

# The importance of the C band for the Fixed Satellite Services



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## Agenda

- 1. Introduction to Agenda Item 1.2
- 2. The importance of the C band in the Caribbean Region and in Region 2
- 3. Mid band situation in the Region
- 4. Issues between FSS and IMT coexistence
- 5. GVF Regulatory proposal





## 1. Introduction to Agenda Item 1.2

### Introduction



**Agenda Item 1.2:** to consider identification of the frequency bands 3300-3400 MHz, **3600-3800 MHz**, 6425-7025 MHz, 7025-7125 MHz and 10.0-10.5 GHz for IMT, including possible additional allocations to the mobile service on a primary basis.



**Resolution 245 (WRC-19)** calls for studies for the terrestrial component of IMT in the bands:

 3600-3800 MHz and 3300-3400 MHz (Region 2); 3300-3400 MHz (amend footnote in Region 1); 7025-7125 MHz (globally); 6425-7025 MHz (Region 1); 10000-10500 MHz (Region 2).





**Contributing ITU Group** 

WP 3K, WP 3M, WP 4A, WP 4B, WP 4C, WP 5A, WP 5B, WP 5C, WP 7B, WP 7C



## 2. The importance of the C band for FSS

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## **C** band unique characteristics

- 3.3 3.4 GHz and 3.6 3.8 are Downlink FSS (space-to-Earth) bands.
- C-band is significative less susceptible to signal interruptions from heavy rains than higher bands (Ku-band, Ka-band)

C band has unique characteristics for services that require high availability

- Typically C band beams are wide-regional beams that enhance the distribution of content.
- C-band satellites serving the Caribbean region have high fill rates in the case of Intelsat's fleet, other satellites fleets have similar fill rates







## **Media services**





- C band is fundamental for the Media Distribution services.
- Distribution of media content to the headers of the broadcasters.
- Distribution of media content to final users



Cruise business in the Caribbean is growing CVF Solutions. The World.

- Satellite connectivity for cruise lines is crucial
- Growing demand from cruise passengers for on-board connectivity has significant economic impact





The Americas led the Cruise world in 2021.



The Caribbean and Gulf of Mexico was undoubtedly the favourite cruise destination in 2021.

Most Popular Destinations in 2019 Based on Volume of Passengers (in thousands)



### **Network services**



Trunking services 500+ Mbps

MNOs – 3G and 4G services

VSAT networks for rural connectivity

Connectivity for government entities (schools, health, police, etc.)

Aeronautical connectivity services (airports)

Disaster recovery – Hurricane season





## 3. Mid-band situation in the Region

**Current IMT allocation in Region 2** 



#### NO regional harmonization for 3.5 GHz band in Region 2



#### Current C-band IMT identification in R2 are:

#### 3300 - 3400 MHz -13 countries

**5.429D** Argentina, Belize, Brazil, Chile, Colombia, Costa Rica, the **Dominican Republic**, El Salvador, Ecuador, Guatemala, Mexico, Paraguay and Uruguay, the use of the frequency band 3 300-3 400 MHz is identified for the implementation of International Mobile Telecommunications (IMT).

#### 3400 - 3600 MHz - Region 2

**5.431B** In Region 2, the frequency band 3400-3600 MHz is identified for use by administrations wishing to implement International Mobile Telecommunications (IMT).

#### <u>3600 - 3700 MHz</u> – 7 countries

**5.434** In Canada, Chile, Colombia, Costa Rica, El Salvador, the United States and Paraguay, the frequency band 3 600-3 700 MHz, or portions thereof, is identified for use by these administrations wishing to implement International Mobile Telecommunications (IMT).





## 4. Issues between FSS and IMT coexistence

Issues between FSS and IMT coexistance GVF Solutions. The World.

#### **Cofrequency Scenarios**

- The technical studies and the existing cases show the impossibility to coexist
- Identification of IMT results in removing FSS services from the band or a large separation distance



#### **Adjacent Scenarios**

- Effect 1: LNB saturation
  - Installation of 60-70 dB rejecting filters
  - Definition of appropriate guardband (typically 20-100 MHz)
- Effect 2: OOBE interference into the FSS band
  - OOBE limits









## 5. GVF Regulatory proposal

### Is More C-band spectrum really needed? GVF Satellite. The World.

### ❸ Achieving a balance for spectrum is key

#### Low and Mid bands

- sub-1 GHz accounts for 20% of mobile operators who operate this spectrum.
- mid band 2.5/3.5GHz towers can cover 5G that currently ranges from 100 to 900Mbps



#### High bands

An MNO may deploy 5G in cities on 26 GHz mmWave while the suburban/rural footprint relies on coverage spectrum below 1 GHz

#### Balanced approached is needed

□ A balanced approach is needed between wider geographic areas and ultra-high speeds and the lowest latencies –

Governments and regulators to prioritize mobile broadband services – above revenue maximization – when awarding new frequencies.

Success isn't just about allocating new spectrum bands - bands above 3.6 GHz are not going to be used to extend coverage.

### **Overview of IMT spectrum growth**

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#### GVF View 3600-3800 MHz in Region 2

- Mid-band spectrum (400 MHz) coupled with spectrum identified at 2 GHz (695 MHz) can meet 5G deployment goals and avoids significant disruption to critical satellite communications services in 3600-3800 MHz.
- Adjacent band protection techniques are necessary for coexistence in adjacent band scenarios.
- Intense use of 3600 3800 MHz in many countries of Region 2 for critical FSS services.

GVF does not support a regional IMT identification in the 3600 – 3800 MHz band. Countries in Region 2 interested in identifying IMT, can include their names in country footnotes. (In line with method 3D of the CPM Text)

Excessive mid-band allocations to 5G can hurt critical satellite services with no clear benefit. By 2025, only 11% of connections in Latin America are projected to be via 5G, while 4G is projected to account for 68% of mobile lines. **A balanced approach is needed** 



## THANK YOU