

License Exempt 6GHz for India

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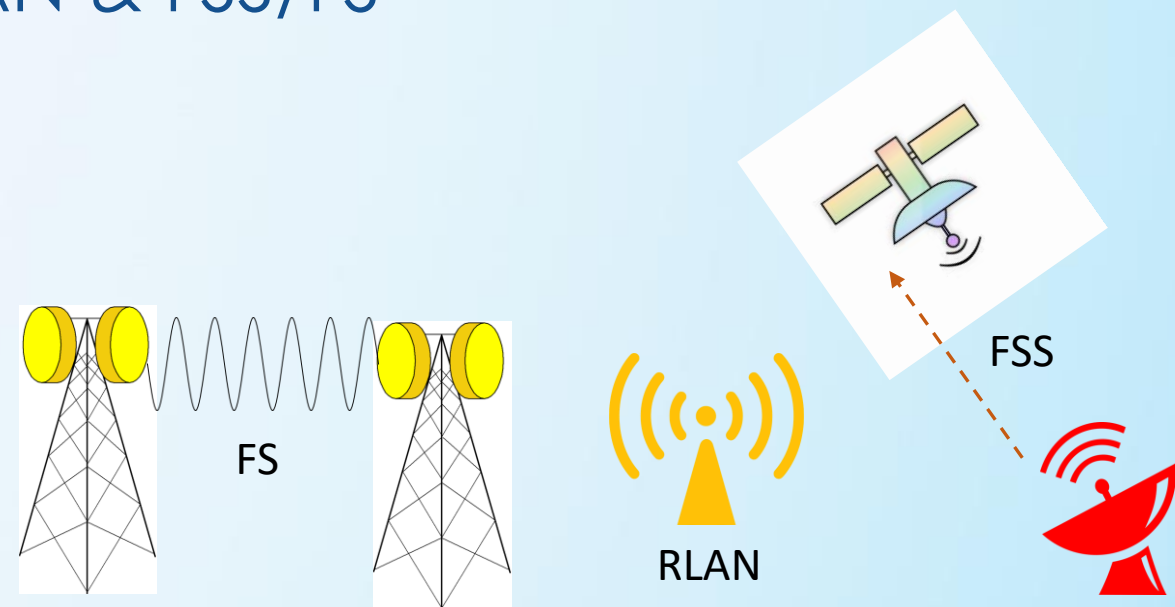
AGENDA

1. 6GHz Sharing Studies : Study Objective & Conclusions
 - i. Between RLAN & FSS/FS
 - ii. Between IMT & FSS
2. Global Position on License exempt 6GHz
3. Need for License Exempt 6GHz
4. Benefits of License Exempt 6GHz
5. Conclusion

1. 6GHz SHARING STUDIES:

i. Between RLAN & FSS/FS

- BIF Commissioned Sharing Studies were carried out by M/s RKF Engineering Solutions, USA. Report ¹ shared with DoT - 6GHz National Committee and DoS/ISRO
- Based on some new inputs received from ISRO, on satellite parameters, further simulation studies were carried out. These studies also take into account, extremely high density of number of WiFi devices – in the worst case situation.



Conclusion: RLAN (WiFi) devices in Lpi and VLP (i/o) across all frequency channels can safely co-exist with incumbent FS and FSS links across the entire 6GHz band.

1: https://broadbandindiaforum.in/wp-content/uploads/2021/11/Frequency-Sharing-for-RLANs-in-the-6GHz-band-in-India_Accessible.pdf

1. 6GHz SHARING STUDIES:

ii. Between IMT & FSS

- In the WRC-15 Cycle, it was proven through sharing studies that IMT & FSS cannot co-exist in the lower 6GHz band (5925-6425 MHz)
- Also, basis initial co-existence studies carried out in India between FSS and IMT in the upper 6GHz band, **suggest that sharing between the two is not feasible.**

License exempt 6GHz works harmoniously with incumbent services (both FSS & FS) without any disruption

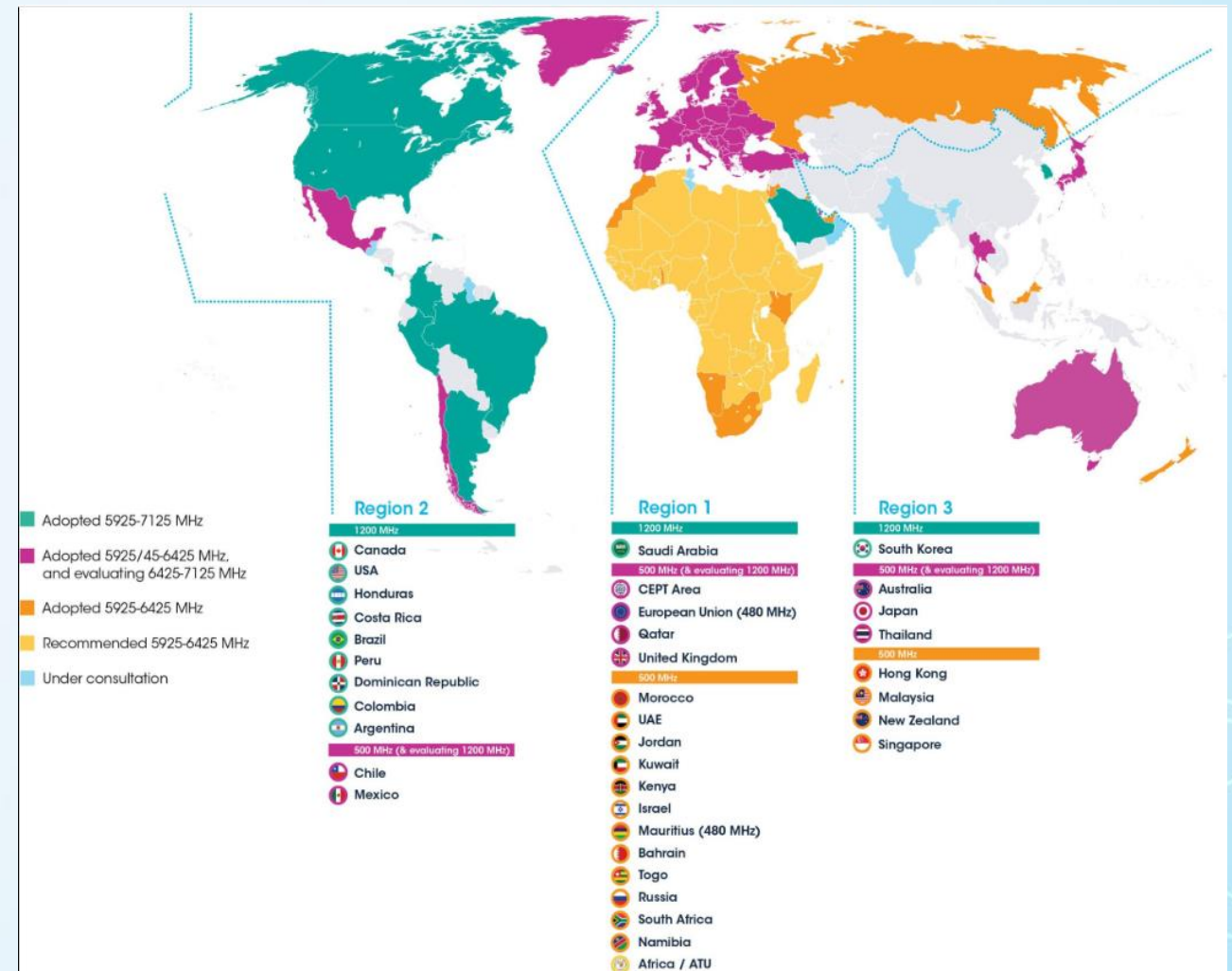
2. WHY THE NEED FOR DELICENSED 6GHz

- 80% of data usage is indoors. 90% of this data consumption is on WiFi
- Higher spectrum bands of 5G further reduces indoor penetration
- Current WiFi on 2.4 & 5 GHz is based on an obsolete generation of WiFi technology (WiFi 4 & 5)
- Advanced & Modern WiFi technologies (WiFi 6E & 7) is needed for
 - (i) In-Building Coverage
 - (ii) Complement 5G & 6G by providing seamless high speed connectivity while indoors
 - (iii) Needs larger channel bandwidth i.e. 3 channels of 320MHz or 7 channels of 160MHz .
 - (iv) Next Gen Applications are : AR/VR/XR/Metaverse, Advanced High Speed Gaming, etc all of which need higher channel Bandwidth of 320/160MHz.
 - (v) WiFi 7 is also used for critical healthcare applications
 - (vi) Fuel innovation and new use cases

Need 1200 Mhz in the fully delicensed 6GHz band

3. GLOBAL SCENARIO ON DELICENSED 6GHz

- Total unlicensed spectrum for WiFi in the 2.4 & 5 GHz bands is only 689 MHz.
- To meet the severe shortage of WiFi spectrum, **more than 84 countries** have delicensed the lower part of the 6 GHz band i.e. 5925-6425 MHz. Many more waiting to follow. (See Chart)
- About 12 countries viz. USA, Korea, Brazil, Saudi Arabia and some others have delicensed the entire 6 GHz (5925-7125 MHz) band.



Essential that we are aligned with the rest of the countries in 6Ghz also

4. BENEFITS OF DELICENSED 6GHz

- **Sustainability**: As per studies, use of 6GHz WiFi leads to 16% energy savings as compared to IMT only for the upper band; = 3.2 megatons less Co2 emissions per year (Europe).² In India-the savings are likely to double.
- **Economic Value**: Recurrent economic gain of over USD 60 billion (approx. Rs. 5 lakh crores) per year from 2028, ³ - a much larger gain than the one-time spectrum auction proceeds for IMT.

Delicensing would lead to innovation and new use cases and lead to growth in IoT services, besides promoting Atmanirbhar Bharat

²:<https://www.wi-fi.org/system/files/SustainabilityBenefitsof6GHzSpectrumPolicy202307.pdf>

³.file:///C:/Users/BIF1/Downloads/Preview%20Copy_The%20Economic%20Value%20of%20Wi-Fi%20Spectrum%20for%20India_BIF.pdf

5. KEY TAKEAWAYS

Full 6GHz (1200 MHz) be opened up as license exempt, in line with global best practices, under LPI and VLP (Indoor/Outdoor) categories

Thank You

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