

## **ISpA Feedback for Consideration by DoT**

### **Apportionment/sharing of frequency bands 37-43.5 GHz, 47.2-48.2 GHz and 66-71 GHz in India- Comments**

1. The frequency bands under consideration in this consultation, such as 37-43.5 GHz, are of the critical importance to the satellite industry as this frequency plays a key role in the working of next generation of High Throughput Satellites. This band will be used by the FSS High Throughput Satellites for feeder links, user terminals (especially in the remote areas). Any sharing of this band with terrestrial IMT will put undue constraints on the satellite usage of this band. It is also worth noting that 40 GHz band is subject of some of WRC-27 preliminary agenda items to further utilize the band by fixed satellite services. For instance Resolution 176 (WRC-19) invites the ITU-R Sector to develop the regulatory framework for aeronautical and maritime ESIMs to operate within GSO FSS allocations in the frequency bands 37.5-39.5 GHz, 40.5-42.5 GHz, 47.2-50.2 GHz and 50.4-51.4 GHz. ITU-R Studies have shown that sharing between FSS and IMT is only feasible under certain conditions; full sharing would cause constraint on FSS (either in terms of deployment or interference).

2. The technical studies conducted and presented to WRC-19 indicated that sharing between FSS and IMT puts undue constraint on the FSS either in terms of deployment type or receiving interference. For that reason the Radio Regulation is very clear and explicit in addressing the sharing environment mechanism between IMT and FSS in Footnote **5.550B** to Article 5 Table of Frequency Allocation: *...Because of the potential deployment of FSS earth stations within the frequency range 37.5-42.5 GHz and high-density applications in the fixed-satellite service in the frequency bands 39.5-40 GHz in Region 1, 40-40.5 GHz in all Regions and 40.5-42 GHz in Region 2 (see No. 5.516B), administrations should further take into account potential constraints to IMT in these frequency bands, as appropriate.* These frequencies are not suitable for IMT coverage applications. Equipment operating in these bands are not even commercially available.

3. On the IMT/5G use of 40 GHz band, these bands are typically used only for providing coverage to high density areas and have a very short range. As a result, they cannot be used for coverage purposes in remote areas. On the other hand, since satellite uses directional antennas, it is well suited for providing remote area connectivity and especially to power Wi-Fi and other terminals. Prioritizing use of this band for 5G in urban areas over connectivity through satellite in remote areas will not help bridge the digital divide.

4. Considering that Indian satellite players would provide services globally, it will be important to have a globally harmonised position on the use of the 40 GHz band.

In light of the aforementioned points, we are of the view that a cautious and step-by-step approach ensuring compatible co-existence may be adopted with regard to the frequency bands under consideration.

5. ISpA also requests that decisions on sharing may only be taken after an independent study of frequency interference from a competent agency are undertaken.

6. Above all, we request for the policy to be harmonized as per ITU Policy.

7. We also request for an additional time of two weeks for deeper examination of the proceedings as this is a very important subject with long term implications for both Industry and National Interest.

**Proforma for Comments/inputs**

<b>S. No.</b>	<b>Para No. of the Elements to the Report</b>	<b>Proposed Text</b>	<b>Justification</b>	<b>Supporting References/Links</b>
	4.2	<p>United states has auctioned the frequency bands 37.6 – 40 GHz and 47.2 – 48.2 GHz for Upper Microwave Flexible Use Service (UMFUS) licenses in 2019/20. Both fixed and mobile operations are authorized in these bands. A licensee can provide any services permitted under a fixed or mobile allocation. FSS earth stations can coexist with UMFUS, subject to certain technical and operational conditions. [ADD] The United States also set aside 40-42 GHz and 48.2-50.2 GHz for exclusive satellite use.</p>	<p>Although WRC-19 identified the full 37-43.5 GHz range for IMT on a coprimary basis with FSS to allow common equipment between regions, in practice, Region 1, 2 and 3 will only use portion of it for 5G due to existing FSS allocation. For example, Europe has harmonised only 40.5-43.5 for 5G, while Americas license the 37-40 GHz for 5G.</p>	

<p>4.4</p>	<p>The European Communications Commission (ECC) has also initiated activities to develop an ECC decision on fixed/mobile wireless broadband harmonization in the 40.5-43.5 GHz band. [ADD] Furthermore, <b>ERC Decision (00)02<sup>1</sup></b> harmonises the band 37.5-40.5 GHz inter alia for FSS operations in the space-to-Earth direction; <b>that ECC Decision (02)04<sup>2</sup></b> identifies that the band 40.5-42.5 GHz may be used by coordinated FSS earth stations in the space-to-Earth direction, and that uncoordinated Earth stations in the fixed satellite and broadcasting satellite services shall not claim protection from fixed and broadcasting stations.</p>	<p>Although WRC-19 identified the full 37-43.5 GHz range for IMT on a coprimary basis with FSS to allow common equipment between regions, in practice, Region 1, 2 and 3 will only use portion of it for 5G due to existing FSS allocation. For example, Europe has harmonised only 40.5-43.5 for 5G, while Americas license the 37-40 GHz for 5G.</p>	<p><sup>1</sup> ERC Decision (00)02: “The use of the band 37.5-40.5 GHz by the fixed service and Earth stations of the fixed - satellite service (space-to-Earth)”, approved March 2000</p> <p><sup>2</sup> ECC Decision (02)04: “The use of the band 40.5 – 42.5 GHz by terrestrial (fixed service/ broadcasting service) systems and uncoordinated Earth stations in the fixed satellite service and broadcasting-satellite service (space to Earth)”, approved March 2002</p>
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<sup>2</sup> ECC Decision (02)04: “The use of the band 40.5 – 42.5 GHz by terrestrial (fixed service/ broadcasting service) systems and uncoordinated Earth stations in the fixed satellite service and broadcasting-satellite service (space to Earth)”, approved March 2002

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For the frequency band 37 – 43.5 GHz, the Committee recommends the following approach:

	<b>Frequenc y band(s)</b>
For Satellite user links [add] and Satellite gateways/hub links (Exclusive)	40 – 42.5 GHz
For IMT (Exclusive)	37-37.5 GHz
IMT and Satellite Gateways/Hub links (Shared)	37.5 – 40 GHz, 42.5 – 43.5 GHz

Or simply

	<b>Frequenc y band(s)</b>
[Mod] For Satellite use (Exclusive)	40 – 42.5 GHz
For IMT (Exclusive)	37-37.5 GHz
IMT and Satellite	37.5 – 40 GHz, 42.5

Given the current congestion in the Ka band with over 130 GSO satellites and several NGSO constellations, the satellite industry is increasingly looking at Q/V as the new frontier for future development of satellite communication.

Furthermore, the whole of the spectrum range between 37.5-50.2 GHz is also required by **feeder link Earth stations** in the FSS allocations which require high spectrum bandwidth; such applications will alleviate the pressure on Ka-band. The IMT footnote **5.550B** in fact clearly recognises the FSS allocation in this band and refers to Res **243 (WRC-19)**.

In the case of ISpA, we are intending to use extensively the FSS allocation in Q/V band (which ranges between 37.5 to 50.2 GHz) for feeder links for our next generation of gateway. As such ISpA has already submitted satellite filings at the ITU and has

		Gateways/H ub links (Shared)	- 43.5 GHz	<p>also requested a license in the USA, i.e., submitted a request in the FCC processing round regarding this frequency band and any required licensing applications will be submitted to Indonesia, when appropriate.</p> <p><b>ISPA humbly request DoT to also allow satellite gateways service in addition of the satellite user links in the 40-42.5 frequency range.</b></p> <p>Coexistence between satellite user terminals and gateways can be easily achieved through satellite coordination.</p>	
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