

NOTICE OF 2022-11-25 GAZETTE NUMBER 57559

NOTICE REGARDING DRAFT RADIO FREQUENCY ASSIGNMENT PLANS FOR THE FREQUENCY BAND 138 TO 144 MHZ IN TERMS OF REGULATION 3 OF THE RADIO FREQUENCY SPECTRUM REGULATIONS, 2015

INVITATION TO SUBMIT WRITTEN REPRESENTATIONS

To: The Director-General, Department of Communications and Digital Technologies

Attention: Mr Manyaapelo Richard Makgotlho

Date: 2023-01-13 (by email - rmakgotlho@icasa.org.za cc: jdikgale@icasa.org.za)

This document constitutes a submission in terms of Sections 3(1) read with subsection (5) of the Electronic Communications Act 36 of 2005 on the proposed Spectrum Policy detailed above.

This written submission is made by Radio Data Communication (PTY) Ltd - (RDC), a private company duly registered by the CPIC registration number 1989/004703/07.

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1. Definitions

- 1.1. **"Area"** The area for which a frequency license has been issued defined by a radius from a central point;
- 1.2. **"Base Station"** Base station installed to receive alarm signals in a central position, usually at a Security Service Provider's control room;
- 1.3. **"Burglar Alarm"** Alarm service is a service where frequency-transmitting devices are placed at premises to detect intrusion and duress signals.
- 1.4. **"Burglar Alarm Service"** means a land mobile service installed, maintained and operated to monitor burglar alarm signals of End Users by means of a signal forwarded from a radio transmitter to a central position;
- 1.5. **"Burglar Alarm Transmitter"** means a transmission radio station in the land mobile service that is intended to transmit automatic alarm signals to a central position;
- 1.6. **"End Users"** Clients of Security Service Providers being private citizens and businesses making use of Burglar Alarm Services within South Africa;
- 1.7. **"Manufacturer"** A local manufacturer who develops, manufactures and supplies custom VHF communication devices including Burglar Alarm Transmitters, Parrot Repeater Stations and Base Stations to Security Service Providers;
- 1.8. **"Multi-user Network"** A single VHF Network set up to accommodate multiple Security Service Providers on single licenses for an Area;
- 1.9. **"Multi-user Network Provider"** A provider that installs, maintains and operates a Multi-user Network/s providing a burglar alarm communication service to multiple Security Service Providers – often a Manufacturer;
- 1.10. **"Network"** One or more Parrot Repeater Stations situated within the Area to relay alarm signals to a central position;
- 1.11. **"Parrot Repeater Station"** means a fixed station in the land mobile service used by a burglar alarm service licensee to store and forward burglar alarm signals over mountainous terrain;
- 1.12. **"Security Service Providers"** Providers of Burglar Alarm Services to End Users;
- 1.13. **"Security Service Provider Network"** A VHF Network set up by a Security Service Provider for their exclusive use;
- 1.14. **"SF"** - means Single Frequency.

2. Oral representations

- 2.1. It is hereby confirmed that an opportunity to make oral representations is required.

3. Interest

- 3.1. RDC is a South African company involved in the local design, development, manufacture and supply of electronic communication systems and devices for alarms for over 46 years. The communication devices are specifically designed to meet South Africa's challenges around crime. Crime prevention and response have become increasingly challenging, being compounded by the effects of load shedding and the consequent degradation of local cellular networks.
- 3.2. The company's products are mainly supplied to local Security Service Providers, who provide Burglar Alarm Services to End Users, being private citizens and industries within South Africa. These companies play an important role in public safety, supporting the country's police force, and various other crime prevention agencies, in combatting crime and ensuring public safety. Data published in a businessstech.co.za news article in late 2021, using data from the South African Police Service (SAPS) and the Private Security Industry Regulatory Authority (PSIRA), showed that there were significantly more actively employed private security officers than police officers across the country – just over 182,000, versus over 560,000 armed response employees.
- 3.3. The company supplies locally designed and manufactured alarm communication devices which use various technologies including cellular, WiFi and VHF radio. RDC and its associated companies currently hold licenses for several different frequencies in the 141 - 141.5 MHz and 152.05 - 152.55 MHz VHF bands. The company also supplies equipment to many Security Service Providers who hold VHF frequencies in these bands licensed around South Africa.
- 3.4. The company has supplied several million VHF Transmitters since inception, which have been used and installed at businesses and private residences in both urban and rural locations over this time.
- 3.5. The company is a prominent participant in the private security industry in South Africa and active members of SAIDSA (South African Intruder Detection Services Association) and ESDA (Electronic Security Distributors' Association).
- 3.6. It is evident from the above that RDC, together with the private security industry in South Africa, have vested interests in the proposed draft spectrum policy.

4. Further information

4.1. We refer to the following clause in the draft:

2.7 *"Stakeholders are requested to provide any further information in this context to the Authority to assist in this matter relating to the migration."*

In response we submit the following information relating to the current industry dynamics, environment and challenges related to SF Alarms:

4.2. Threat of migrations

- 4.2.1. The continuous amendments and threat of possible migrations detailed in the various draft spectrum regulations, creates uncertainty and panic in our industry, which is very destructive. We are encouraged by this draft as it brings a measure of certainty.
- 4.2.2. It is noteworthy that the industry currently faces the 2G and 3G technology sunsets which will have a severe impact on the physical and financial resources of Security Service Providers.

4.3. Why is spectrum for VHF SF Alarms so important and widely used in South Africa?

- 4.3.1. Crime in South Africa is increasingly violent in nature with murder, rape and GBV rates amongst the highest in the world. It goes without saying that SF Alarm communication is life-critical in South Africa.
- 4.3.2. Communication downtime can have catastrophic consequences, while local communication networks using other technologies are experiencing frequent downtime mainly because of load shedding and other local conditions.
- 4.3.3. VHF technology is ideal for sending emergency type signals in particular.
- 4.3.4. SF Alarms systems operating in the VHF band is the only viable technology available to South African Security Service Providers which can meet local needs.
- 4.3.5. VHF networks operate independently of any large communication infrastructures and service providers. Uptime can therefore be managed by the Security Service Providers themselves.
- 4.3.6. It's the only technology that can maintain uptime or quickly be restored without the need to rely on a service provider.
- 4.3.7. When properly managed, systems can operate under conditions where other communication technologies are vulnerable to downtime:

- 4.3.7.1. During load shedding
 - 4.3.7.2. During civil and/or political unrest
 - 4.3.7.3. Through natural disasters
- 4.3.8. It is during these conditions that criminals become opportunistic, and incidents increase.
- 4.3.9. The nature of spectrum outside of the VHF band, including UHF, does not provide the properties needed to adequately fulfil the needs in a viable way.

4.4. Current and future problems created by frequency sharing

We refer to the following regulation and clause.

No. 38641 Radio Frequency Spectrum Regulations - 30 MARCH 2015

25. Burglar Alarm Services

- (1) *Radio frequency spectrum for the purposes of providing burglar alarm services will be assigned on a shared basis and the various manufacturers suppliers of the burglar alarm equipment have a responsibility to coordinate the use therein between the different licensees.*

- 4.4.1. This was put in place largely because of the previous shortage of available VHF frequencies.
- 4.4.2. This form of sharing is, however, currently leading to degradation rather than capacity enhancement and will pose challenges to the future implementation of further capacity enhancing digital techniques.

4.4.3. Current problems created by frequency sharing

- 4.4.3.1. Sharing has led to no-compatible systems being operated on the same narrow band frequencies in the same Areas, leading to interference problems.

4.4.4. Future negative impact of sharing on implementation of further capacity enhancing digital techniques

- 4.4.4.1. Continued sharing of frequencies with non-compatible systems will prevent capacity enhancing digital techniques from being used effectively on new frequencies.

- 4.4.4.2. Re-farming of existing networks in the 140.5-141MHz band to technology using capacity enhancing digital techniques will not be viable.

4.4.5. Sharing of frequencies already accommodated in various other ways

- 4.4.5.1. Sharing is already achieved by frequencies being limited to 50km radius Areas, meaning that the same frequency is shared by many different license holders in different parts of the country.
- 4.4.5.2. Sharing of single frequencies by multiple Security Service Providers is also currently accommodated using Multi-User Networks which can be further encouraged and improved going forward.

4.4.6. Stop frequency sharing

- 4.4.6.1. As can be seen from the points above, the case for halting further sharing by means of assignment of multiple licenses on the same frequency in the same area is compelling.
- 4.4.6.2. No further licenses should be issued for the same frequency in the same Area to limit further interference. Further “sharing” assignments should be halted.

5. Channeling plan

- 5.1. We support the channeling plan which is in line with the various regulations referred to in the draft as well as with the feasibility study.

6. Requirements for usage of radio frequency spectrum

6.1. Capacity enhancing digital technique

We refer to the following clause in the draft:

- 5.3 *Capacity enhancing digital techniques are common and such techniques that promote efficient use of spectrum, without reducing quality of service are encouraged. Only systems using digital technologies that promote spectral efficiency will be issued with an assignment.*

- 6.2. We are in support of this and will work with the authority to improve enhanced capacity.

- 6.3. Current systems already use digital technologies that promote spectral efficiency.
- 6.4. Further enhancements are limited by current licenses being restricted to unidirectional communication.
- 6.5. Bi-directional functionality is a basic requirement needed for more advanced digital techniques, specifically aimed at capacity enhancement.
- 6.6. The authority's online license application system does not accommodate this option and needs to be changed.
- 6.7. This change applies to both the existing 140.5 - 141 MHz and the new 141 - 141.5 MHz bands.

7. Co-ordination requirements

- 7.1. Co-ordination and resolution of interference

- 7.1.1. The draft regulations impose onerous responsibilities on the regulator for co-ordination and resolution of interference problems.
 - 7.1.2. Noting the interference problems detailed above, we highly recommend exclusive use frequency allocations to avoid the current interference problems.

8. Revocation and migration

- 8.1. Note that any objections to the proposed migration of controlled industrial apparatus to the ISM band and the revoking of all SF mobile licenses in the 141-141.5Mhz band, are clearly outweighed by the importance of VHF SF Alarms in security and public safety and the subsequent need for additional bandwidth for SF Alarms.

9. Assignment

- 9.1. We refer to the following clauses in the draft:

- 2.5 *Only systems using digital technologies which have higher spectral efficiency compared to the analogue systems will be issued with a license for this band.*
 - 5.3 *Capacity enhancing digital techniques are common and such techniques that promote efficient use of spectrum, without reducing quality of service are encouraged. Only*

systems using digital technologies that promote spectral efficiency will be issued with an assignment.

- 9.2. The requirement for capacity enhancing digital techniques is mentioned twice in the draft.
- 9.3. Current systems already use digital technologies that promote spectral efficiency.
- 9.4. To facilitate further enhancements, we recommend the following for assignments on the different parts of the band:

9.4.1. 140.5 - 141 MHz band

- 9.4.1.1. Existing license holders must be allowed to keep existing frequencies and relicense them annually.
- 9.4.1.2. No further licenses should be issued for the same frequency in the same Area to limit further interference. Further “sharing” assignments should be halted.
- 9.4.1.3. Existing licenses should be amended to be bi-directional which will allow the spectrum to be re-farmed to new capacity enhancing digital techniques technology.

9.4.2. 141 - 141.5 MHz band

- 9.4.2.1. All new assignments should be on a non-sharing exclusive basis per licensed Area.
- 9.4.2.2. New assignments should specify bi-directional communications.

10. License fees

- 10.1. License fees are not mentioned, but we suggest no changes and that this be specified in the final regulations.

11. Summary and recommendations

- 11.1. The need for additional VHF spectrum is clear and supported by the feasibility study.
- 11.2. South African conditions require the use of VHF systems for reliable emergency signaling from SF Alarms which cannot be provided by other technologies.
- 11.3. Current regulations for SF Alarms are creating unintended interference and halting the implementation of further capacity enhancing digital techniques.

- 11.4. The current requirement for unidirectional communication should be changed to allow bi-directional signaling which will allow for further capacity enhancement.
- 11.5. Frequencies need to be licensed on an exclusive basis to halt further interference problems and facilitate re-farming to capacity enhancing digital technologies on existing networks.
- 11.6. Existing license holders in the 140.5 - 141 MHz band must be allowed to keep existing frequencies and relicense them annually
- 11.7. License fees should remain as is and be clearly specified as such in the final regulations.

Yours faithfully

A handwritten signature in black ink, appearing to read "Brent Andreka". The signature is fluid and cursive, with a stylized "B" and "A".

Brent Andreka
MANAGING DIRECTOR