

## 2015 WORLD RADIOCOMMUNICATION CONFERENCE

### DRAFT PROPOSALS FOR THE WORK OF THE CONFERENCE

**TITLE:** To develop a regulatory framework that provides specific regulatory certainty provisions for NGSO systems operating in the FSS frequency bands 37.5-42.5 GHz (space-to-Earth) and 42.5-43.5 GHz, 49.2-50.2 GHz and 50.4-51.4 GHz (Earth-to-space).

**AGENDA ITEM 10:** *to recommend to the Council items for inclusion in the agenda for the next WRC, and to give its views on the preliminary agenda for the subsequent conference and on possible agenda items for future conferences, in accordance with Article 7 of the Convention,*

**U.S. PROPOSAL:** The US proposes the adoption of an agenda item for the next WRC with the following scope:

- To develop a regulatory framework that provides specific regulatory certainty provisions for NGSO FSS satellite systems operating in the 37.5-42.5 GHz (space-to-Earth) and 42.5-43.5 GHz, 49.2-50.2 GHz and 50.4-51.4 GHz (Earth-to-space) frequency bands, while at the same time ensuring adequate protection to GSO satellite networks;
- To develop, for NGSO satellite systems operating in the above frequency bands, sharing conditions with GSO networks.
- To ascertain whether the current out-of-band limits on the FSS in Resolution 750 (Rev WRC-12) Table 1-1 are still appropriate taking into account updated information on NGSO satellite systems.
- To incorporate into the Radio Regulations mechanisms to establish the coordination procedures applicable to NGSO systems operating in the above frequency bands.

These mechanisms will be determined by the relevant ITU study groups.

The proposed agenda item does not seek to change any allocations or status of allocations within the frequency bands to be considered.

#### BACKGROUND

WRC-97 adopted **5.523A** whereby the use of certain frequency bands by geostationary and non-geostationary fixed satellite service networks is subject to the application of the provisions of No. **9.11A** and No. **22.2** does not apply.

This WRC action allows NGSO satellite systems to operate in the bands subject-referred to in 5.523A without the obligation to protect later filed GSO satellite networks, i.e.subject to coordination on a first come first served basis with respect to GSO satellite networks.

WRC-97 also adopted provisional equivalent pfd (epfd) and aggregate epfd limits to be met by NGSO satellite systems operating in certain frequency bands. WRC-2000 adopted definitive epfd limits and expanded the ranges of frequency where they would apply. A NGSO satellite system meeting the epfd limits in the relevant frequency bands is deemed to be compliant with Article **22.2** with respect to any GSO satellite network regardless of priority date.

Both of these measures contributed to provide a well-defined regulatory certainty framework for NGSO systems operating in the associated frequency bands. The same types of approaches could be studied and considered for NGSO FSS systems that may operate in the frequency bands 37.5-42.5 GHz (space-to-Earth) and 42.5-43.5 GHz, 49.2-50.2 GHz and 50.4-51.4 GHz (Earth-to-space).

Moreover, there are currently no mechanisms in the RR establishing coordination procedures applicable to NGSO systems operating in the frequency bands currently allocated to the FSS in the range from 37.5 to 51.4 GHz, such as application of **9.12**. This also contributes to uncertainty among potential operators of NGSO satellite systems in these bands, and should be resolved as soon as possible by a competent WRC.

#### **STATUS OF ITU FILINGS**

As of April, 2015, there was only one GSO satellite network notified in the frequency range 37.5-39.5 GHz, no notified networks in the frequency range 39.5-40.5 GHz, and two notified GSO satellite networks in the frequency range 40.5-42.5 GHz (space-to-Earth allocations). Additionally, there were 23 GSO satellite networks notified in the frequency range 42.5-43.5 GHz, one GSO satellite network notified in the frequency range 49.2-50.2 GHz and no satellite networks notified in the frequency range 50.4-51.4 GHz (Earth-to-space allocations).

#### **Proposals**

**MOD** USA/10/1

#### **RESOLUTION 808 (WRC-~~12~~15)**

#### **Preliminary aAgenda for the 2018 2019 World Radiocommunication Conference**

The World Radiocommunication Conference (Geneva, ~~2012~~2015),

**Reasons:** To modify the agenda for WRC-18 to add a new item.

**ADD** USA/10/2

**XX** To develop a regulatory framework that provides specific regulatory certainty provisions for NGSO FSS satellite systems operating in the 37.5-42.5 GHz (space-to-Earth) and 42.5-43.5 GHz, 49.2-50.2 GHz and 50.4-51.4 GHz (Earth-to-space) frequency bands in accordance with Resolution [USA/10/NGSO V-BAND] (WRC-15).

**Reasons:** To eliminate the regulatory uncertainty inherent in the application of No. **22.2** to NGSO satellite systems operating in the FSS frequency bands 37.5-42.5 GHz (space-to-Earth) and 42.5-43.5 GHz, 49.2-50.2 GHz and 50.4-51.4 GHz (Earth-to-space) and the absence of coordination conditions applicable to such systems in these frequency bands.

DRAFT RESOLUTION [USA/10/NGSO V-BAND] (WRC-15)

**Development of a regulatory framework for NGSO FSS satellite systems that may operate in the 37.5-42.5 GHz (space-to-Earth) and 42.5-43.5 GHz, 49.2-50.2 GHz and 50.4-51.4 GHz (Earth-to-space) frequency bands**

The World Radiocommunication Conference (Geneva, 2015),

*considering*

- a)* that the International Telecommunication Union has, among its purposes, “to promote the extension of the benefit of the new telecommunication technologies to all the world’s inhabitants” (No. 6 of the Constitution of the International Telecommunication Union - Edition 2011);
- b)* that it is desirable, in this respect, to promote systems capable of providing universal service;
- c)* that new telecommunication services need advanced and reliable networks permitting high-capacity communications;
- d)* the need to encourage the development and implementation of new technologies;
- e)* that systems based on the use of new technologies associated with both geostationary (GSO) and non-geostationary (non-GSO) satellite constellations are capable of providing high-capacity and low-cost means of communication even to the most isolated regions of the world;
- f)* that the Radio Regulations should allow flexibility for the operation of as many systems as possible to ensure efficient use of the spectrum;
- g)* that the Radio Regulations must be sufficiently flexible to accommodate the introduction and implementation of innovative technologies as they evolve;
- h)* that the application of No. 22.2 can result in uncertainty for non-GSO FSS systems unless provisions are adopted to specify what is required to protect future GSO FSS networks;
- i)* that there are plans to operate GSO FSS networks and non-GSO FSS systems in the 37.5-51.4 GHz frequency bands allocated to the FSS;
- j)* that technical studies are required in order to ascertain the extent to which sharing of the frequency ranges 37.5-42.5 GHz (space-to-Earth) and 42.5-43.5 GHz, 49.2-50.2 GHz and 50.4-51.4 GHz (Earth-to-space) is feasible: 1) between GSO and non-GSO systems and 2) between non-GSO systems;

k) that currently there are no regulatory provisions establishing mechanisms for coordination among NGSO satellite systems in the frequency bands allocated to the FSS in the range 37.5-51.4 GHz,

*noting*

a) that filing information for GSO FSS satellite networks in the frequency bands 37.5-42.5 GHz (space-to-Earth) and 42.5-43.5 GHz, 49.2-50.2 GHz and 50.4-51.4 GHz (Earth-to-space) has been communicated to the Bureau;

b) that some of these networks are in operation and others will be operated in the near future and, consequently, difficulties may be experienced in modifying their characteristics;

c) the need to take into account ~~existing and future services in the~~ current and planned use of these bands by the existing services ~~allocated frequency bands,~~

*recognizing*

a) that WRC 2000 adopted provisions to protect GSO FSS satellite networks from NGSO FSS satellite systems in the 10-30 GHz frequency range;

b) that No. **5.516B** identifies the frequency bands 39.5-40 GHz (space-to-Earth) in Region 1, 40-40.5 GHz (space-to-Earth) in all Regions, 40.5-42 GHz (space-to-Earth) in Region 2, and 48.2-50.2 GHz (Earth-to-space) in Region 2 for use by high-density applications in the fixed-satellite service;

c) that No. **5.552** urges Administrations to take all practicable steps to reserve the band 47.2-49.2 GHz for feeder links for the broadcasting-satellite service operating in the band 40.5-42.5 GHz;

d) that No. **5.544A** limits the use of the bands 47.5-47.9 GHz, 48.2-48.54 GHz and 49.44-50.2 GHz by the fixed-satellite service (space-to-Earth) to geostationary satellites;

e) that No. **21.16** contains power flux-density limits applicable to NGSO satellite systems to protect fixed and mobile services with allocations in the 37.5-42.5 GHz frequency band;

f) that the frequency band 50.2-50.4 GHz is allocated on a primary basis to the EES (passive) and SR (passive) services, which must be adequately protected,

g) that the Mobile-Satellite Service (MSS) is allocated on a primary basis in the 39.5-40.5 GHz frequency band (space-to-Earth);

h) that the Broadcasting Satellite Service (BSS) is allocated on a primary basis in the 40.5-42.5 GHz frequency band,

*resolves to invite ITU-R*

1 To study and develop possible alternative technical and regulatory provisions for NGSO FSS satellite systems that may operate in the frequency bands 37.5-42.5 GHz (space-to-Earth) and 42.5-43.5 GHz, 49.2-50.2 GHz and 50.4-51.4 GHz (Earth-to-space) that will ensure

adequate protection of GSO satellite networks ~~providing satellite services~~ in the FSS, MSS and BSS;

2 To study and determine whether the current out-of-band limits on the FSS in Resolution 750 (Rev WRC-12) Table 1-1 are still appropriate taking into account updated information on NGSO satellite systems;

3 To study and develop sharing conditions between NGSO FSS systems operating in the bands listed in 1 above;

*further resolves*

to invite WRC-19 to consider the results of the above studies and take appropriate action,

*invites administrations*

to participate in the studies by submitting contributions to ITU-R.

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ATTACHMENT

**PROPOSAL FOR ADDITIONAL PRELIMINARY AGENDA ITEM AIMING AT DEVELOPING A REGULATORY FRAMEWORK FOR NGSO FSS SATELLITE SYSTEMS THAT MAY OPERATE IN THE 37.5-42.5 GHZ (SPACE-TO-EARTH) AND 42.5-43.5 GHZ, 49.2-50.2 GHZ AND 50.4-51.4 GHZ (EARTH-TO-SPACE) FREQUENCY BANDS**

**Subject:** Proposal for an Agenda Item for WRC-2019 aiming at developing a regulatory framework for NGSO FSS satellite systems that may operate in the 37.5-42.5 GHz (space-to-Earth) and 42.5-43.5 GHz, 49.2-50.2 GHz and 50.4-51.4 GHz (Earth-to-space) frequency bands

**Origin:** United States of America

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**Proposal:** To develop a regulatory framework that provides specific regulatory provisions for NGSO FSS satellite systems operating in the 37.5-42.5 GHz (space-to-Earth) and 42.5-43.5 GHz, 49.2-50.2 GHz and 50.4-51.4 GHz (Earth-to-space) frequency bands in accordance with Resolution [USA/10/NGSO V-BAND] (WRC-15).

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**Background/reason:** According to the current provisions of the Radio Regulations, NGSO systems operating in the frequency range from 37.5 to 51.4 GHz have to protect current and future GSO satellite networks operating in the same frequency range, according to No. 22.2, which creates considerable regulatory uncertainty to potential NGSO satellite service providers. Moreover, there are currently no mechanisms in the RR establishing coordination procedures applicable to NGSO systems operating in these frequency bands, such as application of No. 9.12. This also contributes to uncertainty among potential operators of NGSO satellite systems in these bands.

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**Radiocommunication services concerned:** FSS, MSS and BSS

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**Indication of possible difficulties:** None foreseen

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**Previous/ongoing studies on the issue:** Previous WRCs addressed similar issues in the 11/12/13/14 and 20/30 GHz bands.

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<b>Studies to be carried out by:</b> SG4	<b>with the participation of:</b>
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**ITU-R Study Groups concerned:** SG4

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**ITU resource implications, including financial implications (refer to CV126):** Minimal

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<b>Common regional proposal:</b> Yes/No	<b>Multicountry proposal:</b> Yes/No
	<b>Number of countries:</b>

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**Remarks**