IWG-3/018
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United States of America

DRAFT PREOPOSALS FOR THE WORK OF THE CONFERENCE

WRC-11 Agenda Item 1.11: to consider a primary allocation to the space research service (Earth-to-space) within the band 22.55-23.15, taking into account the results of ITU-R studies, in accordance with Resolution 753 (WRC-07)

Background Information:

To support the SRS missions in near Earth orbit, including missions in transit to the moon and at or near the moon, downlink (space-to-Earth) transmissions will operate in the 25.5-27.0 GHz SRS allocation. This 1.5 GHz wide downlink band will be used for both scientific data retrieval and voice/video communication with the Earth. However, there is a need for a companion uplink (Earth-to-space) band to provide the mission data, command and control links for these missions. Due to the potential for many concurrent exploration-related systems and the large bandwidth requirements of these systems, especially those supporting manned missions, it is envisioned that an uplink bandwidth of up to 600 MHz will be needed. Allocating sufficient primary space research service frequency spectrum in the 22.55-23.15 GHz band will provide the space exploration initiatives adequate uplink (Earth-to-space) bandwidth capacity in a band that is paired with the inter-satellite service and thus is a reasonable companion to the primary space research service 25.5-27.0 GHz space-to-Earth band.

The proposed allocation is in a portion of the ISS allocation 22.55-23.55 GHz. The part of the allocation above 23.15 GHz is in use by the HIBLEO-2/2FL satellite system which is Notified, and was brought into use some years ago, and is expected to be in operation for years to come.

Resolution **753 (WRC-07)** calls for sharing studies between SRS (Earth-to-space) and the fixed, inter-satellite and mobile services in the band 22.55-23.15 GHz to determine appropriate criteria which will provide for sharing between a new SRS (Earth-to-space) allocation and the existing services in the 22.55-23.15 GHz band. These sharing studies have been initiated in ITU-R Working Party 7B, the responsible group for CPM studies in support of WRC-11 agenda item 1.11.

Given the expected high e.i.r.p. to be associated with the intended application of the proposed Space Research Service, it is important to ensure that these unwanted emissions will not cause harmful interference to systems in the part of the ISS band above 23.15 GHz.

Proposal

USA/1.11/ISS-1 ADD

5.534 the use of the allocation to the Space Research Service in the band 22.55-23.15 shall be in accordance with the provisions of Resolution [ISS(WRC-11)]

USA/1.11/ISS-2 ADD

Resolution [ISS(WRC-11)]

Protection of the Inter Satellite Service in the band 23.15-23.55 GHz

The World Radio communication Service (Geneva, 2012)

considering

a) that the band 23.15-23.55 is in active use by the Inter Satellite Service (ISS);

b) that Earth-to-space transmissions of the Space Research Service in the band 22.55-23.15 GHz will require high power emissions;

c) that the emissions in b) could cause harmful interference to the satellite systems operating in the ISS allocation 23.15-23.55 GHz;

d) that the ISS links require a high level of availability;

e) that measures exist which can attenuate the out-of-band emissions of the SRS in the band above 23.15 GHz;

f) that protection requirements exist for the ISS links operating in the band above 23.15 GHz;

resolves

1. that SRS emissions in the band 22.55-23.15 GHz shall use the methodology in ITU-R Recommendation[ISS-PRO] to determine the level of interference into the ISS band above 23.15 GHz;

that the limit of such emissions shall not exceed a power density of XXX dBW/Hz in the ISS band above 23.15 GHz