

Can India Lead the Global 6G Spectrum Agenda?

6G Golden Band | WRC-27

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6G will strain networks from both sides....

6G Increases demand

- Existing use cases (video, gaming) need higher technical performance
- New use cases: integrated sensing, immersive communication
- More time spent on mobile networks as speeds improve
- Ubiquitous connectivity brings more users onto the network
- Even the extreme case — a mobile hologram needs ~0.58 Tbps — today's more modest use cases already justify the need



Networks can only partly keep up

- Greater spectral efficiency from advanced MIMO and coding
- AI-RAN can optimise resource management — but has limits
- Non-terrestrial networks add coverage, not core capacity
- None of this replaces the need for more mid-band spectrum

The evidence for India

GSMA Intelligence, Vision 2040: Spectrum for the future of mobile connectivity (2026)

2–2.8 GHz

South Asia mid-band need, 2035–2040
(weighted average)

2.3–3.1 GHz

Need for the highest-demand cities —
comparable to Greater China and the GCC
states

Why South Asia's number leans on India:

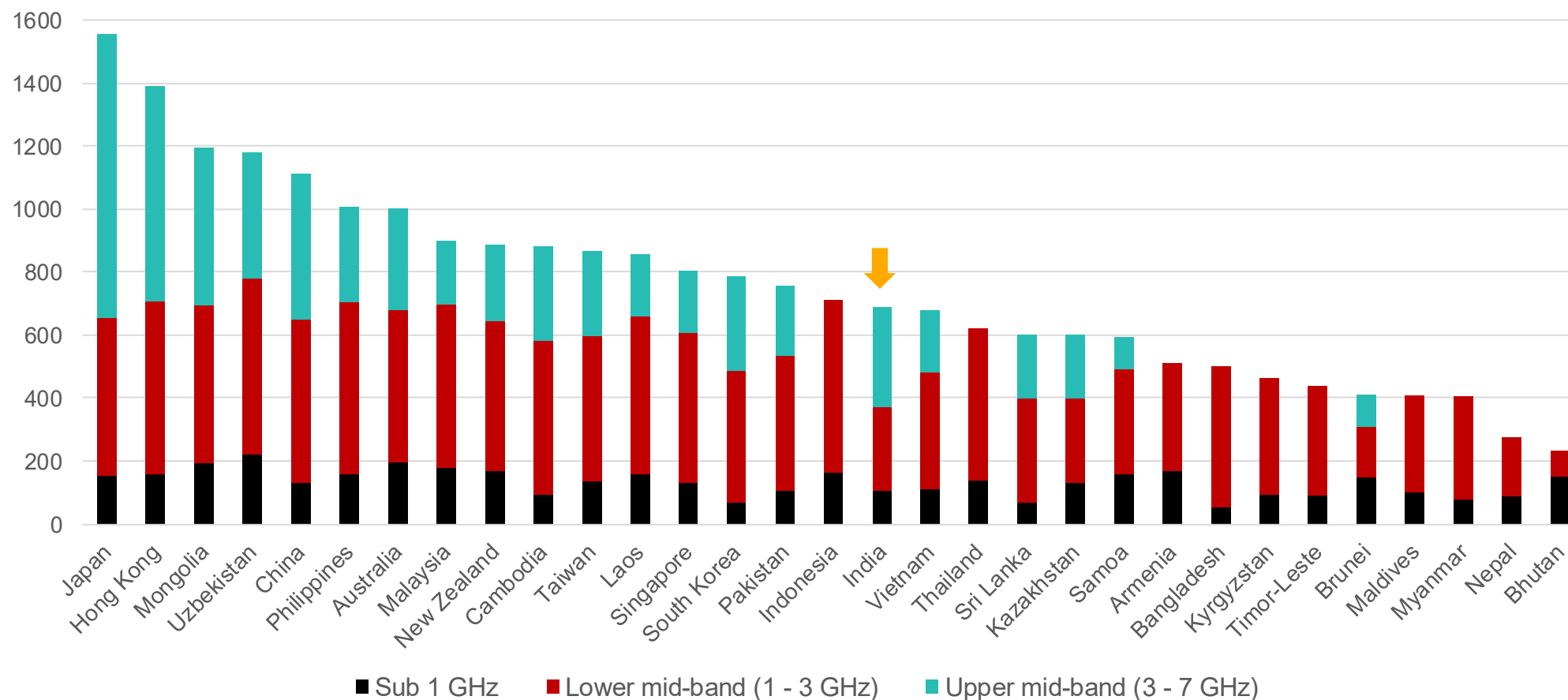
- 450M+ 5G connections within four years of launch
- 45% of mobile connections on 5G (~20 Mn added last quarter)
- 45% of total mobile data traffic already on 5G
- More broadband traffic on mobile than fixed — unlike most large economies
- Expected to be one of the early adopters of 6G (outlined in Bharat 6G Vision)

Source: TRAI

India holds less spectrum than peers

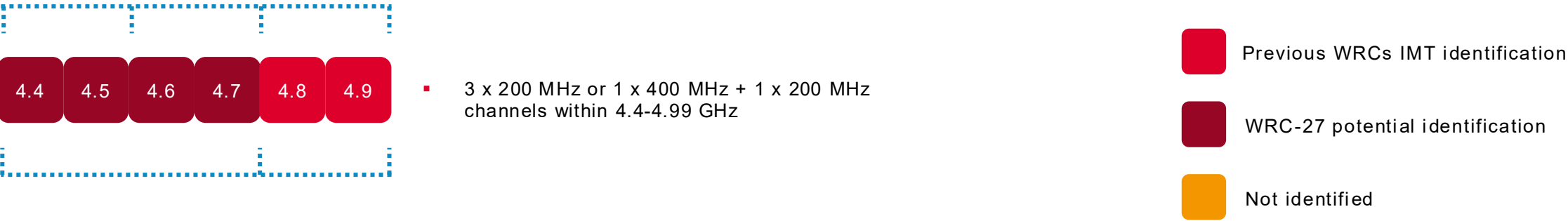
India: ~690 MHz total — 17th of the 31 markets shown, despite its scale

Total IMT Spectrum (MHz) assigned in selected Asian markets (Q3 2026)

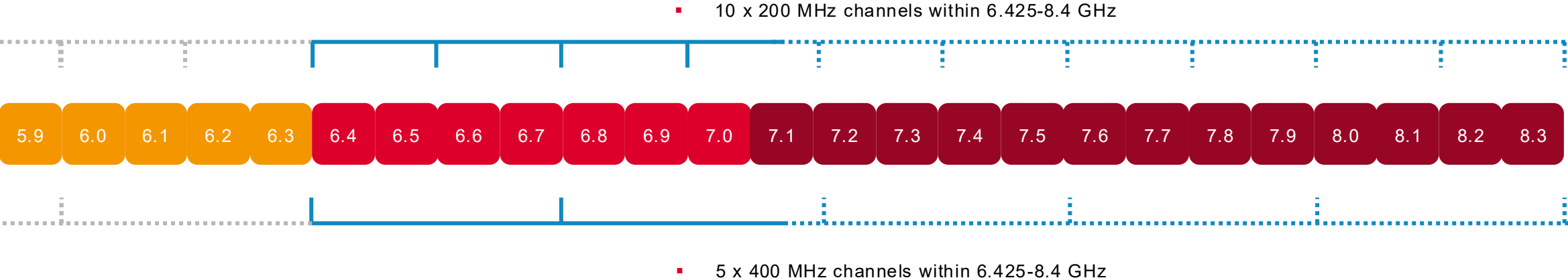


Source: GSMA Intelligence

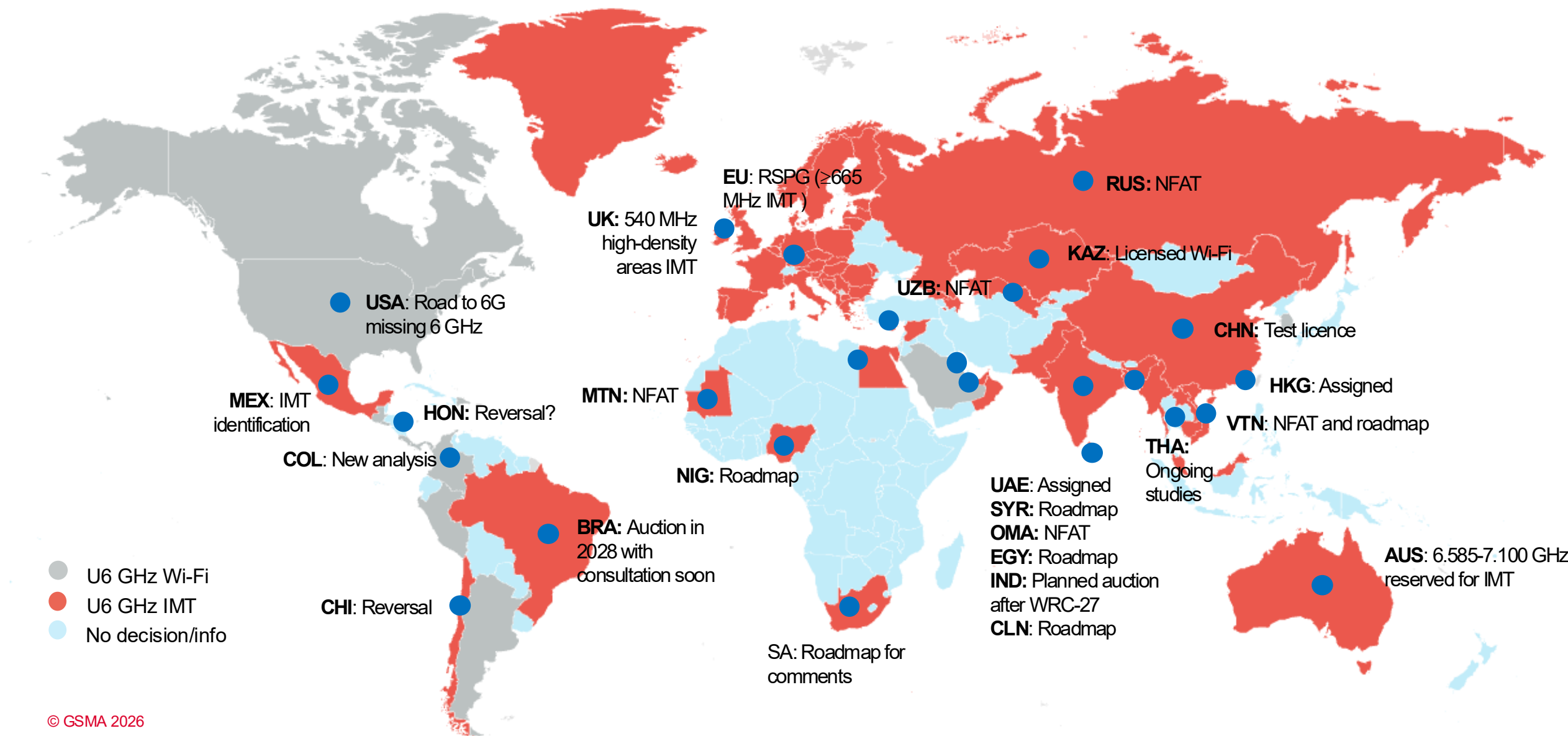
4.5 GHz



6-8 GHz



Where it stands today...



WRC-27 has the power to deliver



1

Harmonisation

Delivering 200-400 MHz channels for 6G in new bands including 4.5 GHz and 6-8 GHz.

2

Innovation

Worldwide access to 6G launch spectrum to deliver XR, integrated AI and seamless digital access.

3

Resilience

Allowing capacity for secure and robust 6G networks that underpin critical infrastructure and digital sovereignty.

What's required nationally, before WRC-27

Supporting the WRC-27 study items (is a procedural step) $\neq$ National decision to identify these bands for IMT in India

The SEQUENCE that matters:

1. Resolve inter-departmental coordination — the actual gating step, not a lack of data or studies
2. Decide nationally which bands India will support for IMT identification (4.4–4.99 GHz, 7.125–8.4 GHz)
3. Communicate that decision clearly to all stakeholders
4. Execute that decision at APG and WRC-27

6.3.2 Parallely, the following frequency bands will be studied for potential identification for IMT based services, through the Agenda Item 1.7 of the WRC-27:

- a) 4400–4800 MHz
- b) 7125–8400 MHz (or selected portions)
- c) 14.8–15.35 GHz

These bands are being considered at the global level for future mobile broadband use. Once identified for IMT during WRC-27, the spectrum in these bands will be assessed for possible re-farming for IMT based services, in India.

Source: Spectrum Roadmap for 6G services in India

India has the scale, the 5G momentum, and a real opening on upper 6 GHz.

The Golden Band is India's chance to help shape global consensus — not just adopt it.

Thank you

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