Review of the ICT COVID-19 National Disaster Regulations

07 May 2021

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1. Introduction

SENTECH thanks the Independent Communications Authority of South Africa ("Authority") for the opportunity to make a submission on the *Review of the ICT COVID-19 National Disaster Regulations* ("ICT COVID-19 Regulations") dated 24 April 2021.

SENTECH's response is limited to matters relating to the 700 and 800 MHz radio frequency bands.

2. State of the Nation Address 2021

SENTECH advises the Authority to acknowledge the company's participation in the ASO, and digital-to-digital migration process is to effect the statement made by the President of the Republic, in particular, the following

> *"The completion of digital migration is vital to our ability to effectively harness the enormous opportunities presented by technological change. After many delays, we will begin the phased switch-off of our analogue television transmitters from next month. It is anticipated that this process, which will be done province-by-province, will be completed by the end of March 2022[1]".*

[1] President Cyril Ramaphosa: 2021 State of the Nation Address

2.1. Analogue-Switch-Off Progress

SENTECH is one of the stakeholders that are part of the Department of Communications and Digital Technologies (DCDT) Project Management Office (PMO) responsible for leading and coordinating various national projects related to Digital Migration. *Table 2.1* provides ASO progress status.

Free State	
Transmitter site	**Confirmed ASO Date**
Senekal	18-Jan-18
Marquard (Self-Help)	16-Apr-21
Phillipolis (Self-Help)	16-Apr-21
Ladybrand	16-Mar-21
Petrus Steyn	16-Apr-21
Boesmanskop	15-Mar-21
Theunissen	08-Apr-21
Kroonstad	08-Apr-21
Suidrand (Low Power)	08-Apr-21
Springfontein	26-Mar-21
Paul Roux (Self-Help)	16-Apr-21
Bethulie (Low Power)	01-Apr-21
Ficksburg (Low Power)	16-Mar-21
Dewetsdorp	26-Mar-21
Hobhouse (Low-Power)	26-Mar-21
Jaggersfontein (Low Power)	01-Apr-21
Northern Cape	
Springbok	30-Apr-21
Garies	30-Apr-21
Pofadder	2016/17
Calvinia (SKA)	23-Apr-21
Victoria West	23-Apr-21
Augrabies	30-Apr-21
Richmond	30-Apr-21
Petrusville	30-Apr-21
Williston (SKA)	30-Nov-20
Prieska (SKA)	23-Apr-21

Table 2.1: ASO Progress Status

3. Extension of the Duration of Temporary Radio Frequency Spectrum Licences

SENTECH strongly opposes the extension of the duration of the temporary radio frequency spectrum licences for the 700 and 800 MHz bands. On several occasions, the company has raised the challenges of interference from IMT services with the Authority and has unfortunately not received sufficient support from the Regulator.

3.1. Information and Communications Technology COVID-19 National Disaster Regulations

SENTECH's opposition to the extension relates to the non-compliance with some aspects of the Information and Communications Technology ("ICT") COVID-19 National Disaster Regulations, in particular, sub-regulations 6(11) and (12):

> ***6 ACCESS TO RADIO FREQUENCY SPECTRUM***
>
> ***Temporary assignment of Radio Frequency Spectrum***
>
> *(11) The licensees shall ensure that radio frequency spectrum sharing is implemented efficiently and in a manner that does not compromise the quality of the electronic communications services provided by licensees and the functioning of the electronic communications networks of other licensees.*
>
> *(12) All spectrum sharing agreements shall be submitted to the Authority for approval in accordance with regulation 18 (4) of the Radio Frequency Spectrum Regulations, 2015. The Authority shall process such agreements within four (4) days of receipt thereof.*

The Authority has on several occasions been made aware of events of interference from IMT services. SENTECH has cooperated with MNOs when requested by sharing technical details required for performing interference simulation and analysis. Since the introduction of the ICT COVID-19 Regulations by the Authority, there has been no request to discuss and conclude a spectrum sharing agreement. The Authority is aware of the absence of spectrum sharing agreements regarding sub-regulations 6(12).

3.2. Information and Communications Technology COVID-19 National Disaster Regulations

SENTECH has previously raised the matter relating to studio-transmitter-links (STLs) experiencing interference from IMT services, thereby affecting the associated terrestrial audio services. The company is restating the issues, as stated below.

SENTECH is increasingly experiencing interference from the IMT services temporarily assigned spectrum in the 800 MHz band. The studio-transmitter-links (STLs) affected by the interference serve the terrestrial audio services. With great concern, SENTECH notes the temporary assignment of spectrum for terrestrial IMT services in the 700 and 800 MHz bands affects terrestrial audio (FM) and audio-visual services (DTT). The Authority's Regional offices' general response regarding STL services interference implies that SENTECH should have migrated the links by now.

SENTECH acknowledges that empowering the Authority to initiate the frequency migration process is the Frequency Migration Regulation and Frequency Migration Plan (RFMP/RFMR) as published in Government Gazette No. 36334 3 April 2013. Of great importance in this instance is the principle outlined in sub-regulation 2.3 of the Radio Frequency Migration Plan, hereto reproduced:

> ***2.3 Time Frame for Migration***
>
> *In principle, ICASA can migrate a user to another location as part of sound radio frequency spectrum management as required. However, an appropriate time frame should be applied as a matter of standard practice.*
>
> *In determining the time frame, the following factors are taken into account:*
>
> - *the duration of the spectrum licence,*
> - *the time frame to migrate existing customers (end users),*
> - *the economic life of the equipment installed and*
> - *adequate forward planning.*
>
> ***The forward looking time frame for a process of spectrum migration is within five years from the moment of publication of this Frequency Migration Plan unless the Authority states otherwise in a Notice****.*

SENTECH supports the principle of regulations being reasonable, actionable and enforceable, amongst others. The Authority published a *Notice Regarding the Radio Frequency Spectrum Assignment Plan for the Frequency 2025 to 2110 MHz Paired with 220 to 2285 MHz for Consultation* on 15 February 2019, Government No. 42230. The Notice officially identifies the band earmarked for the migration of STL services.

It is important to note that the Notice publication occurred five (5) years and ten (10) months after the gazetting of RFMP/RFMR, thereby making the five (5) years period stated in sub-regulation 2.3 of the Radio Frequency Migration Plan impossible and unreasonable to enforce. SENTECH argues, reasonably so, that the migration period is only measurable

from the publication date of the final Notice stating the radio frequency band assigned to STL services.

The *Information and Communications Technology ("ICT") Covid-19 National Disaster Regulations* (ICT Regulations), as published in Government Gazette no. 43207 on 6 April 2020, stipulates the conditions for implementing IMT services temporarily. SENTECH was encouraged by the following provisions in the ICT Regulations regarding the protection of existing services:

> ***6. ACCESS TO RADIO FREQUENCY SPECTRUM Temporary assignment of Radio Frequency Spectrum***
>
> ***…***
>
> *(11) The licensees shall ensure that radio frequency spectrum sharing is implemented efficiently and in a manner that does not compromise the quality of the electronic communications services provided by licensees and the functioning of the electronic communications networks of other licensees.*
>
> *(12) All spectrum sharing agreements shall be submitted to the Authority for approval in accordance with regulation 18 (4) of the Radio Frequency Spectrum Regulations, 2015. The Authority shall process such agreements within four (4) days of receipt thereof.*

SENTECH implores the Authority to protect existing services, particularly when the interference services only have a temporary assignment. SENTECH has consistently presented the migration of terrestrial broadcasting services and STLs will occur within the same timeframes. The National Radio Frequency Plan 2018 (NRFP-18) published in Government Gazette No. 41650 on 25 May 2018, acknowledges this principle through the National Footnote No.8 (NF8):

> ***NF8A (694 – 862 MHz)***
> *Transitional Arrangements*
> *The Authority resolved the following transitional arrangements for the right of use of spectrum in the frequency range 694 to 862 MHz:*
> *(i) That Broadcasting Spectrum Assignments for the frequency band above 694 MHz, in the affected areas as stipulated in the Terrestrial Broadcasting Frequency Plan (Notice No. 298 of 2013 in Government Gazette No. 36321 and Notice No. 801 of 2014 in Government Gazette 38005 or the latest version), are to be used subject to meeting the conformance requirements in line with the GE06 Plan and are to be phased out during the performance period.*

(ii) That broadcast transmissions and services ancillary to broadcasting for the frequency range 694 to 862 MHz are to be systematically switched off.
(iii) That matters related to spectrum management geared at minimising and or preventing harmful interference during the transitional arrangement period, is to be managed by the Authority to achieve systematic implementation and seamless transition.
(iv) That sharing and co-existence in the frequency range 694 to 862 MHz is to be implemented systematically through a Geographic separation of IMT Systems and Broadcasting Services in affected areas in accordance with the Terrestrial Broadcasting Frequency Plan 2013, Government Gazette 36321, read with the First Update to the Terrestrial Broadcasting Plan 2013 Government Gazette 3800512 until the end of the migration from Analogue to Digital Terrestrial Television process.

Therefore, SENTECH's view the Authority has to comply with the existing regulatory framework and ensure the protection of DTT and STL services until the end of March 2022, the date announced during the 2021 State of Nation Address.

3.3. Digital Terrestrial Television Services

Mobile Network Operators (MNOs) assigned temporary spectrum in the 700 and 800 MHz have acknowledged the difficulties operating in those bands. The Authority, as a member of the DCDT PMO, is aware of the schedule to switch off analogue services and migrate digital services to below 694 MHz by the March 2022 due date. Therefore, it is counterproductive for the PMO process to be constantly distracted by events of interference from IMT services. More importantly so, the MNOs have expressed the following regarding the 700 and 800 MHz radio frequency bands

"The 700-800 MHz emergency spectrum can only be used for experimentation and innovation for now," MTN told the researchers. "Unfortunately, we couldn't use this emergency spectrum in the areas we expected and wanted to release in because of high-levels of interference from analogue."

The emergency spectrum that was issued in what is known as TV white spaces – the spaces between TV channels that will be available when all broadcasting is digital – is all but unusable due to a combination of noise from analogue signal, and these bands not being freed up across South Africa.

"One of the biggest challenges is around the usability of the emergency spectrum band we were issued," says Vodacom. "We would like to see a complete migration path to getting analogue out of and digital into those bands."

Telkom further warned that the emergency spectrum issued had only been suitable for "entry-level" purposes. For full 5G services to be rolled out, as envisaged in international definitions set by the 3rd Generation Partnership Project (3GPP), a global alliance which develops telecommunications standards and Specifications, ICASA would need to allocate large "contiguous blocks" of spectrum. In some spectrum bands, such as the 700-800MHz and 2300 MHz, such blocks are simply not available[2]*.*

It is clear from these experiences, the 700 and 800 MHz bands require urgent protection from additional interference by not extending its use for terrestrial IMT services.

4. Conclusion

SENTECH thanks the Authority for the opportunity to make a submission on the ICT COVID-19 Regulations. The company reiterates its objection of the extension of the use of the 700 and 800 MHz radio frequency bands for IMT terrestrial services.

[2] World Wide Worx- 5G prospects for South Africa in 2021: The Operators, pages 5 -6