

DoS Views on WRC-19 Agenda Items

ITU-APT Workshop

June 12, 2019

New Delhi



WRC-19 Agenda Items

- ▶ **AGENDA 1.3**
 - ▶ **AGENDA 1.5**
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Agenda 1.3:

Upgradation of the secondary allocation to the meteorological satellite service to primary status and primary allocation to EESS in 460-470 MHz

Agenda 1.5:

ESIMs in 17.7-19.7 GHz and 27.5-29.5 GHz

DoS is in full agreement with views of Satellite Industry (GSC)

- To be permitted, Option-1 pfd limits for aero-ESIMs with no altitude constraints**



▶ AGENDA 1.13

Item A : 24.25-27.5 GHz

This band has good potential for 5G with band segmentation & few constraints

Condition

Option **A2-a**



- Limits in Table-1-1 of Resolution-750
 - BS: -42 dB (W/200 MHz)
 - UE: -38 dB(W/200 MHz)
- Open to discussions (-33.5dBW & -29.7 dBW/200 MHz)

A2-b



- Limits in Table-1-1 of Resolution-750
 - BS: -45.3 dB (W/100 MHz)
 - UE: -44.3 dB(W/100 MHz)
- Open to discussions

A2-d



- Open to discussions for option-1

A2-e



- Max limit TRP of 25 dBm/200 MHz
- Open to discussions for option-3 & TRP of 37dBm/200 MHz

A2-g



- Open to discussions for option-3 or Option-4



Method

- A2

Alternative

- 1

Item C :37-40.5 GHz

- Band segmentation approach for harmonization
 - ✓ 37-40.5 GHz for satellite users link (down link)
 - ✓ 40.5-43.5 GHz for 5G & satellite gateways link

Remark

Indian passive sensor operates in 36-37 GHz

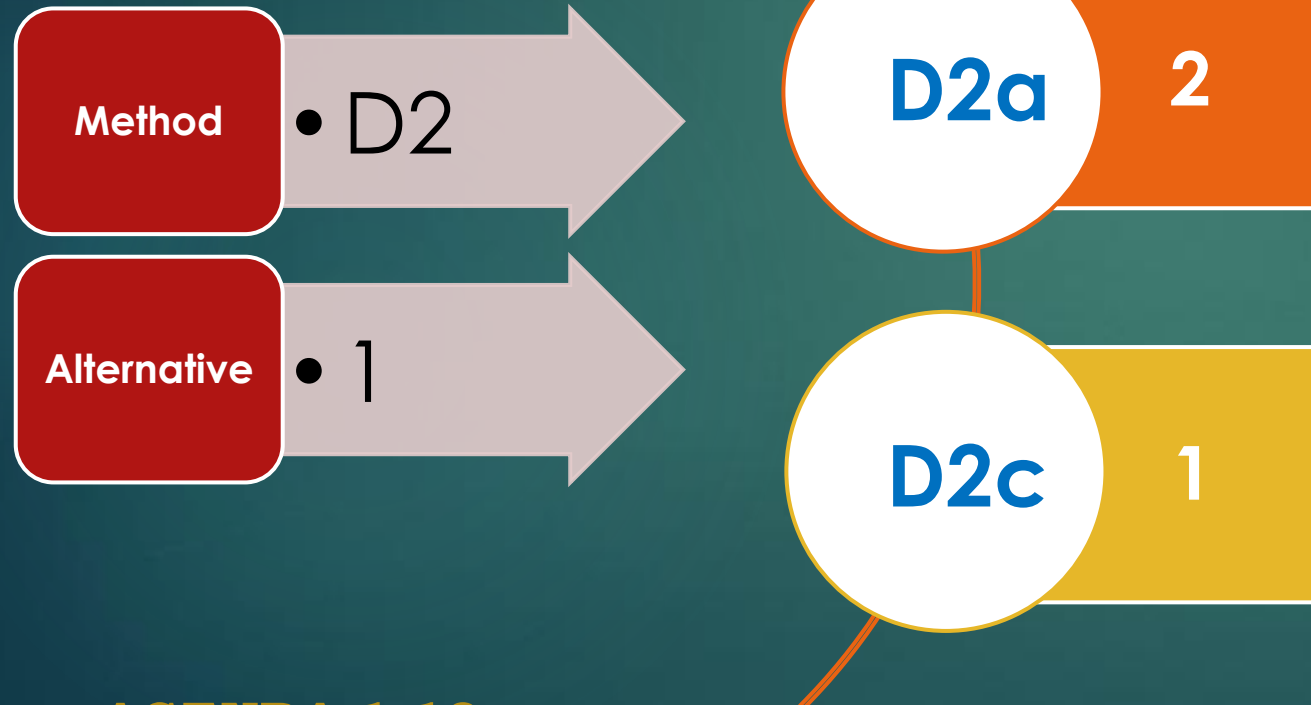


Item D : 40.5-42.5 GHz

This band has good potential for 5G with few constraints

Condition

Option



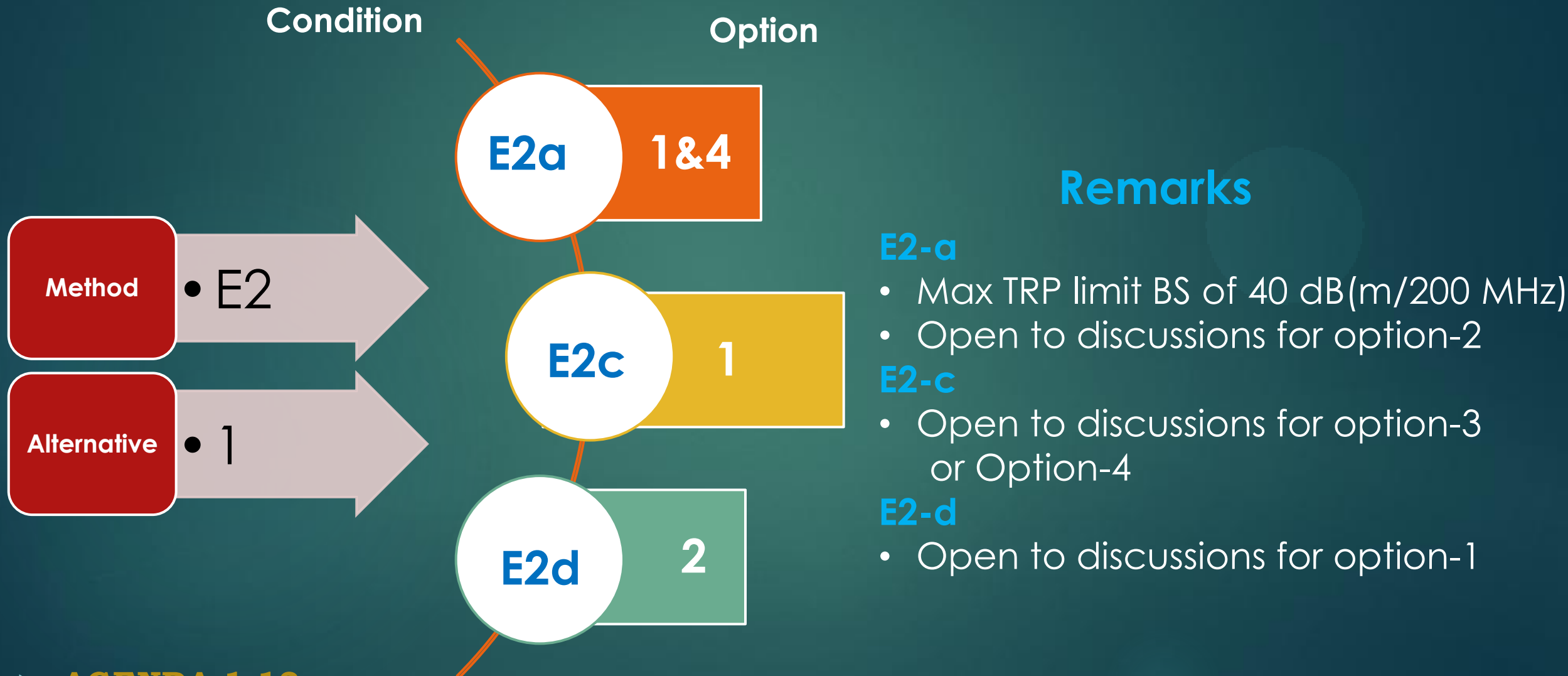
Remark

D2-a

- Open to discussions for option-1

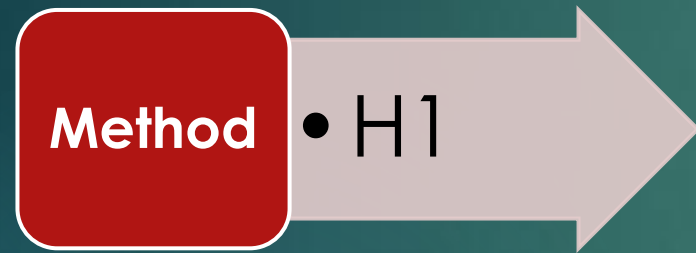
Item E : 42.5-43.5 GHz

This band has good potential for 5G with few constraints



Item H : 47.2-50.2 GHz

This band may not be used for 5G considering band segmentation approach



Remarks

Used for satellite user links (uplink)

Item I : 50.4-52.6 GHz

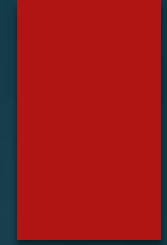
This band may not be used for 5G considering band segmentation approach



Remarks

Used for satellite user links (uplink)

Item J : 66-71 GHz



Condition Option



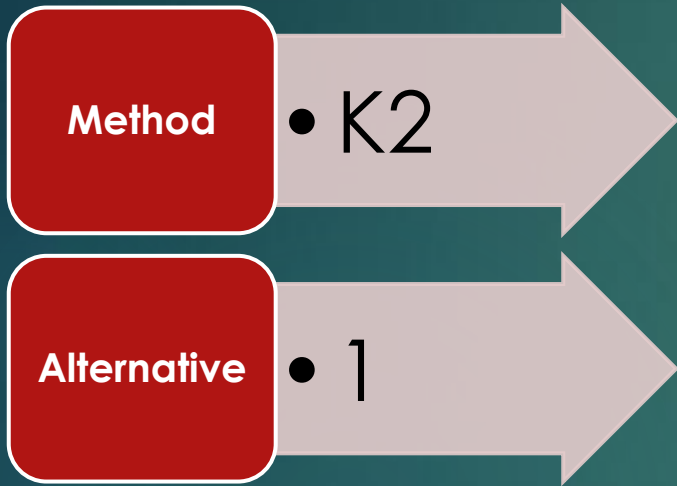
Remarks

1. No ITU-R studies for protecting other services, hence this view

Item K : 71-76 GHz

Condition

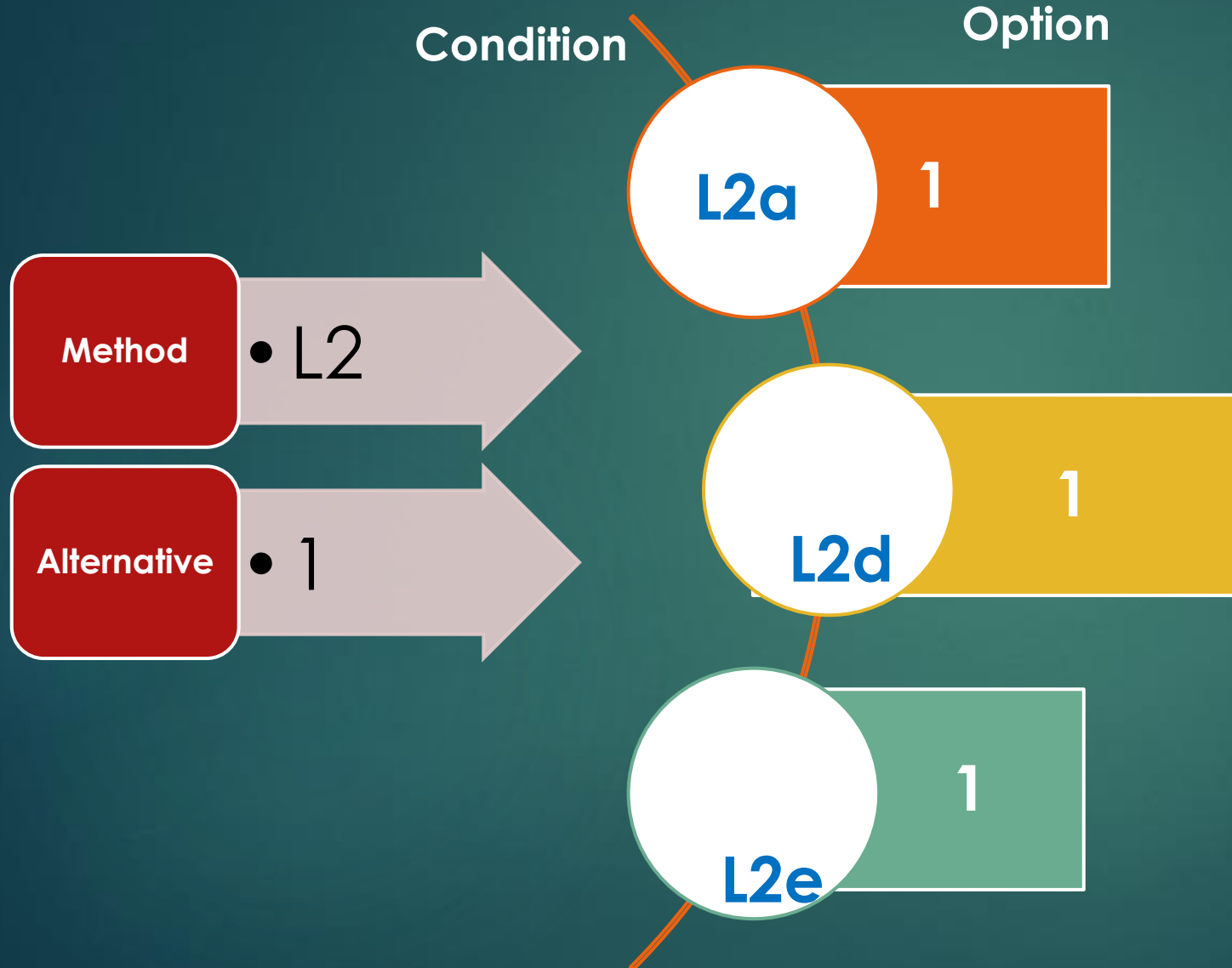
Option



- This band can be considered for 5G with constraints
- Satellite technologies are evolving in this band

Item L : 81-86 GHz

Condition Option



- This band can be considered for 5G with constraints
- Satellite technologies are evolving in this band



▶ AGENDA 1.16

Frequency band A: 5150-5250 MHz

Method A1: No Change to RR

Frequency band B: 5250-5350 MHz

Method A1: No Change to RR

Frequency band C: 5350-5470 MHz

Method A1: No Change to RR

Frequency band D: 5725-5850 MHz

No Comments

Frequency band E: 5850-5925 MHz

Method E: Feeder link to MSS satellites



**RADAR IMAGING
SATELLITE**





▶ AGENDA 9.1.1

Implementation of IMT in frequency band 1885-2025 MHz and 2110-2200 MHz

DoS is in agreement with Satellite Industry view for this Agenda

- View 1



▶ AGENDA 1.6

Non-GSO FSS in 37.5-39.5 GHz, 39.5-42.5 GHz, 47.2-50.2 GHz & 50.4-51.4 GHz

- **DoS is still working on this agenda**
 - Appropriate epfd limits/mask of NSGO not yet developed by ITU studies for protection of GSO FSS
 - Large range of unwanted emission limits of Non-GSO FSS for protection of EESS (passive) in adjacent 50.2-50.4 GHz
 - ✓ -51.3.....-69.8 dBW/200 MHz for UE
 - ✓ -27...-66 dBW/200 MHz for gateways



▶ AGENDA 1.14

Regulatory actions for HAPS within existing fixed-service allocations

- **DoS is still working on this agenda**
 - It is required that HAPS must not pose any constraints in operation of satellite services in
 - ✓ 27.9-28.2 GHz (HAPS D/L)
 - ✓ 38-39.5 GHz (HAPS U/L)
 - ✓ 47.2-47.5 GHz and 47.9-48.2 GHz

SUMMARY

- Coexistence of 5G & Satellite services is possible in selective bands.
- DOS studies have identified such bands.
- Platforms like ITU-APT, India to enable convergence of views among stake holders.

HLF recommendation on 27.5-29.5 GHz & 29.5-31.3 GHz for IMT in India as Identify-Tier

- 27.5-29.5 GHz being used for microwave links and satellite gateways uplink in India
- 29.5-31 GHz exclusively identified by ITU for satellites users links using small ubiquitous terminals
- DoS in-depth analysis on 27.5-29.5 GHz for IMT shows
 - ✓ IMT BS & UEs cause harmful interference to satellite receivers violating protection criteria by a large margin
 - ✓ Keep-out distances of 13-60 Km required for protection of IMT BS & UEs from satellite hubs

DoS doesn't recommend this band for IMT in India

THANKS

