PRESENTATION: ICASA Public Hearings on the Second National Radio Frequency Plan (NFRP)

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Presentation Overview

1. IMT L-Band (1427–1518 MHz)
2. Upper 6 GHz Band (6425–7125 MHz)
3. 4 800-4 990MHz
4. 3 300-3 400 MHz
5. 3 600-3 800 MHz
6. Public Protection and Disaster Relief (PPDR)
7. Power Distribution Networks
8. Future Railway Mobile Communication System (FRMCS)
9. Concluding Remarks

1. Comments on the 1 427-1 518 MHz (L-Band)

Huawei fully supports ICASA's ongoing efforts to update the National Radio Frequency Plan in line with the outcomes of WRC-23. We appreciate the opportunity to contribute to this important regulatory process and hereby submit our comments on selected spectrum bands for ICASA's consideration.

❑ Global Harmonization & Best Practice:

- The L-band is internationally recognized by 3GPP for IMT, with **SDL** emerging as the **globally adopted configuration**.
- Over **10 countries**, mainly in Europe (UK, Germany, Italy, Netherlands, Switzerland), have deployed L-band for IMT SDL since 2008.
- Recent adoption by **Thailand (2025)** further confirms global momentum.
- **No country has adopted IMT TDD** in this band; IMT FDD is limited to **Japan only**, with a constrained ecosystem.

❑ Network Performance & Consumer Benefit:

- SDL directly addresses asymmetric mobile traffic growth, particularly high downlink demand.
- Enhances mobile broadband capacity and user experience without requiring paired uplink spectrum.

Comments on the 1 427-1 518 MHz (L-Band)

❑ Mature and Proven Ecosystem:

- The IMT SDL ecosystem in the L-band is fully mature, with **1,000+ commercially** available 4G/5G devices, including **smartphones and CPEs**.
- **This maturity ensures:**
  - Immediate deployment capability
  - Lower device and network costs
  - Reduced technology risk
- **By contrast, no viable TDD ecosystem exists, and FDD support remains niche.**

❑ Alignment with African and International Policy:

- The ATU IMT Spectrum Roadmap (ATU-R Rec. 008-0, July 2025) endorses a downlink-only approach for 1427–1517 MHz
- **Huawei recommends ICASA adopt:**
  - **SDL-only** usage for 1427–1517 MHz (or applicable subset including guard bands)
  - 5 MHz channel raster
  - Technical conditions aligned with ITU-R M.2159-0 and ECC Decision (17)06

2. Comments on the 6425-7125 MHz (U6 GHz)

Huawei recommends that ICASA **maintain the designation of the 6425–7125 MHz band for licensed IMT use**, in line with WRC-23 outcomes and Africa's harmonized spectrum roadmap.

❑ Alignment with WRC-23 and Global Direction:

- ❖ Resolution 220 (WRC-23) identifies the **Upper 6 GHz band for IMT**, supported by **ITU-R M.1036-7**.
- ❖ Global momentum for IMT in U6 GHz has accelerated across **Latin America, Asia, Middle East, and Asia-Pacific**.
- ❖ In **November 2025**, Europe's **Radio Spectrum Policy Group (RSPG)** endorsed allocating **540 MHz** of U6 GHz to IMT, with further confirmation expected post-WRC-27.
- ❖ Countries assigning both lower and upper **6 GHz to Wi-Fi** represent **only ~8% of the global population**.

❑ Consistency with Africa and South Africa's Leadership:

- ❖ South Africa has historically played a **leading role** in advocating IMT identification for U6 GHz in Region 1.
- ❖ The IMT designation aligns with:
  - ○ **ATU-R Recommendation 008-0 (July 2025)**
  - ○ **Africa Spectrum Allocation Plan (AfriSAP, July 2025)**
- ❖ Maintaining IMT use preserves policy consistency and regional harmonization.

Comments on the 6425-7125 MHz (U6 GHz)

❑ Capacity, 5G Evolution and 6G Readiness:

- ❖ Upper 6 GHz is **critical for 5G capacity expansion** and forms a **foundation for future 6G networks**.
- ❖ Licensed IMT use delivers higher spectral efficiency, predictable quality of service, and stronger economic value.

❑ Concern on WAS/RLAN Inclusion:

- ❖ The inclusion of **WAS/RLAN as a typical application** in the Second Draft NRFP creates:
  - ○ Policy ambiguity on intended spectrum use
  - ○ Misalignment with WRC-23 and Africa's agreed position
- ❖ **CEPT technical studies (ECC Report 366)** confirm that **IMT and WAS/RLAN cannot coexist effectively** in this band.

❑ Huawei Recommends:

- ❖ Huawei Recommend ICASA **remove WAS/RLAN as a typical application** in the following ranges:
  - ○ 6425–6429 MHz
  - ○ 6429–6700 MHz
  - ○ 6700–7075 MHz
  - ○ 7075–7145 MHz

3. Comments on the 4 800-4 990MHz:

- We commend ICASA for indicating IMT as a typical application in this band as well as undertaking to develop a Radio Frequency Spectrum Assignment Plan (RFSAP) for the band.

4. Comments on the 3 300-3 400 MHz:

- Huawei notes that this band has been identified for IMT in South Africa following WRC-15. We recommend that ICASA finalizes the development of the Radio Frequency Spectrum Assignment Plan (RFSAP) for this band.

5. Comment on the 3 600-3 800 MHz:

- Huawei welcomes the **primary allocation and IMT identification of the 3.6 GHz band** for South Africa at **WRC-23**, recognizing this as a **critical milestone** in modernizing the country's mobile broadband infrastructure and advancing digital and economic development.

Recommendation:

- **Huawei recommends that ICASA develop a comprehensive Radio Frequency Spectrum Assignment Plan (RFSAP) for the 3.6–3.8 GHz band.**
- Provides **regulatory certainty and transparency** in spectrum assignment
- Enables **efficient spectrum management** and accelerated network rollout.
- Supports **5G expansion, innovation, and capacity growth**
- Contributes directly to **digital transformation and socio-economic development**

6. Comments on the Public Protection and Disaster Relief (PPDR):

There is a **longstanding and growing need for dedicated broadband spectrum** to support **Public Protection and Disaster Relief (PPDR)** services, alongside existing narrowband PPDR communications.

- Modern PPDR operations increasingly rely on **broadband applications**, including:
  - Real-time mobile video from the field.
  - Body-worn and drone cameras
  - Location-based services and digital mapping

- These applications **cannot be effectively supported by narrowband systems alone** and require coexistence with broadband technologies.

- To ensure **secure, reliable, resilient, and mission-critical communications**, spectrum allocation for **broadband PPDR services** should be considered, with:
  - Dedicated or prioritized access
  - Guaranteed **quality of service (QoS)** appropriate for emergency and public safety operations.

7. Comments on the Power Distribution Networks:

Globally, regulators are increasingly allocating **dedicated spectrum** to support **modern power distribution networks** and the reliable operation of national energy grids.

- Dedicated spectrum enables **real-time monitoring and control** of critical power infrastructure.
- Supports the **integration of renewable energy sources.**
- Enhances grid efficiency, resilience, and reliability amid rising energy demand.

- **We recommend ICASA to consider allocating appropriate spectrum for power utilities to support secure, mission-critical communications for energy distribution and grid management.**

8. Comments on the Future Railway Mobile Communication System (FRMCS):

The transition from legacy **GSM-R (2G/3G-based)** systems to **Future Railway Mobile Communication System (FRMCS)** is essential to modernize South Africa's rail communications and support safe, efficient, and data-driven rail operations.

- Legacy railway communications technologies are **reaching end-of-life** and cannot support modern operational requirements.

- FRMCS, based on **5G New Radio (NR)**, enables:
  - Mission-critical train control and signaling
  - Low-latency, high-reliability communications
  - Real-time telemetry and diagnostics
  - High-definition video and advanced safety applications

- A national FRMCS pathway should include:
  - Identification and securing of **dedicated spectrum for rail operations**
  - **Prioritization and protection mechanisms** for mission-critical communications
  - **Technical and interoperability standards** aligned with global best practice
  - A **structured migration plan** from GSM-R to FRMCS, ensuring continuity of service and regional harmonization

9. Concluding Remarks

1) Huawei's submissions consistently support a **forward-looking, harmonized, and economically optimal spectrum framework** for South Africa one that aligns with **WRC-23 outcomes, ITU and ATU recommendations, and global best practice**.

2) Across IMT, public safety, transport, and critical infrastructure use cases, the key principle is **regulatory clarity combined with purposeful spectrum designation**. Allocating spectrum for **IMT Supplemental Downlink in the L-Band**, **licensed IMT in the Upper 6 GHz band**, and establishing a **clear RFSAP for the 3.6–3.8 GHz band** will ensure South Africa can meet rapidly growing mobile broadband demand while enabling 5G evolution and future 6G readiness.

3) Equally important is the recognition that **mission-critical services**—including **Public Protection and Disaster Relief (PPDR)**, **power distribution networks**, and **railway communications (FRMCS)**—require **dedicated, secure, and resilient spectrum frameworks** with appropriate quality-of-service protections. These allocations are essential to national safety, energy security, transport modernization, and overall economic resilience.

4) Taken together, these recommendations aim to provide ICASA with a **coherent, future-ready spectrum policy pathway** that maximizes societal and economic value, strengthens South Africa's global competitiveness, and supports inclusive digital transformation. Huawei remains committed to working closely with ICASA and national stakeholders to translate these strategic objectives into practical, implementable regulatory outcomes.

Thank you

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