|  |  |  |
| --- | --- | --- |
|  | ASIA-PACIFIC TELECOMMUNITY | **Document No:** |
| **The 2nd Meeting of the APT Conference Preparatory**  **Group for WRC-23 (APG23-2)** | **APG23-2/OUT-16** |
| 19 – 23 April 2021, Virtual/Online Meeting | 23 April 2021 |

Working Party 2

**PRELIMINARY VIEWs on WRC-23 agenda item 1.9**

**Agenda Item 1.9:**

*to review Appendix 27 of the Radio Regulations and consider appropriate regulatory actions and updates based on ITU‑R studies, in order to accommodate digital technologies for commercial aviation safety-of-life applications in existing HF bands allocated to the aeronautical mobile (route) service and ensure coexistence of current HF systems alongside modernized HF systems, in accordance with* ***Resolution 429 (WRC‑19);***

**1. Background**

* Agenda Item 1.9 was proposed by a Region 2 administration aviation community and had broad support at the WRC19. ICAO supports the work that may lead to changes and improvements to the Appendix 27.
* The HF spectrum has largely been broken up into repeating allocations throughout the range 3-30 MHz. These allocations have their conventional implementation arrangements and the traditional adoption of multiple 3 kHz channels (with a 2.7 kHz emission in the initial planning days) allowed for adjacent channel use, adjacent band use and service allocation replication across the HF domain. This is all to enable beyond line of site communications across all periods of the day, month, season and sunspot cycle.
* There is a new layer of technologies that enable higher data rates in the HF frequency range via aggregation of contiguous 3 kHz channels as well as aggregation of non-contiguous channels.
* Currently Appendix 27 (Frequency allotment plan for AM(R)S) does not allow aggregation, however the aviation industry, in conjunction with manufacturers, wants to be able to implement this aggregation for wider applications within the aviation domain. This application, conventionally termed Wideband HF or WBHF is being implemented in a non-aviation domain. The regulations do not preclude the use of WBHF in some other services (maritime mobile service, for instance), but the current studies and implementation arrangements do not enable easy adoption of the new technologies in these allocations.
* The aviation community, including ICAO, are supporting the studies limited to Appendix 27 bands only, to enable early adoption of the newer WBHF technologies.
* To date, a work program has been discussed briefly within Working Party 5B (WP 5B), and a request for technical parameters has been made to external organisations/administrations. ICAO has provided a single set of technical parameters for one type of technology and has been requested to provide further parameters. At the 25th meeting of WP 5B (Nov 2020), a Working Document (WD) towards a PDN Report ITU-R M.[AERO-WIDEBAND-VHF] and the draft CPM text were initiated.
* Current documents undergoing work within WP5B are:
* [Annex 4](https://www.itu.int/dms_ties/itu-r/md/19/wp5b/c/R19-WP5B-C-0225!N04!MSW-E.docx) to Document 5B/225-E Chairman’s Report ***-*** *Working Document towards Draft CPM Text for WRC-23 agenda item 1.9*
* [Annex 5](https://www.itu.int/dms_ties/itu-r/md/19/wp5b/c/R19-WP5B-C-0225!N05!MSW-E.docx) to Document 5B/225-E Chairman’s Report **-** *Draft Work Plan for WRC-23 agenda item 1.9*
* [Annex 29](https://www.itu.int/dms_ties/itu-r/md/19/wp5b/c/R19-WP5B-C-0225!N29!MSW-E.docx) to Document 5B/225-E Chairman’s Report - *Working Document towards preliminary draft new report ITU-R M.[Aero-Wideband-HF]*

**2. Documents**

Input Documents submitted to the meeting of APG23-2

* Document APG23-2/ [INP-11(JPN)](https://www.apt.int/sites/default/files/2021/04/APG23-2-INP-11.docx), [INP-22(NZL),](https://www.apt.int/sites/default/files/2021/04/APG23-2-INP-22_New_Zealand_input_to_WP2_-_AIs_1.7_1.8_1.9_1.11.docx) [INP-25(AUS)](https://www.apt.int/sites/default/files/2021/04/APG23-2-INP-25_AUS_contribution_for_WP2_Preliminary_Views_on_WRC-23_Agenda_Items_1.6_1.7_1.8_1.9_1.10_1.11_and_Res.427WRC-19.docx), [INP-31(KOR)](https://www.apt.int/sites/default/files/2021/04/APG23-2-INP-31_WP2_kor.docx), [INP-45(CHN)](https://www.apt.int/sites/default/files/2021/04/APG23-2-INP-45_PRELIMINARY_VIEWS_ON_WRC-23_AGENDA_ITEMS_1.7_1.8_1.9_1.10_AND_1.11.docx)

Information Documents submitted to the meeting of APG23-2

* Document APG23-2/ [INF-25](https://www.apt.int/sites/default/files/2021/04/APG23-2-INF-25_ASMG_Preparation_for_WRC-23.pdf)(ASMG), [INF-34](https://www.apt.int/sites/default/files/2021/04/APG23-2-INF-34_CITEL_Preparation_for_WRC-23.pdf)(CITEL), [INF-35](https://www.apt.int/sites/default/files/2021/04/APG23-2-INF-35_Status_of_CEPT_Preparation_for_WRC-23_and_RA-23.pdf)(CEPT),

Briefing Document submitted to the meeting of APG23-2

* Document APG23-2/ [INF-39](https://www.apt.int/sites/default/files/2021/04/APG23-2-INF-39_Briefing_on_AI1.9.docx)

**3. Summary of discussions**

**3.1 Summary of APT Members’ views**

**3.1.1 Japan** - **Document APG23-2/INP-11**

* Japan supports ongoing regulatory studies to accommodate digital technologies for commercial aviation safety-of-life applications in existing HF bands allocated to the aeronautical mobile (route) service and to ensure coexistence of current HF systems alongside modernized HF systems as indicated in Resolution **429 (WRC-19).**

**3.1.2 New Zealand -** **Document APG23-2/INP-22**

* New Zealand is supporting studies with a view to enable new systems that improve the utility of the HF bands (e.g. for modern digital wideband applications).

**3.1.3 Australia -** **Document APG23-2/INP-25**

* Australia supports sharing studies to ensure compatibility between the proposed digital technologies and the incumbent primary services within the frequency bands under Resolution 429 (WRC-19) and adjacent bands. Australia supports ensuring studies and changes proposed are technology neutral.

**3.1.4 Korea -** **Document APG23-2/INP-31**

* The Republic of Korea supports reviewing RR Appendix 27 to accommodate digital technologies for aeronautical wideband HF systems, while ensuring compliance with safety requirements and protection of other primary services in band and in adjacent bands.
* When considering possible changes to RR Appendix 27 for the introduction of new digital aeronautical wideband HF systems, application of the concept stated in Notes t) and u) of RR Appendix 17 could be taken into consideration.

**3.1.5 China -** **Document APG23-2/INP-45**

China is of the view that:

1. China supports on-going ITU-R studies mandated by WRC-23 Agenda Item 1.9.
2. Protection of current HF systems must be ensured while accommodating the introduction of wideband HF digital systems under AM(R)S.

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

* No issues raised within the drafting group. Good participation from delegates with positive approach to the development and agreement of text.

**4. APT Preliminary View(s)**

* APT Members support studies with a view to identify any necessary modifications to RR. Appendix 27 to accommodate wideband HF technologies for the aeronautical mobile (route) service (AM(R)S) between 2 850 and 22 000 kHz in accordance with Resolution **429 (WRC-19)** with theneed to avoid harmful interference to Primary services in the same band and adjacent bands in particular existing AM(R)S HF systems.
* APT Members recognise that there are differing Wideband HF technologies and are of the view that changes to RR. Appendix 27 should allow new digital wideband HF systems taking into account technology neutrality.

**5. Other View(s) from APT Members**

* *None*

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

* *None*

**7. Views from Other Organisations** (as provided in the information documents to

APG23-2)

**7.1 Regional Groups**

**7.1.1 ASMG** - **Document APG23-2/INF-25**

* Support the promotion of optimal use of the radiofrequency spectrum by introducing digital technologies for safety applications in the HF bands allocated to the aeronautical mobile service, provided that coexistence with current analogue system is ensured.

**7.1.2 ATU** - **Document APG23-2/INF-ZZ**

* None/No information available at this moment

**7.1.3 CEPT** - **Document APG23-2/INF-35**

* CEPT supports the modification of the Appendix 27 of RR that would allow new digital wideband HF systems including aggregating contiguous and/or not contiguous channels, if retained, while ensuring:

• the protection of other primary services operating in band and in adjacent frequency bands, and

• coexistence with existing aeronautical analogue voice and data HF systems.

**7.1.4 CITEL** - **Document APG23-2/INF-34**

* An Administration supports studies called for by Resolution 429 (WRC-19) to accommodate new digital HF technologies.

**7.1.5 RCC** - **Document APG23-2/INF-ZZ**

* None/No information available at this moment

**7.2 International Organisations**

**7.2.1 IARU** - **Document APG23-2/INF-ZZ**

* None/No information available at this moment

**7.2.2 ICAO** - **Document APG23-2/INF-ZZ**

* None/No information available at this moment

\_\_\_\_\_\_\_\_\_\_\_\_