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|  | ASIA-PACIFIC TELECOMMUNITY | Document No: |
| **The 4th Meeting of the APT Conference Preparatory****Group for WRC-19 (APG19-4)** | **APG19-4/OUT-16** |
| 7 – 12 January 2019, Busan, Republic of Korea | 12 January 2019 |

Working Party 1

**PRELIMINARY VIEWs 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**

As the responsible group of WRC-19 agenda item 1.12 in ITU-R, Working Party 5A (WP 5A) had two meetings since APG 19-3 meeting. WP 5A developed the draft CPM text for this agenda item. WP 5A further developed a draft new Recommendation ITU-R M.[ITS\_FRQ] dealing with harmonized frequency bands. It was agreed by ITU-R Study Group 5 (SG 5) for approval using the procedure of simultaneous adoption and approval (PSAA). WP 5A also developed a draft new Report ITU-R M.[ITS USAGE] covering overall ITS usage in various countries and a draft new Report ITU-R M.[ITS\_ARR] describing examples of arrangements for ITS deployments. These draft new reports were approved by SG5. 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”, 2012.
* Recommendation ITU-R M.1453-2, “Intelligent Transport Systems – Dedicated Short Range Communications at 5.8 GHz”, 2005.
* Draft revision of Recommendation ITU-R M.1890-0, “Operational radiocommunication objectives and requirements for advanced Intelligent Transport Systems”
* Preliminary draft revision of Recommendation ITU-R M.2084-0, “Radio interface standards of vehicle-to-vehicle and vehicle-to-infrastructure communications for intelligent transport systems applications” ([Document 5A/976 Annex 22](https://www.itu.int/dms_pub/itu-r/md/15/wp5a/c/R15-WP5A-C-0976%21N22%21MSW-E.docx))
* Draft new Recommendation ITU-R M.[ITS\_FRQ], “Harmonization of frequency bands for Intelligent Transport Systems in the mobile service”
* Report ITU-R M.2228, “Advanced Intelligent Transport Systems (ITS) radiocommunications”, 2012.
* 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 Draft CPM Report, three methods have been proposed to satisfy this agenda item:

* Method A – No change to the Radio Regulations
* Method B – Add a new WRC Resolution
* Method C – Add a new WRC Resolution and non-mandatory reference to ITU-R Recommendation

All methods above request to suppress Resolution **237 (WRC-15).**

**2. Documents**

* Input Documents: APG19-4/INP-06 (AWG), INP-15 (AUS), INP-22 (NZL), INP-29 (THA), INP-59 (J), INP-73 (KOR), INP-100 (CHN), INP-117 (IND)
* Information Documents: APG19-4/INF-02 (WMO), INF-03 (IARU), INF-04 (ICAO), INF-22 (CITEL), INF-23 (CEPT), INF-24 (RCC), APG19-4/INP-09R1 (Chairman, APG-19)

**3. Summary of discussions**

**3.1 Summary of APT Members’ views**

**3.1.1 Australia -** **Document APG19-4/INP-15**

Australia supports harmonisation of frequency bands in existing mobile service allocations for the implementation of evolving ITS. In January 2018, Australia published its decision to make the band 5 855-5 925 MHz available on a non-exclusive nationwide basis for ITS.

Consistent with Method A of the Draft CPM Report, Australia supports no change to the Radio Regulations to satisfy this agenda item, and no new WRC Resolution. Spectrum harmonisation is best achieved by development of ITU-R Recommendations, supported by relevant new and/or revised ITU-R Reports.

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

**3.1.2 New Zealand -** **Document APG19-4/INP-22**

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 draft CPM text for WRC-19 Agenda item 1.12.

**3.1.3 Thailand - Document APG19-4/INP-29**

Thailand supports possible harmonization of frequency bands in existing mobile-service allocations for the implementation of evolving ITS.

Thailand is also of the view that:

– Evolving ITS should not be restricted to, nor exclude, any particular evolving ITS technology.

– 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.

Thailand prefers to specify harmonized frequency bands explicitly in an ITU-R recommendation. Thailand currently has no preference over whether the ITU-R recommendation is referenced in a WRC Resolution or not.

**3.1.4 Japan -** **Document APG19-4/INP-59**

Japan supports ongoing studies of ITS applications in ITU-R toward possible global or regional harmonized frequency bands, including frequency bands currently using for ITS applications in Japan.

**3.1.5 Republic of Korea - Document APG19-4/INP-73**

Republic of Korea proposes modifications to the APT Preliminary Views adopted at the APG19-3 meeting as stated below:

“APT Members support studies under Resolution **237 (WRC-15)** toward possible harmonization of frequency bands in existing mobile-service allocations for the implementation of evolving Intelligent Transport Systems (ITS).

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.

− 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.

− Global/regional harmonization of frequencies for evolving ITS can be achieved through ITU-R Recommendations/Reports and there is no need to change the Radio Regulations except suppression of Resolution **237 (WRC-15)**.

− The frequency bands for global or regional harmonized frequency band for evolving ITS is recommended to use 5 855-5 925 MHz.”

**3.1.6 People’s Republic of China - Document APG19-4/INP-100**

China's preliminary views are as follows:

1. China supports the method of adding one new WRC Resolution to satisfy WRC-19 agenda item 1.12 for global or regional harmonized frequency bands of evolving Intelligent Transport Systems, and consequently suppress the Resolution **237 (WRC-15)**.
2. China supports to consider 5 850-5 925MHz or part of this frequency range as global harmonized frequency band for evolving Intelligent Transport Systems.
3. China supports that LTE-V2X and its evolution technologies should be considered within the scope of WRC-19 Agenda Item 1.12 as the evolving ITS technologies, and any harmonized frequency bands for evolving ITS should not be restricted to, nor exclude, any particular evolving ITS technologies.

**3.1.7 Republic of India** - **Document APG19-4/INP-117**

Evolving ITS should not be limited to any particular ITS technology including LTE based V2X and its evolution technologies. 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, in particular while considering the frequency band 5 850-5 925MHz a regional (or sub-regional) basis, could also be used by the new generation of co-operative ITS.

India has already allocated 5875-5925 MHz for ITS services. India supports Method A of no change to the Radio Regulations under this agenda item and further proposes to satisfy this agenda item through ITU-R Recommendations and/or Reports.

**Method A – No change to the Radio Regulations and suppress Resolution 237 (WRC-15)**

No change to the Radio Regulations other than to suppress Resolution **237 (WRC‑15)**.

ITS operate within existing mobile service allocations. Harmonization of frequencies for ITS pertaining to the exchange of information to improve traffic management and to assist driving safety can be achieved through the course of ITU-R Study Group work by applicable ITU‑R Recommendations and/or Reports (e.g., Recommendation ITU-R M.[ITS\_FRQ]).

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

It is noted that the draft new Recommendation ITU-R M.[ITS\_FRQ] has *recommends* part dealing with the frequency band 5 850-5 925 MHz, or parts thereof, and examples of ITS frequency bands in current use. The draft new Recommendation ITU-R M.[ITS\_FRQ] has been considered in drafting the APT Preliminary View for this agenda item.

It is noted that WP 5A studies that are directly related to agenda item 1.12 have been completed. APT Members’ further consideration of APT Preliminary Views in APG 19-5 may be affected by the results of CPM19-2.

It is noted that the consideration of Methods to satisfy the agenda item is important for the preparation of APG 19-5 meeting and, if consensus can be reached, possible Preliminary APT Common Proposal to WRC-19 can be developed.

An issue that may be considered to facilitate APT Members’ further consideration of Methods to satisfy the agenda item in APG 19-5 is the preferences of APT Members regarding how to provide framework for harmonization for ITS, i.e. by ITU-R Recommendations/Reports and/or a WRC Resolution. In case of a new WRC Resolution, whether to provide harmonized frequency bands in the Resolution explicitly, or to provide harmonized frequency bands through non-mandatory reference to ITU-R Recommendation.

**4. APT Preliminary Views**

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.[ITS\_FRQ] for regional harmonized ITS frequency bands.

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

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.
* 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.

**5. Other Views**

No consensus was reached regarding the Method to satisfy the agenda item.

Some APT Members support the Method of no changes to the Radio Regulations under this agenda item and satisfy this agenda item through ITU-R Recommendation and/or Report.

Some APT Members support methods of adding one new WRC Resolution specifying harmonized frequency bands of evolving ITS or adding one new WRC Resolution providing harmonized frequency bands including through non-mandatory reference to ITU-R recommendation to satisfy this agenda item.

Some APT Members prefer to specify harmonized frequency bands explicitly in an ITU-R Recommendation, and currently have no preference over whether the ITU-R Recommendation is referenced in a WRC Resolution or not.

**6. Issues for Consideration at Next APG Meeting**

APT Members are encouraged to consider Methods to satisfy agenda item 1.12, including the outcomes of CPM 19-2, and develop possible Preliminary APT Common Proposal to WRC-19.

**7. Views from Other Organisations**

**7.1 Regional Groups**

**7.1.1 ASMG** - **Document APG19-4/INP-09(Rev.1)**

Follow-up studies for this agenda item, and request administrations to consider the possibility of identifying appropriate frequency bands for these systems within the current allocations of the mobile service.

Work on developing a vision for the use of ITS in Arab administrations and study the spectrum needs of these systems.

Conduct a questionnaire for Arab administrations about the candidate bands to be used for ITS from the bands contained in draft Recommendation ITU- R.M. [ITS\_FRQ].

**7.1.2 ATU** - **Document APG19-4/INP-09(Rev.1)**

ATU supports Method Cwhich entails a new WRC Resolution to encourage administrations to use globally and regionally harmonized frequency bands for ITS applications by referring to the most recent version of Recommendation ITU-R M.[ITS\_FRQ. Suppress Resolution **237 (WRC-15)**. This method provides a regulatory framework for worldwide or regional harmonization for ITS applications through a new WRC Resolution and the most recent version of Recommendation ITU‑R M.[ITS\_FRQ].

**7.1.3 CEPT** - **Document APG19-4/INF-23**

**Preliminary CEPT position:**

CEPT is of the view that its existing regional harmonisation measures for ITS in the band 5 855-5 925 MHz are sufficient and no changes to the Radio Regulations are required in response to WRC-19 agenda item 1.12 except the suppression of Resolution **237 (WRC-15)**. CEPT is developing a revision of its existing harmonisation framework for ITS around 63-64 GHz.

CEPT is of the view that harmonisation measures for ITS at ITU-R level can be achieved through the course of ITU-R study group work by applicable ITU-R Recommendations (e.g. Recommendation ITU-R M.[ITS\_FRQ]).

CEPT is also of the view that harmonisation of ITS under AI 1.12 is limited to the exchange of information to improve traffic management and to assist driving safety.

In addition, CEPT is of the view that Road tolling (also known as Electronic Toll Collection (ETC)) in 5 795-5 815 MHz is not part of agenda item 1.12.

**7.1.4 CITEL** - **Document APG19-4/INF-22**

No Change to the regulations. Identification of spectrum for applications to be addressed via ITU reports and recommendations.

**7.1.5 RCC** - **Document APG19-4/INF-24**

The RCC Administrations consider that there is no need to modify Radio Regulations within this agenda item (Method A).

The RCC Administrations support harmonization of frequency bands for evolving ITS at global and regional levels within existing mobile service allocations through the development of ITU-R Recommendations and Reports

The RCC Administrations are of the view that harmonizing the use of frequency bands for evolving ITS shall not impose additional constraints on services to which these frequency bands are allocated.

**7.2 International Organisations**

**7.2.1 ICAO** - **Document APG19-4/INF-04**

To ensure, on the basis of agreed ITU-R studies, that any regulatory actions within existing mobile service bands do not impact existing aeronautical systems operating in accordance with the Radio Regulations.

Ensure that any reference to “existing mobile-service bands” applies only to existing frequency bands where the land mobile service is allowed (i.e., does not apply to bands that are allocated for example only to the aeronautical mobile service).

**7.2.2 WMO - Document APG19-4/INF-02**

Since no specific frequency bands have been currently proposed for study, WMO does not have a specific concern on this agenda item. Consideration of frequency bands used for meteorological operations would increase WMO concerns.

**7.2.3 IARU** - **Document APG19-4/INF-03**

The IARU is of the view that existing and future amateur use in this band should be protected with special attention to the bands 5 760 to 5 765 MHz and 5 830 to 5 850 MHz.

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