



The European Vision for 6G Networks

The Voice of European Industry and Research for Next Generation Networks and Services

Dr. Colin Willcock,

Chairman of the Board 6G Smart Networks and Services Industry Association (6G-IA)

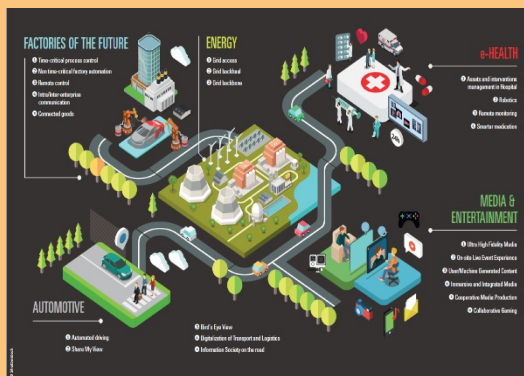
The **VOICE** of **EUROPEAN INDUSTRY** for the
DEVELOPMENT and **EVOLUTION** of **5G&6G**



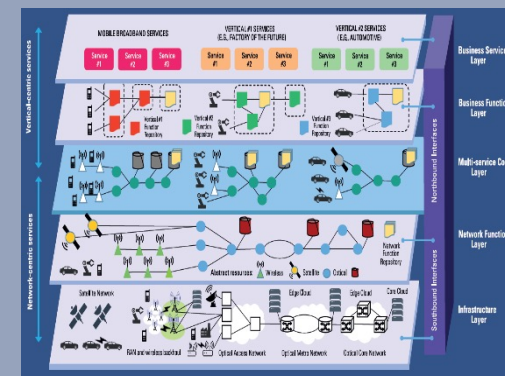
PHASE 1: 5G Core Research

- 5G system design & evaluation aspects
- 5G air interface innovations
- Network management & security innovations
- Virtualisation & service deployment innovations

PHASE 2: System development & application in vertical industries



PHASE 3: Large scale trials and innovation infrastructures



2015

2016

2017

2018

2019

2020

- 92 R&I projects since the beginning of the Program
- Overall, 700 stakeholders participating in the projects
- 800+ contributions to standardization activities (Phase II and Phase III)
- Over 2000 scientific publications (Phase II and Phase III)
- 40 white papers
- 445 innovations in the Innovation Radar
- Design, evaluated, and validated multiple technological breakthroughs

6G SNS

[Know more here](#)

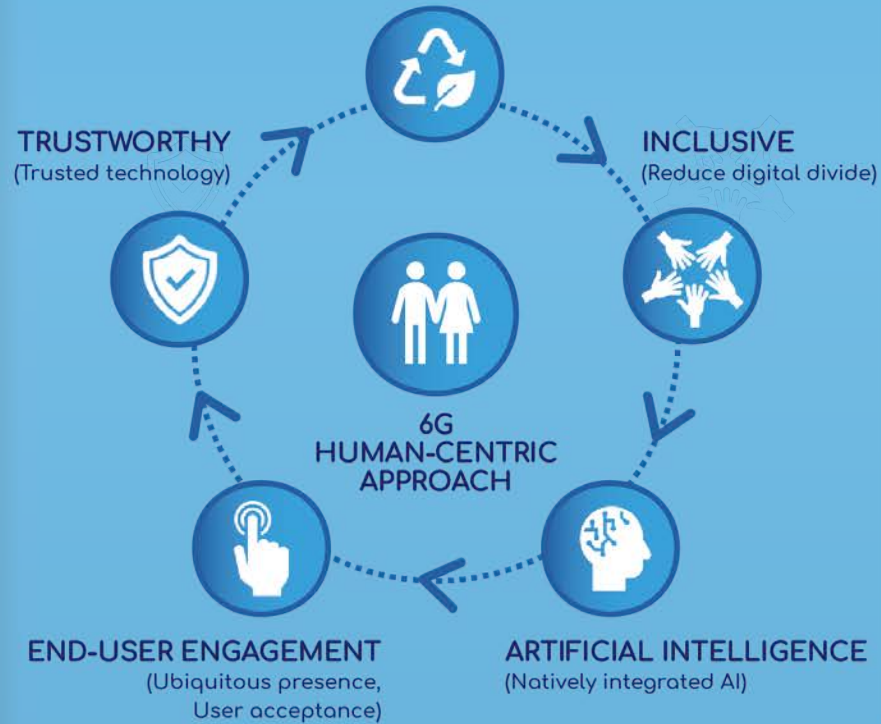
- **The Smart Networks and Services Joint Undertaking has started**
- **900 Million Euro publicly funded research program for Next generation networks and equal resources from the private side**
- **First group of projects to started in January 2023**



[Download the White Paper here](#)

SOCIETY

SUSTAINABLE / ENERGY CONSCIOUS OPERATION
(Sustainable Development Goals, EU green Deal)



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)



CONNECTED INTELLIGENCE
(convergence of physical, human and digital)



PROGRAMMABLE
(Flexibility & customization)



INTEGRATED SENSING
(Native accurate localisation & sensing)



TRUSTWORTHY
(Secure, trusted and private infrastructure)



DETERMINISTIC
(Delivery of steady performance)



SUSTAINABLE
(Sustainable 6G & 6G for sustainability)



SCALABLE & AFFORDABLE
(Ubiquitous & inclusive)



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, reformatting, modulation, beamforming, IRS, etc.)



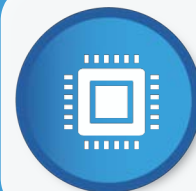
SPECIAL PURPOSE (SUB)-NETWORKS

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



OPTICAL NETWORKS

(Intrinsically secure, green and flexible transport networks)



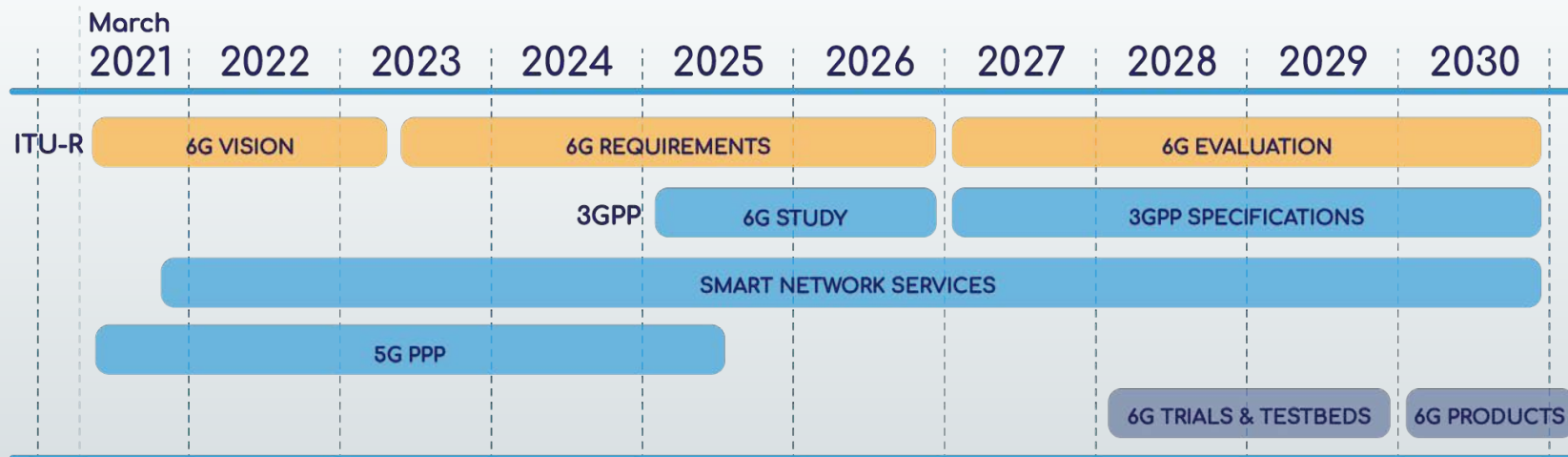
DEVICES & COMPONENTS

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

6G WILL

- Play a **key role** in the evolution of society towards the 2030's
- Support the **European Green Deal & the UN Sustainable Development Goals**
- Create a **fully connected world based on novel services** (immersive, holographic, tactile comms)
- Use **universal and reusable infrastructure**

Global standards and renewed regulations needed for the development/deployment of 6G



Envisaged Timeline



Thanks for your attention!

Dr. Colin Willcock

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