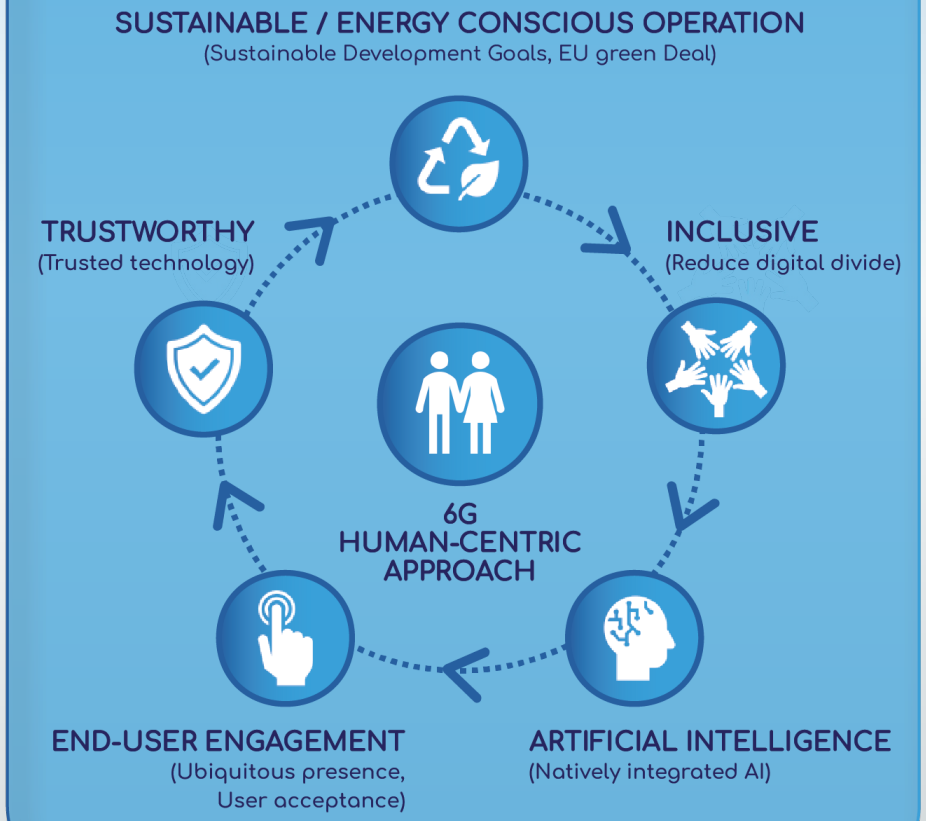
Societal, policy and business drivers for 6G

SOCIETY



POLICY

- BASED ON EU VALUES
- SECURE INFRASTRUCTURE & DATA
- TECHNOLOGICAL SOVEREIGNTY
  (Strong position in Global market with International collaborations)

BUSINESS

- BOOSTING EU ECONOMY
  (6G to improve the economy of member States)
- NEW BUSINESS
  (Emergence of novel business models)
- CHALLENGES/CRISIS PROTECTION
  (Cope with pandemics & other crisis)

Main goals of 6G

CONNECTED INTELLIGENCE
(convergence of physical, human and digital)

PROGRAMMABLE
(Flexibility & customization)

INTEGRATED SENSING
(Native accurate localisation & sensing**)**

TRUSTWORTHY
(Secure, trusted an private infrastructure)

DETERMINISTIC
(Delivery of steady performance)

SUSTAINABLE
(Sustainable 6G & 6G for sustainability)

SCALABLE & AFFORDABLE
(Ubiquitous & inclusive)

Stretching 5G KPIs

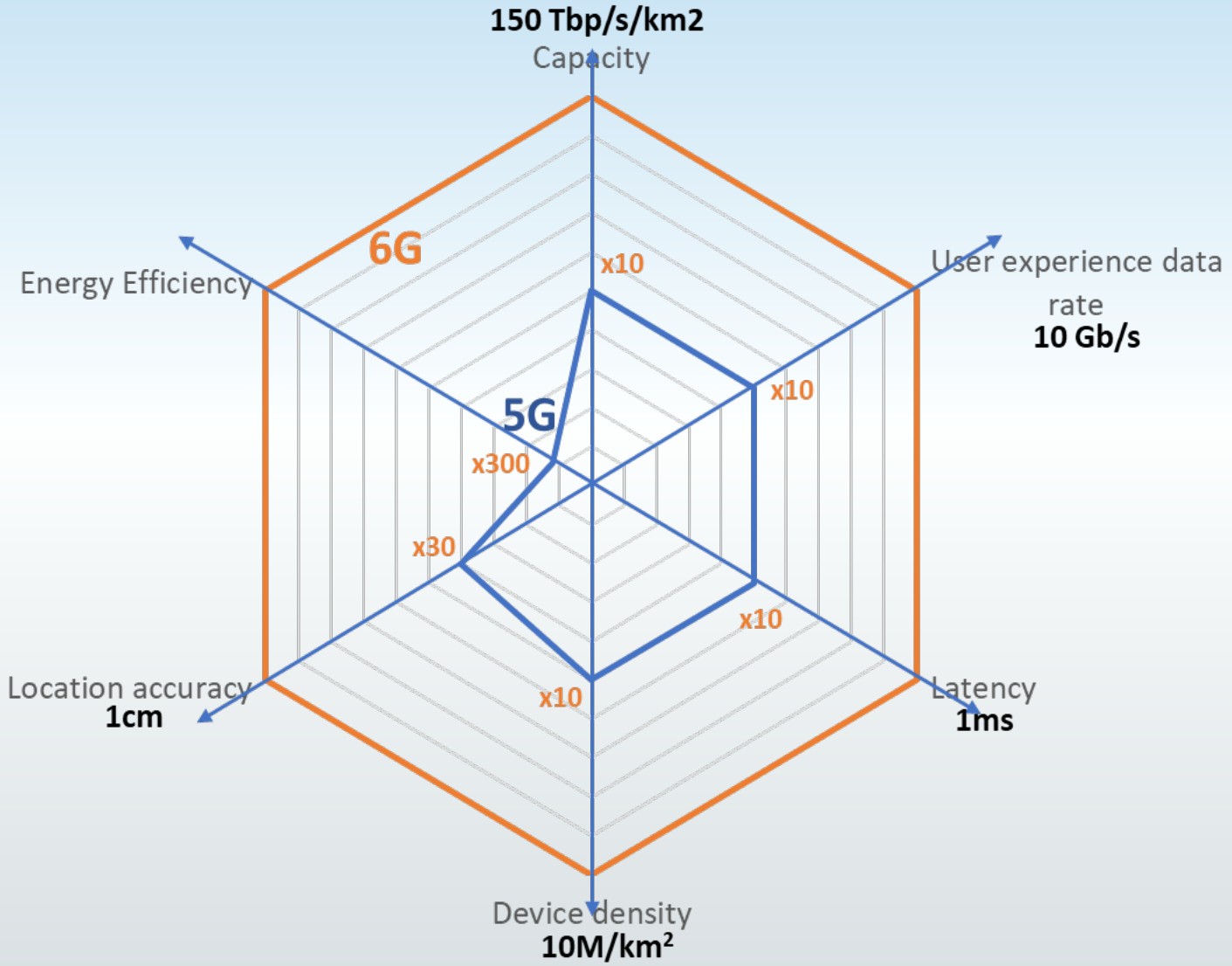
INCREASED NUMBER OF CONNECTED DEVICES
(Sensors, vehicles, home devices, robotics)

INCREASED TOTAL CAPACITY
(New services/business, ubiquitous coverage)

EXTREME PERFORMANCE
(Immersive & tactile communications)

IMPROVED ENERGY EFFICIENCY
(Reduced consumption for increased traffic)

HIGH-ACCURACY LOCALIZATION
(cm level localization & accurate sensing)



Indicative Key Technologies enabling 6G

SYSTEM ARCHITECTURE & CONTROL

(Communication/computation co-design, AI governance, etc.)

NETWORK & SERVICE SECURITY

(Larger attack surface, micro-segmentation, Security as a Service, etc.)

EDGE & UBIQUITOUS COMPUTING

(Responsiveness, reduced data flows, distributed microservices)

NON-TERRESTRIAL NETWORKS

(Single access network, edge flying nodes (computing & storage), resource sharing)

RADIO & SIGNAL PROCESSING

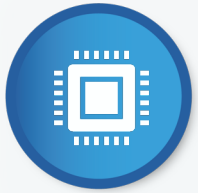
(THz & visible spectrum, refarming, modulation, beamforming, IRS, etc.)

SPECIAL PURPOSE (SUB)-NETWORKS

(Vertical sub-networks such as in-body, in-robot, in-car networks, etc.)

OPTICAL NETWORKS

(Intrinsically secure, green and flexible transport networks)



DEVICES & COMPONENTS

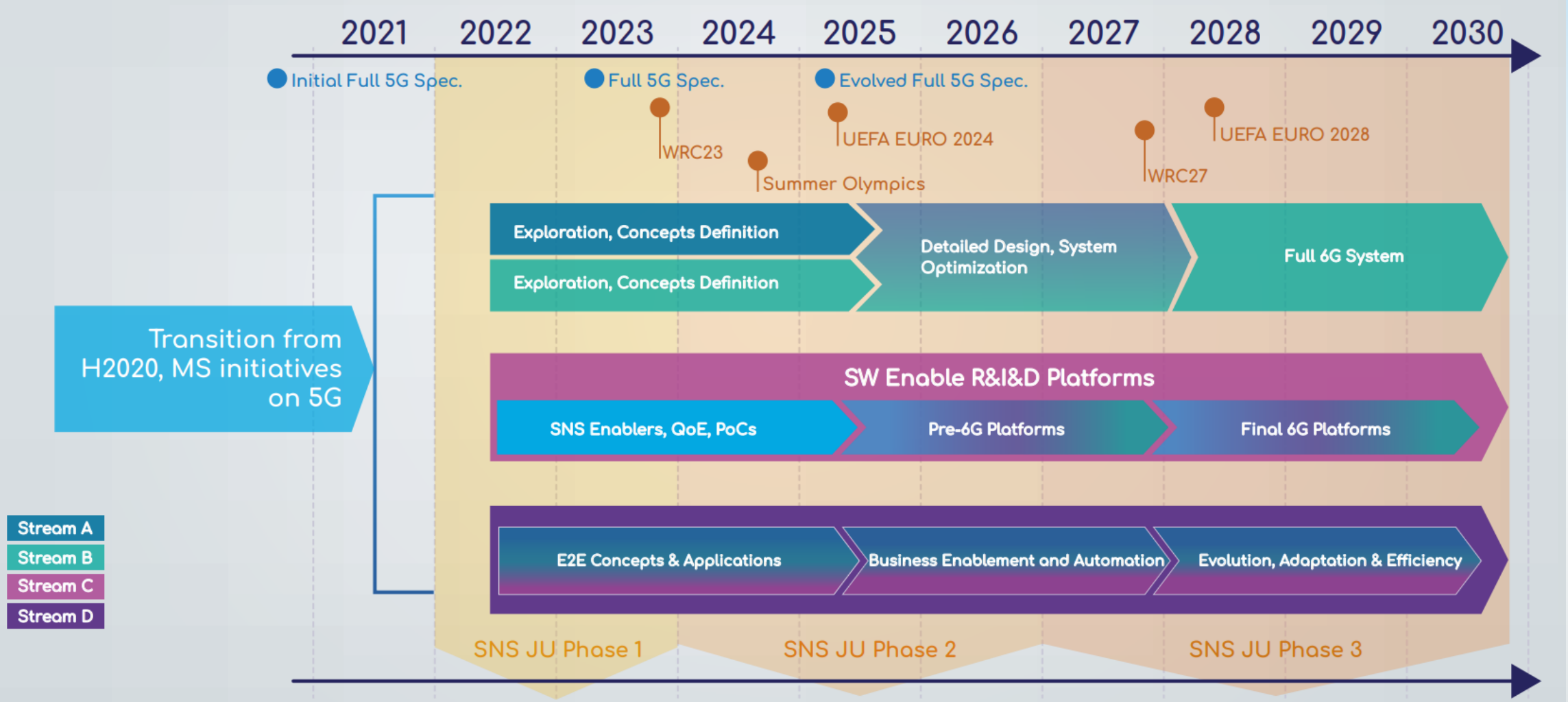
(Efficient Tx/Rx modules, optical & hybrid transceivers, Neural processing units, etc.)

SNS JU – Strategic Objectives

ENSURE EUROPEAN LEADERSHIP FOR 6G SMART NETWORKS AND SERVICES	IMPROVE DIGITAL INDUSTRIES OPERATION	ADDRESS SOCIETAL NEEDS AND POLICY OBJECTIVE
Advanced applications & services	**Identify needs and provide solutions**	**Identify and meet relevant Sustainable Development Goals (SDG)**
Competitive connectivity solutions	**Advanced infrastructures**	**Support EU Green Deal targets**
Full value chain approach	**Create a fertile business ecosystem**	**Safeguard security and privacy**

- **Mobilise the European stakeholders**
- **Enable cross-sector collaboration**
- **Make Europe the center of gravity for international collaboration and global consensus**

SNS Roadmap


2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
Initial Full 5G Spec.
Full 5G Spec.
Evolved Full 5G Spec.
WRC23
Summer Olympics
UEFA EURO 2024
WRC27
UEFA EURO 2028
Transition from H2020, MS initiatives on 5G
Exploration, Concepts Definition
Exploration, Concepts Definition
Detailed Design, System Optimization
Full 6G System
SW Enable R&I&D Platforms
SNS Enablers, QoE, PoCs
Pre-6G Platforms
Final 6G Platforms
E2E Concepts & Applications
Business Enablement and Automation
Evolution, Adaptation & Efficiency
Stream A
Stream B
Stream C
Stream D
SNS JU Phase 1
SNS JU Phase 2
SNS JU Phase 3