

27 August 2021

**ATTENTION: MR MANYAAPELO RICHARD MAKGOTLHO**

The Chairperson  
Independent Communication Authority of South Africa  
Private Bag X10,  
Highveld Park 0169  
Centurion, Pretoria

Dear Sir

**RE: WRITTEN REPRESENTATION BY ALTRON NEXUS ON THE DRAFT UPDATE OF THE NATIONAL RADIO FREQUENCY PLAN 2021**

Altron Nexus (Pty) Ltd, as a longstanding industry member appreciate the opportunity to provide our views in respect of the draft update of the National Radio Frequency Plan as published in GG44803, dated 9 July 2021.

Our views revolve around the government and industrial sector needs as identified within our client base. These include:

1. PPDR Sub-1GHz spectrum allocation
2. Allocation of dedicated high-bandwidth spectrum for critical industry needs.
3. Provisioning an internationally recognised frequency band for PAMR.

**PPDR SPECTRUM ALLOCATION**

We refer to our comprehensive submission, of 31 January 2020, regarding The Licensing Process for International Mobile Telecommunications Spectrum for WOAN and High Value Spectrum, which included our views regarding the associated WOAN participation by Government. Therein we explained our belief that it would be in the best interests of both government and the general population, for the government, including SOE's, to actively participate in the WOAN. These views remain relevant under this current Draft National Frequency Plan review.

However, WOAN participation does not preclude the need for Public Protection and Disaster Relief (PPDR) selective private network deployment. Dense operational areas will require the enhanced safety and affordable bandwidth of a private network. We are therefore encouraged by the following note - *Consideration of the future spectrum needs of Broadband Public Protection and Disaster Relief (PPDR) in the range 694-790 MHz as described in the most recent ITU-R M.2015, while taking into account studies called for by Resolution 646 (WRC15) for technical and operational measures.* It is our opinion that this be included not as a consideration but formalised in dedicated spectrum being allocated for this purpose such that once the Digital Terrestrial Television (DTT) migration is completed it will be immediately available for this purpose. Spectrum of 2 x 10MHz FDD as a minimum should be allocated.

### **DEDICATED HIGH BANDWIDTH SPECTRUM FOR INDUSTRIAL SECTORS**

This recommendation relates to most, if not all, heavy industrial activities in South Africa. We refer to the mining sector, which remains a significant contributor to the local GDP, as a key example.

To remain relevant and globally competitive, South Africa needs to provision for the modern generation mining practices through the use of digital technology. This implies the use of IoT devices and applications to dramatically drive productivity and efficiency. An example of this is the utilisation of driverless vehicles using high bandwidth machine-to-machine communications for visibility and control. This requires a dedicated mission-critical broadband network in order to ensure appropriate levels of control and safety.

Additionally, the Mine Health and Safety Act No.29 of 1996 states the following:

....

#### **2. Employer to ensure safety**

(1) The employer of every mine that is being worked must:

(a) ensure, as far as reasonably practicable, the mine is deigned, constructed and equipped

(i) to provide conditions for safe operation and a healthy working environment; and

(ii) **with a communication system** and with electrical, mechanical and other equipment as necessary to achieve those conditions;

....

This Health and Safety legal obligation for a communication system eliminates the possibility of using a telecommunication operator managed service as control of functionality is limited. The mining industry therefore requires the ability to self-deploy resilient communication systems.

When these above issues are considered, it is necessary that provision be made for dedicated spectrum for the implementation of private wireless broadband, i.e. 4G / 5G, in the industrial sector. It is therefore our request that allocation be made in the standardised and commercially available Sub-6GHz and mmWave bands, for the licensing and deployment of these systems.

### **PAMR – INTERNATIONAL SPECTRUM COMPATIBILITY**

Currently the band 254-259.4MHz paired with 262-267.4MHz is allocated in South Africa for Public Access Mobile Radio (PAMR) trunking. This band is not supported internationally by manufacturers, nor is it allocated by regulators for the purpose of PAMR. With extremely limited international system and user product availability this situation therefore inhibits operator and user enthusiastic participation. Without a reasonable degree of uptake the benefit of the required spectrum efficiency, which trunked solutions are intended to bring, is significantly reduced.

An allocation in a restructured digital-oriented VHF High Band (136-174MHz) using 12.5kHz channels with effective 6.25kHz per communication path spectral efficiency, would enable a far better uptake of such services and thereby reduce the current congestion being experienced in this band.

We request that serious consideration be given to the allocation for PAMR in a band that can be supported within the international product availability spectrum.

**CONCLUSION**

We trust that our above recommendations will be favourably considered to the benefit of critical sectors that will ensure accelerated economic growth and effective delivery of public and private sector services.

Altron Nexus will be willing to attend and present at a public hearing should additional detail of any of our recommendations be required.

Our submission does not require any aspect to be treated as confidential.

We look forward to the advancement of this process.

Yours faithfully

**ALTRON NEXUS (PTY) LTD**

**[Electronically Signed]**

**EHIMARE AIRE**

**EXECUTIVE: TECHNOLOGY**