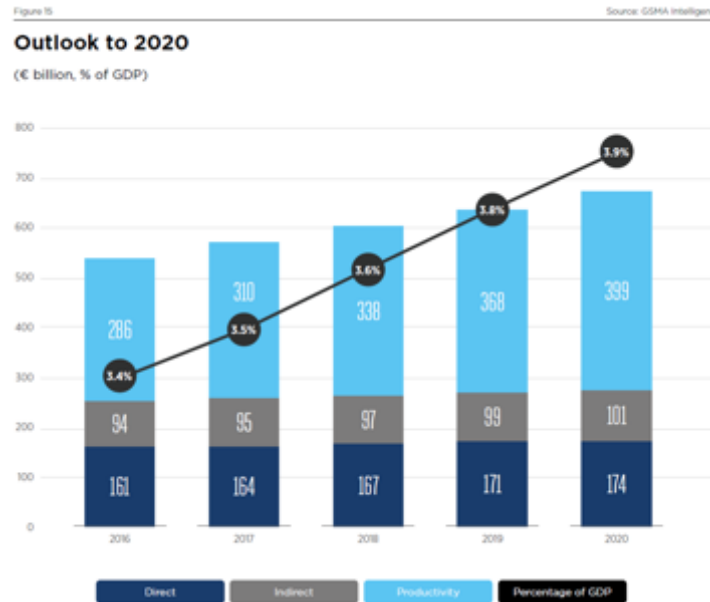
Total (direct, indirect and productivity) contribution to GDP (€ billion, % 2016 GDP)


Revenue forecast (CAGR 2016 – 2026, US-$ billion)

Where is the value potential of the Internet of Things?

Source: SNS proposal. June 30, 2020, https://ec.europa.eu/info/sites/info/files/research_and_innovation/funding/documents/ec_rtd_he-partnership_smart-networks-services.pdf.
GSMA The Mobile economy report 2017, https://www.gsmaintelligence.com/research/?file=89a59299ac2f37508b252124726a1139&download.
Ericsson: The 5G Business Potential. 2017, https://www.ericsson.com/assets/local/news-and-events/events/2017/mwcs-2017/topic-3_ericsson_5g_business_potential.pdf.
McKinsey & Company: The Internet of Things: Mapping the value beyond the hype. McKinsey Global Institute, June 2015.
https://www.mckinsey.de/files/unlocking_the_potential_of_the_internet_of_things_full_report.pdf.

OBJECTIVE 4 – B5G SYSTEMS DESIGN AND SUPPORT OF EMERGING APPLICATIONS

- To research, develop and validate the next generation of telecommunications networks and support emerging services, while enabling networks to efficiently support any service to be provisioned under all relevant environments.
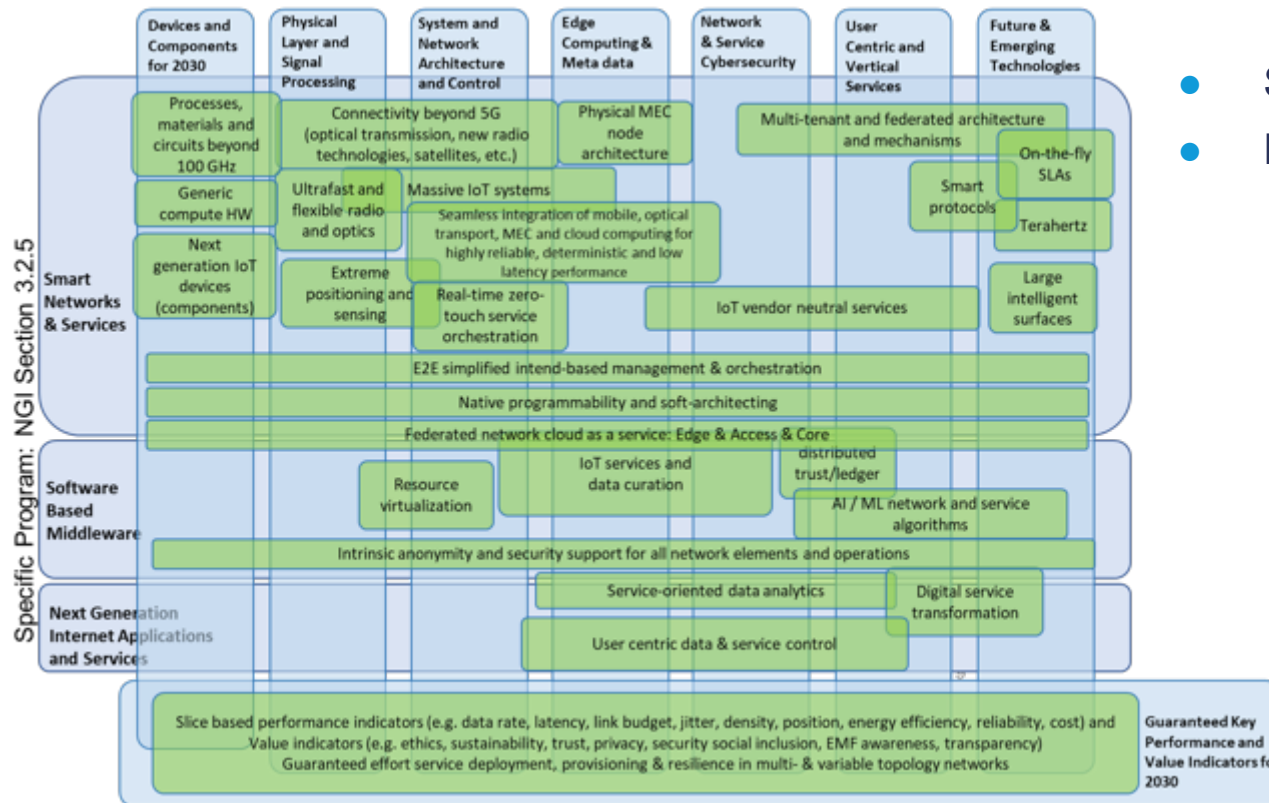
- SRIA developed by Networld2020
- Revised after public consultation before publication

Strategic Research and Innovation Agenda
(published at Networld2020 ETP website):
https://bscw.5g-ppp.eu/pub/bscw.cgi/d367342/Networld2020%20SRIA%202020%20Final%20Version%202.2%20.pdf
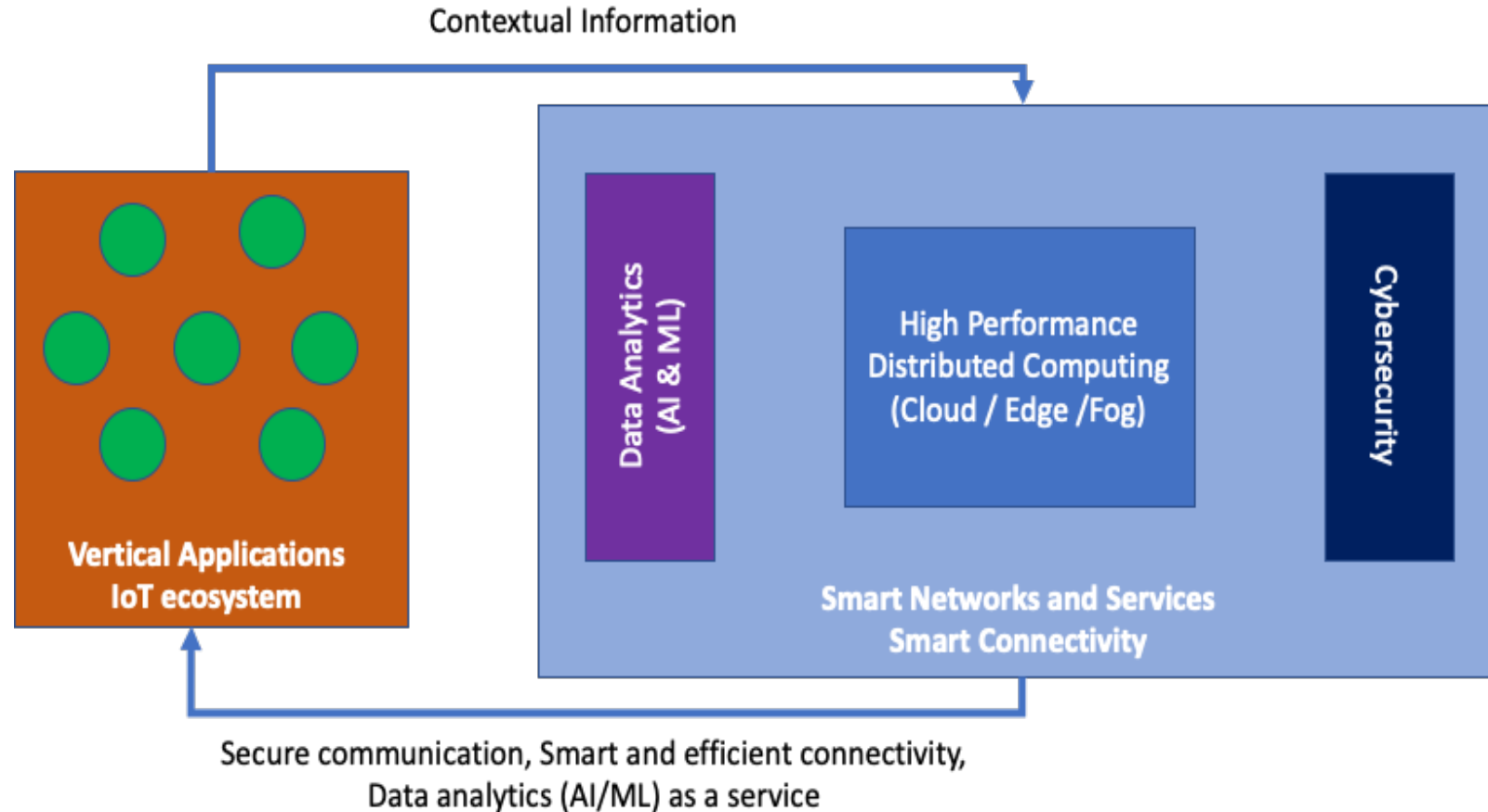
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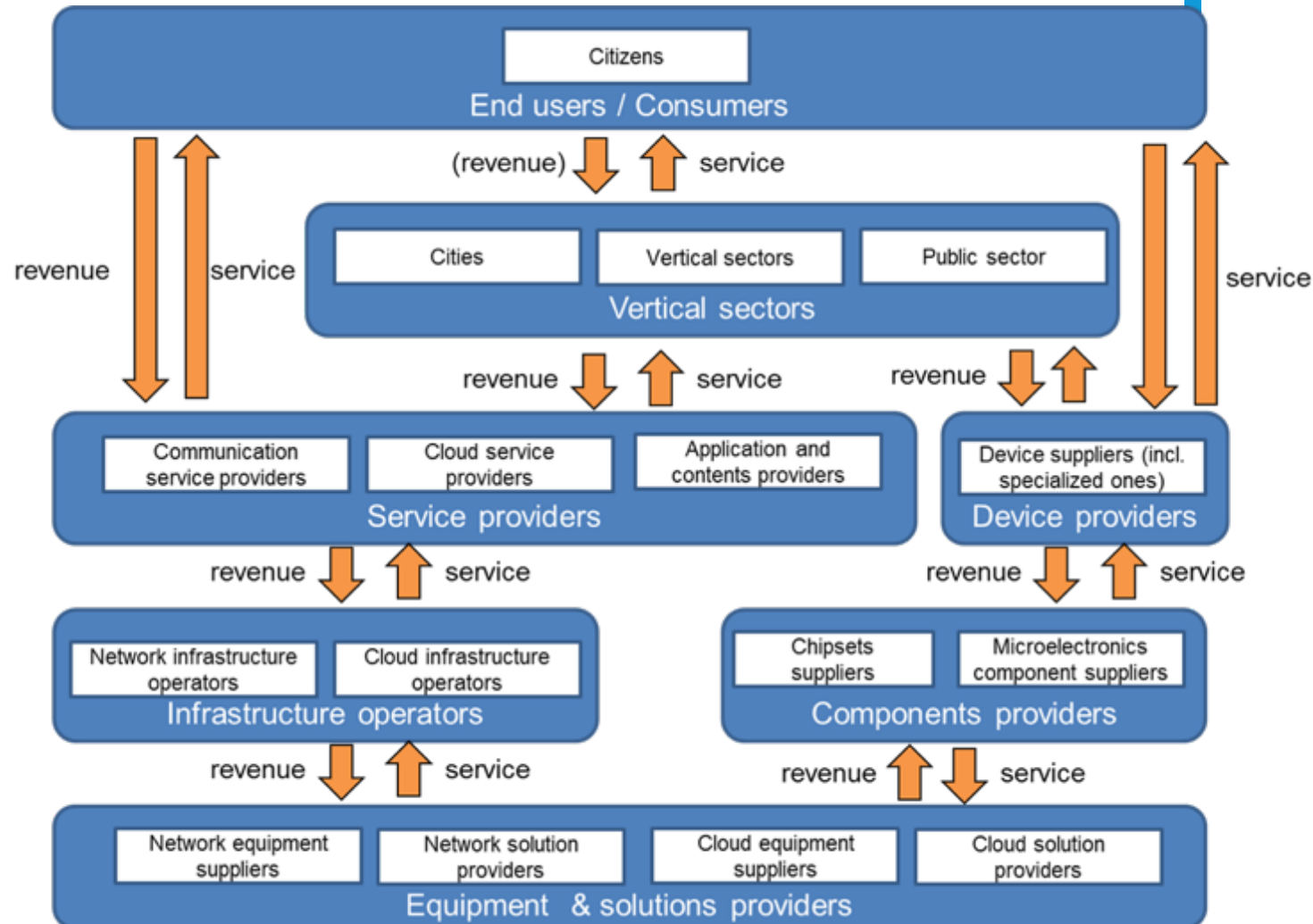
Draft SNS Annex (under discussion)

Source: SNS proposal. June 30, 2020, https://ec.europa.eu/info/sites/info/files/research_and_innovation/funding/documents/ec_rtd_he-partnership_smart-networks-services.pdf

SNS PROGRAMME PROPOSAL: KEY PILLARS COMPLEMENTARY TO NETWORKING

VALUE-CHAIN APPROACH AND INVOLVED STAKEHOLDERS

STAKEHOLDER INVOLVEMENT

Different tiers of stakeholder involvement

SNS stakeholder and their link to Partnership's objectives

SNS PROGRAMME PROPOSAL: SYNERGIES
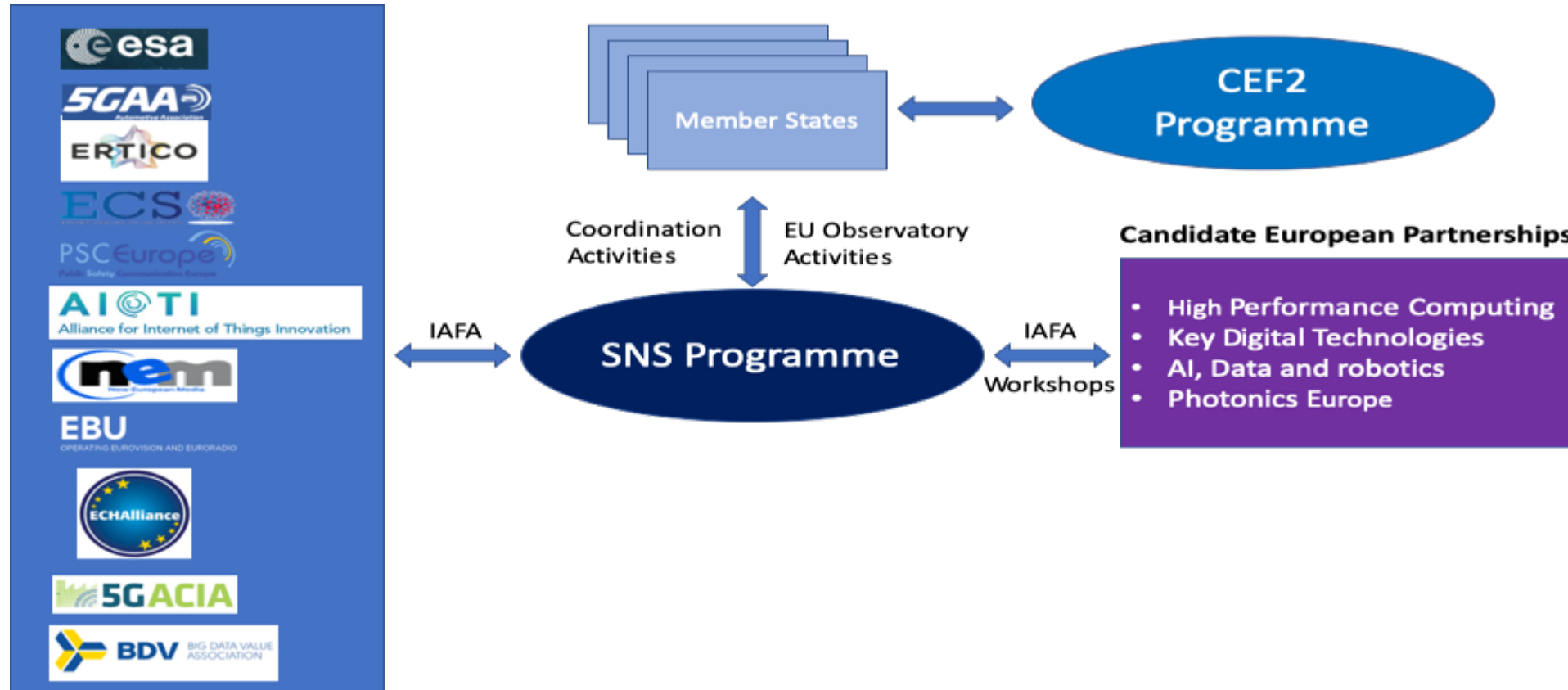
Impact Assessment and Facilitation Actions" (IAFA) that are research-based activities and that ensure relevance and impact. focus on interaction with adjacent Partnerships, initiatives and relevant Associations to ensure relevance and synergies in both directions
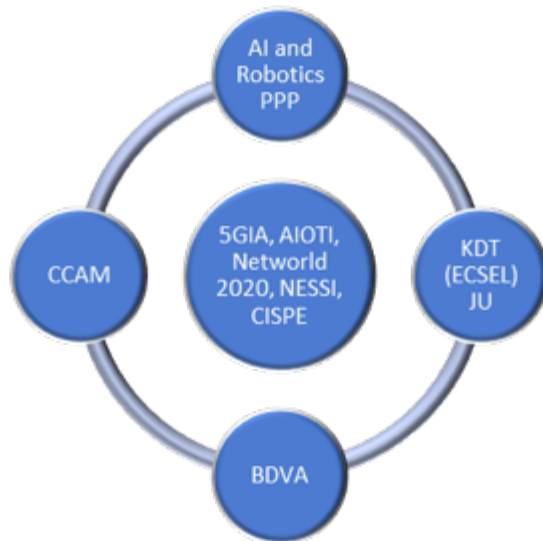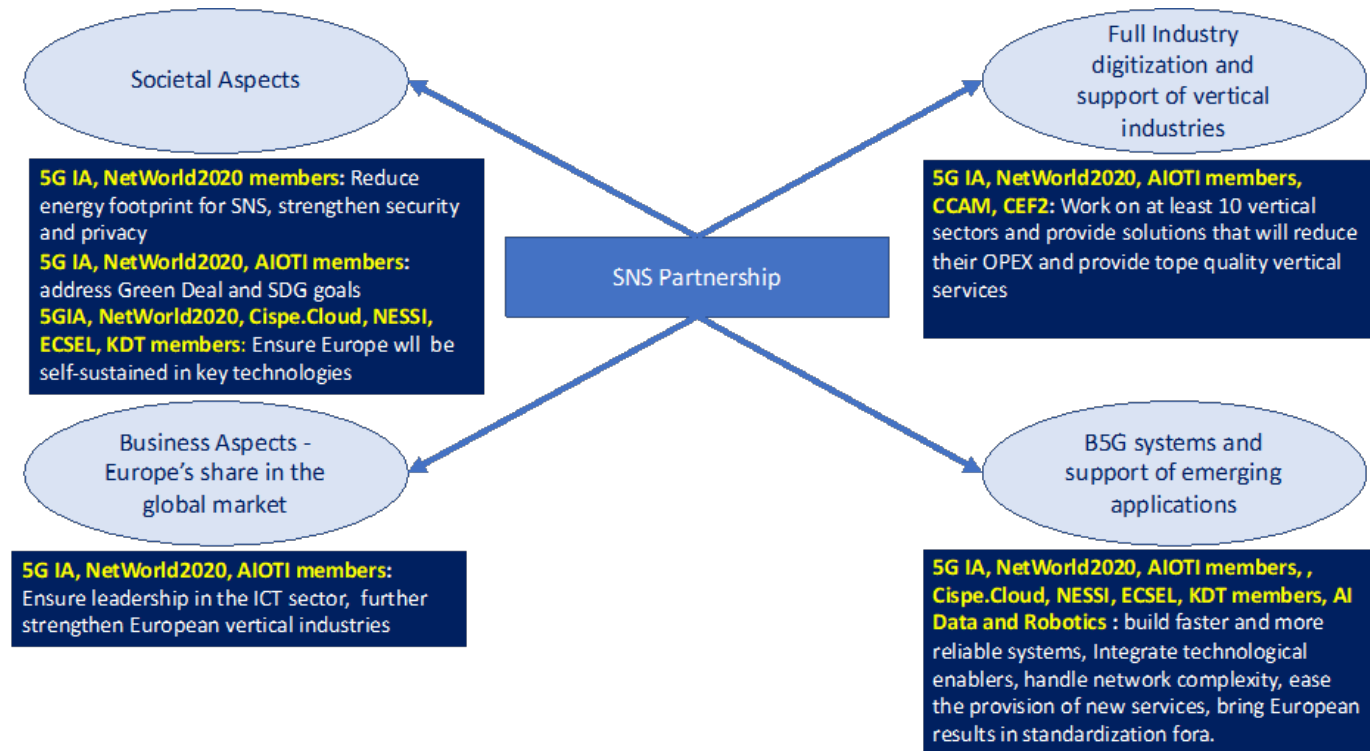
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SNS PROGRAMME
MAIN ACTIVITY STREAMS AND PHASES
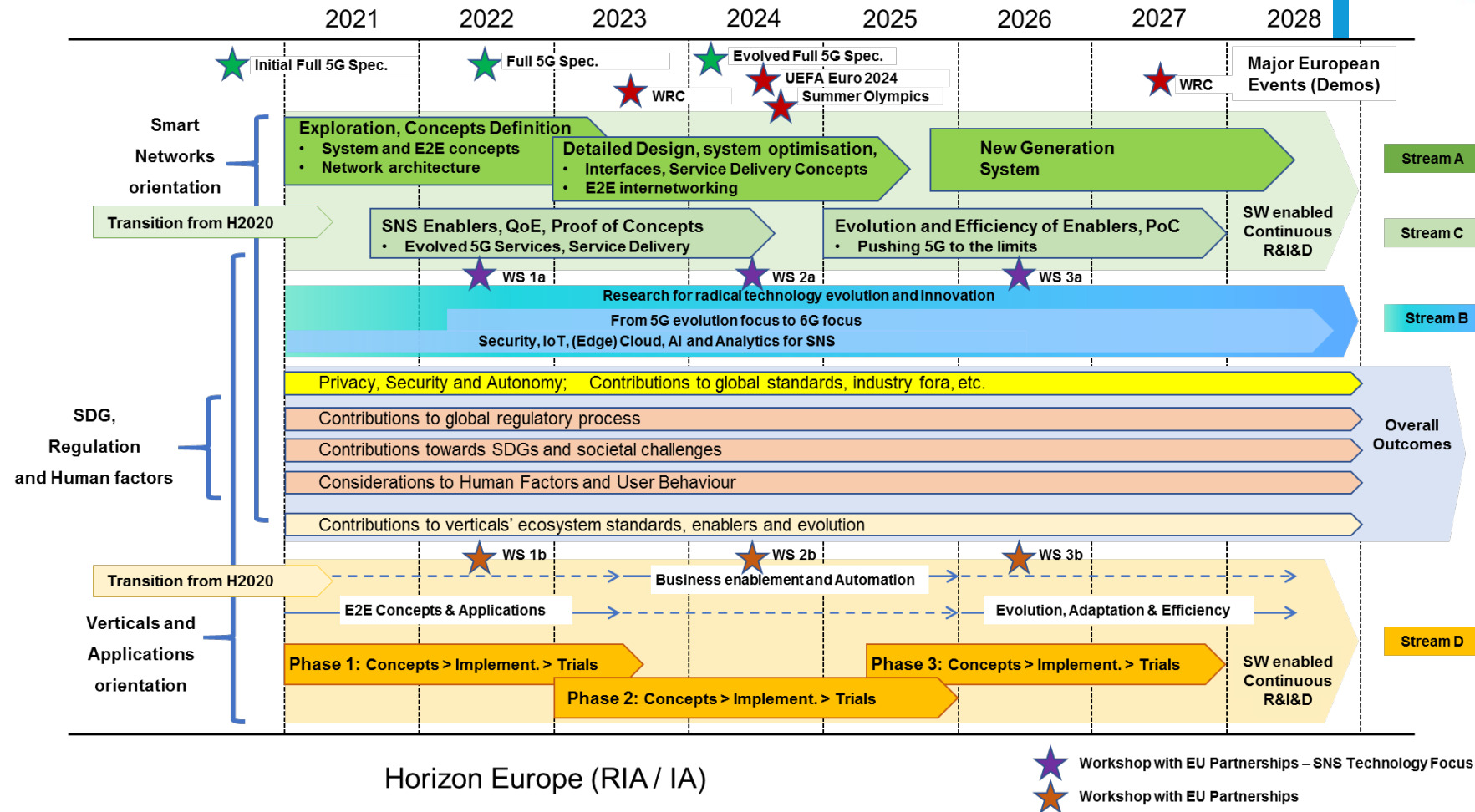
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STATUS OF SNS PARTNERSHIP AND TIMING

SMART — NETWORKS & SERVICES

Q2 2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022

May 2020: EC Regulatory Scrutiny Board supported SNS

Private side is expected to submit a „general letter of commitment" to EC by October 15,2020

After Council adoption private side is expected to submit a "confirmation letter" to EC

June 30, 2020: SNS proposal published on EC website

Political agreement achieved between EU Commission and Member States on Institutionalised Partnerships

EC is preparing Basic Act (Regulation) for adoption by College of Commissioners

Council adoption in Q1/Q2 2021

- First SNS Work Programme available after Council adoption
- First SNS call for proposals after Council adoption

First SNS projects will start in 2022

All proposed Institutionalised Partnerships follow a single legislative process and will be adopted as a packege

Until now no agreement on next MFF (Multi-annual Financial Framework) budget for 2021 – 2027 agreed between EC, Member States and EU Parliament