ASIA-PACIFIC TELECOMMUNITY
The 5th Meeting of the APT Conference Preparatory Group for WRC-19 (APG19-5)
31 July – 6 August 2019, Tokyo, Japan

Document No: APG19-5/INP-xx
xx July 2019

Thailand

PROPOSAL FOR PRELIMINARY APT COMMON PROPOSALS ON WRC-19 AGENDA ITEMS 1.11, 1.12, 1.14 AND 1.15

Agenda Item 1.11:

"to take necessary actions, as appropriate, to facilitate global or regional harmonized frequency bands to support railway radiocommunication systems between train and trackside within existing mobile service allocations, in accordance with Resolution 236 (WRC-15)"

1. Background

Resolution **236 (WRC-15)** invites WRC-19, based on the results of ITU-R studies, to take necessary actions, as appropriate, to facilitate global or regional harmonized frequency bands, to the extent possible, for the implementation of railway radiocommunication systems between train and trackside (RSTT), within existing mobile service allocations.

Three methods have been proposed to satisfy this agenda item:

– Method A: No change to the RR except suppression of Resolution 236 (WRC-15);
– Method B: Add a new Resolution **[A111-METHOD B] (WRC-19)** specifying frequency ranges for RSTT and referencing the most recent version of Recommendation ITU-R M.[RSTT_FRQ] and consequently suppress the Resolution **236 (WRC-15)**;
– Method C: Add a new Resolution [B111-METHOD C] (WRC-19) without specifying frequency ranges for RSTT, while referencing the most recent version of Recommendation ITU-R M.[RSTT_FRQ] and consequently suppress the Resolution 236 (WRC-15).

2. Views and Proposals

Thailand supports to consider frequency bands (or parts thereof) within the tuning ranges of 138-174 MHz, 335.4-470 MHz, 873-915 MHz and 918-960 MHz, within the existing mobile service allocations, as parts of global and regional harmonized frequency bands in Region 3 to support RSTT.

Thailand is of the view that neither ITU-R Recommendations and/or Reports nor APT Recommendations and/or Reports have been developed to sufficiently facilitate global or regional harmonized frequency bands to support RSTT. Therefore, in order to satisfy WRC-19 agenda item 1.11, Thailand supports a WRC-19 Resolution to facilitate global or regional harmonized frequency bands to support RSTT within existing mobile service allocations.

Thailand is also of the view that the implementation of RSTT in the harmonized frequency bands shall not impose additional constraints on other primary services to which these frequency bands are already allocated.

Contact: Ms. Suppapol JAROONVANICHKUL Email: suppapol.j@nbtc.go.th
Mr. Supanath JUTHACHAROENWONG supanath.j@nbtc.go.th
Office of the NBTC, Thailand

Agenda Item 1.12:

"to consider possible global or regional harmonized frequency bands, to the maximum extent possible, for the implementation of evolving Intelligent Transport Systems (ITS) under existing mobile-service allocations, in accordance with Resolution 237 (WRC-15)"

1. Background

There is a need to consider harmonization of frequency bands for the implementation of evolving Intelligent Transport Systems (ITS).

Evolving ITS are being deployed to assist safe driving and to support transportation system efficiency and environmental sustainability. It is recognized that the frequency bands within existing mobile service allocations being used by evolving ITS may also be utilized by other applications and services.

Several ITU-R Reports and Recommendations have been developed in support of this agenda item, as listed in section 1/1.12/3.

ITU-R studies indicated that some administrations in each of the three Regions have designated the frequency band of 5 850-5 925 MHz, or parts thereof, for the deployment of evolving ITS. Recommendation ITU-R M.2121 recommends that several frequency bands within each Region, in whole or in part, be used for current and future ITS applications.

Three methods have been proposed to satisfy this agenda item:

- Method A: No change to the Radio Regulations because ITS continue to operate within existing mobile service allocations and the required harmonization of frequencies for ITS can be achieved through ITU-R Recommendations and Reports.
- Method B: No change to the Table of Frequency Allocations in the Radio Regulations, and add a new WRC Resolution to encourage administrations to use 5 850-5 925 MHz, or parts thereof, as global harmonized evolving ITS frequency bands. Other harmonized frequency band(s) for evolving ITS applications refer to the most recent version of Recommendation ITU-R M.2121.
- Method C: No change to the Table of Frequency Allocations in the Radio Regulations, and add a new WRC Resolution to encourage administrations to use globally and regionally harmonized frequency bands for evolving ITS applications by referring to the most recent version of Recommendation ITU-R M.2121.

For all Methods, Resolution **237 (WRC-15)** should be suppressed.

2. Views and Proposals

Thailand supports harmonization of frequency bands in existing mobile service allocations for the implementation of evolving ITS through ITU-R Recommendations (including Recommendation ITU-R M.2121) and/or Reports without the need to change the Radio Regulations. Therefore, Thailand supports Method A of the CPM report.

Thailand is also of the view that the use of frequency bands by ITS should not impose additional constraints on other primary services to which these frequency bands are already allocated and should take appropriate account of the potential interference from other primary services, including FSS earth station uplinks.

Agenda Item 1.14:
"to consider, on the basis of ITU-R studies in accordance with Resolution 160 (WRC-15), appropriate regulatory actions for high-altitude platform stations (HAPS), within existing fixed-service allocations"

1. Background

The technological innovations and the growing urgency to expand the availability of broadband led to a review of the current regulatory environment for delivery platforms such as High Altitude Platform Stations (HAPS). Stations operating in the stratosphere are high enough to provide service to a large area. Recent test deployments of stations delivering broadband from approximately 20 km above ground have demonstrated their maturity to provide connectivity to underserved communities with minimal ground-level infrastructure.

More options for broadband delivery are better, especially for countries with less-developed infrastructures. HAPS can drive broadband rollout by providing an additional platform which provides service that could augment the capacity of other providers using innovative and easily deployable platforms positioned in the upper atmosphere. WRC-15 adopted Resolution 160 to study how to facilitate access to global broadband applications delivered by HAPS in the fixed service.

The aim of this agenda item is to consider additional spectrum needs for gateway and fixed terminal links for HAPS to provide broadband connectivity in the fixed service pursuant to Resolution 160 (Facilitating access to broadband applications delivered by high altitude platform stations).

Five methods have been developed to satisfy this agenda item.

2. Views and Proposals

For the bands that are designated for use by HAPS globally (47.2-47.5/47.9-48.2 GHz) and those that may be used by HAPS in some administrations including Thailand (27.9-28.2 GHz and 31-31.3 GHz), Thailand does not support Method C.

Agenda Item 1.15:

"to consider identification of frequency bands for use by administrations for the land-mobile and fixed services applications operating in the frequency range 275-450 GHz, in accordance with Resolution 767 (WRC-15);"

1. Background

This agenda item seeks to identify spectrum for land mobile service (LMS) and fixed service (FS) applications in the 275-450 GHz frequency range while maintaining protection of the existing Earth exploration-satellite service (EESS) (passive) and radio astronomy service (RAS) applications identified in RR No. **5.565**. A PDN Report ITU-R SM.[275-450GHz SHARING] has been developed. This Report contains the results of compatibility studies between LMS, FS applications and both EESS (passive), RAS in the 275-450 GHz band based on the technical information available on LMS and FS characteristics in Reports ITU-R M.2417-0 and F.2416-0, for the purpose of identifying spectrum that can be used by LMS/FS applications without the need for regulatory restrictions.
Compatibility studies between the RAS and LMS/FS applications concluded that atmospheric attenuation independent of free-space losses at 275-450 GHz is not sufficient to provide compatibility between FS and RAS operations in the absence of other considerations. Separation distances and/or avoidance angles between RAS stations and FS stations should be considered depending on the deployment environment of FS stations.

2. Views and Proposals

Thailand supports the identification of the following frequency bands for fixed and mobile service applications in the range 275-450 GHz while maintaining the protection of the passive services identified in RR No. 5.565:

- 275-296 GHz
- 306-313 GHz
- 318-333 GHz
- 356-450 GHz

Thailand therefore supports Method E in the CPM report.

R16-WRC19-C-5418!
A15!MSW-E.docx