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| APTlogogreen3 | ASIA-PACIFIC TELECOMMUNITY | **Document No:** |
| **The 3rd Meeting of the APT Conference Preparatory Group for WRC-19 (APG19-3)** | **APG19-3/OUT-09** |
| 12 – 16 March 2018, Perth, Australia | **16 March 2018** |

Working Party 2

**PRELIMINARY VIEWs on WRC-19 agenda item 1.16**

**Agenda Item 1.16:**

*to consider issues related to wireless access systems, including radio local area networks (WAS/RLAN), in the frequency bands between 5 150 MHz and 5 925 MHz, and take the appropriate regulatory actions, including additional spectrum allocations to the mobile service, in accordance with Resolution* ***239 (WRC-15)****.*

**1. Background**

Resolution **239 (WRC 15),** calls for ITU-R to study WAS/RLAN technical characteristics and operational requirements in the 5 GHz frequency range. It also calls for ITU-R to perform sharing and compatibility studies between WAS/RLAN applications and incumbent services in the frequency bands 5 150-5 350 MHz, 5 350-5 470 MHz, 5 725-5 850 MHz and 5 850-5 925 MHz while ensuring the protection of incumbent services including their current and planned use, to consider enabling outdoor WAS/RLAN operations in the band 5 150-5 350 MHz, and potential mobile service allocations to accommodate WAS/RLAN operations in the 5 350-5 470 MHz and 5 725-5 850 MHz frequency ranges, and identify potential WAS/RLAN use in 5 850-5 925 MHz frequency range.

At the latest ITU-R WP5A meeting, the draft CPM text and the working documents on RLAN sharing were further developed.

The working documents towards a preliminary draft new Report ITU-R M.[RLAN SHARING] has been divided into 5 document, each of which addresses one frequency band. The documents addressing 5 250-5 350 MHz, 5 350-5 470 MHz and 5 725-5 850 MHz bands almost reached final agreements. The major difficulties in the document 5 150 -5 250 MHz band are the sharing studies of MSS feeder links versus WAS/RLAN and aeronautical radionavigation systems versus WAS/RLAN.

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

* Recommendation ITU-R M.1450 - Characteristics of broadband radio local area networks
* Recommendation ITU-R M.1739 - Protection criteria for wireless access systems, including radio local area networks, operating in the mobile service in accordance with Resolution 229 (WRC-03) in the bands 5 150-5 250 MHz, 5 250-5 350 MHz and 5 470-5 725 MHz
* Recommendation ITU-R M.1652 - Dynamic frequency selection in wireless access systems including radio local area networks for the purpose of protecting the radiodetermination service in the 5 GHz band
* Annexes 10, 11, 21-27 to Working Party 5A Chairman’s Report (Doc. 5A/650).

**2. Documents**

* Input Documents: APG19-3/INP-15 (IND), INP-22 (KOR), INP-29Rev.1 (IRN), INP-35 (NZL), INP-42 (AUS), INP-50 (J), INP-66 (SNG), INP-75 (MLA), INP-79(INS), INP-83 (VTN), INP-87 (CHN), INP-97 (BGD)
* Information Documents: APG19-3/INF-06 (CEPT), INF-08Rev.1 (CITEL), INF-09 (IARU)

**3. Summary of Discussions**

**3.1 Summary of APT Members’ view**

**3.1.1 India** - **Document APG19-3/INP-15**

India supports NOC to the Radio Regulations for 5850-5925 MHz and is of the view that detailed and thorough examination, with identification of possible mitigation techniques if necessary, should be performed with respect to technical compatibility of WAS/RLAN with existing and planned ITS systems in this band.

**3.1.2 Korea** - **Document APG19-3/INP-22**

The Administration of Korea proposes modifications to the APT Preliminary View adopted as at the APG19-2 meeting, as stated below:

“APT Members support studies being conducted in ITU-R in accordance with Resolution **239 (WRC-15).**

* APT Members are of the view that the protection of incumbent services including their current and planned use in the frequency bands 5 150-5 350 MHz, 5 350-5 470 MHz, 5 725-5 850 MHz and 5 850-5 925 MHz should be ensured, without any unacceptable constraints on these services.
* APT Members support no change to the RR in the band 5 350-5 470 MHz for the use of WAS/RLAN to protect incumbent services.
* APT Members support the worldwide use of the band 5 725-5 850 MHz for mobile service taking into account RR No.5.453.”

**3.1.3 Iran** - **Document APG19-3/INP-29Rev.1**

This administration support ITU-R studies being conducted in ITU-R in accordance with Resolution 239 (WRC-15).

This administration is of the view that the protection of incumbent services including their current and planned use in the frequency bands 5 150-5 250 MHz and 5 725-5 850 MHz should be ensured, without any unacceptable constraints on these services.

**3.1.4 New Zealand** - **Document APG19-3/INP-35**

New Zealand supports the ITU-R studies undertaken in accordance with Resolution 239 (WRC-15) as this work could potentially enable a contiguous block of spectrum in the 5 GHz band for the implementation of wireless access systems, including radio local area networks (RLAN).

New Zealand also supports the review of existing regulatory framework applicable to the bands 5 150–5 350 MHz as contained in Resolution 229 (Rev. WRC-12).

New Zealand is of the view that the possible use of 5 875–5 925 MHz, or parts thereof, for RLAN purpose should be thoroughly investigated for its technical compatibility and interoperability with respect to Intelligent Transport System (WRC-19 Agenda item 1.12).

**3.1.5 Australia -** **Document APG19-3/INP-42**

Australia supports Method A, no change, in the frequency bands 5 250-5 350 MHz, 5 350 5 470 MHz, 5 725-5 850 MHz and 5 850-5 925 MHz. Sharing and compatibility studies have shown that no regulatory actions are required in these frequency ranges.

Australia has a preference for Method A, no change, in the frequency range 5 150-5 250 MHz unless sharing and compatibility studies conclude that regulatory action to modify Resolution 229 (Rev.WRC-12) in the frequency range 5 150-5 250 MHz continues to ensure protection of incumbent services in accordance with invites ITU-R b) of Resolution 239 (WRC-15).

**3.1.6 Japan -** **Document APG19-3/INP-50**

Japan is of the view that existing services should be protected adequately in all the frequency ranges to be considered in this agenda item.

Japan supports sharing and compatibility studies being conducted in ITU-R with a view to enabling outdoor WAS/RLANs operations in the frequency band 5 150- 5 250 MHz including possible associated conditions to protect the existing services.

Japan also supports to modify the Radio Regulations in the frequency band 5 150- 5 250 MHz in this regard.

**3.1.7 Singapore -** **Document APG19-3/INP-66**

Singapore supports NOC to the Radio Regulations for 5850-5925 MHz and is of the view that detailed and thorough examination, with identification of possible mitigation techniques if necessary, should be performed with respect to the technical compatibility of WAS/RLAN with existing and planned services, including ITS systems, in this band.

**3.1.8 Malaysia -** **Document APG19-3/INP-75**

In Malaysia, the frequency band 5 150-5 250 MHz is allowed for indoor use of WAS/RLAN only.

Malaysia is of the view that WAS/RLAN for outdoor operations may be implemented in the frequency band of 5 150-5 250 MHz, provided that studies conducted by ITU-R show that sharing and compatibility with existing services can be achieved and that there should not be constraint imposed to existing services.

**3.1.9 Indonesia -** **Document APG19-3/INP-79**

Indonesia is of the view to follow up the progress studies in WAS/RLAN technical characteristics and operational requirements in the 5 GHz frequency range, including regulatory and procedural consideration, while ensuring the protection of incumbent services including their current and planned use. Indonesia also has not yet decided to choose the method to satisfy the agenda of this item until the relevant study is finished.

**3.1.10 Viet Nam -** **Document APG19-3/INP-83**

Viet Nam supports studies being conducted in ITU-R in accordance with Resolution 239 (WRC-15).

Viet Nam supports the worldwide use of the band 5 725-5 850 MHz for mobile service taking into account RR No.5.453.

Viet Nam is of the view that the possible use of 5 875–5 925 MHz for RLAN should be thoroughly investigated for its technical compatibility and interoperability with respect to Intelligent Transport System in WRC-19 Agenda item 1.12.

**3.1.11 China -** **Document APG19-3/INP-87**

Unless the mitigation techniques can be shown to provide co-existence with existing services, China does not support relaxing the access conditions applicable to WAS/RLANs in the 5 150-5 350 MHz band.

Since there are still no feasible mitigation techniques available to ensure sharing between WAS/RLAN and incumbent EESS (active), Radiolocation and Radionavigation services, China does not support any new allocation to the mobile service in the frequency band 5 350-5 470 MHz with a view to accommodate WAS/RLAN use.

The protection of incumbent services including their current and planned use in the frequency band 5 850-5 925 MHz should be ensured, without any unacceptable constraints on these services.

**3.1.12 Bangladesh -** **Document APG19-3/INP-97**

Bangladesh supports ITU-R sharing and compatibility studies, and subject to study conclusions, identification of appropriate regulatory actions to address the considerable growth and demand for wireless access systems, including radio local area networks (WAS/RLAN) in the frequency ranges identified in Resolution 239 (WRC-15) ensuring adequate protection of incumbent services.

**3.2 Summary of key points raised during the meeting**

During the drafting group sessions, some issues have been raised by APT Members as below:

* In the “Background” section, some Members consider that the CPM text should not be included in this section at this meeting. With a short discussion, the meeting agreed to remove the relevant text.
* In the “Summary of APT Members’ view” subsection, it was proposed to add some additional text before the quotation mark to make it clearer to the reader if the views were provided in the form of “track-changes” to APT Preliminary View adopted at previous APG meeting. The meeting agreed this additional text.
* In the “APT Preliminary View(s)” section, the meeting agreed to keep the two APT Preliminary Views developed at previous APG meeting/
* In the “Other Views from APT Members” section, it was proposed to categorize these views in different frequency bands. The meeting agreed this categorization and developed 5 bullets based on views from APT Members.

**4.** **APT Preliminary View(s)[[1]](#footnote-1)**

* APT members support studies being conducted in ITU-R in accordance with Resolution **239 (WRC-15).**
* APT members are of the view that the protection of incumbent services including their current and planned use in the frequency bands 5 150-5 350 MHz, 5 350-5 470 MHz, 5 725-5 850 MHz and 5 850-5 925 MHz should be ensured, without any unacceptable constraints on these services.
* In the frequency band 5 350-5 470 MHz, APT Members support NOC to the Radio Regulations for the use of WAS/RLAN to protect incumbent services.

**5. Other Views from APT Members**

* In the frequency band 5 150-5 250 MHz, some APT Members have a preference for Method A, no change, unless sharing and compatibility studies conclude that regulatory action to modify Resolution **229 (Rev.WRC-12)** in the frequency band continues to ensure protection of incumbent services in accordance with invites ITU-R b) of Resolution **239 (WRC-15)**, while some other APT Members support sharing and compatibility studies being conducted in ITU-R with a view to enabling outdoor WAS/RLANs operations in this frequency band and to modify the Radio Regulations in this frequency band with associated conditions to protect the existing services.
* In the frequency band 5 250-5 350 MHz, some APT Members support NOC to the Radio Regulations.
* In the frequency band 5 725-5 850 MHz, some APT Members support NOC to the Radio Regulations, while some other APT Members support the worldwide use of the band for mobile service taking into account RR No.5.453.
* In the frequency band 5 850-5 925 MHz, some APT Members support NOC to the Radio Regulations.

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

* APT Members are encouraged to contribute to the next APG meeting on the Agenda Item 1.16, taking into account the outcome of APG19-3 and the results of ITU-R studies.

**7. Views from Other Organisations**

**7.1 Regional Groups**

**7.1.1 ASMG** - **Document APG19-2/INF-01**

* Follow-up studies.
* Do not support the identification of new bands for WAS / RLAN, unless the studies show possibility of coexistence with current services.
* Ensure protection of the existing services without adding any new restrictions on them.

**7.1.2 ATU - Document APG19-2/INF-07**

* No preliminary position on this agenda item yet.

**7.1.3 CEPT - Document APG19-3/INF-06**

Preliminary CEPT position:

* In the 5 150-5 250 MHz band, CEPT notes that an outdoor relaxation to WAS/RLAN would affect the operation of the MSS feeder links, aeronautical radionavigation and aeronautical telemetry (see No 5.446C). However, CEPT is still studying usage restrictions (e.g. in vehicle use) combined with appropriate mitigation techniques to achieve co-existence with incumbent services to enable outdoor WAS/RLAN use in this band.
* In the 5 250-5 350 MHz band, CEPT notes that the current studies have shown difficulties in achieving co-existence with incumbent services and therefore supports no change to the RR in this band.
* In the 5 350-5 470 MHz band, CEPT supports no change to the RR in this band.
* In the 5 725-5 850 MHz band, CEPT would support a new mobile allocation to accommodate WAS/RLANs use if sharing and compatibility studies can demonstrate the effectiveness of any new proposed interference mitigation techniques to ensure the protection of radars, fixed service (see No 5.455) and FSS space station receivers. It is to be noted that CEPT will take into account compatibility studies between RLAN and specific applications within CEPT (e.g. road tolling systems). At this time no effective mitigation techniques has been proposed to enable co-existence with certain modes of frequency hopping radars operated in this band in some CEPT countries.
* In the 5 850-5 925 MHz band, CEPT notes that the current studies have shown difficulties in achieving co-existence with other incumbent services without imposing any additional constraints on existing services such as FSS (space station receivers) and existing applications under the mobile service such as ITS (including urban rail). Therefore, CEPT supports no change to the RR in this band.

Preliminary European Common Proposal:

* NOC on 5 250-5 350 MHz
* NOC on 5 350-5 470 MHz
* NOC on 5 850-5 925 MHz

**7.1.4 CITEL - Document APG19-3/INF-08Rev.1**

* Preliminary views from a few countries support studies. Several considering which relevant portions of the 5 GHz band could be used by RLANs while taking into account the need to protect incumbents.
* Preliminary proposal for no change to 5350-5470 MHz.

**7.1.5 RCC - Document APG19-2/INF-05**

* The RCC Administrations are in favour of necessary protection from potential WAS/RLAN interference for all the services having allocations in the considered frequency bands, first of all for systems in radiolocation and aeronautical radionavigation services used for the safety of flights.
* The RCC Administrations consider that reducing restrictions for the use of WAS/RLAN in the frequency bands 5150-5250 MHz and 5250-5350 MHz is possible only when efficient new mitigation methods ensuring sharing between outdoor WAS/RLAN and the systems in existing services would be identified in the considered frequency bands.
* The RCC Administrations consider that the use of WAS/RLAN in the frequency bands 5350−5470 MHz, 5725−5850 MHz and 5850−5925 MHz is possible only when methods for sharing between WAS/RLAN and the systems in existing services would be identified in the considered frequency bands.

**7.2 International Organisations**

**7.2.1 IARU - Document APG19-3/INF-09**

* The IARU is of the view that there is growing interest among radio amateurs in experimentation, investigation of propagation phenomena, point-to-point communication and space communication in this band, and 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.

**7.2.2 ICAO - Document APG19-2/INF-02**

* To ensure, on the basis of agreed ITU-R studies, that any new provisions, or changes to existing regulatory provisions, in the frequency bands/ranges 5 150 ‒ 5 250 MHz, 5 350 ‒5 470 MHz and 5 850 ‒ 5 925 MHz do not adversely impact aviation systems.

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1. [Document APG19-3/OUT-01](https://www.apt.int/sites/default/files/2018/03/APG19-3-OUT-01_Meeting_Report_Adhoc_Plenary.docx) [↑](#footnote-ref-1)