

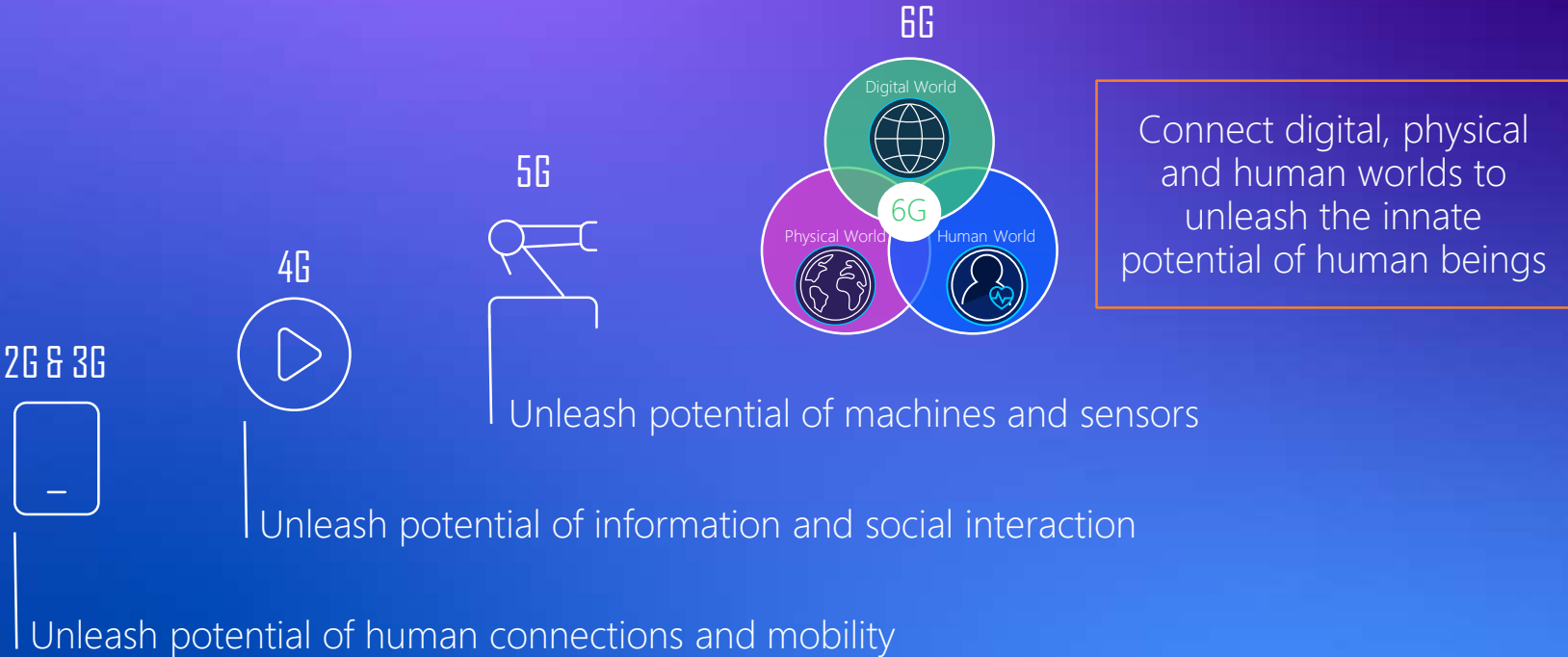
# Envision a 6G future

Amit Marwah

Head of Marketing and Corporate Affairs

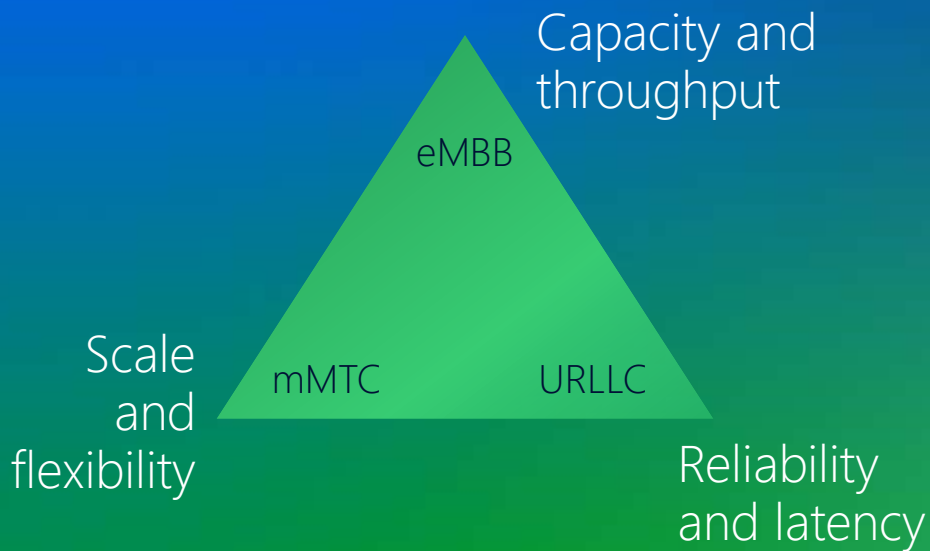
The Nokia logo is displayed in white, uppercase letters. It is positioned to the right of a large, white, stylized arrow graphic that points towards the left. The arrow is composed of two thick, parallel lines that meet at a point on the left side of the slide. The background of the slide is a gradient of purple and red.

# 6G era: Close Integration of Digital, Physical and Human worlds



# Wireless system design principles

Critical dimensions will continue to be important in 6G



## Capacity and throughput



- ▲ 20x traffic growth
- ▲ 100 Gbps peak data rates
- ▲ 1 Gbps where needed

## Reliability and latency



- ▲ 0.1 ms-1ms
- ▲ Nine 9s (99.9999999%)
- ▲ Nanosecond synchronization level

## Scale and flexibility

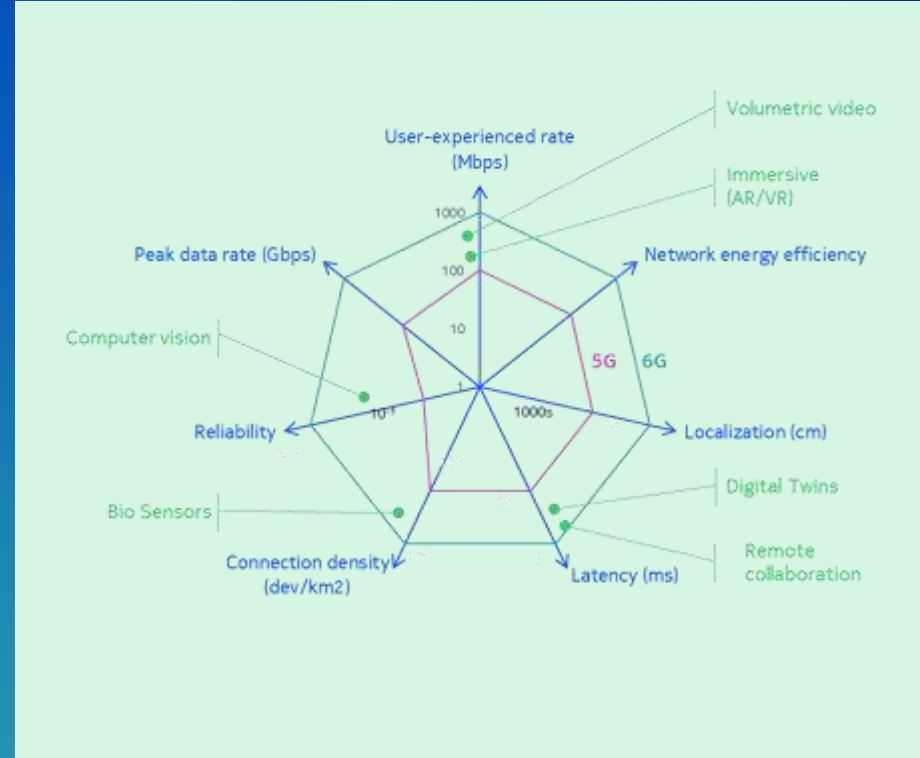
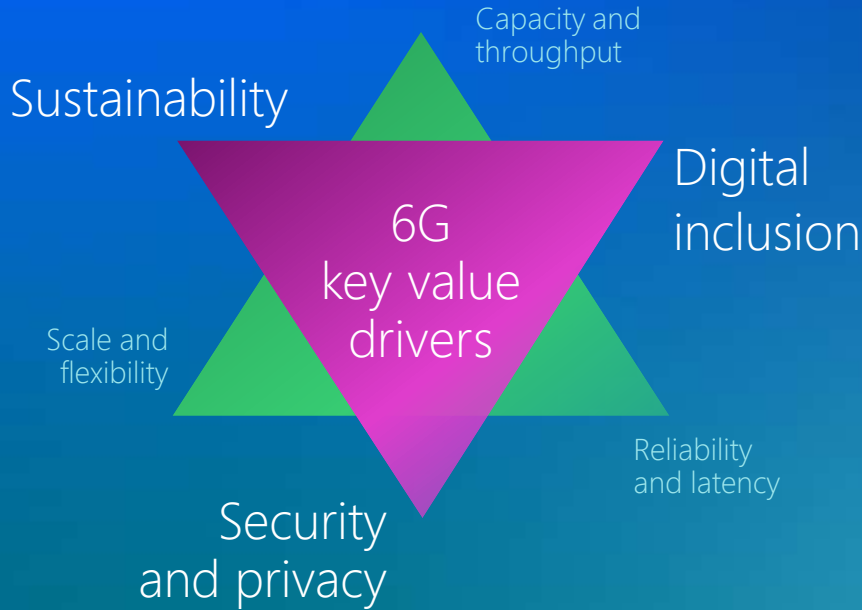


- ▲ Global coverage
- ▲ 10 million devices/Sq Km
- ▲ Platform & services approach

*\* Extreme attributes of performance may apply to specialized sub-networks only and all the requirements may not be achieved simultaneously*

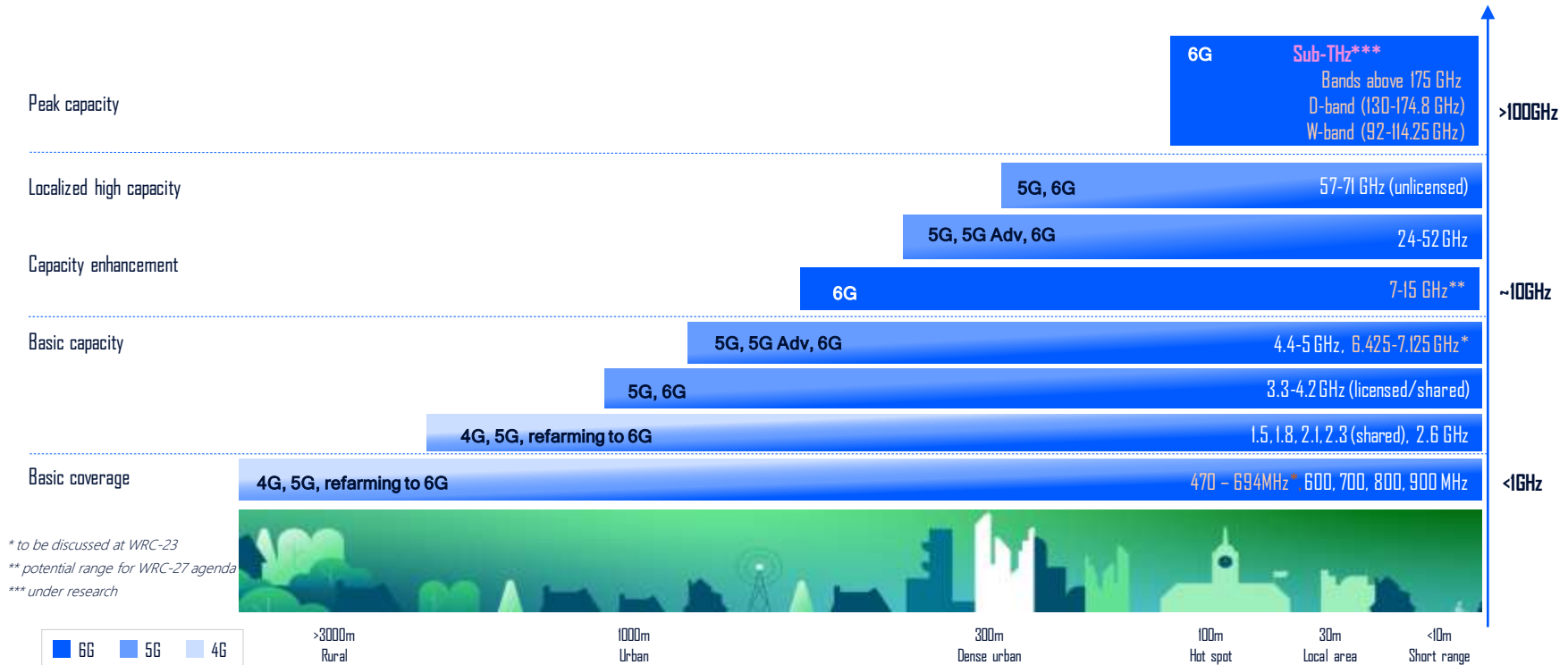
# Wireless system design principles

...but also go beyond



# Spectrum for 6G – possible new and re-farmed bands

## Band options for a new generation of wireless technology



\* to be discussed at WRC-23

\*\* potential range for WRC-27 agenda

\*\*\* under research



# Bringing future to life

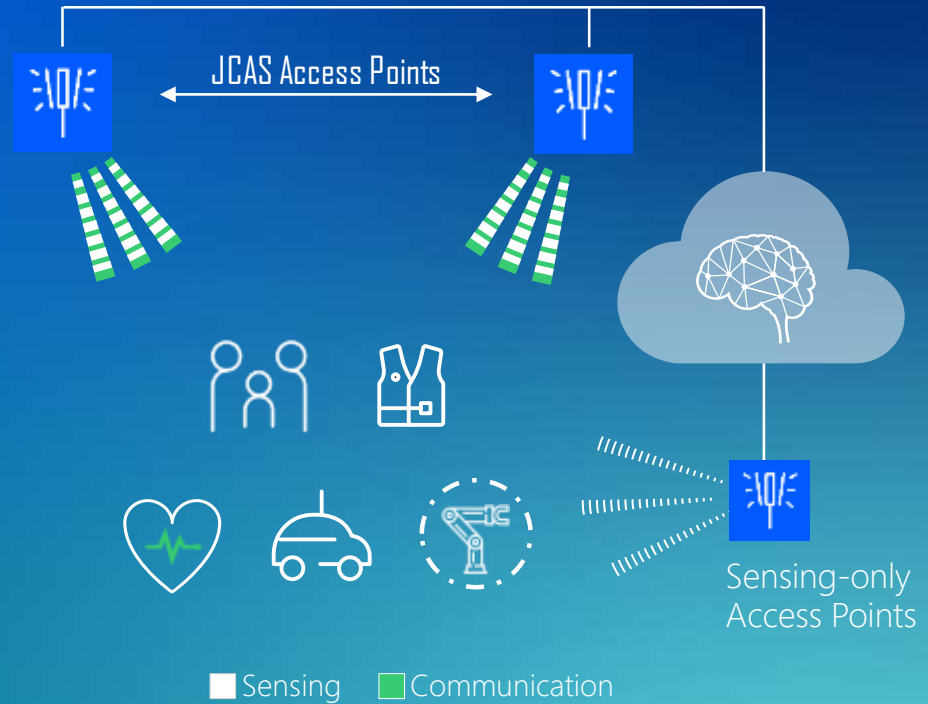
Six key technology areas for the 6G essential infrastructure



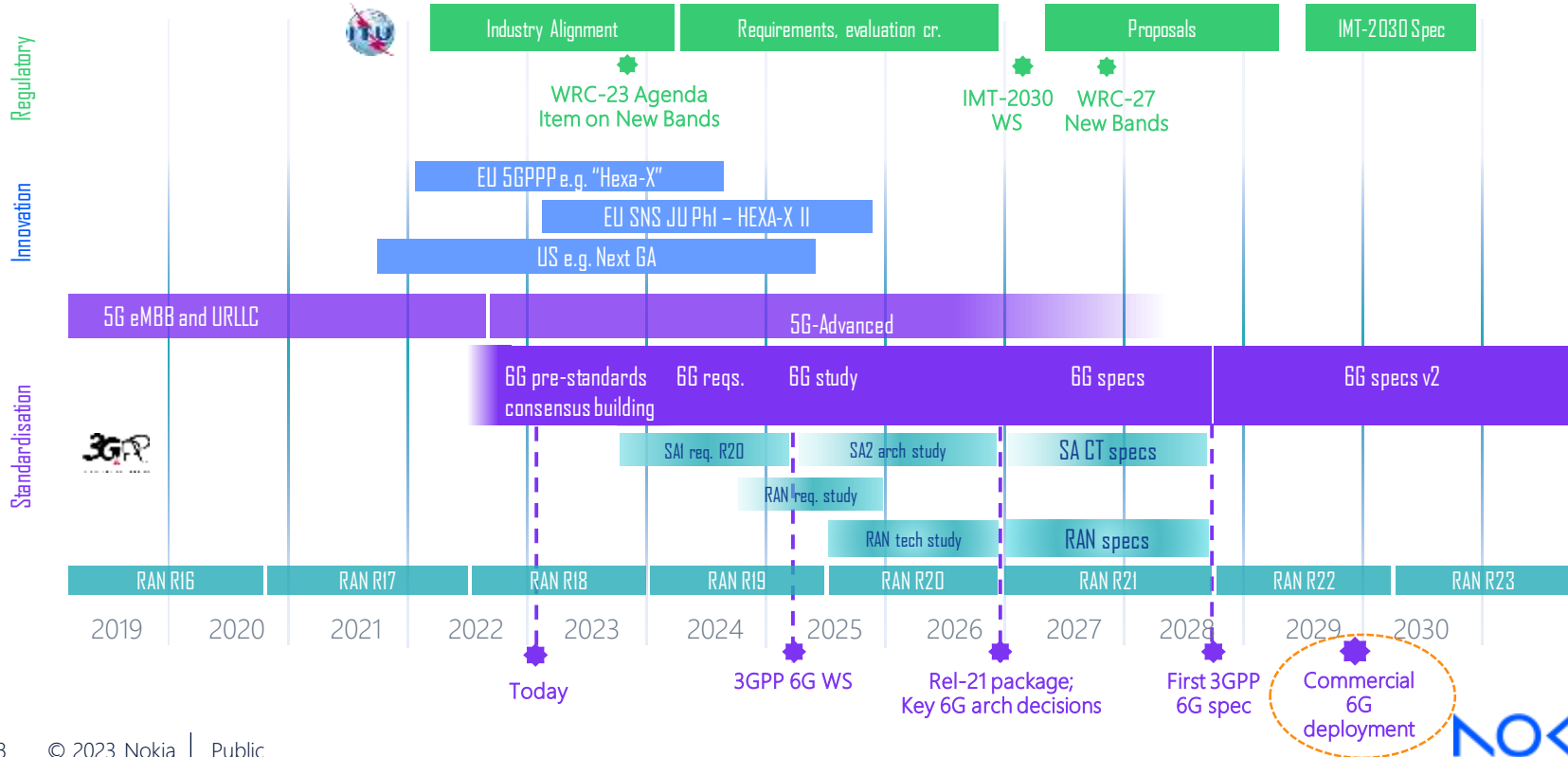
# Network as a sensor



Simultaneous communication and sensing



# 6G timelines – Specifications and commercialization





# 6G success depends on a global unified approach

## Spectrum

- Wider agreement on spectrum, regulations, technical specs and timelines to maximize the potential
- Globally harmonized approach to drive cost efficiency and wider ecosystem

## Collaboration

- Collaboration among various stakeholder (industry, tech forums, organizations and academia..)
- Focus on making the technology simpler to use, sustainable and socially relevant

## Investment

- New technology development is capital intensive
- Govt funding and support to accelerate 6G development
  - Finland's 6G Flagship program
  - Germany's 6G-ANNA
  - US public sector driven 6G Research program
  - Korea's MSIT lead 6G research program
  - Japan's Beyond 5G Promotion Consortium for 6G initiative
  - China's IMT-2030 (6G) Promotion Group
  - India (6G vision document releases in Mar 2023)

# We are leading the way to make 6G a reality

## Ecosystem engagement



THANK YOU !!

A large white graphic element on the right side of the slide, consisting of two thick diagonal lines that meet at a point on the left, forming a stylized arrow or chevron shape that points towards the center.

NOKIA