

13 Jan 2023

Attn: Mr Manyapelo Richard Makgotlho
rmakgotlho@icasa.org.za
CC: JDikgale@icasa.org.za

Reference: Draft Radio Frequency Spectrum Assignment Plan for the frequency bands 380 MHz to 399 MHz and 410 MHz to 430 MHz for public consultation

Dear Mr Makgotlho,

We are writing to you on behalf of the 450 MHz Alliance in response to the public consultation about the Draft Radio Frequency Spectrum Assignment Plan for the frequency band 380 MHz to 399 MHz and the 410 MHz to 430 MHz.

The 450 MHz Alliance is an industry association that represents the interests of stakeholders in CDMA and LTE systems in the frequency range of 380 – 512 MHz, which are outside the focus of the main mobile operators but address important niche use cases in many countries. Our members include traditional wireless industry companies such as wireless license holders, carriers and major equipment manufacturers, as well as companies representing various vertical markets for machine-to-machine communication.

We received the Draft Spectrum Assignment Plan with great interest. The draft proposals are very much in line with the global trend and with the earlier consultation related to the 450 MHz to 470 MHz band. Listed below are general and detail input from existing implementations and ongoing work.

Input to the technical specifications:

- As the 450 MHz band, the 380 MHz and 410 MHz are most suitable for providing excellent coverage rather than high capacity connectivity, FDD is in our opinion to be preferred above TDD.
- The work to establish LTE bands in the 380 MHz to 399.9 MHz band are in progress the bands in progress are first defined as 380-385 MHz paired with 390-395 MHz and second band likely to be 384.9-389.9 MHz paired with 394.9-399.9 MHz, the work should be completed by 2025 to be available for immediate implementation for countries already operating the bands and for providing an alternative with good migration time for countries evolving existing services in the band.
- Spectrum assignment plan for 410 MHz Section 5.
 - To reach a good spectrum utilization it important to not add additional margin to the calculations. The specification for the systems is the guaranteed values. In practice the values are better than the specification and should be treated in that manor.
 - We would like to promote the importance of co-existence between different technologies in the bands for efficient spectrum utilization. In Europe there are countries with about 19 000 narrowband licenses within the 450 MHz and still co-exist LTE networks.

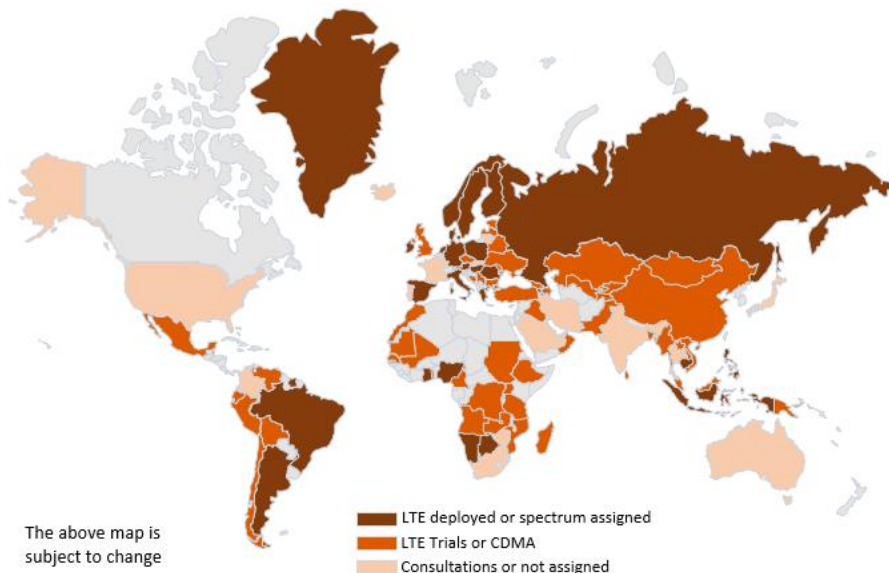
- Spectrum assignment plan for 410 MHz Section 7.
 - To reach a good spectrum utilization it important to not add additional margin to the calculations. The specification for the systems is the guaranteed values. In practice the values are better than the specification and should be treated in that manor.
 - From experience in North Europe the border value is better control in signal strength values than with distance. This due to that output power are variable and to provide good service in the border areas lower outpower and directional antenna are implemented.

General input for operations

The 400 MHz spectrum has historically been used for rural communication and critical communication. With the operators evolving their networks the 400 MHz spectrum become more focused on dedicated solutions, listed below are the currently most active verticals in the 400 MHz bands:

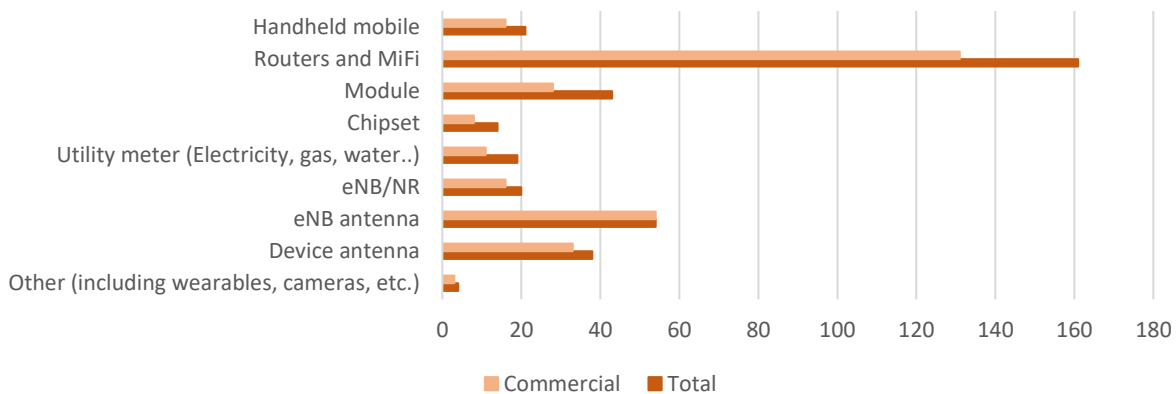
- Energy sector, Electrical, Gas and Water, is the biggest vertical for implementation of 400 MHz network globally today and are growing fast in Europe and in Latin America.
- Agriculture vertical have deployments in South America and Asia as of today, but is likely to grow if more spectrum is made available.
- Transport and Logistics have implementation and are in progress in some countries mostly in combination with railways.
- School and Health care are good use case for searching for information, keeping records and remote second opinions for specialists.
- Banking and Finance have implemented this for their rural offices to be online to handle money transfers, payments and ATM's.
- Mission critical communication providers are mainly evaluating this for disaster recovery connectivity and IoT services since they set requirements at least 10+10 MHz bandwidth for their services. There is also the option to implement 5+5 MHz bandwidth and to complement with additional bandwidth with mobile cellular units.
- Mining and Timber industries in the Nordics are using this for remote monitoring of vehicles and to handle logistics.
- Fish and Shipping are using the service since it provides a good offshore coverage and limits the use of the more expensive satellite service.
- Rural broadband was the initial business model for many operations but have become less popular due to the limited bandwidth.

Current footprint of 410 MHz and 450 MHz globally can be seen in the map below.



The global update report from 2022 is included in our response.

As a part of the work done by our organization we provide annual updates of the equipment available in the 400 MHz bands. The equipment ecosystem is good, up to date, growing and cover the current need of the deployed operations globally. An overview of the number of different equipment available can be seen in the table below:



The annual equipment report is amended as part of our response and includes more details.

The 450 MHz Alliance is at your disposal should you require further explanation regarding any of the points raised through this response. This could be in the form of written text, phone calls or even a workshop with some of our members. Please let us know if you wish to engage in any form of further information exchange.

On behalf of the 450 MHz Alliance, we wish to express our appreciation for this opportunity to share our insights.

Yours Sincerely,



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