

# ISMC : WRC-27 Preparations

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# Collaborating with the global ecosystem to drive innovation



# Shaping the digital future



Powering the  
mobile revolution



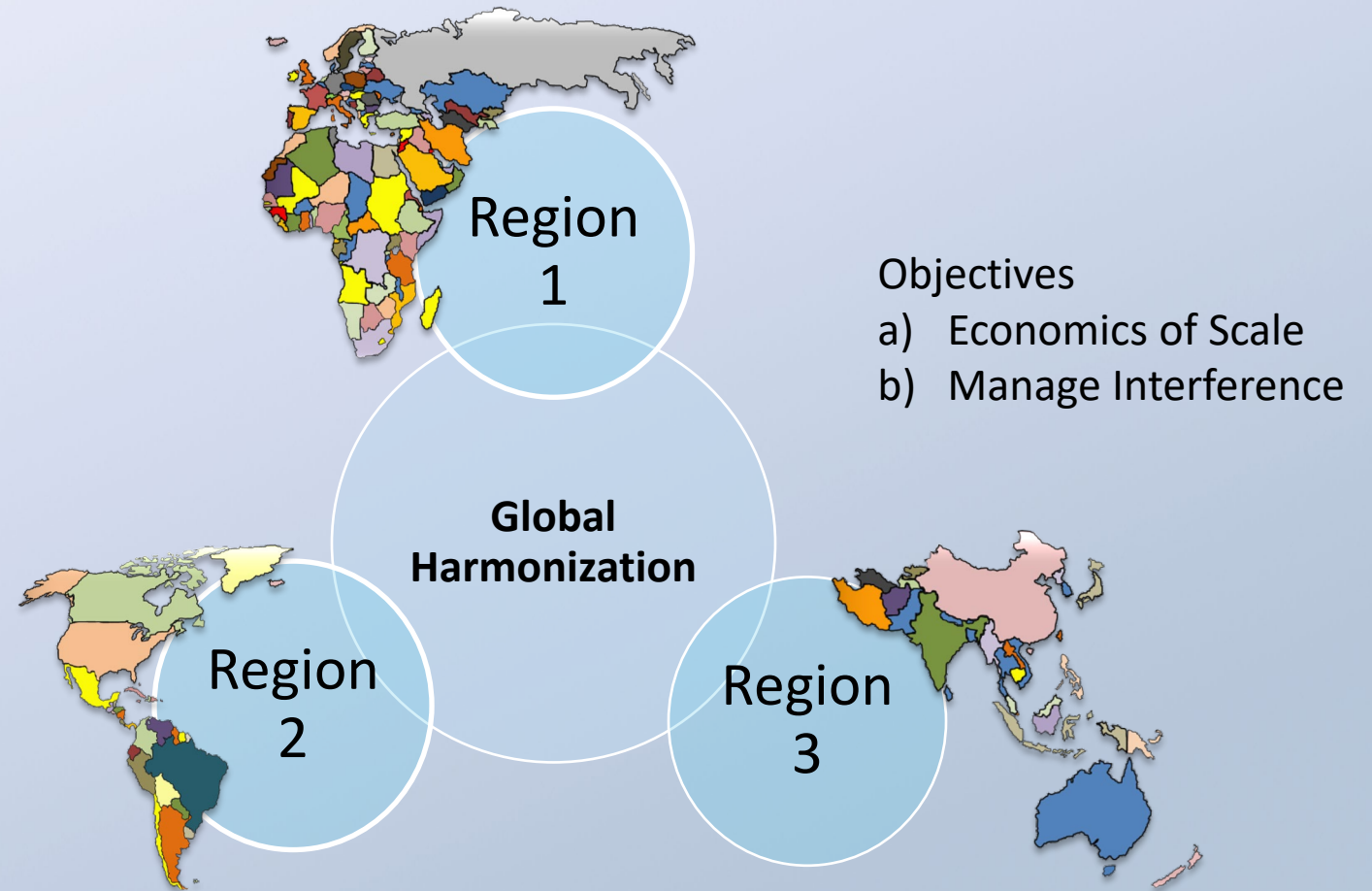
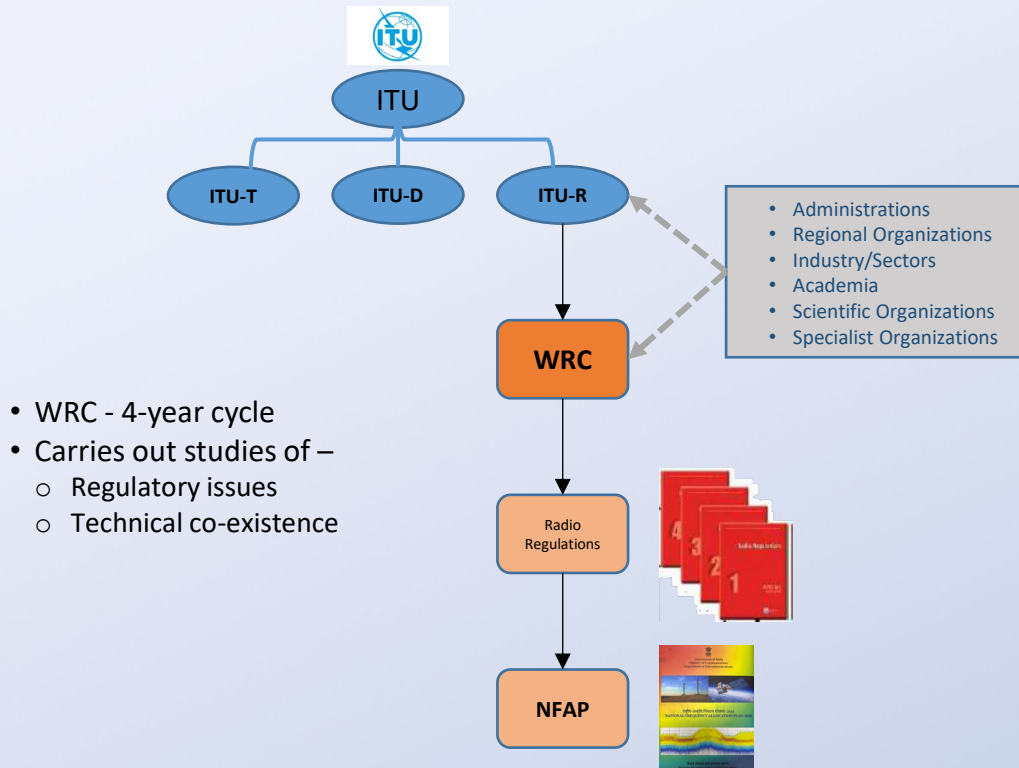
Redefining  
connected processing



Enabling intelligent  
computing everywhere

# Harmonization Process

## ITU Process : Global Harmonization



Spectrum is Globally and/or Regionally Harmonized

# Where are we in the cellular innovation cycle?

5G

Ramping volume and expanding to new use case

5G ADVANCED

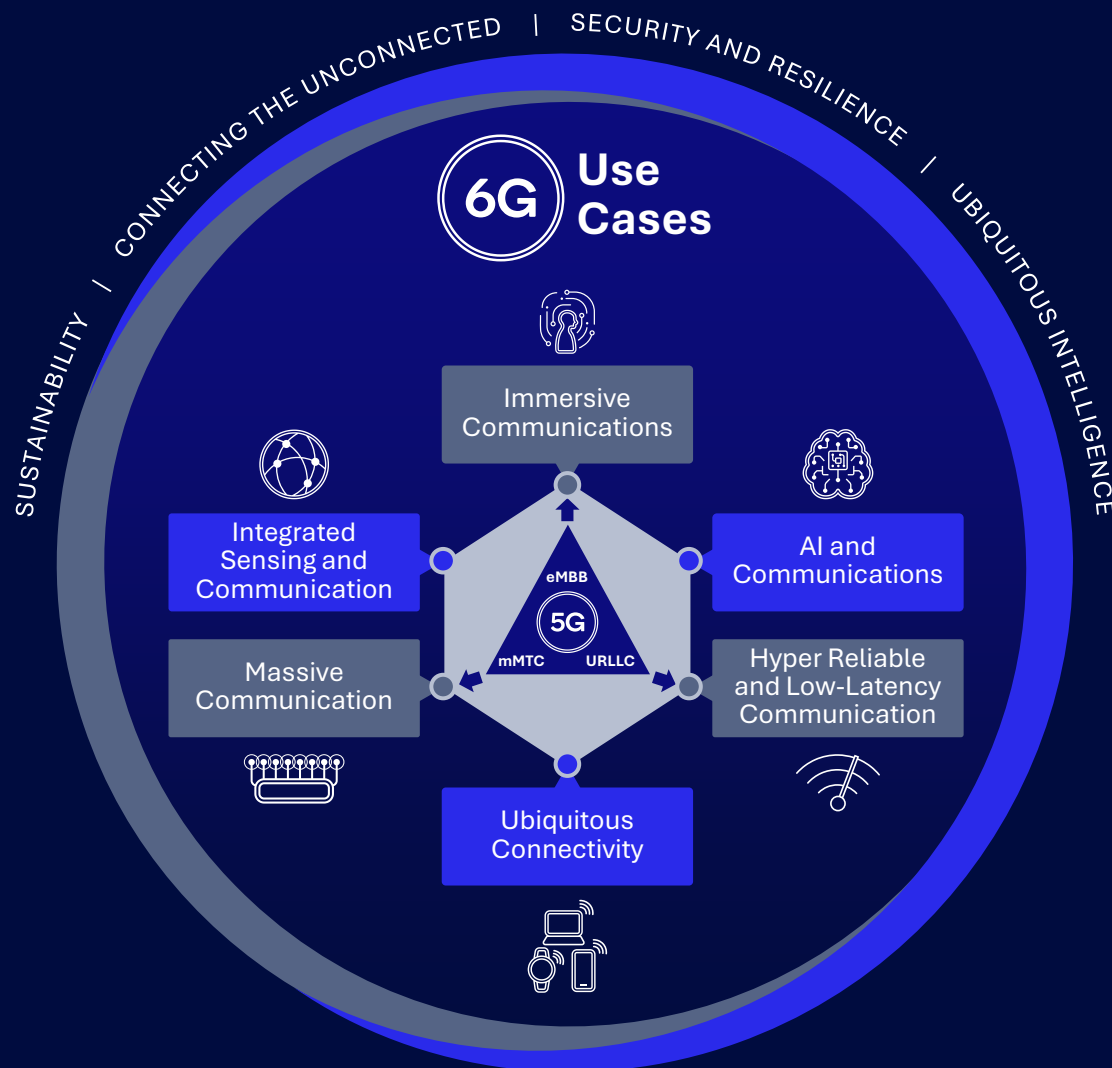
Completing 1st standard  
—2<sup>nd</sup> phase of 5G innovations

6G

Aligning on vision, foundational research, timeline, requirements



# 6G vision from ITU-R — Usage scenarios and capabilities



## Enhanced Capabilities

Security resilience	
Reliability	5G $1-10^{-5}$ 6G $\uparrow 1-10^{-5} - 1-10^{-7}$
Latency	5G 1 6G $\downarrow 0.1 - 1$ ms
Mobility	5G 500 6G $\uparrow 500 - 1,000$ km/h
Connection density	5G $10^6$ 6G $\uparrow 10^6 - 10^8$ devices/km <sup>2</sup>
Area traffic capacity	
Spectrum efficiency	
User experience data rate	
Peak data rate	

## New Capabilities

Coverage
Sensing-related capabilities
AI-related capabilities
Sustainability
Interoperability
Positioning (1-10 cm)

**6G**  
**Capabilities**



# 6G will support an unprecedented range of frequency bands

## LOW BANDS

below 1 GHz (~20 MHz BW)

With 6G, lower frequencies with narrower bandwidths will provide even better long-range coverage.

## MID BANDS

1 — 7 GHz (~100 MHz BW)

Bandwidths up to ~100 MHz, shorter wavelengths, massive MIMO antennas and MU-MIMO enable high capacities

## UPPER MID-BANDS

7 – 24 GHz (~500 MHz BW)

New 6G spectrum with bandwidths up to ~500 MHz bring additional wide-area capacity for communications and sensing

## mmWAVE BANDS

24-71 GHz

6G spectrum bringing additional local-area capacity for communications and sensing

## SUB-THZ

above 100 GHz

Higher frequencies with wide bandwidths provide excellent precision

Improving coverage and capacity in legacy bands and supporting new frequency bands for growth

# Spectrum Bands Identified for IMT studies

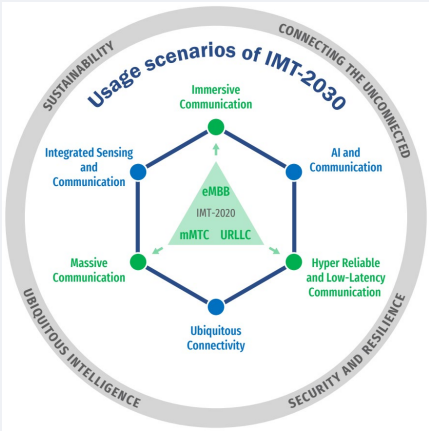
## WRC-27 Agenda item 1.7

Administrations or Regions will study new candidate bands for use by 6G/IMT-2030, for decisions WRC-27.

Study Stage :

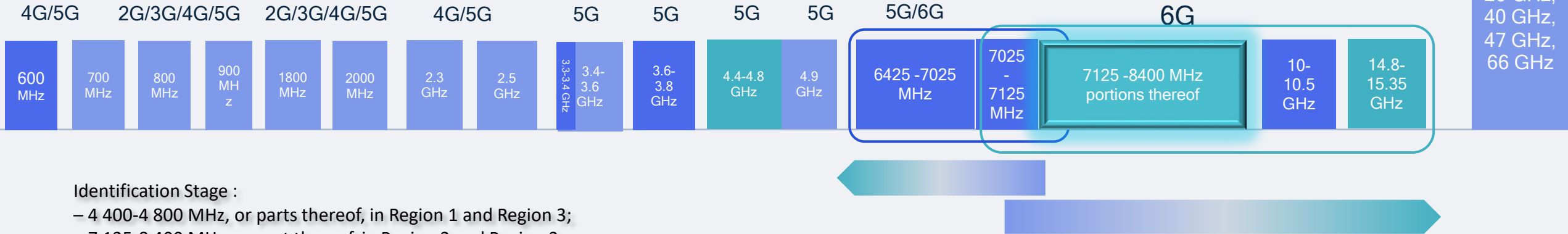
- 4 400-4 800 MHz
- 7 125-8 400 MHz
- 14.8-15.35 GHz.

Additional contiguous broadband spectrum in FR3 range is required to support the immersive communication and high-resolution sensing in wide area coverage deployment.



5G/6G

mmW  
26 GHz,  
40 GHz,  
47 GHz,  
66 GHz



Identification Stage :

- 4 400-4 800 MHz, or parts thereof, in Region 1 and Region 3;
- 7 125-8 400 MHz, or part thereof, in Region 2 and Region 3;
- 7 125-7 250 MHz and 7 750-8 400, or part thereof, in Region 1;
- 14.8-15.35 GHz, Global



# Spectrum Bands Identified for IMT studies (Lead Group : ITU-R WP5D)

WRC-27 Agenda item 1.7 : Readiness for Sharing Studies

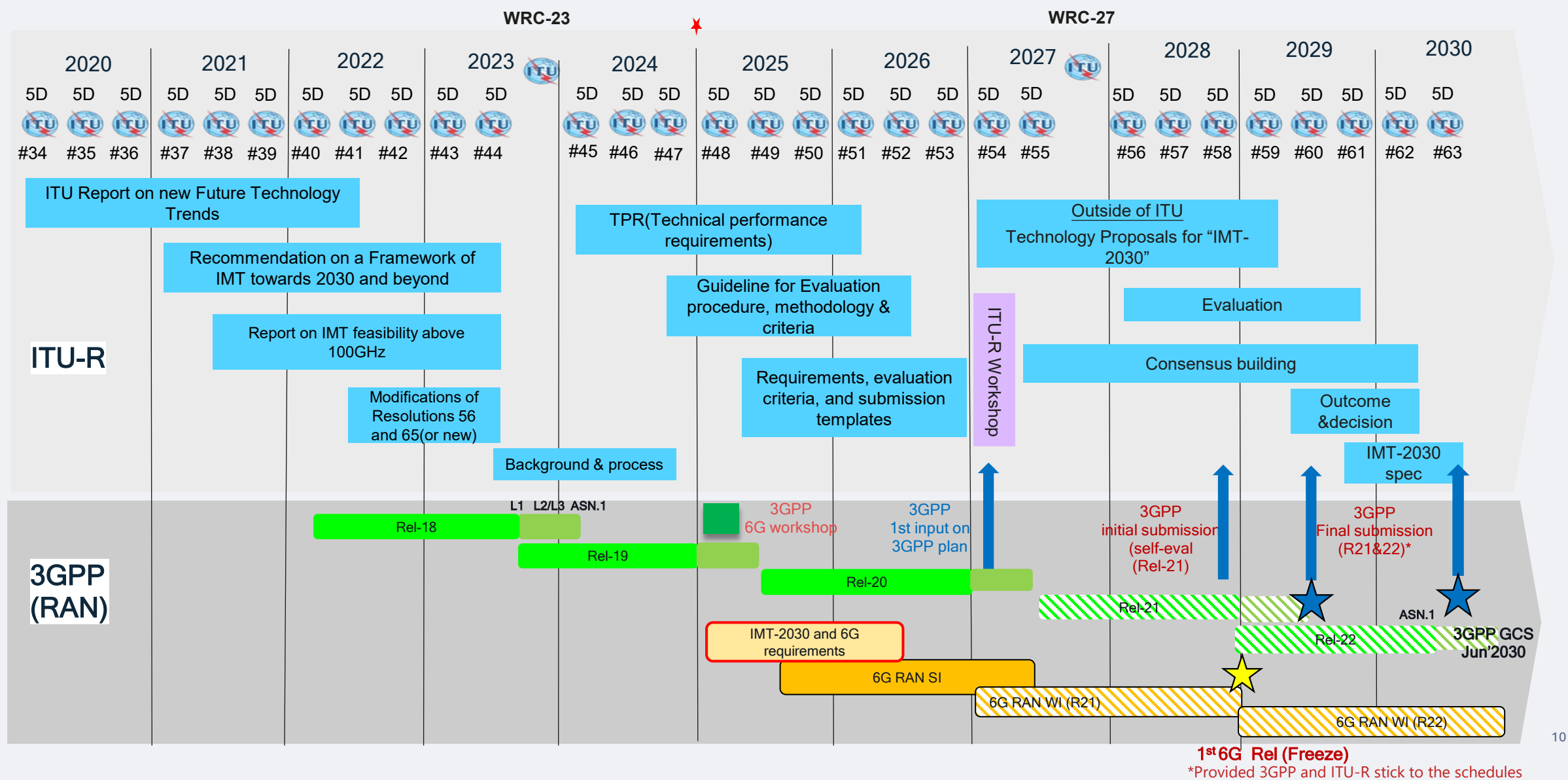
## IMT Parameters:

- Most 7.124-8.4 GHz parameters finalized
- Parameters for 14.8-15.35 GHz to be finalized in Feb-25 at 5D#48
  - Decision on macro deployment to be made
- Mobile industry's priority is 7.124-8.4 GHz

## Key Technical Discussions/Developments:

- AAS modelling issues: resolved with the great effort from Industry
- Reverse studies from existing incumbent services to IMT
  - Traditionally protection is always for the incumbents
  - Some countries asking for reverse studies to protect IMT from incumbents (France, Russia, China)
  - Many countries supporting traditional approach of following relevant Resolution of WRC agenda (US, Korea, Brazil, India)
- IMT deployment modelling method for large area
  - **Ra/Rb**: US, Korea, Canada, Russia, Japan, GSMA, and Industry for keeping Ra/Rb modelling.
  - **Population based method**: UK, New Zealand, France, Germany and Samoa for population-based method for IMT deployment modeling
  - Need to do a sensitivity analysis study for calibration purpose
    - Approx 800K BS per TSP in India in 6/7 GHz

# ITU-R IMT-2030 and 3GPP Timeline



# Global Momentum for 6G is growing

We are leading key discussions and working groups to promote early government investments in critical technologies



IMT-2030 defines next-gen mobile system requirements for 2030 and beyond



A GLOBAL INITIATIVE

The standards body responsible for global 6G technology standardization



# WRC-27 Preparation

## Key Agenda Items :

AI 1.7

AI 1.12

AI 1.13

AI 1.14

AI 1.19

## Essentials

- Identify WRC Team
- Nomination of National Coordinators for various Agenda Items
- Coordination within Sub-Region/Region
- Coordination and alignment with administrations with common interests
  - Based on each Agenda Item
- Participation in relevant Working Parties by the National Coordinators
- Timely identify National priorities
- Timely identify issues for negotiations
- Work on relevant sharing and compatibility studies

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