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| **The 5th Meeting of the APT Conference Preparatory**  **Group for WRC-19 (APG19-5)** | **APG19-5/OUT-27**  **(Rev.1)** |
| 31 July – 6 August 2019, Tokyo, Japan | 5 August 2019 |

Working Party 1

**APT VIEW AND PRELIMINARY APT COMMON PROPOSAL**

**on WRC-19 agenda item 1.12**

**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**

Several ITU-R Reports and Recommendations have been developed in support of agenda item 1.12. 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. Report ITU-R M.2445 addresses overall ITS usage in various countries, and Report ITU-R M.2444 provides examples of arrangements for ITS deployments. In AWG, APT Report on “Usage of Intelligent Transportation Systems in APT Countries” (APT/AWG/REP-18 (Rev.2)) was published.

Relevant ITU-R Reports/Recommendations, APT Reports/Recommendations and ongoing studies are as follows:

* Recommendation ITU-R M.1452-2, “Millimetre wave radiocommunication systems for ITS applications”
* Recommendation ITU-R M.1453-2, “Intelligent Transport Systems – Dedicated Short Range Communications at 5.8 GHz”
* Recommendation ITU-R M.1890-1, “Operational radiocommunication objectives and requirements for advanced Intelligent Transport Systems”
* Draft revision of Recommendation ITU-R M.2084-0, “Radio interface standards of vehicle-to-vehicle and vehicle-to-infrastructure two-way communications for intelligent transport systems applications” ([Document 5/149](https://www.itu.int/md/R15-SG05-C-0149/en))
* Recommendation ITU-R M.2121, “Harmonization of frequency bands for Intelligent Transport Systems in the mobile service”
* Report ITU-R M.2228-1, “Advanced Intelligent Transport Systems (ITS) radiocommunications”
* Report ITU-R M.2441, “Emerging usage of the terrestrial component of International Mobile Telecommunication (IMT)”
* Report ITU-R M.2444, "Examples of Arrangements for Intelligent Transport Systems deployments under the mobile service"
* Report ITU-R M.2445, “Intelligent transport systems (ITS) usage”
* APT Report on “Usage of Intelligent Transportation Systems in APT Countries” (APT/AWG/REP-18 (Rev.2))

In the Report of CPM19-2, 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. Documents**

− Input Documents APG19-5/INP-16 (NZL), INP-24 (BGD), INP-42 (AUS), INP-49 (INS), INP-75 (J, CHN, MLA), INP-102 (THA), INP-133 (IND)

− Information Documents APG19-5/INF-02 (ICAO), INF-03 (IARU), INF-18 (CEPT), INF-19 (ATU), INF-20 (CITEL), INF-22 (RCC)

**3. Summary of discussions**

**3.1 Summary of APT Members’ views**

**3.1.1 New Zealand -** **Document APG19-5/INP-16**

New Zealand is of the view that the new generation of co-operative ITS should operate within those frequency bands that are already being adopted for ITS use on a regional (or sub-regional) basis within existing mobile service allocations, or an immediately adjacent frequency band that is also appropriate for such use. For this reason, New Zealand supports the use of the frequency band 5 850-5 925 MHz, or parts thereof, when deploying ITS applications.

New Zealand is also of the view that Agenda item 1.12 can be satisfied through non-mandatory ITU-R Recommendation and/or Report without any changes to the Radio Regulations. Therefore, New Zealand supports Method A as outlined in the CPM Report.

**3.1.2 Bangladesh (People’s Republic of) - Document APG19-5/INP-24**

In order to possible harmonization of frequency bands in existing mobile-service allocations for the implementation of evolving ITS, Bangladesh administration supports method A of the CPM report to WRC 2019.

**3.1.3 Australia - Document APG19-5/INP-42**

Australia supports Method A in the CPM Report (no change to the Radio Regulations).

Selection of preferred ITS technology is solely a matter for national administrations, is beyond the scope of Resolution **237 (WRC-15)**, and should not be addressed in any Resolution or ITU‑R Recommendation.

Australia proposes a Preliminary APT Common Proposal for NOC.

**3.1.4 Indonesia (Republic of) - Document APG19-5/INP-49**

Indonesia, proposes Views and Proposals for the draft PACP on agenda item 1.12 as follows, for the consideration by APG19-5.

**3.1.4.1 Views**

Indonesia is of the view that:

1. **Method C** is supported to satisfy Agenda Item 1.12 of WRC-19 which is 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. Consequently, suppress Resolution 237 (WRC-15);
2. 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;
3. Evolving ITS should not be restricted to, nor exclude, any particular evolving ITS technology including LTE based V2X and its evolution technologies.

**3.1.4.2 Proposals for the PACP on Agenda Item 1.12**

The APT Members support to establish a new WRC-19 Resolution in order to satisfy the Agenda Item 1.12 of WRC-19, for encouraging administrations to use globally and regionally harmonized frequency bands for evolving ITS to the extent possible, by referring to the most recent version of Recommendation ITU-R M.2121. 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. The current and future ITU-R studies on evolving ITS should not be restricted to, nor exclude, any particular evolving ITS technology including LTE based V2X and its evolution technologies.

**3.1.5 Japan, People’s Republic of China and Malaysia - Document APG19-5/INP-75**

Japan, China and Malaysia support to add a new WRC Resolution to encourage administrations to seek globally and regionally harmonized frequency bands for evolving ITS applications in order to accelerate the development of ITS systems and technologies to fully realize the development of connected and automated vehicles driving by referring to the most recent version of Recommendation ITU-R M.2121 without changing the Table of Frequency Allocations in the Radio Regulations.

Japan, China and Malaysia are of the view that Method C of the CPM Report with associated Resolution will achieve future global or regional harmonized frequency for ITS applications. No change in the RR Article **5** and suppression of Resolution **237 (WRC-15)**.

**3.1.6 Thailand - Document APG19-5/INP-102**

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.

**3.1.7 India (Republic of) - Document APG19-5/INP-133**

India is of the view that the new generation of co-operative ITS should operate within those frequency bands that are already being adopted for ITS use on a regional (or sub-regional) basis within existing mobile service allocations, or an immediately adjacent frequency band that is also appropriate for such use. For this reason, India supports the use of the frequency band 5 850-5 925 MHz, or parts thereof, when deploying ITS applications.

Therefore, India supports Method B as outlined in the CPM text for WRC-19 Agenda item 1.12.

**3.2 Summary of issues raised during the meeting**

Some APT Members are of the view that harmonization of spectrum use for ITS can be achieved through ITU-R Recommendations and Reports (such as Recommendation ITU-R M.2121).

Some APT Members support a new WRC Resolution to encourage administrations to ensure regionally and globally harmonized frequency bands are used for evolving ITS applications, by referring to the most recent version of Recommendation ITU-R M.2121.

**4. APT View(s)**

1. APT Members are of the view that there are needs for harmonization of spectrum use in existing mobile service allocations for evolving ITS. APT Members support possible harmonization of frequency bands in existing mobile service allocations for the implementation of evolving ITS. APT Members support the consideration of the frequency band 5 850-5 925 MHz, or parts thereof, as global harmonized frequency band for evolving ITS. APT Members also support the consideration of examples of ITS frequency bands in current use, as listed in the Annex of Recommendation ITU-R M.2121 for regional harmonized ITS frequency bands.

2. APT Members agreed that no changes to the Table of Frequency Allocations are required for harmonization of spectrum use for ITS.

3. APT Members are also of the view that evolving ITS should not be restricted to, nor exclude, any particular evolving ITS technology including LTE based V2X and its evolution technologies.

4. APT Members are also of the view that the use of frequency bands by ITS should not adversely affect other primary services to which these frequency bands are allocated should not claim protection from other primary services including FSS earth station uplinks.

5. APT Members support the suppression of Resolution **237** (**WRC-15**).

**5. Preliminary APT Common Proposal(s)**

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