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| **The 4th Meeting of the APT Conference Preparatory Group for WRC-23 (APG23-4)** | **APG23-4/INP-xx** |
| 15 – 20 August 2022, Bangkok, Thailand | xx August 2022 |

Thailand (Kingdom of)

**preliminary views on WRC-23 agenda item 1.13 and 9.1 Topic a**

**Agenda Item 1.13:**

*to consider a possible upgrade of the allocation of the frequency band 14.8-15.35 GHz to the space research service, in accordance with Resolution 661 (WRC-19);*

**1. Background**

The frequency band 14.8-15.35 GHz is currently allocated on a primary basis to the fixed and mobile services, and on a secondary basis to the space research service (SRS). Within the SRS, the band is expected to be used for high-speed direct downlinks from space science missions to a limited number of earth stations located globally. Additionally, the band is also currently used in two capacities by Data Relay Satellite (DRS) systems operated by multiple administrations. These uses include forward feeder uplinks from DRS earth stations to relay satellites in GSO orbit, as well as inter-satellite return links to relay data from non-GSO space science spacecraft (including crewed space vehicles and stations) through DRS satellites to the Earth.

The space research satellite requirements for use of the band are expected to continue to increase in the coming years as a result of increasing numbers of robotic science satellites and crewed vehicles, limited bandwidth and/or increasing congestion in other SRS bands, and increasing science mission data transport needs.

The purpose of this agenda item is to explore the feasibility of establishing a regulatory framework to provide for the operation of SRS systems in this band on a primary basis, consistent with not causing harmful interference to nor constraining the operation of systems operating in other primary services in the band.

**2. Preliminary Views**

Thailand does not oppose the upgrade of the SRS allocation from secondary to primary in the frequency band 14.8-15.35 GHz, subject to the condition that the upgrading allocation shall provide protection and not adversely affect incumbent services in the frequency band 14.8-15.35 GHz and adjacent bands.

**Agenda Item 9.1 Topic A:**

*In accordance with Resolution* ***657 (Rev.WRC-19)****, review the results of studies relating to the technical and operational characteristics, spectrum requirements and appropriate radio service designations for space weather sensors with a view to describing appropriate recognition and protection in the Radio Regulations without placing additional constraints on incumbent services;*

**1. Background**

Space weather refers to the physical processes occurring in the space environment that ultimately affects human activities on Earth and in space. Space weather is influenced by the X-ray, Ultraviolet (UV), high energic particles and strong solar wind generated by Coronal Mass Ejection (CME). Space weather observations are important for detecting and forecasting solar activity events that impact services critical to the economy, safety and security of administrations and their population. These observations are made from ground-based and space-based systems. Some of the sensors operate by receiving signals of opportunity, including, but not limited to, low-level natural emissions of the Sun, Earth’s atmosphere and other celestial bodies, and therefore may suffer harmful interference at levels which could be tolerated by other radio systems. However, no frequency bands have been documented in any manner in the Radio Regulations for space weather sensor applications.

Agenda item 9.1 topic a was therefore established with a view to describing appropriate recognition and protection of space weather sensors in the Radio Regulations without placing additional constraints on incumbent services.

**2. Preliminary Views**

Thailand supports an appropriate recognition of space weather sensors in the Radio Regulations with consideration given to the technical and operational characteristics, spectrum requirements, and protection without placing additional constraints on incumbent services.

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