

6 March 2023

ICASA Consultation on Second Draft Radio Frequency Spectrum Assignment Plan for the frequency band 1427 MHz to 1518 MHz for public consultation

GSOA would like to thank the ICASA for the opportunity to provide comments on the public consultation on “Second Draft Radio Frequency Spectrum Assignment Plan for the frequency band 1427 MHz to 1518 MHz for public consultation”.

GSOA¹ is the CEO-driven association representing global and regional satellite operators, and it provides a platform for collaboration between satellite operators globally and a unified voice for the sector. Our vision is to help policymakers improve the state of the world by continuously bridging digital, education, health, social, gender and economic divides across diverse geographies and across mature and developing economies.

Here below are some considerations about the document under consultation.

L Band (1427-1518 MHz)

GSOA notes with concern the ICASA proposed assignment of the frequency band 1427-1518 MHz for IMT applications under the channelling arrangement G3 from ITU-R Recommendation M.1036-6. GSOA would like to highlight that the adjacent frequency band 1518-1559 MHz, paired with 1626.5-1660.5 MHz and 1668-1675 MHz (commonly referred to as the L band), is a core spectrum resource for the deployment of mobile satellite service (MSS) networks across the globe. These MSS networks fulfil a range of essential and critical communication requirements for land-based, maritime, and aeronautical applications. In addition, L band MSS networks are catalysing the digital transformation of various sectors such as agriculture and mining, by enabling the connection of IoT assets that are beyond the coverage envelope of terrestrial networks.

Various technical studies conducted to date have demonstrated that the introduction of IMT networks in the frequency range 1492-1518 MHz will cause significant harmful interference towards sensitive MSS receiver terminals operating in the adjacent band 1518-1559 MHz. In this regard, GSOA encourages ICASA to review the outcomes of the following technical studies:

- ECC Report 263 - Adjacent band compatibility studies between IMT operating in band 1492-1518 MHz and the MSS operating in 1518-1525 MHz
- ECC Report 199 - Measures to address potential blocking of MES operating in bands adjacent to 1518 MHz (including 1525-1559 MHz) at seaports and airports
- ITU [Preliminary] Draft New Report ITU-R M.[REP.MSS & IMT L-BAND COMPATIBILITY]
- ITU [Preliminary] Draft New Recommendation ITU-R M.[REC.MSS & IMT L-BAND COMPATIBILITY]

¹ The members, activities, and other details about GSOA can be found at www.gsoasatellite.com

The above Reports and Recommendations develop a number of compatibility measures to assist administrations in protecting MSS operations in the band 1518-1559 MHz.

L-band MSS services, using the band 1518-1559 MHz, are on-board South African vessels as well as foreign registered vessels to meet GMDSS requirements, bringing constant all-weather data connectivity across oceans and seas. In addition, L-band satellite terminals operate on-board aircraft, including on South African aircraft, and provide real-time information relating to flight progress, weather, and engine and aircraft performance. These and other L-band MSS services will be at risk of interference from 4G/5G mobile systems if deployed in the band 1427-1518 MHz.

Given that L band MSS is the mainstay of essential and critical services and a key enabler for IoT, GSOA respectfully recommends that the Authority takes the following steps:

1. To prioritise accommodating IMT systems at the lower part of the band 1427-1518 MHz, ideally below 1492 MHz.
2. To the extent that there is demand for IMT that needs to be accommodated in the band 1492-1518 MHz, to establish suitable technical and regulatory conditions to ensure the interference free operation of MSS networks in South Africa. These measures would likely cover one or a combination of the following:
 - In-band power limits on the effective isotropic radiated power of IMT emitters (base stations and user equipment)
 - Unwanted emission limits on IMT emitters (base stations and user equipment)
 - Geographical separation of IMT and MSS systems, including PFD limits at ports/waterways and airports to ensure that IMT base stations keep adequate separation from ship earth stations and aircraft earth stations.
 - Identifying spectrum below 1518 MHz to serve as a guard band between MSS receivers and IMT emitters.

Given the complexity of the adjacent band compatibility with respect to the MSS, it is recommended to use only the band below 1492 MHz, which would avoid major compatibility issues with the MSS.

Conclusion

GSOA appreciates this opportunity to contribute to the ICASA public consultation on “Second Draft Radio Frequency Spectrum Assignment Plan for the frequency band 1427 MHz to 1518 MHz for public consultation”. Given the importance of MSS for critical safety operations, GSOA respectfully requests that ICASA ensures the continued viability and growth of L-band MSS services. The simplest approach to avoid compatibility issues is to limit IMT use to only the central portion of this band (1452-1492 MHz). This approach has been followed by several European administrations.

GSOA would be pleased to have further discussions with ICASA about important spectrum policy related to the Spectrum Assignment Plan for the frequency band 1427 MHz to 1518 MHz.