

**Chapter:** One

**Service:** Fixed Satellite Service (FSS) and Broadcasting Satellite Service (BSS)

**Agenda Item:** 1.6

**Description of the Agenda Item:** Consider technical and regulatory measures for fixed-satellite service satellite networks/systems in the frequency bands 37.5-42.5 GHz (space-to-Earth), 42.5-43.5 GHz (Earth-to-space), 47.2-50.2 GHz (Earth-to-space) and 50.4-51.4 GHz (Earth-to-space) for equitable access to these frequency bands, in accordance with Resolution 131 (WRC 23).

**Focus:** Ensuring equitable access to Q/V-band spectrum and associated orbital resources for all countries, particularly developing countries, while preserving efficient spectrum utilization and protecting existing satellite systems.

---

### Status of Studies

Studies under Agenda Item 1.6 are being conducted within ITU-R Working Party 4A. The agenda item was proposed by the African Telecommunications Union (ATU) to address concerns that the current "first-come, first-served" approach may limit future access to Q/V-band spectrum and orbital resources, particularly for developing countries.

The studies are examining:

- i. The current utilization of the Q/V-band frequencies by GSO and non-GSO FSS systems.
- ii. Challenges faced by developing countries in accessing these frequency bands.
- iii. Potential regulatory and procedural measures to enhance equitable access.
- iv. Measures that could facilitate the introduction of new satellite networks by administrations that currently have limited access to these bands.

The studies recognize that the Q/V bands are expected to play an increasingly important role in supporting future broadband satellite systems due to the large amount of available spectrum.

---

### Objective of the Studies

The objective of the studies is to promote equitable access to the Q/V-band frequency spectrum and associated orbital resources while maintaining efficient spectrum utilization.

The studies seek to:

- i. Facilitate access to Q/V-band resources by developing countries.

- ii. Ensure that all administrations have a fair opportunity to develop satellite systems.
- iii. Prevent situations where early filings create barriers to future access by other administrations.
- iv. Enhance efficient use of spectrum and orbital resources.
- v. Support the implementation of Articles 12 and 44 of the ITU Constitution, which recognize the equal rights of all countries in the use of radio-frequency spectrum and satellite orbits.

---

### **Frequency bands under consideration**

- i.* 37.5 - 42.5 GHz Space to Earth
- ii.* 42.5 - 43.5 GHz Earth to Space
- iii.* 47.2 - 50.2 GHz Earth to Space
- iv.* 50.4 - 51.4 GHz Earth to Space

These bands are increasingly being utilized by next-generation satellite systems, particularly high-throughput satellites (HTS) and non-geostationary satellite constellations.

While the current ITU framework operates largely on a "first-come, first-served" basis, concerns have been raised that extensive filings in these bands could make it difficult for future entrants, especially developing countries, to secure spectrum and orbital resources.

These bands are currently allocated to the following services:

- i.* FIXED
- ii.* MOBILE
- iii.* SPACE RESEARCH
- iv.* FIXED SATELLITE(Space-to-Earth)
- v.* Earth exploration satellite
- vi.* MOBILE-SATELLITE
- vii.* EARTH EXPLORATION-SATELLITE(Earth-to-space)
- viii.* BROADCASTING
- ix.* BROADCASTING-SATELLITE
- x.* LAND MOBILE
- xi.* RADIO ASTRONOMY

---

### **Methods to Satisfy the Agenda Item**

Several methods are under consideration.

#### **Method A – No Change**

This method concludes that the existing provisions of the Radio Regulations are sufficient and proposes:

- i. No changes to the Radio Regulations.
- ii. Suppression of Resolution 131 (WRC-23).

Administrations that support this method consider that existing coordination and notification procedures already provide adequate mechanisms for spectrum access.

### **Method B**

Method B proposes a new WRC-27 Resolution that provides preferential treatment for administrations, particularly those with limited or no existing GSO FSS filings in the Q/V bands, to improve equitable access to spectrum and orbital resources.

#### Key Features

- i. Grants preferential treatment to administrations that:
  - Have no GSO satellite network recorded in the MIFR in the relevant Q/V bands
  - Have no more than one overlapping satellite filing under coordination.
- ii. Protects existing satellite networks, with no retroactive changes and no requirement for the Bureau to re-process previously recorded networks.
- iii. Maintains existing coordination procedures to ensure:
  - Technical compatibility between networks.
  - Protection from harmful interference.
  - Efficient spectrum use.
- iv. Recognizes that developing countries may face challenges bringing satellite networks into use within the standard 7-year regulatory period.
- v. Considers two options regarding the Bringing Into Use (BIU) period:
  - Option 1: Retain the current 7-year BIU period.
  - Option 2: Extend the BIU period for networks benefiting from preferential treatment, similar to the 8-year implementation period used in Appendices 30, 30A and 30B.

### **Method C**

Method C proposes the adoption of two separate WRC-27 Resolutions: one for GSO FSS networks and another for non-GSO FSS systems in the Q/V bands (37.5-42.5 GHz, 42.5-43.5 GHz, 47.2-50.2 GHz and 50.4-51.4 GHz).

#### Key Features

- i. Establishes separate regulatory procedures for GSO and non-GSO systems to reflect their different technical, operational, and coordination characteristics.
- ii. Introduces specific measures to facilitate equitable access to Q/V-band spectrum and orbital resources.
- iii. Ensures that potential technical incompatibilities between satellite networks are identified and addressed through coordination.
- iv. Draws on experience from existing equitable access frameworks, including:
  - Appendices 30, 30A and 30B (BSS and FSS Plans);
  - Resolution 170 (Rev. WRC-23);

- Resolution 553 (Rev. WRC-23).
- v. Seeks to balance equitable access with the continued efficient use of spectrum and orbital resources.
- vi. Proposes the suppression of **Resolution 131 (WRC-23)** once the new framework is adopted.

### **Method D**

This method proposes a new WRC-27 Resolution that introduces preferential regulatory measures to improve equitable access to the Q/V bands (37.5-42.5 GHz, 42.5-43.5 GHz, 47.2-50.2 GHz and 50.4-51.4 GHz) for eligible administrations, particularly developing countries.

#### Key Features

- i. Provides preferential treatment for qualifying GSO and non-GSO FSS satellite filings while recognizing their different technical and operational characteristics.
- ii. Protects existing satellite networks and filings, with no retroactive changes or re-processing of already recorded systems.
- iii. Maintains the coordination process to ensure technical compatibility and protection from harmful interference.
- iv. Strengthens the role of the Radiocommunication Bureau (BR) by allowing it to provide technical assistance and participate as an observer in coordination discussions.
- v. Supports developing countries through technical assistance in accessing spectrum and orbital resources.
- vi. Introduces limited flexibility to extend the seven-year regulatory implementation period for administrations facing difficulties in bringing satellite networks into use.
- vii. Addresses concerns regarding spectrum and orbital resource hoarding by considering additional measures related to satellite capability and bringing assignments into use.

---

### **Regulatory and Technical Framework**

The studies are examining regulatory approaches that could improve opportunities for future satellite systems to access Q/V-band resources.

Key principles under consideration include:

#### Equitable Access

- i. Recognition that all countries have equal rights to access spectrum and orbital resources.
- ii. Facilitation of access for administrations that have not previously utilized these bands.
- iii. Consideration of the needs of developing countries.

### Efficient Spectrum Utilization

- i. Encouraging timely implementation of satellite networks.
- ii. Preventing warehousing or underutilization of spectrum resources.
- iii. Promoting practical use of assigned frequency resources.

### Regulatory Certainty

- i. Maintaining predictability and transparency within the ITU filing process.
- ii. Preserving the integrity of Articles 9 and 11 coordination procedures.

## **Key Issues Under Discussion**

### **First-Come, First-Served versus Equitable Access**

One of the central debates is whether the current coordination framework adequately balances:

- i.* Protection of existing rights
- ii.* Future access opportunities for new entrants.

Many administrations argue that large numbers of satellite filings may create practical barriers for future systems, particularly those from developing countries.

### **Access by Developing Countries**

Studies recognize that developing countries may face:

- Limited technical expertise;
- Financial constraints;
- Reduced bargaining power during coordination negotiations.

These challenges can affect their ability to successfully implement satellite projects.

### **Spectrum and Orbital Resource Efficiency**

Discussions are also considering whether additional measures are necessary to ensure that assigned spectrum and orbital resources are brought into use effectively and do not unnecessarily constrain future access opportunities.

---

## **Technical and Regulatory Challenges**

Several challenges remain under discussion:

### **Regulatory Challenges**

- i. Balancing equitable access with existing filing rights.
- ii. Avoiding unnecessary disruption to established ITU procedures.
- iii. Defining objective criteria for administrations that may benefit from special measures.
- iv. Ensuring consistency with Articles 9 and 11 of the Radio Regulations.

### **Operational Challenges**

- i. Maintaining certainty for existing satellite operators.

- ii. Avoiding increased complexity in the filing and coordination process.
  - iii. Ensuring that any new procedures remain practical and implementable.
- 

## **Conclusion**

Agenda Item 1.6 seeks to examine whether additional technical and regulatory measures are necessary to promote equitable access to the Q/V-band frequency spectrum and associated orbital resources.

The studies reflect concerns that the increasing number of FSS satellite filings in these bands may create barriers to future access, particularly for developing countries. While one method proposes retaining the existing regulatory framework, others propose additional procedures and regulatory measures to facilitate equitable access.

The outcome of these studies will have important implications for future access to Q/V-band resources, spectrum management, and the ability of developing countries to participate in satellite communications in the coming decades.