

**Thuraya comments on  
ANACOM's public consultation on the  
Strategic Spectrum Plan (Plano Estratégico do Espectro)**

## **INTRODUCTION**

Thuraya would like to thank ANACOM for the opportunity to comment on their proposed Strategic Spectrum plan.

Thuraya is a leading mobile satellite communications company that empowers people with tools to bring the organizations and communities they serve closer together. Thuraya has launched 3 MSS satellites operating in the L band for service link and C band for feeder link. Currently, Thuraya-2 and Thuraya-3 are operating successfully and providing MSS services to around 140 countries including Portugal. Thuraya is now in the process of developing its next generation satellite plans involving L, S, C, Ka, Q/V and other frequency bands.

### **Thuraya comments on Section 3(a) - Major/Strategic Challenges:**

While Thuraya endorse adopting a strategy which encourage flexible use of the spectrum, ensure efficient use of spectrum resources and promote technological innovation leading to a more efficient use of spectrum, to increase the benefits for users, Thuraya see the following points and suggestions should be taken into account especially in case of adopting Licensed Shared Access (LSA):

- 1- The operation of existing services and applications should not be interrupted and restricted.
- 2- Future development of existing application and services should not be affected by any new applications.
- 3- Applications which are regionally or globally harmonized should be accorded higher priority.

### **Thuraya comments on Section 3(1) Mobile Services:**

- 1- For the mobile broadband in the band 3400-3800 MHz, the licencing conditions shall ensure that no interference is caused to the FSS earth stations operating in the band 3400-3800 MHz or in the adjacent band 3800-4200 MHz in Portugal and adjacent countries.
- 2- After the assessment of the spectrum requirements for IMT-Advanced systems, including LTE-A, if the L-band spectrum 1492-1518 MHz is to be considered for mobile broadband use in Portugal, it is important to ensure protection of MSS systems operating in the adjacent band 1518-1559 MHz in Portugal and adjacent countries. As per Resolution 223 of WRC-15, ITU-R is currently conducting studies to determine the

technical conditions to ensure compatibility between IMT below 1518 MHz and MSS above 1518 MHz.

- 3- Regarding 5G, Thuraya support ANACOM view that 5G should be seen in a broader context, involving other systems and infrastructure, e.g. for "backhaul".

### **Thuraya comments on Section 3(4) Satellite Services:**

Thuraya supports and appreciate the recognition by ANACOM of the value of satellite services provision to user community in Portugal. Thuraya would like also to clarify that Thuraya MSS services are available in the whole of Europe including Portugal. Thuraya L-band system operates in the 1.5/1.6 GHz and the services provided by Thuraya are heavily used for both land and maritime MSS markets.

Furthermore, Thuraya see increased demand for the evolving mobile satellite services in particular for land mobile satellite service such as Machine-to-Machine (M2M) technology and internet of things (IoT) as well as portable and handheld terminals through satellite under global coverage (as is the case for L-band MSS). The emergence of M2M/IoT based satellite communication has encouraged organizations to expand their market reach without facing capacity crunch. In addition to such trends in the land mobile satellite service market, there are developments in the maritime and aeronautical satellite service market as well.

Thuraya also supports ANACOM view that the growth of satellite services brings, as a consequence, the need for additional spectrum to meet the demand for new applications (IoT, M2M, broadband, DTH and government uses).

Assessment of the spectrum requirements for the MSS in the 1-6 GHz range, was carried out prior to WRC-07 and is contained in Report ITU-R M.2077. For the year 2020, the shortfall in spectrum requirements is between 19 and 90 MHz in the uplink direction and between 144 and 257 MHz in the downlink direction. As a result, possibility of new spectrum allocations for MSS should also be explored.

Moreover, the growth of satellite services also requires ensuring protection of the spectrum allocated for MSS in the extended L-band range i.e. 1518-1525 MHz from the planned IMT in the adjacent band below 1518 MHz.

The frequency band 1518-1559 MHz is allocated in all three Regions to the mobile-satellite service (MSS) on a primary basis, there is a need to ensure the continued operations of the MSS in this L-band and global harmonization for the use of the band by satellite systems is also required. MSS L-band band has customers including commercial businesses, governments, military users, public safety organisations, and individual user who expect to use the satellite systems in an interference free environment all over the world.

Thuraya also support the views of ANACOM of the importance of the future use of higher frequency bands for satellite communications, such as the Ka band (20/30 GHz) and Q / V bands (40/50 GHz).

## Thuraya comments on Annex Spectrum Management/ Innovative Techniques for spectrum sharing :

When authorizing a new application to share certain band with existing applications, the following spectrum access methods should be considered:-

- 1- If the application is harmonized for global /regional use, it should have priority over applications not harmonized for a regional/global use and having primary allocation status.
- 2- Applications that are not harmonized for regional/global use, these should always be on a secondary basis and should implement interference mitigation techniques allowing them to operate without causing interference and to avoid receiving interference.
- 3- Application on the same level should be on a first come first served basis, allowing the expansion of incumbent services.

Such a mechanism will allow fast growth for the applications identified globally or regionally and make better use of the available spectrum and at the same time does not prevent other applications from accessing the spectrum they believe it is availed.

## CONCLUSION

Thuraya appreciate the recognition by ANACOM of the value of satellite services in the territory of Portugal, and supports ANACOM view that the growth of satellite services brings, as a consequence, the need for additional spectrum to meet the demand for new applications. Thuraya also support the views of ANACOM of the importance of the future use of higher frequency bands for satellite communications, such as the Ka band (20/30 GHz) and Q / V bands (40/50 GHz). Thuraya would like to highlight the need to protect existing satellite services and promote the use of the spectrum by the spectrally-efficient and globally-important satellite services technology and industry, especially the protection of the extended L-band range i.e. 1518-1525 MHz from the IMT in the band below 1518 MHz.