International Civil Aviation Organization

SEVENTH MEETING OF SPECTRUM REVIEW WORKING GROUP (SRWG/7)

Bangkok, Thailand, 15-17 February 2023

Agenda Item 2: Review outcomes of relevant meetings

OUTCOME OF APG23-4 MEETING

(Presented by the Secretariat)

SUMMARY

This paper presents the outcome of the Fourth Meeting of Asia-Pacific Telecommunity (APT) Conference Preparatory Group for World Radiocommunication Conference 2023 (APG23-4).

1. INTRODUCTION

1.1 The Fourth Meeting of Asia-Pacific Telecommunity Conference Preparatory Group for World Radiocommunication Conference 2023 (APG23-4) was held on 15-20 August 2022 in hybrid mode of physical meeting at Bangkok, Thailand and Video Tele-Conference (VTC) via Zoom.

1.2 722 participants (with 291 in-person participation) representing 28 Members, 1 Associate Member, 33 Affiliate Members, 7 International/Regional Organizations and 1 other organization participated in the meeting.

1.3 Meeting reports of the various working parties and the Preliminary Views from the meeting can be found at https://www.apt.int/APTAPG.

2. DISCUSSION

2.1 The Regional Officers (CNS) from ICAO APAC Office were nominated to participate in the meeting, so as to:

- ensure correct inclusion of latest ICAO Position as the result of study progressed by FSMP based on latest ITU studies;
- monitor progress and status of Asia/Pacific regional preliminary views for WRC-23;
- protect aeronautical spectrum and support the ICAO Position at regional forums in accordance with APANPIRG/27 Conclusion 27/45; and
- report to relevant contributory bodies on the regional preparation progress made by APT APG.

2.2 ICAO representatives participated in various sessions of draft groups on agenda items relevant to civil aviation and provided necessary input and clarification as required, and engaged in lobbying with participants from civil aviation administrations and exchanged information and views with them.

2.4 The outcome of the meeting is in line with the ICAO Position in overall, and a summary of the ICAO Position and APG23-4 preliminary view output is provided in **Appendix A** to this paper.

2.5 The 5th and 6th Meeting of the APT Conference Preparatory Group for WRC-23 (APG23-5 and 6) have been scheduled for 20-25 February 2023 in Busan, Republic of Korea, and 14-19 August 2023 in Brisbane, Australia respectively. For information, WRC-23 is scheduled for 20 November - 15 December 2023 in Dubai, United Arab Emirates.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the outcome of APG23-4 highlighted in **Appendix A**;

b) participate in the preparatory meetings for WRC-23; and

c) discuss any relevant matter as appropriate.

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APT APG23-4 PRELIMINARY VIEW OUTPUT

WRC-23 AGENDA ITEM	ICAO POSITION	APG23-4 PRELIMINARY VIEW OUTPUT (TRACKED CHANGES FOR UPDATES FROM LAST MEETING)
AI 1.1 Review of RR No. **5.441B** regarding IMT identification in 4 800-4 990 MHz	To support any measures taken to enhance the protection of flight testing in international airspace that are consistent with the results of agreed studies. To oppose any proposed measure that is not in line with the results of agreed studies and reduces the level of protection afforded to flight test operations in international airspace and above international waters. To ensure that the proposed methods to satisfy this agenda item do not have a negative impact on the use of aviation systems in other frequency bands.	APT Members support the on-going ITU-R studies relating to Agenda Item 1.1
AI 1.2 IMT identification in 3 300-3 400 MHz, 3 600-3 800 MHz, 6 425-7 025 MHz, 7 025-7 125 MHz and 10.0-10.5 GHz	To oppose any proposal in the frequency band 6 425-7 025 MHz in Region 1 that would reduce the level of protection below an acceptable level and hence compromise flight test operations. To oppose any proposal in the frequency bands 3 600-3 800 MHz and 6 425-7 025 MHz that could lead to harmful interference or could constrain the use of these bands by the FSS for the provision of aeronautical services or GSO MSS feeder links.	**7 025-7 125 MHz (globally)** APT Members support the on-going sharing and compatibility studies in ITU-R in accordance with Resolution **245 (WRC-19)**. APT Members supports ~~ITU-R studies to consider the~~ potential IMT identification in the frequency band 7 025-7 125 MHz to achieve globally harmonized utilization ~~of frequency band for IMT~~ with appropriate regulatory and technical conditions, where applicable, taking into account the results of studies to ensure the protection of services to which the frequency band is allocated on a primary basis (and in adjacent bands, as appropriate) ~~so that they shall in no way be adversely affected~~. **3 300-3 400 MHz (Region 2 and amend footnote in Region 1)** APT Members support ITU-R studies with a view that any possible IMT identification/or action in the frequency band 3 300-3 400 MHz in Region 1 and Region 2 shall protect the services to which the frequency band is allocated on a primary basis (and in adjacent bands, as appropriate) in Region 3 so that these services shall in no way be adversely affected. **3 600-3 800 MHz (Region 2)** APT Members support ITU-R studies with a view that any possible IMT identification in the frequency band 3 600-3 800 MHz in Region 2 shall protect the services to which the frequency band is allocated on a primary basis (and in adjacent bands, as appropriate) in Region 3 so that these services shall in no way be adversely affected. **6 425-7 025 MHz (Region 1)** APT Members ~~support ITU-R studies with a~~ are of the view that any possible IMT identification in the frequency band 6 425-7 025 MHz in Region 1 shall protect the services to which the frequency band is allocated on a primary basis (and in adjacent bands, as appropriate) in Region 3 so that these services shall in no way be adversely affected. APT Members support the on-going sharing and compatibility studies in ITU-R in accordance with Resolution **245 (WRC-19)** for the frequency band. **10 000-10 500 MHz (Region 2)** APT Members support ITU-R studies with a view that any possible IMT identification in the frequency band 10.0-10.5 GHz in Region 2 shall protect the services to which the frequency band is allocated on a primary basis (and in adjacent bands, as appropriate) in Region 3 so that these services shall in no way be adversely affected.
AI 1.3 MS allocation in 3.6-3.8 GHz in Region 1	To oppose any changes to existing regulatory provisions of the ITU Radio Regulations for the frequency bands 3 600-3 800 MHz that adversely affect the aeronautical use of systems operating in the FSS in Region 1.	• In the interest of global harmonization, APT Members support ongoing sharing and compatibility studies in ITU-R in accordance with Resolution **246 (WRC-19)** to the possibilities of upgrading mobile service to primary allocation in the band 3 600 – 3 800 MHz in Region 1.

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		• APT Members are of the view that a possible upgrade of mobile service to primary allocation in the band 3 600 – 3 800 MHz in Region 1 ~~should~~ shall protect services to which the frequency band is allocated on a primary basis (and in adjacent bands, as appropriate) in Region 3. • APT Members are also of the view that ~~this is a Region 1 issue, and~~ such upgrading shall not have any adverse effect on the allocation of the existing services and their future development in Region 3. • APT Members are of the view that any discussions on this agenda item shall not be mixed up on the discussions being followed / carried out under Agenda Item 1.2.
AI 1.4 Use of HIBS below 2.7 GHz	To ensure that high-altitude platform stations as IMT-base stations (HIBs) sharing and compatibility studies performed under Resolution **247 (WRC-19)** address the protection of aeronautical systems operating in the frequency bands 960-1 164 MHz and 2 700-2 900 MHz. In particular, to oppose the use of HIBS within the frequency band 2 500-2 690 MHz or parts thereof where agreed studies have not demonstrated that the signal levels from the HIBS will be below the predicted levels from the ground based IMT studies.	- APT Members support the ongoing ITU-R studies for establishing a new globally or regionally harmonized regulatory framework for HIBS with a view to providing flexibility of spectrum usage for HIBS in certain frequency bands below 2.7 GHz already identified for IMT referred to in Resolution **247 (WRC-19)**, while ensuring the protection of the existing services, to which the frequency band is allocated on a primary basis, and adjacent bands, as appropriate, without adversely affecting in their deployment including other IMT uses, existing systems and the planned development of primary services. - APT Members are considering that there is a need to develop the definition of HIBS with a view to potentially be included in the ITU Radio Regulations.
AI 1.6 Sub-orbital vehicles	To support ITU-R studies and the definition of relevant technical characteristics as called for by Resolution **772 (WRC-19)** to ensure aviation needs are satisfied. To support, if identified as required by the studies called for in Resolution **772 (WRC-19)**, modifications to the Radio Regulations that help enable the integration of sub-orbital vehicles into the airspace structure. To support, if studies show the need for access to additional spectrum, the establishment of a WRC agenda item at a future competent conference.	- APT Members support ITU-R studies of spectrum needs for communications between stations on board sub-orbital vehicles and terrestrial/space stations and of appropriate modification, if any, to the Radio Regulations consistent with Resolution **772 (WRC-19)**. - APT Members ~~are of the view that when studying appropriate modification to the Radio Regulations, existing services should be properly protected,and new allocations or changes to the existing allocations in Radio Regulations Article **5** are excluded under this agenda item at WRC-23~~ also support that a new WRC Resolution should be developed, which contains the provisions to operate radiocommunications for sub-orbital vehicles and the definition or description of suborbital vehicle.
AI 1.7 New AMS(R)S VHF allocation	To support ITU-R studies and the definition of relevant technical characteristics as called for by Resolution **428 (WRC-19)**. To support a global allocation to the aeronautical mobile-satellite (route) service for both the Earth-to-space and space-to-Earth directions in the frequency band 117.975-137 MHz and that the use of the allocation be limited to the relaying of aeronautical VHF air traffic management communications. To support that those systems shall operate in accordance with international Standards and Recommended Practices and procedures established in accordance with the Convention on International Civil Aviation. To ensure that any change to the regulatory provisions and spectrum allocation resulting from this agenda item do not adversely impact the operation of existing VHF systems in the band 117.975-137 MHz operating in the AM(R)S, including regional usage of terrestrial VHF, nor require any changes to aircraft equipage or to existing installations.	- APT Members support ITU-R studies defined in Resolution **428 (WRC-19)** for a new AMS(R)S allocation for both the Earth-to-space and space-to-Earth directions in all or part of the frequency band 117.975-137 MHz, while taking into account the protection of existing services operating in this frequency band and in adjacent frequency bands. – APT Members are considering to support Method B, with the associated conditions as contained in the Draft CPM text. ~~support the new AMS(R)S allocation that is limited to the relaying of aeronautical VHF air traffic management communications in accordance with international Standards and Recommended Practices and procedures established in accordance with the Convention on International Civil Aviation.~~ ~~APT Members are of the view that unacceptable interference shall not be caused to the services to which the band is currently allocated as well as to the additional allocation of the aeronautical mobile (OR) service on a primary basis operating in the band 132-136 MHz and 136-137 MHz~~.
AI 1.8 UAS CNPC links via FSS	To support ITU-R studies, as called for by Resolutions **155 (Rev.WRC-19) and 171 (WRC-19)**. To support the modification of No. **5.484B** and Resolution **155 (Rev.WRC-19)**. ICAO is expecting that the decision of WRC-23 will result in a Resolution that: • clearly provides primary status; • removes any apparent inconsistencies;	APT Members support ongoing studies being carried out by ITU-R ~~WP 5B~~ in relation to Agenda Item 1.8 in accordance with Resolution **171 (WRC-19).**

WRC-23 AGENDA ITEM	ICAO POSITION	APG23-4 PRELIMINARY VIEW OUTPUT (TRACKED CHANGES FOR UPDATES FROM LAST MEETING)
	• acknowledges that in accordance with the Annexes of the Convention of the International Civil Aviation Organization (ICAO), ensuring the safety-of-life aspects of the use of UAS CNPC is the role of the responsible States; • provides sufficient information to support and/or validate safety cases; and • ensures that safety cases do not need to be revisited as a result of future satellite co-ordination agreements.	
AI 1.9 Digital tech for aviation safety-of-life applications (App.27)	To support ITU-R studies as called for by Resolution **429 (WRC-19)**. To support, based on agreed studies, the necessary modification of Appendix 27 to the Radio Regulations that will enable the introduction of HF wideband aeronautical communication systems. Those systems shall be operated in accordance with international Standards and Recommended Practices and procedures established in accordance with the Convention on International Civil Aviation.	- 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 the need to avoid harmful interference to Primary services in the same and adjacent bands in particular existing AM(R)S HF systems. - APT Members ~~are of the view~~ noted 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. - APT Members are also of the view that the implementation of new wideband AM(R)S HF systems may require necessary coordination through ICAO given their role in organizing HF aeronautical channel plans in flight information regions.
AI 1.10 New AMS allocation (@15.5 & 22 GHz) for non-safety applications	To support ITU-R studies as called for by Resolution **430 (WRC-19)**. To support, based on the agreed results of studies, new allocations to the aeronautical mobile service only for use by non-safety aeronautical mobile applications. To ensure that any such modification does not adversely affect the status or provision of aeronautical safety services.	- APT Members support ongoing ITU-R studies on spectrum needs, coexistence with radiocommunication services and regulatory measures for possible new allocations for the aeronautical mobile service for the use of non-safety aeronautical mobile applications, in accordance with Resolution **430 (WRC-19)**; - APT Members are of the view that the protection of existing primary services in the 15.4-15.7 GHz and 22-22.21 GHz frequency bands and, as appropriate, in adjacent frequency bands should be ensured. - APT Members are also of the view that: • the radiolocation, aeronautical navigation and fixed-satellite (Earth-to-space) services are allocated and used in the 15.4-15.7 GHz band, and future AM(OR)S shall not cause unacceptable interference to nor claim protection from these services. • the frequency band 21.2-23.6 GHz is extensively used by terrestrial services, in particular fixed service, to support the development of telecommunication infrastructure in many countries and crucial in developing countries and no adverse effect by the potential AM(OR)S allocation on the terrestrial services allocated in this band and its future development should be ensured.
AI 1.11 GMDSS modernization and e-navigation	To ensure that any change to the regulatory provisions and spectrum allocations resulting from this agenda item do not adversely impact on the capability of search and rescue aircraft, including helicopters, to effectively communicate with vessels during disaster-relief operations. To ensure that any regulatory provisions in response to this agenda item do not adversely affect compliance of aeronautical mobile-satellite (route) service systems with international standards and recommended practices and procedures established in accordance with the Convention on International Civil Aviation.	**Issue A (*resolves 1*): GMDSS Modernization** - APT Members support ~~ITU-R studies to progress the~~ modernization of GMDSS, taking into consideration the activities of IMO~~, for GMDSS modernization, including~~, as follows: • the deletion of the NBDP for distress and safety communications from GMDSS; • the implementation of an ACS for MF and HF; • the introduction of MF and HF NAVDAT ~~system and revised IMO performance standards of GMDSS equipment.~~ frequencies into Appendix **15** of the Radio Regulations; and • the implementation of the AIS-SART as locating equipment as alternative to Radar SART. ~~APT Members support possible introduction of the automatic connection system (ACS) for MF and selected HF bands and international NAVDAT service for the modernization of GMDSS, while ensuring no adverse effect on the allocation of the existing services and their future development in the same and adjacent~~

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		~~frequency bands. APT Members are of the view that introduction of new radiocommunication technologies should not adversely affect the operation of the GMDSS.~~ ~~APT Members are also of the view that the modernization of GMDSS including the introduction of the automatic connection system (ACS) should be affordable and simple to operate, so that non-SOLAS/non-Convention vessels could also benefit from it.~~ - APT Members are of the view that introduction of new radiocommunication technologies should not adversely affect the operation of the GMDSS and ensure no adverse effect on the allocation of the existing services and their future development in the same and adjacent frequency bands. - APT Members are also of the view that the modernization of GMDSS including the introduction of the automatic connection system (ACS) should be affordable and simple to operate, so that non-SOLAS/non-Convention vessels could also benefit from it. - APT Members support the removal of the use of satellite EPIRBs from the frequency band 1645.5-1646.5 MHz. **Issue B (*resolves 2*): E-navigation** ~~APT Members support ITU-R studies, taking into consideration the activities of IMO, for implementation of e-navigation, while ensuring no adverse effect on the operation of the existing services and their future development in the same and adjacent frequency bands.~~ ~~APT Members are also of the view that the implementation of e-navigation should be affordable and simple to operate, so that non-SOLAS/non-Convention vessels could also benefit from it.~~ - APT Members are of the view that it is not necessary to modify the Radio Regulations in support of e-navigation. **Issue C (*resolves 3*): Introduction of additional satellite systems into the GMDSS** - APT Members support the introduction of additional GSO satellite systems into the GMDSS, ~~provided that the results of studies on sharing and compatibility with other radiocommunication services in the same and adjacent frequency bands ensure the protection of the services in the frequency bands under consideration by this agenda item~~ under the conditions that: • IMO's action to introduce a new GMDSS satellite system is completed; • Coordination and notification in accordance with the relevant and applicable provisions of Articles **9** and **11** of the Radio Regulations and associated Rules of Procedure are applied in order to protect services to which the bands are currently allocated; and • Existing services in the same and adjacent bands are not adversely affected.
AI 1.13 Allocation of the 14.8-15.35 GHz to space research service	To support studies called for by Resolution **661** (WRC 19) ensuring that they take account of systems operating in the aeronautical mobile service. To ensure that any radio regulatory action taken as a result of agreed studies does not adversely affect the provision of aeronautical services.	APT Members support ITU-R ~~sharing and compatibility~~ studies for the consideration of upgrading the SRS allocation from secondary to primary in the frequency band 14.8-15.35 GHz~~, while ensuring protection and~~. Any possible upgrade of the SRS to primary service shall protect and not adversely affect~~ing~~ the incumbent services in this frequency band as well as the adjacent bands~~.~~, including the band 15.35-15.4 GHz to which the RAS is allocated. ~~Appropriate transitional measures need to be developed to protect incumbent services that are allocated on a secondary basis in the frequency band 15.2-15.35 GHz.~~
AI 1.15 GSO ESIM use in 12.75-13.25 GHz	To ensure that any radio regulatory action, taken as a result of this agenda item, neither adversely affects the provision of aeronautical safety-of-life services nor sets an unwanted precedent.	APT Members support on-going studies being carried out by ITU-R Working party 4A for the use of the frequency band 12.75 – 13.25 GHz (Earth-to-space) by earth stations on aircraft and vessels communicating with GSO space stations in the FSS while ensuring protection of existing services in those frequency bands and in adjacent bands, in accordance with Resolution **172 (WRC-19)**.

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		APT members are considering to support Method B provided that the remaining elements and part of that method as referred to draft CPM text of agenda item 1.15 are duly completed and finalized and agreed. This includes the following: • Interference management mechanism to deal with interference occurring from operation of ESIM to other administrations; • Switching facility allowing transmission over these territories of countries which agreed to be included in the service area and/or authorized operation of the service on the territory under jurisdiction and no transmission over these countries if they are not in the service areas or they have not given their authorization for operation of that ESIM; • Methodology to enable the Radiocommunication Bureau to examine the conformity with PFD limit as contained in Annexes of draft resolution; • Finalisation of calculation of PFD of A-ESIM in different altitudes and elevation angles; • Other elements yet to be discussed at the next meeting. APT Members also have preliminary views as follows: - The use of the frequency band 12.75-13.25 GHz (Earth-to-space) by earth stations on aircraft and vessels shall not limit the access of other administrations to their national resources in Appendix **30B** as well as implementation of Resolution **170 (WRC-19)**. - The use of the frequency band 12.75-13.25 GHz (Earth-to-space) by earth stations on aircraft and vessels shall not ~~adversely affect~~ cause unacceptable interference to nor claim protection from the operation of ~~existing~~ terrestrial services and their future development. With respect to the sharing and compatibility studies between earth stations on aircraft and vessels and terrestrial services, the protection of terrestrial services shall be ensured under all circumstances and conditions in the various sharing scenario. - Supports ~~to develop an appropriate~~ the development of a methodology ~~in order to enable~~ regarding examination by the Bureau ~~to examine the conformity~~ of compliance with PFD limits by A-ESIM, or of adequate transitional measures should WRC-23 not finalise the methodology. ~~established under this Agenda Item 1.15.~~ - The ~~U~~use of earth stations on board aircraft and vessels shall not cause unacceptable interference (more than what is stipulated in relevant annexes to **AP30B** of the Radio Regulations) to allotments, assignments converted from allotments ~~to assignments~~ within the limits of initial characteristics as contained in ~~the allotment~~ Plan or modified characteristics, for providing services to national territory as well as those from application of Article 6 and 7 ~~and those stemming from application of Article 7 transferred to Article 6~~ of **AP30B** and those submitted under Resolution **170 (WRC-19)** as well as all existing and planned services in that frequency band and adjacent bands operating in accordance with the Radio Regulations. - Earth stations on board aircraft and vessels shall not claim protection from the allotment Plan, assignments in the List of **AP30B** for national coverage, and other services including terrestrial services to which the frequency band is allocated and operating in accordance with the provisions of Radio Regulations. - With respect to the sharing and compatibility studies between earth stations on board aircraft and vessels communicating with geostationary space stations in the fixed-satellite service and the fixed service in the frequency band 12.75-13.25 GHz, both long-term and short-term interference scenarios under relevant ITU-R Recommendations should be considered and carried out in these studies. - For the operation of A-ESIM and M-ESIM, the technical, operational and regulatory provisions including responsibilities of administrations and entities responsible for the operation, authorization and the interference management system of these earth stations need to be clearly defined.

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		- The only administration that could notify ESIM is the same administration as the one notifying the GSO network to which the ESIM communicate. Thus, notification of any frequency assignment for ESIMs shall only be made by one single administration, which will be responsible for resolving potential interferences, operational issues and monitoring of ESIM to comply with Radio Regulations. - The notifying administration of the satellite network shall ensure that ESIMs operate only in the territory under the jurisdiction of any administration/country from which an explicit authorization has been obtained. Moreover, it has been emphasized that for the implementation of the Resolution, the notifying administration of the satellite network/ system with which ESIMs communicate shall ensure that ESIMs are designed and operate so as to cease transmission over the territory of any administration/country from which authorization has not been obtained. - Regarding the use of PFD mask in A-ESIM operation, one possible acceptable way is to provide a PFD mask as guidance to administration intending to authorize the operation of the A-ESIMs to determine whether or not the interference which may be caused to its terrestrial stations/assignments. - The compliance with the PFD mask does not release the notifying administration of the A-ESIM with respect to discharging its responsibility that such earth station shall not cause unacceptable interference to nor claim protection from terrestrial stations/ assignments. - An administration authorizing the operation of A-ESIM and M-ESIM in their territories (air space and territorial waters) shall be within the service area of the subject satellite network and authorize the operation of the associated gateway earth station as needed. - The relevant examination shall be done by the Bureau and if the latter is unable to examine, that A-ESIM with respect to conformity with the PFD limits on the Earth's surface specified in the Draft CPM text to comply with the limit, then the notifying administration of the A-ESIM shall send to BR a commitment that the A-ESIM will comply with those limits; for this purpose it is mentioned in the draft CPM text that the BR shall formulate a qualified favourable finding with respect to the limits, otherwise it shall formulate an unfavourable finding. - Any transmissions from M-ESIM within the minimum distance, as specified in the Resolution for this agenda item, in order to protect terrestrial services shall be subject to prior agreement of the concerned administration. - For sharing and compatibility of M-ESIM with the fixed service, both long-term and short-term interference scenarios should be considered, in which [X*] km should be treated as the minimum distance for M-ESIM sharing and compatibility with FS from the low-water mark as officially recognized by the coastal State. - There are still several issues on the operation of ESIMs to be clarified and specified in the Draft New Resolution. * X: The minimum distance ranges from 86 – 190 km as the current result of ITU-R WP4A studies
AI 1.16 Non-GSO ESIM use in Ka band	To ensure that any radio regulatory action taken as a result of this agenda item: • do not adversely affect the provision of UAS CNPC under Resolution **155 (Rev. WRC-19)**; • make a clear regulatory distinction between satellite networks or satellite network resources providing UAS CNPC and those providing non-safety ESIMs applications; • do not set a precedent that could adversely affect the provision of aeronautical safety-of-life services.	• APT Members are of the view that ~~on-going sharing and compatibility studies between earth stations in motion (~~in order to make it possible to use the aeronautical and maritime ESIM~~)~~ communicating with non-GSO FSS in the frequency bands 17.7–18.6 GHz, 18.8–19.3 GHz and 19.7–20.2 GHz (space-to-Earth), and 27.5–29.1 GHz and 29.5–30 GHz (Earth-to-space) ~~and the existing services including passive services allocated in those frequency bands and the adjacent bands should be conducted to ensure the protection of existing services.~~ , it is required to continue studies to develop technical and regulatory solution(s) for all concerns that are currently raised. Completion of studies and decisions shall be made to ensure the protection of the existing services in accordance with Resolution 173 (WRC-19). • APT Members are also of the view that ~~the operation of secondary services as allocated by previous WRCs and currently contained in the Radio Regulations shall/should not be adversely affected by the~~

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		~~potential operation of ESIM being studied under this agenda item.~~sharing studies should be finalized and results of the studies transferred to the Draft New Resolution. • APT Members are also of the view that regulatory provision, and technical and operational measures with appropriate examination methodology by the Bureau for non-GSO ESIM should be established to ensure the protection of services to which the frequency bands are allocated and operated in accordance with the Radio Regulations. In the absence of such methodology necessary transitional measures should be developed and agreed by WRC-23. • APT Members are also of the view that the only administration that could notify ESIM is the same administration as the one notifying the non-GSO system to which the ESIM communicate. Thus, notification of any frequency assignment for ESIMs shall only be made by one single administration, which will be responsible for ESIM operation. • APT Members are also of the view that interference management mechanism and operation mechanism of ESIMs shall be clearly defined by completing relevant studies for inclusion in the Draft New Resolution. • APT Members are also of the view that studies to ensure non-GSO FSS ESIM deployment in the bands 17.7 - 18.6 GHz and 18.8 - 19.3 GHz (space-to-Earth) will not result in increased adjacent band interference to EESS (passive) operations in the 18.6 - 18.8GHz band should be finalized. • APT Members are also of the view that with respect to the sharing/compatibility studies and PFD examination method for aeronautical non-GSO ESIM studies, the protection of terrestrial services shall be ensured in accordance with Resolution 173 (WRC-19). • APT Members are of the view that the non-GSO ESIM operating in the frequency bands 17.7-18.6 GHz, 18.8-19.3 GHz, and 19.7-20.2 GHz (see No.5.524) shall not claim protection from terrestrial services as contained in the Radio Regulations. • APT Members are also of the view that for the protection of other space services, non-GSO ESIM characteristics shall remain within the envelope characteristics of typical earth stations associated with the non-GSO satellite system within which these ESIM communicate. • APT Members are also of the view that for the protection of GSO FSS networks operating in the 17.8-18.6 GHz, 19.7-20.2 GHz, 27.5-28.6 GHz, and 29.5-30.0 GHz the relevant EPFD limits in Nos. 22.5C, 22.5D and 22.5F shall apply. • APT Members are also of the view that there are still several issues on the operation of ESIMs operating with non-GSO space stations to be clarified and specified in the Draft New Resolution by ITU-R WP 4A. ~~APT Members are also of the view that the ESIMs operating with non-GSO FSS system shall not cause unacceptable interference to the terrestrial services in those frequency bands and in adjacent frequency bands and not adversely affect these terrestrial services.~~
AI 1.17 Sat-sat links in Ku/Ka bands	To ensure that, given the overlap in frequency bands, any radio regulatory action taken as a result of this agenda item does not adversely affect the provision of UAS CNPC under Resolution **155 (Rev. WRC-19)**	APT members support ITU-R studies on the sharing and compatibility as well as to develop technical conditions and regulatory provisions for the use of satellite-to-satellite operations in the 11.7-12.7 GHz, 18.1-18.6 GHz, 18.8-20.2 GHz and 27.5-30 GHz frequency bands or portions thereof, in accordance with Resolution 773 (WRC-19), as such the use shall ensure protection of ~~primary~~ the FSS and other services to which the frequency bands are allocated ~~in the bands and~~ as well as those services in the adjacent bands to the above services , including passive services. APT members are of the view that the use of these bands for ~~inter-satellite service~~ satellite-to-satellite links needs to ~~fully~~ protect the FSS in these bands, taking into account that the parts of these frequency bands studied under the agenda item ~~is~~ are the core FSS bands which are used for telecommunication infrastructure in many countries. APT members are of the view that currently there is no coordination procedure to protect other services, in particular FSS, due to the fact that the inter satellite link composed of GSO and NGSO link for which

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		according to the RRB Rules of Procedure, the protection of other services is not possible. See (Document 4A/691/Annex 30). APT members are of the view that the technical conditions and regulatory provisions developed under WRC-23 agenda item 1.17 shall ~~not impact on~~ ensure not causing unacceptable interference to the terrestrial services operating in the frequency band 27.5-29.5 GHz. APT members are also of the view that consideration should be given to the operation of the secondary terrestrial services as currently contained in the Radio Regulations in order that these terrestrial services should not be adversely affected by ~~inter-satellite service~~ satellite-to-satellite links in the frequency band being studied under WRC-23 agenda item ~~AI~~1.17. APT members support the protection of the BSS in the band 11.7-12.2 GHz in Region 3 and not to impose any additional constraints on future development of the BSS in the band 11.7 - 12.2 GHz in Region 3. APT members support satellite-to-satellite transmissions according to the FSS directionality indicators (i.e. Earth-to-space or space-to-Earth) and "within the cone of coverage" concept of operations. APT members are considering to support NOC for the allocation in the band 11.7-12.2 GHz in Region 3 at this stage.
AI 4 Review of Res and Rec of previous conferences	(Review of Resolutions and Recommendations)	~~APT Members support the ongoing ITU-R studies for establishing a new globally or regionally harmonised regulatory framework for HIBS with a view to providing flexibility of spectrum usage for HIBS in certain frequency bands below 2.7 GHz already identified for IMT referred to in Resolution **247 (WRC-19)**, while ensuring protection of the existing services, to which the frequency band is allocated on a primary basis, and adjacent bands, as appropriate, without adversely affecting in their deployment including other IMT uses, existing systems and the planned development of primary services.~~ APT Members support the principle and intent of Resolution **95 (Rev.WRC-19)**, to ensure Resolutions and Recommendations of past WRCs are relevant and kept up to date. Since a number of the studies requested by the WRC Resolutions are now under consideration at the relevant groups in the ITU-R, APT members are encouraged to participate in these studies. In reviewing the Resolutions/Recommendations listed in the Attachment 1; – the progress of the studies is important information for those Resolutions that include "*invites ITU-R*", – or similarly, the progress of the implementation work of the ITU Radiocommunication Bureau (BR) is also important for those Resolutions that include "*instructs the Director of the Radiocommunication Bureau*".
AI 8 Deletion of country footnotes	To encourage administrations listed in the footnotes to review Nos. **5.181, 5.197** and **5.259**, as access to the frequency bands 74.8-75.2, 108-112 and 328.6-335.4 MHz by the mobile service is difficult and could create the potential for harmful interference to important radionavigation systems used by aircraft at final approach and landing as well as systems operating in the aeronautical mobile service in the frequency band 108-112 MHz. To encourage administrations listed in the footnotes to review Nos. **5.201 and 5.202**, as use by the AM(OR)S of the frequency bands 132-136 MHz and 136-137 MHz in some States may cause harmful interference to aeronautical safety communications. To encourage administrations listed in the footnote to review No. **5.330** as access to the frequency band 1 215-1 300 MHz by the fixed and mobile services could potentially cause harmful interference to services used to support aircraft operations.	~~It was agreed no meeting of AI 8 was required at APG23-3 and that it was not necessary to develop an APT Preliminary View on the agenda item at this meeting.~~ **Issue A – Deletion of country footnotes or country names from footnotes** APT Members support the principles and intent of Resolution **26 (Rev.WRC-19)** and the WRC standing agenda item for administrations to remove their country footnotes or their country names associated with specific footnotes of the Table of Frequency Allocations in Article **5** of the Radio Regulations when no longer required. **Issue B – Addition of country names into existing footnotes**

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	To encourage administrations listed the footnote to review No. **5.352A** as access to the frequency bands 1 525-1 530 MHz by the fixed services could potentially constrain aeronautical use of this frequency band. To encourage administrations listed in the footnote to review No. **5.355** as access to the frequency bands 1 540-1 559, 1 610.6-1 613.8 and 1 613.8-1 626.5 MHz by the fixed services could potentially constrain aeronautical use of these frequency bands. To encourage administrations listed in the footnote to review No. **5.359** as access to the frequency bands 1 550-1 559 MHz, 1 610-1 645.5 MHz and 1 646.5-1 660 MHz by the fixed services could potentially jeopardize aeronautical use of those frequency bands. To encourage administrations listed in the footnote to review No. **5.439** to ensure the protection of the safety critical operation of radio altimeters and WAIC systems in the frequency band 4 200-4 400 MHz. ICAO would encourage administrations to take appropriate actions under this agenda item to remove their country's name from these footnotes if no longer required.	The addition of country names to existing footnotes during the conference can carry with it considerable impact to existing allocations and the management of spectrum in other (often neighbouring) countries. APT Members are of the view that this standing agenda item is not intended for adding country names into existing footnotes. WRCs may continue to deal with requests to add country names to the existing footnotes on a case-by-case basis, subject to the principle that there are no objections from the affected countries (See Annex 1 to Resolution **26 (Rev.WRC-19)**). **Issue C – Addition of new country footnotes** Previous conferences have considered proposals for addition of new country footnotes under this agenda item and determined the following principle: "Proposals for the addition of new country footnotes which are not related to agenda items of the Conference should not be considered." (see WRC-15 Document 142 (Rev.1)). APT Members are of the view that the standing agenda item for deletion of country names from footnotes is not intended for the addition of new country footnotes and therefore proposals for the addition of new country footnotes which are not related to agenda items of the Conference should not be considered (See Annex 1 to Resolution **26 (Rev.WRC-19)**). **Issue D – Availability of proposals under WRC standing Agenda Item 8** APT Members are of the view that the proposals under this WRC standing agenda item, should be available in a timely and efficient manner before a conference for due consideration of administrations.
AI 9.1b Protection of RNSS (s-to-E) receivers from the amateur and amateur-satellite services in the frequency band 1 240-1 300 MHz	To ensure that ITU-R studies under Resolution **774 (WRC-19)** address whether potential mitigation measures will impact the protection of aeronautical radar systems operating under the existing aeronautical radionavigation or radiolocation service allocations.	APT Members support ~~studies in~~ ITU-R studies in accordance with Resolution 774 (WRC-19), and development of new ITU-R recommendations to protect RNSS (space-to-Earth) receivers from the amateur and amateur-satellite services in the frequency band 1 240-1 300 MHz without considering the removal of the amateur and amateur-satellite service allocations. APT Members support no changes to the Radio Regulations under Agenda Item 9.1 Topic B.
AI 9.2 Difficulties and inconsistencies encountered by the BR in the application of the RR	Participate in ITU-R studies to ensure any proposed changes to the Radio Regulations recommended in the Director's Report to the WRC do not impact current or planned aeronautical systems or applications.	Nil output in this meeting. Due to the nature of this agenda item and lack of input contribution, DG AI9.2 had no session at APG23-~~34~~. Any issues are likely to be raised closer to the final meeting of APG23. **Resolution 811 (WRC-19)** instructs the Director of the Radiocommunication Bureau to submit a draft report referred in Agenda Item 9.2 to the second session of the CPM-23 and to submit the final report at least five months before the WRC-23. It is noted that standing Agenda Item 9.2 is strictly limited to the Report of the Director of the BR on any difficulties or inconsistencies encountered in the application of the Radio Regulations and the comments from administrations.