GLOBALCOM SUBMISSION ON THE DRAFT NATIONAL RADIO FREQUENCY PLAN 2025

Submitted by: globalCom

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1. INTRODUCTION

globalCom welcomes the opportunity to contribute to the Draft National Radio Frequency Plan (NRFP) 2025. As a South African-based provider of mission-critical connectivity—spanning satellite communications, IoT, enterprise networking, and cloud-based services—we operate where resilient communications matter most: remote communities, industrial zones, frontline public services, and cross-border infrastructure corridors.

The NRFP is not merely a regulatory planning tool; it is a national blueprint for digital inclusion, infrastructure resilience, and economic growth. Its implementation directly impacts how businesses, government, and civil society access reliable, scalable, and globally compatible spectrum resources.

It is within this context that globalCom raises concern about ICASA's proposal to extend International Mobile Telecommunications (IMT) services into the 1492–1518 MHz band. This band lies adjacent to the internationally protected 1518–1559 MHz Mobile Satellite Service (MSS) band, a frequency block fundamental to safety-of-life services and industrial-grade satellite operations. Any interference in this band has consequences not only for service continuity but also for regulatory compliance, contractual obligations, and public safety.

We therefore respectfully urge ICASA to uphold the globally harmonised IMT cap at 1492 MHz and to protect the MSS band from adjacent-band interference. Doing so will preserve the operational integrity of critical satellite services and ensure that South Africa's digital future remains both inclusive and internationally credible.

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2. Role of MSS in Broadband and IoT Innovation

The MSS band (1518–1559 MHz) is essential to hybrid connectivity architectures that underpin South Africa's broadband and IoT evolution. In particular, globalCom uses this spectrum to support deployments where

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terrestrial networks fall short—rural clinics, agricultural lands, mines, transport corridors, and remote utility nodes.

Use cases include:

- Smart agriculture systems leveraging satellite-enabled IoT sensors for precision farming;
- Cross-border freight tracking and fleet management via MSS-powered telematics;
- Energy grid monitoring and remote infrastructure diagnostics;
- Emergency response connectivity for health posts, disaster sites, and mobile command units.

MSS services in the L-band offer broad reach, high availability, and resistance to environmental disruptions. These characteristics make the band uniquely suited for low-power, mobile, and latency-sensitive applications. Furthermore, MSS capabilities are embedded in high-SLA commercial offerings used in industries where uptime is not negotiable.

Degrading the MSS spectrum with adjacent-band interference will disrupt service delivery, inflate engineering costs, and violate service-level agreements. It also risks isolating South Africa from globally harmonised device ecosystems, increasing costs and reducing innovation velocity.

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3. Coexistence Challenges Between IMT and MSS

While IMT and MSS both play vital roles in South Africa's connectivity landscape, their physical coexistence in adjacent bands presents well-documented risks. Studies from ITU-R, CEPT, and others confirm the high likelihood of harmful interference due to:

- **High-power base stations:** IMT towers emit strong signals that overpower sensitive MSS receivers;
- **Out-of-band emissions:** IMT operations inevitably leak into adjacent frequencies, degrading signal-to-noise ratios;
- **Receiver desensitisation:** Continuous exposure to strong nearby emissions reduces MSS device sensitivity.

These risks are not abstract. MSS-enabled systems currently support:

- Fleet tracking for logistics firms requiring uninterrupted geolocation services;
- Smart grid monitoring in isolated zones;
- Always-on emergency systems in low-coverage areas.

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In many deployments, MSS terminals are embedded in remote assets. Mitigating interference through upgrades or shielding is not just impractical—it's prohibitively costly. Proposed mitigation strategies such as guard bands or exclusion zones are difficult to enforce and often ineffective in real-world conditions.

Maintaining the IMT boundary at 1492 MHz is the most practical and globally accepted safeguard.

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4. International Regulatory Practice and Ecosystem Alignment

Globally, regulators have adopted cautious, evidence-based approaches to spectrum reallocation near the MSS band. Administrations in Germany, the UK, the Netherlands, Italy, and Malta have retained the 1492 MHz cap for IMT to protect satellite service integrity and support infrastructure reliability.

4.1 Global Harmonisation

Key drivers for maintaining the 1492 MHz boundary include:

- Persistent interference risks confirmed by technical studies;
- High cost and complexity of mitigation strategies;
- Criticality of MSS in safety, logistics, and industrial systems.

Clarity in spectrum policy promotes vendor alignment, device interoperability, and efficient broadband and IoT scale-up.

4.2 Ecosystem Compatibility

The 1518–1559 MHz MSS band anchors a global device ecosystem. Changing its operational environment in one jurisdiction creates:

- Certification challenges for equipment manufacturers;
- Delays in time-to-market for local innovations;
- Additional regulatory burdens for providers.

A deviation from harmonised standards risks undermining South Africa's positioning in the global digital economy.

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4.3 Regional Continuity

At the regional level, neither the African Telecommunications Union (ATU) nor the Southern African Development Community (SADC) has supported IMT expansion into the 1492–1518 MHz range. African Common Proposals at WRC-23 recognised the importance of MSS continuity in enabling development goals.

Maintaining alignment with regional frameworks ensures:

- Seamless cross-border MSS operation;
- Easier spectrum coordination;
- Predictable investment conditions for regional service providers.

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5. Recommendations

Based on operational realities, technical evidence, and international precedent, globalCom offers the following recommendations:

5.1 Maintain the IMT Allocation Cap at 1492 MHz

Reaffirm this proven boundary to prevent adjacent-band interference and uphold MSS service quality. This cap provides regulatory certainty for long-term investment in hybrid connectivity platforms.

5.2 Preserve the 1518–1559 MHz Band Exclusively for MSS

Continue to protect this band to ensure continuity in safety services, IoT infrastructure, and broadband deployments that depend on MSS reliability.

5.3 Institutionalise Stakeholder Engagement

Create a formal engagement framework to include MSS users like globalCom in future planning processes. Early collaboration enables better policy outcomes and market stability.

5.4 Align with Regional and Global Frameworks

Avoid isolated deviations that compromise harmonisation. Support cross-border interoperability and investment predictability by aligning with ATU, SADC, and ITU standards.

6. Conclusion

The strength of South Africa's digital transformation lies not only in expanding coverage but also in protecting the services that form its foundation. The MSS band is integral to emergency communications, industrial IoT, cross-border logistics, and rural broadband. Introducing adjacent-band IMT interference puts these services—and their national value—at risk.

globalCom respectfully urges ICASA to:

- Retain the current IMT cap at 1492 MHz;
- Protect the 1518–1559 MHz MSS band;
- Enable structured stakeholder engagement;
- Promote IMT growth in less sensitive bands;
- Maintain regional and global spectrum alignment.

By taking these steps, ICASA will ensure a resilient, inclusive, and future-ready spectrum environment that supports innovation without compromising operational integrity.

globalCom remains available for continued engagement and technical collaboration in the public interest.

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