Preparation towards 6G

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Driving mobile networks for new waves of innovation

1,000,000×
Data speed increase in 30 years

6G
Cyber-physical world

5G
Digitalization of societies and industries

4G
App economy

3G
Mobile broadband

2G
Global voice calls and SMS

1G
Local voice calls

1980   1990   2000   2010   2020   2030

Future Use Cases in 2030+

Massive Merged Reality
- Immersive XR for Mass Market -

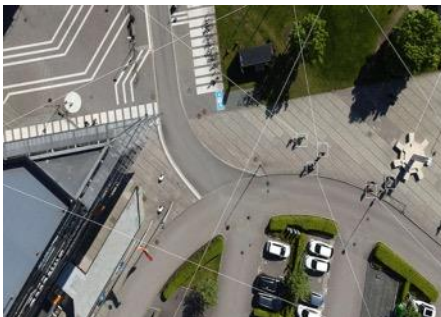## Global Broadband
- 100% coverage -

Massive Digital Twinning
- Data Collection & Modelling -

Autonomous Mobility
- Smart Transport -
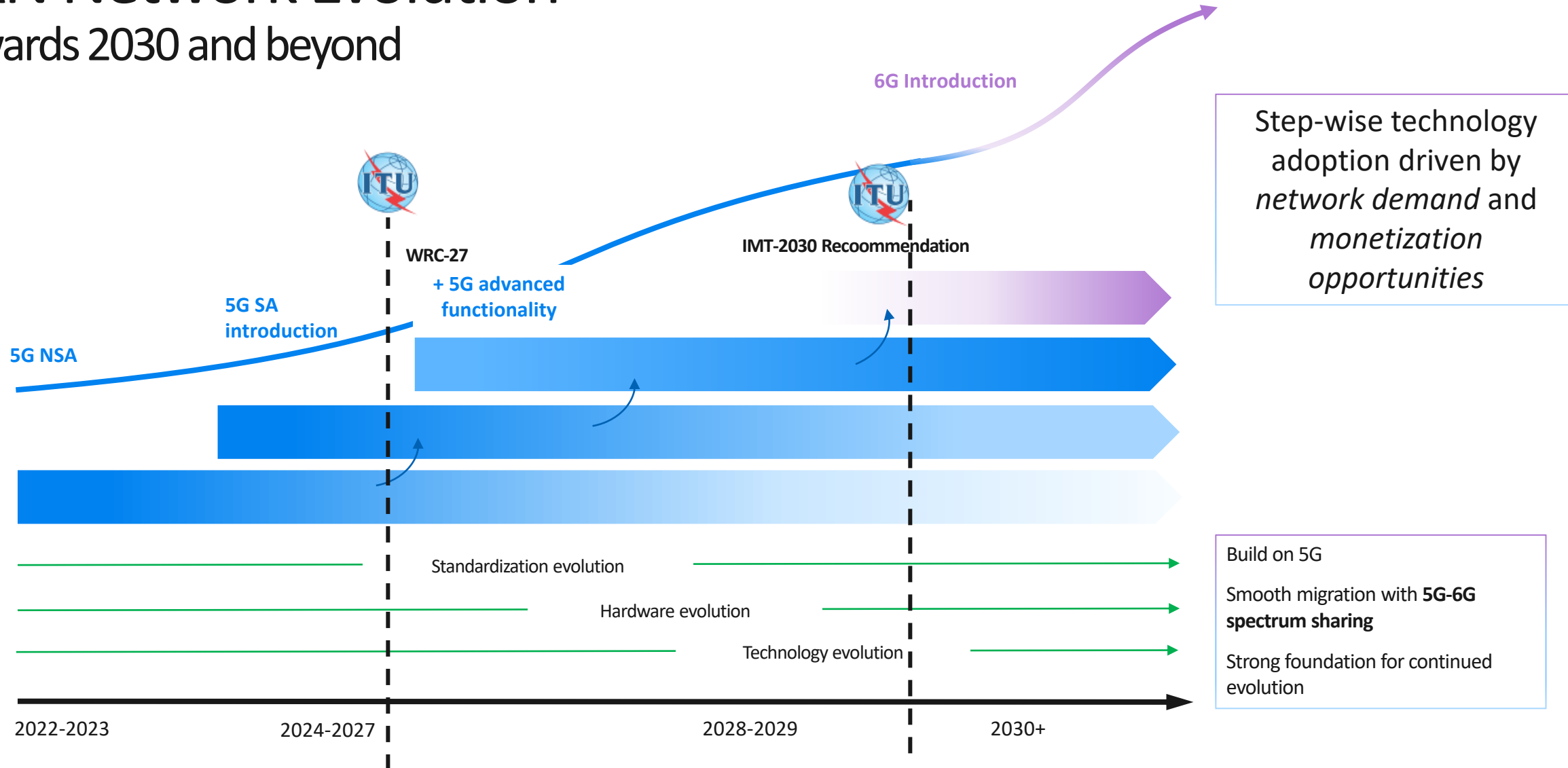
Resilient Connectivity
- Priority Emergency Communication -

Spatial Data Engine
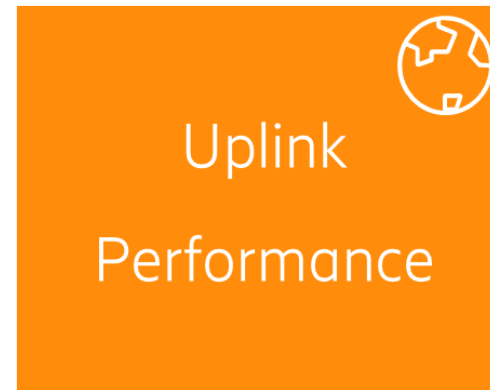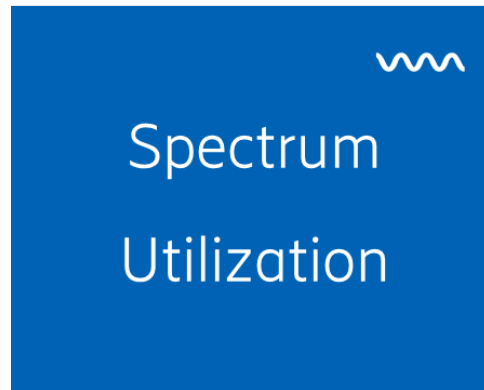- Coordinate-based Data Exposure -

RAN Network Evolution
Towards 2030 and beyond

6G Introduction

Step-wise technology adoption driven by *network demand* and *monetization opportunities*

WRC-27

+ 5G advanced functionality

IMT-2030 Recoommendation

5G SA introduction

5G NSA

Standardization evolution

Hardware evolution

Technology evolution

Build on 5G

Smooth migration with **5G-6G spectrum sharing**

Strong foundation for continued evolution

2022-2023   2024-2027   2028-2029   2030+

6G RAT: Exploring Technology Potential
Quantifying the benefits

Energy Performance

Evolved/New Capabilities

Spectrum Utilization

Uplink Performance
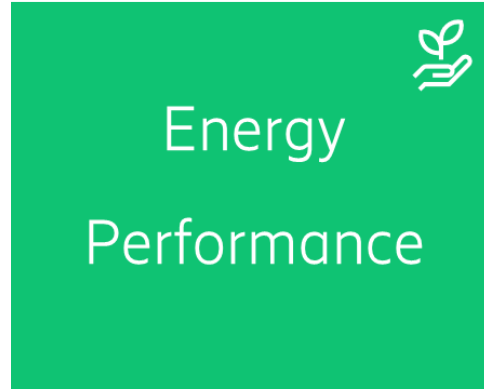
Key 6G Principles
- Minimize complexity, Maximize performance

- 6G RAN shall have a **standalone** architecture only

- 6G RAN shall interface a 6G core based on an **Evolved 5G Core**

- 6G architecture shall be **intent-based and programmable**

- 6G architecture shall include selected **open interfaces**

- 6G shall **operate in all existing 3GPP bands** and in **new cmWave** bands

- **Spectrum Sharing** shall be supported between 5G and 6G

- **Sharing by design** shall be supported in cmWave

- 6G shall support **new and evolved use cases**, efficiently & sustainably

Key takeaways

Standardization starts 24.Q3, commercial solutions in **2030**

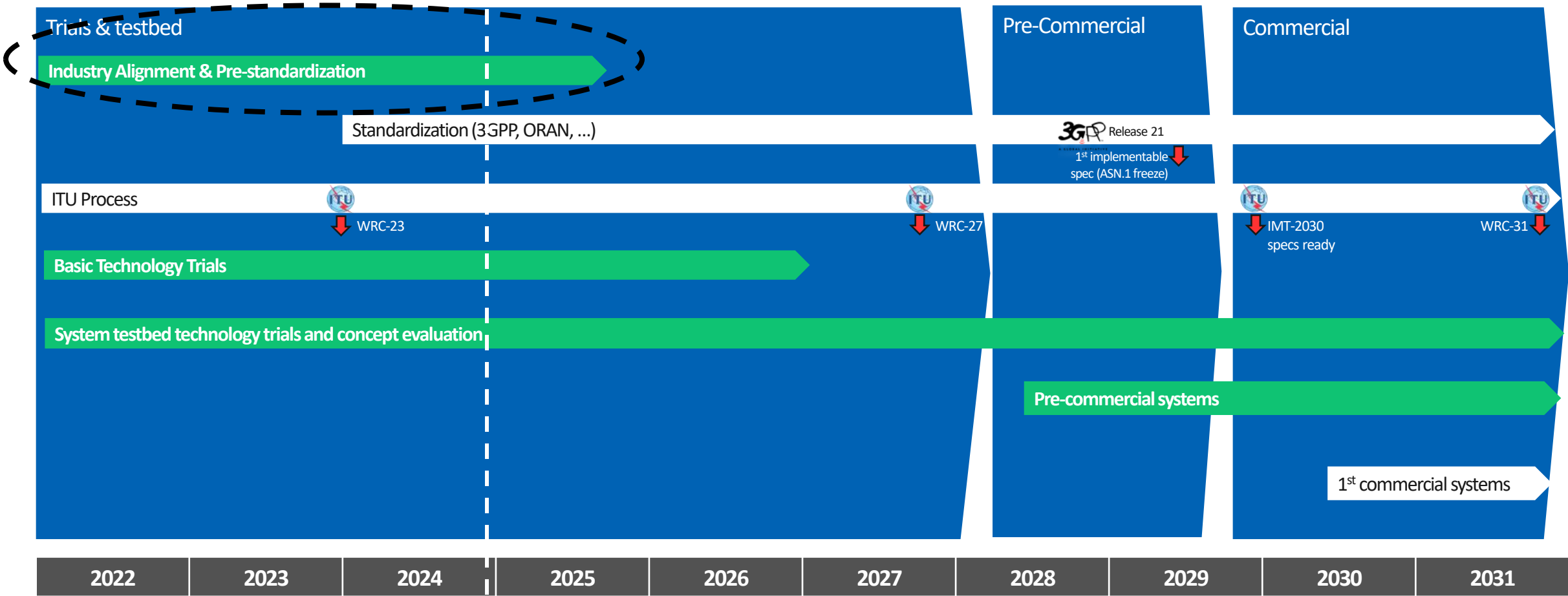6G will **evolve** from 5G and **expand** into new areas

Global efforts needed to secure additional 3GPP **spectrum**

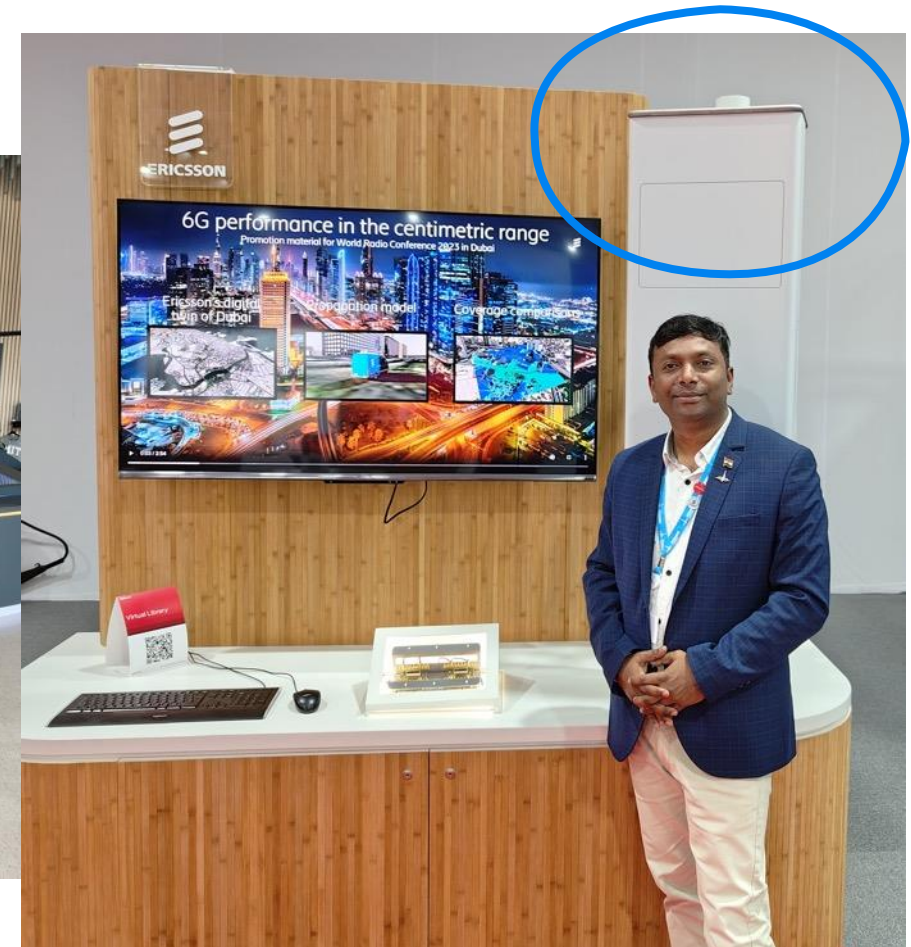12 month focus: Alignment on **key principles, 1st 6G** release scope, clarifying **quantifiable benefits** of 6G

6G Timeline and preparing

Phase									
Trials & testbed						**Pre-Commercial**		**Commercial**	

Industry Alignment & Pre-standardization

Standardization (3GPP, ORAN, …)

3GPP Release 21
1st implementable spec (ASN.1 freeze)

ITU Process

WRC-23   WRC-27   IMT-2030 specs ready   WRC-31

Basic Technology Trials

System testbed technology trials and concept evaluation

Pre-commercial systems

1st commercial systems

2022	2023	2024	2025	2026	2027	2028	2029	2030	2031

Initial Activities - Spectrum

Assessing the cmWave,

Ericsson 6G demos @ MWC 2024 – Feb 2024