



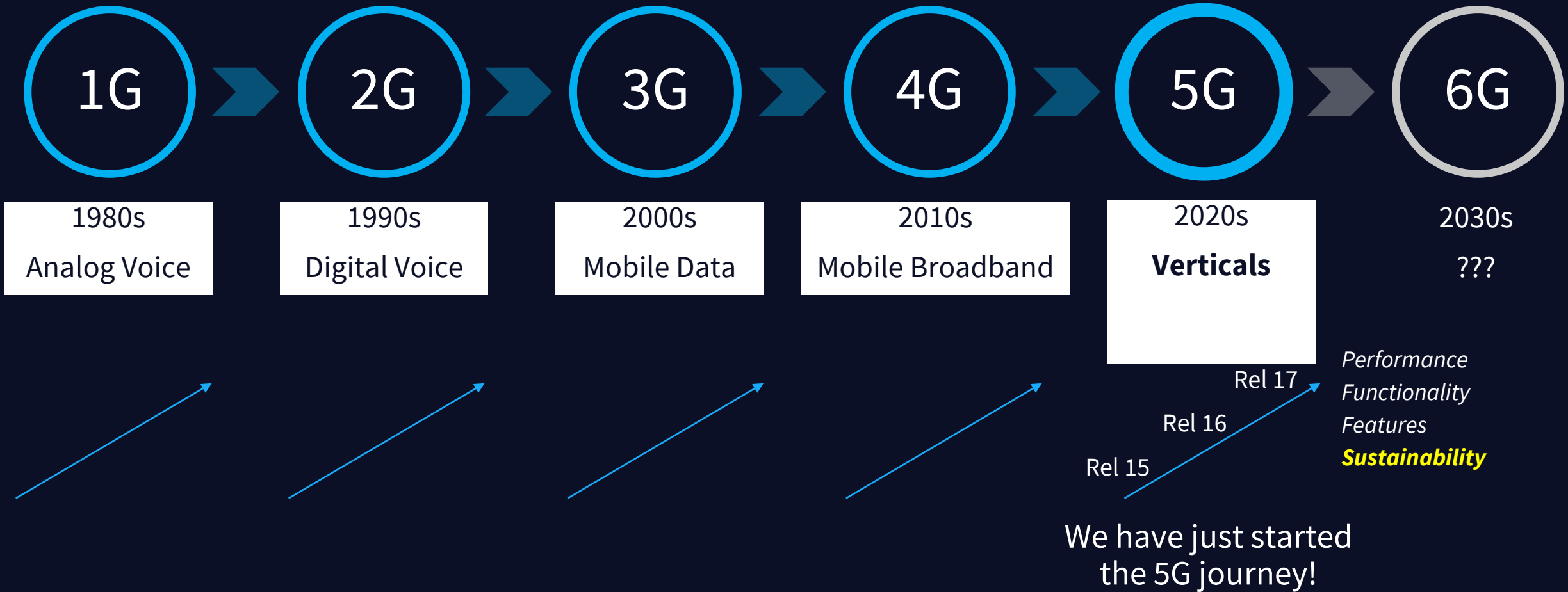
RESEARCH ON 5G EVOLUTION AND 6G ENABLING TECHNOLOGIES

Dr. Patrick Waldemar, Vice President Telenor Research

NGINO

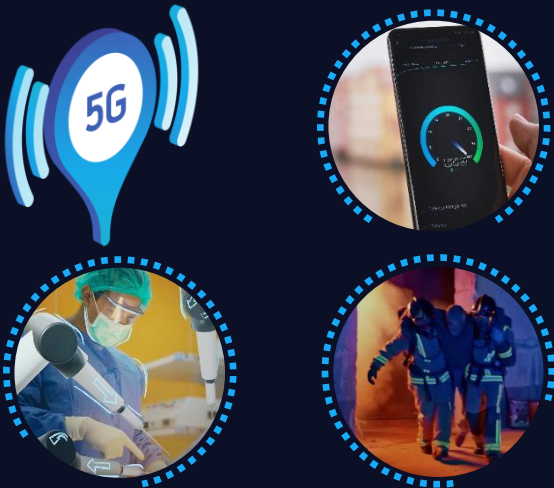
March 10th 2022

Evolution of mobile generations



The route from 5G towards 6G

5G Evolution



- Consumer broadband
- Enterprise broadband
- Industries, health, transport

EU/ESA projects:

- | | |
|----------------|-------------|
| • 5G-VINNI: | 2018 - 2022 |
| • 5G-HEART: | 2019 - 2022 |
| • 5G-SOLUTIONS | 2019 - 2022 |
| • FUDGE-5G | 2020 - 2023 |
| • CONCORDIA | 2019 - 2022 |
| • EMPOWER | 2019 - 2022 |
| • TERAFLOW | 2021 - 2023 |
| • 5GMEDIAHUB | 2021 - 2023 |
| • 6GStart | 2022 - 2024 |
| • 5G-EMERGE | 2022 - 2024 |
| • COMNECT | 2022 - 2024 |

6G Visions



- Resource usage
- Empowering society
- Open innovation



Horizon Europe - SNS

The voice of the European industry for the development, deployment and evolution of 6G Smart Networks and Services

6G SNS
IA

SNS R&I WP

6G SNS
IA



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%

Latest draft version [available at BSCW](#)



Research focus 2022

#1: Focus

Research on smart communication components, systems, networks and services for the 5G evolution

Research on enabling technologies towards 6G

Maintain and establish experimental research infrastructures within 5G evolution and towards 6G

#2: Why important

Understand and share insights on how 5G innovations can position Telenor for growth

Understand 6G use cases and future opportunities

Understand customer needs and test technologies and service concepts through co-creation with partners

#3 How

Produce knowledge through work in EU projects on selected topics and provide support to Telenor units

Vendor collaborations and participation in EU projects

Engineer managing the experimental infrastructure and strong internal and external collaborations



Research focus 2022 - 2025

#1: 5G evolutions

Understand 5G technology evolutions and how 5G innovations enable growth

- Enterprise networks
- Network Slice as a Service
- RAN & Core evolutions
- Automation & Orchestration
- Positioning
- Business models
- Service Concepts

#2: 6G technologies

Understand trends and opportunities in 6G enabling technologies

- THz communications
- AI in networks
- ISAC*
- 6G Use cases
- 6G ecosystems

#3 Infrastructures

Use of experimental infrastructures to test technologies and services

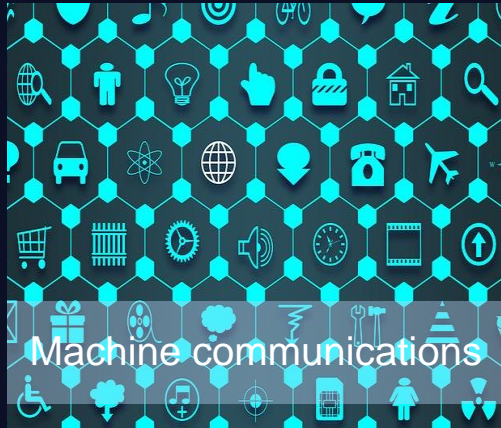
- Open APIs
- Orchestration
- 5G & 6G Ecosystems
- Federation across platforms
- Nordic & Pan European
- Industry domains

* ISAC = Integrated Sensing And Communication

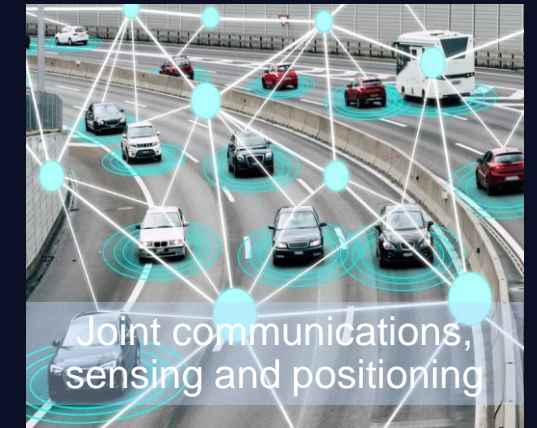


Research directions on 6G enabling technologies

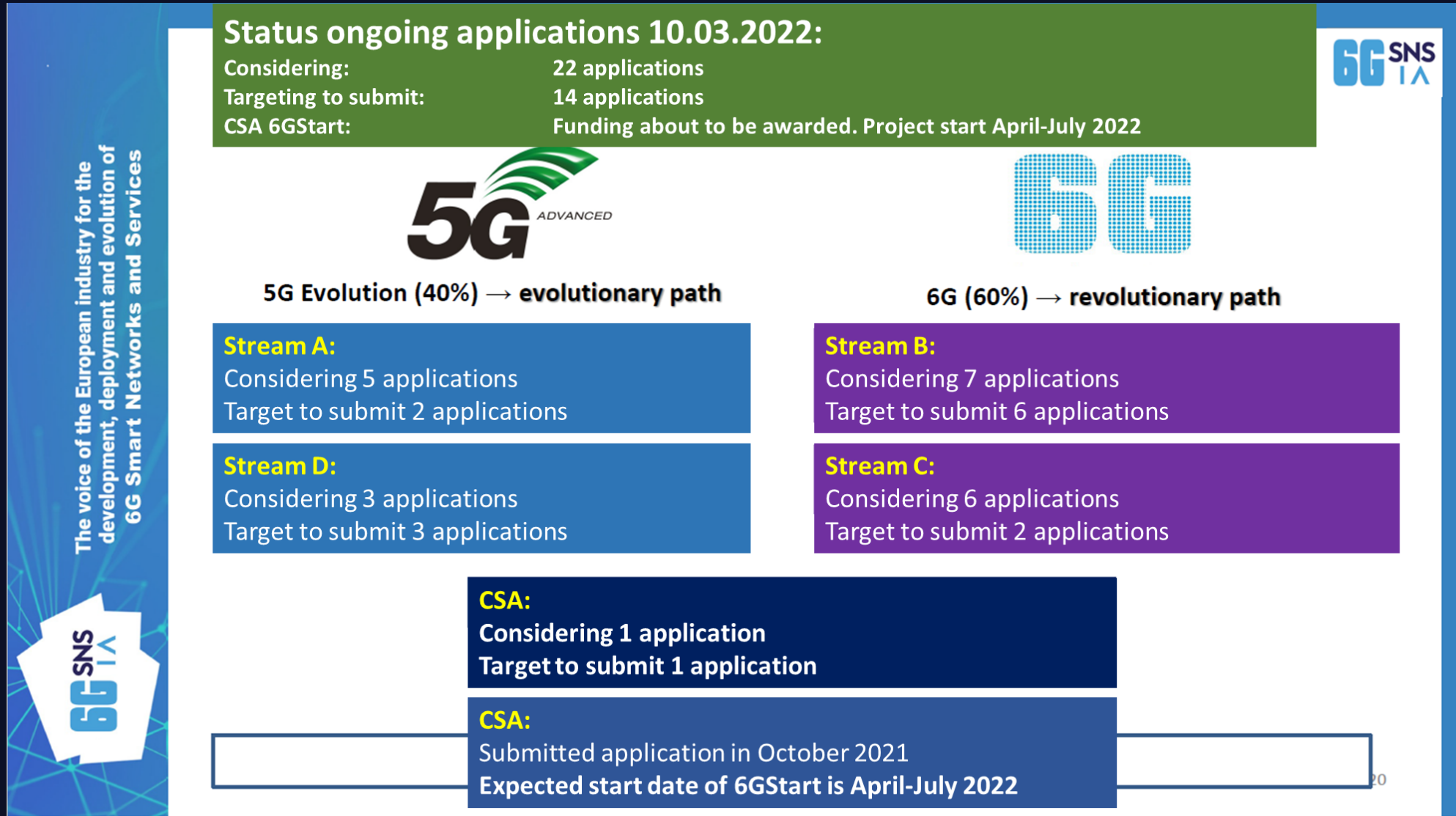
Evolutions



New and radical



Horizon Europe – SNS – New applications April 26th



Research on 5G evolution and 6G enabling technologies

5G Evolution



- Consumer broadband
- Enterprise broadband
- Industries, health, transport

Ongoing EU/ESA projects

6G Visions



- Resource usage
- Empowering society
- Open innovation

New HEU SNS applications

Research directions



- Enabling Technologies
- Consumers and verticals
- 6G ecosystems



RESEARCH ON 5G EVOLUTION AND 6G ENABLING TECHNOLOGIES

The background image shows a person's hands holding a smartphone. Overlaid on this is a futuristic digital interface. It includes a globe on the left, a network diagram with nodes and lines in the center, and various data visualizations like bar charts and pie charts on the right. There are also some text elements like 'Business Strategy' and 'Innovation' scattered throughout the interface.

Questions?

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Telenor Research