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SECOND DRAFT RADIO FREQUENCY SPECTRUM ASSIGNMENT PLAN FOR THE FREQUENCY BAND 825 TO 830 MHz AND 870 TO 875 MHz

The Internet of Things (IoT) is all about connectivity, so it's not surprising that so many alternatives have arisen for getting data from "here to there".

For short range we have Wi-Fi and Bluetooth, just to name a few. For longer range, we have had 2G/3G and now 4G LTE, with the introduction of 5G still to be deployed. In addition, a new breed of low-power, long-range wireless networks (LPWANs) have arisen and are now being rolled out by companies such as Sigfox and Kerlink with a technology called LoRA.

To build connected devices you basically need three different pieces (at a minimum). You need a device that can connect, a **network connection** and an application. As sensor prices are decreasing, we have seen projections for **billions of connected devices by 2020 and beyond.** So how are all these devices going to connect? To handle billions of connections, we need **a wireless technology that is designed to do the job**—to handle devices the long distances, use minimal power and lower costs associated with many IoT applications.

Many IoT connections, especially those connected at long range, are different from traditional distributed devices. They are in remote, hard to reach areas. Distances are longer (think cellular and kilometers), and data rates need to handle occasional small bursts of data rather than continuous voice or video. Fundamentally, many IoT connections just don't need what traditional 2G / 3G / 4G was designed to do.

And so we had new options arise... LPWANs. These networks were designed to work at distances measured in kilometers and have power consumption figures that allow for years, not days or weeks. LPWANs are optimized for the IoT where data rates are not the greatest concern—range, battery life and cost are. LoRaWAN and Sigfox, among others, were designed to meet the direct needs of new IoT applications.

Both these technologies / equipment are mostly deployed in South Africa using the 868MHz ISM band (869.4 - 869.525MHz to be more specific for downlink as well as lower bands for Uplink).

The importance of the IoT industry to small, medium and large businesses in SA, and the growth it is predicted to generate (IDC report backs this up), cannot be over emphasized. Industries dramatically influenced by this technology includes tracking, agriculture, security, logistics, public utilities (water, electricity, gas), health sector, etc. etc.

Comsol, in conjunction with the CSIR, invested a lot of time on "Smart Metering" development specifically with the city council's in mind.

Comsol's existing network (Phase-1) consists off the following coverage areas / towns which will be influenced:

Comsol is in the process of rolling out Phase-2 which consists of 1 500 Base stations nationally.

Comsol Networks (Pty) Ltd hereby strongly oppose the proposed band plan as published in the Government Gazette, 1 September 2017, Notice 648 of 2017.

We refer to paragraph 9.5 of the publication.

The Authority recognizes that there may be issues with respect to interference that may be experienced by typical applications using apparatus in the 863-870MHz band which may operate on an licence exempt basis (in line with Radio Frequency Spectrum Regulations Government Gazette 38754 (Notice 386 of 2015) and Spectrum Reallocation for RFID GG 31127), adjacent to the Mobile services.

Comsol (and other companies) invested a lot of capital to roll out a network operating in the said licence exempt frequency band. Should the Authority deploy the proposed band plan, we (and other companies) stand the risk of reducing quality of service (Qos) in our existing network as set out above. Even though we operate in a license exempt band, we feel that existing networks (and therefore existing band plans) should be "protected" by ICASA. By introducing the proposed plan there is a good possibility that we might be interfered with by other networks/devices as there will only be 0.475MHz separation or "guard" between our operating frequency and the proposed new band.

ICASA states in the publication (9.5 above) they are aware of the fact that this may cause interference in the existing 863-870MHz licence exempt band and therefore Comsol feels that ICASA knowingly wants to put our network at risk.

This brings us to a few extremely important questions namely:

a. What does the Authority plan on doing to overcome interference based on the statement in paragraph 9.5 of the publication should there be any?
b. What will the process be should there be any interference?
c. **Why change the band plan to knowingly put existing networks at risk?**

With the above in mind, Comsol respectfully request that the Authority re-consider / re-design the proposed IMT850 band plan in order to protect existing IOT networks already deployed in South Africa.

Signed at _____Midrand_____ on this __20th__ day of ___October___ 2017.

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Designation _Chief Legal Officer_