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Ms Pumla Ntshalintshali
ICASA
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30 May 2025

By email: to PNtshalintshali@icasa.org.za and rmakgotlho@icasa.org.za

Dear Ms Ntshalintshali,

DRAFT REGULATIONS ON DYNAMIC SPECTRUM ACCESS AND OPPORTUNISTIC SPECTRUM MANAGEMENT IN THE INNOVATION SPECTRUM 3800 - 4200 MHz AND 5925 – 6425 MHz

1. Broadband Infraco SOC Limited ("Broadband Infraco / BBI") welcomes the opportunity to provide the Authority with its views regarding the above-referenced draft regulation pertaining to the 3800 - 4200 MHz AND 5925 – 6425 MHz radio spectrum frequency bands ("the draft regulation")

2. As an I-ECNS licensee, Broadband Infraco looks forward to applying for spectrum in the above-referenced frequency bands

3. Broadband Infraco notes the objective of the draft regulation being to:

3.1. (a) expand broadband access to the rural, underserved, remote communities

3.2. (b) reduce barriers to entry and promoting equitable access to spectrum, while encouraging broader participation from non-dominant players, small micro and medium enterprises and communities consistent with the Next-Generation Radio Frequency Spectrum for Economic Development policy

3.3. (c) foster innovation in network deployment use cases, applications, and services

3.4. (d) promote socio-economic development;

3.5. (e) establish a technology-agnostic regulatory framework through which the Authority may authorise the implementation of DSA approach for use of innovation spectrum on a geographical basis

3.5.1. (a) encourage spectrum sharing in a dynamic and opportunistic manner; and

3.5.2. (b) establish a non-market-based, non-competitive pricing framework to reduce barriers to entry and encourage participation by non-dominant players, SMMEs, and community network operators.

3.6. Broadband Infraco welcomes the objectives of the draft regulation as they're currently enunciated, as a critical number of them align with the Company's statutory mandate of being:

3.6.1. to expand the availability and affordability of access to electronic communications, including but not limited to underdeveloped and under serviced areas, in accordance with the Electronic Communications Act and commensurate with international *best* practice and pricing, through the provision of

3.6.2. electronic communications network services; and

3.6.3. electronic communications services[1].

3.7. The key areas of alignment of the draft regulation and Broadband Infraco's statutory remit being the expansion, availability and affordability of access to electronic communications and the draft regulation's first objective of *expand[ing] broadband access to the rural, underserved, remote communities*.

3.8. Other areas of common purpose between the draft regulation and the Company's statutory mandate include the *promotion of socio-economic development and encouraging participation by non-dominant players, SMMEs, and community network operators.*

3.9. Broadband Infraco believes that it promotes socio-economic development and encourages the participation of non-dominant players and SMMEs by means of it spearheading government's National Broadband Policy objective of rolling out and providing wireless broadband services in rural communities via SA Connect Phase 2.

[1] Broadband Infraco Act, No. 33 of 2007.

3.10. In doing so, Broadband Infraco utilises unlicensed Wi-Fi spectrum. Dynamic spectrum access under the draft regulation would improve the quality-of-service end-users of SA Connect Phase 2's offerings experience by the Company being able to use DSA spectrum in remote areas in conjunction with existing incumber operators

3.11. Broadband Infraco could also use the opportunity to apply for the IRFS 1 spectrum that would be made available during this process to assist in mitigating some of the backhaul challenges that are being experienced by the current ANPs within the SA Connect 2 Project.

4. Positioning itself and the ICT Chamber to be the USSP / Switch Operator

4.1. Strategically, given the alignment of its statutory remit with the draft regulations policy objectives, coupled with its long-standing involvement in SA Connect Phase 1 and Phase 2, along with the Broadband Access Fund and USAASA's rural connectivity initiatives, Broadband Infraco believes it is in a uniquely advantageous position to serve as the Switch Operator in partnership with the ICT Chamber.

4.2. Broadband Infraco possesses the key RF skills required of the Switch Operator but also notes that it would require its personnel to be trained by the CSIR to serve as the Switch Operator.

4.3. Although the Company currently does not have the software development skills in-house to second those skills to the Switch Operator, Broadband Infraco believes, again, that training from the CSIR would enable it to optimally serve as the Switch Operator.

4.4. The CSIR is cited above because Broadband Infraco is aware that the CSIR is currently serving as the Switch Operator for TVWS.

4.5. BBI and the ICT Chamber would offer the switch operation services on Platform-as-a-Service basis.

4.6. In doing so, both organisations would seek to ensure that CSIR Switch Operator tool can, at a minimum:

4.6.1. Ensure that critical regulatory parameters of dynamic spectrum access, such as measuring power levels and the geo-location of transmitters, are met.

Other operational requirements of an optimal Platform-as-a-service that the two organisations would seek to ensure that the Switch Operator can address include:

4.6.2. Identification of unused frequencies, or areas of 'white space';

4.6.3. Occupancy or coverage of a particular frequency;

4.6.4. Occupancy or coverage of a particular set of frequencies (such as those belonging to a particular mobile operator) to identify, for example, coverage 'not spots';

4.6.5. Comparative coverage of frequency bands of different networks to assess which provides the best signal;

4.6.6. Channel occupancy or channel loading of a network;

4.6.7. Mapping Wi-Fi and 'licence exempt' spectrum usage;

4.6.8. Pinpointing of unlicensed and illegal frequency usage, for example:

4.6.8.1. by comparing the licence database with the measured signals or

4.6.8.2. by detecting signals which exceed their predicted level based on their licence parameters;

4.6.9. Validating and calibrating coverage prediction models with real-world measurements;

4.6.10. Checking the EM environment for potential infringements of EMF limits; and

4.6.11. Comparison of daily or hourly spectrum usage, to determine times of peak demand[2].

5. Principles BBI and ICT Chamber Advocate for Managing the Switch Operator

High-level strategic policy intentions

5.1. As influenced by the alignment of its statutory remit with the objectives of the draft regulation, Broadband Infraco and the ICT Chamber would manage the Switch Operator from the premise that spectrum sharing is the most efficient and cost-effective principle by which the finite and scarce national resource of radio frequency spectrum should be administered.

[2] L S Telecoms - *Dynamic Spectrum Access Solutions*. Internet 2025.

5.2. Broadband Infraco and the ICT Chamber note that there are divergent interests in the management and use of radio frequency spectrum, such the need to promote and sustain government's socio-economic policy objectives versus private sector intentions to grow revenue and market share. However, both organisations believe strongly that spectrum management should reflect national government's overall policy of B-BBEE, women and youth empowerment, job creation and overall sustainable socio-economic development for all South Africans, in a manner that enhances the economy overall. Therefore, the spectrum management by the Switch Operator administers radio frequencies, should underscore government's policy aspirations by ensuring that SMMEs, non-dominant players, rural communities, women, youth and physically challenged entrepreneurs are brought into the mainstream of the economy to ensure that they have access to Innovative spectrum to enable them to contribute meaningfully to South Africa's overall national development.

5.3. This includes ensuring that spectrum is shared much more and more dynamically, for multiple uses, in multiple bands[3].

Critical operational objectives

5.4. Dynamic spectrum access is a flexible system for which more spectrum is available for more users at more times.

For example, an entity might be able to gain additional spectrum capacity during internet rush hours. And in another, a user might be able to use 10 MHz of spectrum at one time during the day and a different 10 MHz in the same band at a different time. *So, as long as users can be agile, they can access spectrum dynamically.*

5.5. To avoid degrading national capabilities and potentially putting lives at risk, *government departments must have the certainty that there will not be transmissions on the spectrum they need as this will cause interference which degrades their capabilities*[4].

5.6. All this must be done whilst ensuring that incumbent users of spectrum bands are not harmed with interference by new DAS users. Consequently, mitigation techniques, such as the deployment of highly sensitive sensors for spectrum monitoring purposes, become paramount.

5.7. BBI and the ICT Chamber recognise that Dynamic access spectrum management systems facilitate spectrum sharing by carrying out at least the following core functions:

5.7.1. Protecting incumbent licensees or other users from interference caused by entrants with lower priority (and, in some cases, coordinate among users with the same priority)

5.7.2. Provide authoritative and in some bands virtually real-time decisions on requests to transmit or assign usage rights.

5.7.3. Enforce the use of authorized devices.

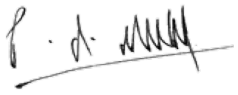
5.7.4. Monitor spectrum assignments and, in some cases, actual usage[5].

6. Conclusion

6.1. Broadband Infraco and the ICT Chamber are confident that, with training from the CSIR, they could successfully serve as the USSP for the DAS.

6.2. The organisations combined possess the RF skills, operational experience, collaborative relationships and good will to serve as the USSP in the country's best interest.

Yours faithfully,



Phatang Nkhereanye
Senior Manager, Legal & Regulatory Affairs

[3] James Brzezinski, *Democratising the spectrum through dynamic spectrum access*., 2009

[4] *Ibid* at page 4.
[5] *Solving the Spectrum Crunch* - Dynamic Spectrum Management Systems, the Dynamic Spectrum Alliance, October 2023.