International Civil Aviation Organization

The Second Meeting of the APANPIRG ATM Sub-Group (ATM /SG/2)

Hong Kong, China, 4-8 August 2014

Agenda Item 4: ATM Systems (Modernisation, Seamless ATM, CNS, ATFM)

OUTCOME OF CNS SG/18 MEETING ON ATM RELATED MATTERS

(Presented by the Secretariat)

SUMMARY

This paper presents the outcome of the Eighteenth Meeting of the Communications/Navigation and Surveillance Sub-Group (CNS SG/18) on the ATM related matters for review by the ATM/SG meeting.

1. INTRODUCTION

1.1 The CNS SG/18 was held at the Regional Sub-office in Beijing from 21-25 July 2014. 78 participants from 23 States/Administrations, one international organization namely IATA and one Communication Service Provider – SITA participated the meeting.

1.2 The meeting considered 36 working papers and 29 information papers. The meeting developed 15 draft Conclusions and 5 draft Decisions for consideration by APANPIRG/25 meeting. In addition, the Sub-group made 3 Decisions regarding its work programme. The conclusions and decisions relevant to ATM SG may include but not limited to the following:

- *Draft Conclusion 18/1 Response to AN-Conf/12 Recommendations;*
- *Draft Conclusion 18/2 Regional Priorities and Targets;*
- *Draft Decision 18/3 AIDC Implementation Task Force;*
- *Draft Conclusion 18/8 Harmonization for AIDC Implementation;*
- *Draft Conclusion 18/12 Adoption of PAN Regional ICD for AIDC;*
- *Decision 18/14 Support Formation of PBN ICG;*
- *Draft Decision 18/16 Revised ADS-B Guidance Document (AIGD);*
- *Draft Conclusion 18/17 Flight Plan Item 10 – ADS-B Indicators;*
- *Draft Conclusion 18/18 Regulations for Compliance of ADS-B Transmissions;*
- *Draft Conclusion 18/20 ANRFs and Responsibility Matrix;*
- *Draft Conclusion 18/21 Seamless ATM Implementation Guidance;*
- *Draft Conclusion 18/22 Web-based reporting process;*

2. DISCUSSION

Follow-up to AN-Conf/12 Recommendations

2.1 The meeting noted that in this connection, a follow-up State Letter issued by the ICAO Regional Office dated 2 August 2013 invited States/Administrations and international organizations to initiate action as appropriate on the applicable AN-Conf/12 Recommendations and submit the action planned by 31 January 2014. Australia, Hong Kong China, Japan, New Zealand, Singapore, Thailand and USA submitted their action plans which were compiled in the Attachment to WP/03. Philippines and Malaysia confirmed that they would follow up with the recommendations of AN Conf/12.

2.2 The ADS-B SITF/13 meeting held in April 2014 proposed to take action on 16 of the 56 recommendations and formulated a draft Conclusion that its response to these 16 recommendations be adopted as guidance for consideration by States. Similarly, ACSICG/1 meeting held in May 2014 identified Recommendations 1/6, 3/2, 3/3, 3/4 and 3/5 as relevant to the work of ACSICG and recommendations 3/9 and 6/13 are indirectly linked to ACSICG activity.

2.3 The responses from States, ADS-B SITF/13 and ACSICG/1 meetings were consolidated into a single recommended action by an ad hoc working group during the meeting. The ad-hoc group was led by Hong Kong China, with members from Australia, Japan, Singapore and USA. The meeting further reviewed the consolidated response and formulated following draft Conclusion:

Draft Conclusion 18/1 - Response to AN-Conf/12 Recommendations

That, the regional response to the Recommendations of AN-Conf/12, as proposed in **Appendix XX** to the report be adopted as guidance for consideration by States.

Priorities and Targets

2.4 The meeting recalled that APANPIRG/24 adopted Conclusion 24/2 regarding establishment of regional priorities and targets (see ATM/SG/WP07). As a result of discussion, CNS SG/18 recommended the regional priorities and targets to APANPIRG for adoption and subsequent submission to ICAO Headquarters with following Draft Conclusion:

Draft Conclusion 18/2 - Regional Priorities and Targets

That, Regional Priorities and Targets contained in **Appendix XX** to the Report be adopted and submitted to ICAO Headquarters.

Review Outcome of FIT-AISA/3 and RASMAG/19 Meetings

2.5 The meeting noted the outcome of the 3rd Meeting of the Future Air Navigation Systems Interoperability Team-Asia (FIT-Asia/3) and the Nineteenth Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/19) held in Pattaya, Thailand from 26-30 May 2014.

2.6 The meeting noted the data-link performance status reports from India, China and Singapore and the draft PfA to SUPPs regarding CPDLC (14/07), ADS-B, ADS-C, ACAS II and SSR Mode S transponders (14/09).

2.7 The meeting focused its discussions on the three items that required actions by CNS SG.

a) Regarding the recommended guidance material for implementation of data link systems provided by Australia in FIT-Asia/3/IP04, after lengthy discussion on title of the recommended guidance material, its relation with GOLD, difference between ADS-C and CPDLC etc., the meeting concluded that contents of this guidance material would be more relevant for consideration by ATM SG.

b) The meeting discussed the ATS direct speech circuit and COM/SUR problems between China and Pakistan as identified by RASMAG, namely the interface between Urumqi and Lahore (Pakistan) FIRs. China had proposed enhancements to communications and ATS surveillance near its border with Pakistan, but had encountered difficulties in establishing the facilities along boundaries between two countries. China requested ICAO to work with Pakistan to resolve this problem, as it was concerned about the safety risks at the PURPA crossing point. A side meeting between China and Pakistan was held during the CNS SG/18 meeting during which the reported issues were reviewed and proposed solutions were discussed. As first step, both sides agree to designate a focal point for this issue. ICAO Regional Office was requested to organize a COM Coordination meeting as soon as possible. Both China and Pakistan agreed to improve existing means of ATS direct speech circuit for transferring air traffic as one of the priorities.

c) Regarding the proposed establishment of an AIDC Task Force to facilitate AIDC implementation so as to reduce Large Height Deviation errors during air traffic transfer between States in the SEA and BOB areas, the meeting discussed several issues and explored several alternate ways of addressing the identified problem in a timely and effective manner. Considering AIDC implementation was identified as one of the regional priorities, its inclusion in the ASBU B0 modules and noting APANPIRG Conclusions 24/17, 24/27 on AIDC Implementation, the meeting endorsed the following Draft Decision:

Draft Decision 18/3- AIDC Implementation Task Force

That, AIDC Implementation Task Force be established with Terms of Reference provided in **Appendix X**[1] to this Report.

2.8 The concept of GO-team as proposed by IATA as one available means to facilitate AIDC implementations was included in the draft TOR of the Task Force. It was also informed that corresponding working team in the States/Administrations would be required to achieve the desired result through effective coordination.

2.9 The CNS SG meeting adopted the following draft Conclusion regarding harmonization for AIDC implementation.

Draft Conclusion 18/8 - Harmonization for AIDC Implementation

That, States/Administrations in APAC Region be urged to share their implementation plan and experiences with concerned States for an expeditious AIDC implementation in a harmonized and time bound manner.

2.10 The meeting was informed that an AIDC Seminar (ICAO Special Implementation Project) was scheduled for 28-31 October 2014.

Pan Regional ICD for AIDC

2.11 The meeting noted the following activities of the inter-regional AIDC Task Force (IRAIDTF):

- IRAIDTF/1 meeting was held in ICAO Paris Office from 16-18 January 2013;
- IRAIDTF WebEx meeting held on 27 February 2013;
- IRAIDTF WebEx meeting held on 10 April 2013;

[1] Attachment A to WP14

- IRAIDTF/2 meeting was held in ICAO Bangkok Office from 22-26 July 2013;
- IRAIDTF/3 meeting s held in ICAO Headquarters from 24-28 March 2014;
- IRAIDTF Teleconference held on 11 June 2014;
- IRAIDTF Teleconference held on 9 July 2014; and
- IRAIDTF Teleconference scheduled for early August 2014

2.12 The meeting reviewed and endorsed the latest draft of the Pan Regional APAC/NAT AIDC ICD (Version 0.91). The ICD was initially developed based on the APAC AIDC ICD Version 3.0 and NAT AIDC ICD Version 1.3.0. It was anticipated that the ICD would likely be adopted by NATSPG in June 2015. For the APAC Region, similar to the process for adoption of GOLD, the PAN Regional ICD for AIDC may also be adopted as interim version by APANPIRG/25 in September 2014 subject to adoption by NATSPG in June 2015. In view of the foregoing, the meeting endorsed the following draft Conclusion:

Draft Conclusion 18/12 – Adoption of PAN Regional ICD for AIDC

That, upon release by IRAIDC Task Force by September 2014, the PAN Regional ICD for AIDC be adopted as Version 1.0 serving as regional guidance for AIDC implementation in the APAC and NAT Regions.

2.13 Considering the tasks given by NAT SPG through Conclusion 48/28 and APANPIRG through Conclusion 23/20 being completed once the PAN regional ICD for AIDC is adopted by both the regions, the meeting agreed that IRAIDC Task Force be dissolved after adoption of the Version 1 of PAN Inter-regional ICD for AIDC by NAT SPG in June 2015. Accordingly the meeting endorsed following draft Decision:

Draft Decision 18/13- Dissolving Inter-regional AIDC Task Force

That, once Version 1 of PAN Inter-regional ICD for AIDC is adopted by July 2015, the Inter-regional AIDC Task Force established through NAT SPG Conclusion 48/28 and APANPIRG Conclusion 23/20 be dissolved.

RCP/RSP Implementation Framework

2.14 Through IP/10 (**Attachment B**), the Secretariat informed of the proposed structure i.e. Table of Contents for Performance-based Communication and Surveillance Manual (Doc 9869) and the frame work of the proposed amendment to Annexes 6, Part I, Annex 11 and PANS-ATM.

2.15 An OPLINKP PBCS drafting group is working on improving the contents of the PBCS Manual and proposed amendments to Annexes and PANS. The Operational Data Link Panel (OPLINKP) is planning to submit mature proposals to FLTOPSP in due course (preferably prior to the next Flight Operations Panel (FLTOPSP) meeting in October) for its consideration and comments. The mature proposals will include amendments to Annexes 6, 11, PANS-ATM, and Doc 9869 (PBCS Manual).

2.16 The meeting noted that OPLINK Panel had a plan to review the final proposals on PBCS at its next meeting scheduled for 6-17 October 2014. The proposals for amendments to Annexes and PANS will then, if consensus is reached, be refined for presentation to the ANC in early 2015, proposing applicability date of November 2016.

2.17 The Secretariat proposed an initial implementation framework of RCP/RSP across APAC Region in response to APANPIRG Decision 24/33 - APAC RCP/RSP Implementation Framework. The PBCS concept applies RCP and RSP specifications in any one or more of the following ways:

- Air traffic services (ATS) provision and prescription (in accordance with ICAO Annex 11, PANS, Doc 7030 and/or Aeronautical Information Publication (or equivalent publication)) of a RCP specification for a communication capability and/or a RSP specification for a surveillance capability, either of which is required for the ATS provision in a particular airspace; and
- Operator authorization (under Air Operator Certificate, special authorization or equivalent, in accordance with ICAO Annex 6) of a communication and/or surveillance capability including aircraft equipage where RCP and/or RSP specifications have been prescribed for the communications and/or surveillance capabilities supporting the ATS provision.

2.18 The CNS SG/18 meeting discussed about the RCP/RSP implementation issues. It was considered intensive work needs to be addressed under PBCS framework. It may also require a contributory body to be established in the future to deal with the implementation planning and related issues. There was also a proposal to review the monitoring agencies such as the CRA under RASMAG to see if they can be redefined to include PBCS.

2.19 Considering that PBCS manual would be made available in 2015 and related SARPs and PANS-ATM would be updated to include PBCS in end of 2016, ICAO was requested to organize more workshops/seminars facilitate understanding on the subject and the requirements for implementation in the future.

SATVOICE Communication

2.20 India informed the meeting that India adopted SATVOICE communication and has implemented it at Oceanic Control Center at Mumbai and planned to implement SATVOICE at Chennai, Kolkata and Delhi ACCs. The guidance for use of SATVOICE in India was currently through standard operating procedures. India encouraged States in Asia/Pac region to use SATVOICE as an LRCS option in addition to routine and emergency use.

2.21 States were also encouraged to consider including SATVOICE capability into their ATM automation system when such systems are replaced or upgraded in accordance with directive of APANPIRG.

2.22 The meeting was informed of Australia SATVOICE Position that the use of SATVOICE was restricted to non-routine and emergency purposes only and it would not be used for routine ATS service until the new Australian ATM system became operational. New Zealand indicated that they also had a similar position for using SATVOICE communication.

2.23 IATA restated its position that use of SATVOICE Communication should be as a backup system only for emergency use. The meeting identified a need for training on the use of SATCOM, including upgrading and refresh training.

PBN Implementation Progress and ICAO Support

2.24 The meeting noted that with rapid increase in aviation demand and needs for higher fuel efficiency; there is an urgent call for use of new navigation technologies and operation procedures to meet such requirements. In response to this call for action, ICAO had endorsed the use of Performance-Based Navigation (PBN) and Global Navigation Satellite System (GNSS) as the new navigation elements of CNS systems.

2.25 The number of published PBN SID/STAR procedures within the APAC Region continued to increase. For approach operations, currently 51% of all instrument runways within APAC had published PBN approach procedures. Beyond establishing relevant ICAO standards and guidance material, to assist Member States with on-going PBN planning and implementation, ICAO in cooperation with industry partners such as IATA had organized several PBN implementation focus activities. These activities include PBN symposia, workshops, Go-Team visits, training courses and learning packages. ICAO has also established implementation support offices for PBN implementation in the form of the APAC Regional Sub-Office (RSO) and a Flight Procedure Programmes Office at Beijing.

2.26 To serve as the primary forum to support implementation of PBN in this region, ICAO proposed to APANPIRG the formation of a PBN Implementation Coordination Group (PBN ICG). The meeting reviewed the draft Terms of Reference of the proposed PBN ICG and supported the latter's establishment, with endorsement of the following Draft Decision:

Decision 18/14 – Support Formation of PBN ICG

That, the CNS SG supports the establishment of the PBN ICG and its draft Terms of Reference as in Appendix **XX**.

Outcome of ADS-B SITF/13 Meeting (WP/23)

2.27 The meeting reviewed the report of the Thirteenth Meeting of Automatic Dependent Surveillance – Broadcast (ADS-B) Study and Implementation Task Force (ADS-B SITF/13). An ADS-B Seminar and the ADS-B SITF/13 meeting, hosted by the DCA. Hong Kong China was held from 22 to 25 April 2014. The deliberations during the Seminar were taken into consideration at the 13th meeting of the Task Force. The report of the meeting and other relevant documents are provided on the following ICAO APAC webpage: http://www.icao.int/APAC/Meetings/Pages/2014-ADSB-SITF13.aspx

2.28 The CNS SG/18 meeting noted that a survey was conducted by ADS-B SITF on the readiness of ADS-B ground stations that had been upgraded to be capable of receiving ADS-B D0260B compliant ADS-B data.

Proposed Amendment to AIGD

2.29 The meeting noted that Australia, Hong Kong China and Singapore had proposed an amendment to the ADS-B Implementation and Guidance Document (AIGD) to incorporate guidance for monitoring and analysis of the performance of ADS-B avionics. The meeting reviewed the revised AIGD appended to the ADS-B SITF/13 report. The proposed amendment also included guidance materials on synergy between ADS-B and GNSS, revised ATC phraseology and clarification on the flight planning requirements etc. In view of the foregoing, the meeting endorsed following Draft Conclusion:

Draft Conclusion 18/16- Revised ADS-B Implementation and Guidance Document.

That, the revised ADS-B Implementation and Guidance Document (AIGD) provided in **Appendix H** (including **H2**) to this report be adopted.

2.30 It was foreseeable that increasing number of States worldwide would start to formulate plans to implement ADS-B in order to meet their operational needs and implement relevant Aviation System Block Upgrades (ASBUs). Therefore, it was recommended that the AIGD should be promulgated to States in other Regions as guidance materials for experience and knowledge sharing on ADS-B implementation in order to reap early operational benefits and save efforts. The Secretariat informed the meeting that the AIGD had already been forwarded to other ICAO Regional Office for their reference and agreed to seek assistance from ICAO Headquarters to make the AIGD available to States in other Regions to achieve better synergy in ADS-B implementation.

The Use of Flight Plan Data to Support ATM and the Effect of Variable Application of Flight Planning Requirements

2.31 The meeting noted that Amendment 1 to the 15th Edition of ICAO Doc 4444 (PANS/ATM), effective from November 2012, introduced new, more detailed flight planning requirements improving the description aircraft capabilities in Items 10 and 18 of the ICAO FPL. Descriptors for surveillance equipment capabilities were provided for in Item 10b of the FPL. Descriptors for ADS-B capability were provided in both the "SSR Mode S" and "ADS-B" ranges of descriptors. The purpose of the ADS-B descriptors was to allow ATC to plan operations with an expectation that the aircraft will or will not be transmitting ADS-B as indicated in the FPL, before the aircraft was detected.

2.32 Examination of Flight Plan data indicated that serviceable ADS-B capability was not consistently indicated, perhaps due to a lack of clarity and understanding of the ICAO FPL requirements.

- B1 and B2 included the term "dedicated", which could suggest an ADS-B transmitter which was separate from the Mode S transponder. Depending on interpretation B1 or B2 could be planned to indicate ADS-B capability, regardless of the transmitter hardware (being either the Mode S transponder or a discrete unit), or only where the ADS-B transmitter was separate from the Mode S transponder;

- There was no value in ATC knowing whether or not the ADS-B capability was in a discrete unit or not. ATC was only interested in whether the aircraft as a whole was transmitting useable ADS-B data;

- The majority of ADS-B equipped flight plans received by Australia indicated both the SSR Mode S capability, and the associated ADS-B capability, e.g. EB1, LB1, LB2. Some ADS-B equipped flights we observed to be planning "E" or "L", but without "B1" or B2";

- There were significant issues faced by other regions that required DO260B for operational purposes. Currently there were no means in the flight plan to distinguish between DO260, DO260A and DO260B. It was likely that Europe/USA would require a designator to indicate DO260B compliance. For example:
  - B1/B2 : DO260 (or DO260A)
  - B3/B4 : DO260B

- European organizations had discussed additions to Item 18 SUR/ to achieve this as an interim measure until the ICAO FPL could be revised again. European organizations had also identified potential redundancy between L (and E) and the B1/B2 designators.

- An understanding of each aircraft's ADS-B capability was important for the Air Traffic Controllers' traffic management and planning. :
- The variability of flight planning understanding among operators, pilots and ANSPs undermined the reliability of information presented to the air traffic controller. There were no known current or anticipated operational uses for the declaration of 1090 MHz Extended Squitter capability in the flight plan beyond declaration of ADS-B capability.
- It was recommended that ICAO Doc. 4444 (PANS/ATM) Appendix 2 (A2-7) and Appendix 3 (A3-13) be amended.

2.33 The meeting endorsed proposed changes to be included in the regional interpretation into the AIGD, and agreed to the following Draft Conclusion formulated by the ADS-B SITF:

Draft Conclusion 18/17 – Flight Plan Item 10 ADS-B Indicators

That, ICAO be invited to consider to amend relevant contents in Doc. 4444 PANS/ATM Appendix 2 (A2-7) and Appendix 3 (A3-13) as shown below:

o E Transponder — Mode S, including aircraft identification, pressure-altitude and ~~extended squitter (~~ADS-B out~~)~~ capability

o L Transponder — Mode S, including aircraft identification, pressure-altitude, ~~extended squitter (~~ADS-B out~~)~~ and enhanced surveillance capability

o B1 ADS-B ~~with dedicated 1 090 MHz ADS-B~~ "out" capability using 1 090MHz extended squitter.

o B2 ADS-B ~~with dedicated 1 090 MHz ADS-B~~ "out" and "in" capability using 1 090MHz extended squitter.

2.34 In this recommended amendment, there was duplication of the indication of ADS-B carriage for aircraft where the Mode S transponder was the transmission device.

2.35 This recommendation was unlikely to require significant changes to ATM systems; the descriptors were unchanged but their interpretation was clarified. Some adaptation changes could be required where ANSPs were currently using the descriptors as triggers for system processing such as controller HMI indications. Changes to flight planning systems would be required in cases where the text associated with each descriptor was provided for pilot reference and to individual States' AIP where ICAO DOC 4444 flight planning requirements were repeated.

ADS-B Operational approval requirement

2.36 The meeting recalled that a number of Asia Pacific States required State of Registry operational approvals for the introduction of ADS-B airspace in December 2013, possibly to conform with the APANPIRG Conclusion/template.

2.37 At ADS-B SITF/13 meeting, Australia recommended that States and ANSPs should reconsider any current requirements for "operational approval" for aircraft operators, and remove any such reference to a requirement for an "operational approval" or "operational specification" from State regulations and AIP. New Zealand and USA supported the proposal to remove the requirement for operational approvals, and Canada advised that they also did not require operational approval. However, other States stated that they would have difficulty in supporting ADS-B operations without an operational approval process. The meeting discussed the varying regulatory and legislative circumstances that may exist among Asia/Pacific States, and the evolutionary nature of each State's development of ADS-B regulations.

2.38 In view of the foregoing and in order to provide flexibility to those States until more experience was gained, the following Draft Conclusion developed by the Task Force was endorsed by the meeting:

Draft Conclusion 18/18 - Regulations for Compliance of ADS-B Transmissions

That, States be urged to implement regulations to give effect to Regional Supplementary Procedure Serial APAC-S12/10 – MID/Asia 5-3 to ensure that all aircraft transmitting ADS-B are compliant with the standards;

States in the Asia and Pacific Regions may choose to require or not require an Operations Specification or Operations Approval for ADS-B OUT.

ADS-B Operational Approval for Operations Outside of U.S. Domestic Airspace

2.39 The meeting noted that USA provided information on how the FAA issued State of Registry operational approval for U.S.-registered aircraft to comply with ADS-B mandates of other States and discussing the burden to the aircraft operator and approving regulator of requiring "State of Registry" operational approval. Very recent updates on the FAA Flight Standards Service (AC 90-114, Change 1) indicates that no operational approval is required for aircraft with avionics compliant with AC 20-165A to operate in U.S. airspace defined in Title 14 of the Code of Federal Regulation (14 CFR) § 91.225 (part of the U.S. ADS-B Final Rule).

Space based ADS-B Surveillance Service (Canada)

2.40 An overview of NAV CANADA's plans for introduction of space-based ADS-B surveillance services was provided to the ADS-B SITF meeting. The meeting appreciated the opportunities offered to States/Administrations in the APAC Region to receive additional information through a workshop on space-based ADS-B supported by NAV CANADA. The meeting further noted that one day workshop on space-based ADS-B would be arranged in conjunction with ADS-B SEA/BOB WG meeting in Singapore on 11 November 2014.

Business Jet Aircraft Fitment Issues

2.41 The meeting noted the ADS-B fitment rate issue for Business jet aircraft. It was advised that a number of States/Administrations had received a letter from IBAC asking for suspension or withdrawal of the ADS-B mandates in the specified routes segments of the concerned State/Administrations' airspace. The meeting noted the outcome of discussions on this matter recorded in the report of the ADS-B SITF/13 meeting.

Separation Minima, Airspace Capacity and ADS-B Mandates

2.42 The meeting noted the combined 4th Meeting of the South Asia/Indian Ocean ATM Coordination Group and 21st Meeting of the South East Asia ATS Coordination Groups (SAIOCG/4 & SEACG/21 held in February 2014 had agreed to a draft Conclusion on ADS-B Airspace Mandates. The meeting noted the Draft Conclusion was supported and endorsed by the ADS-B SITF. The meeting reviewed the draft PfA without any further comments.

2.43 IATA urged States to consider and address the issues impeding the region from implementing the separation standards that would improve airspace capacity and efficiency by providing ATC with the tools to deliver optimal services.

Air Transport Aircraft ADS-B OUT Forward Fit

2.44 The meeting discussed the following draft Conclusion proposed by Australia on ADS-B OUT forward fit for air transport aircraft. The significant benefits were highlighted for new aircraft to be equipped with ADS-B avionics compliant with Version 2 ES and the proposal does not bring significant costs to the airline community.

ADS-B OUT Forward Fit

*That, States/Administrations in APAC Region mandate that **air transport** aircraft with a maximum take-off weight of more than 5,700 kg and an individual certificate of airworthiness first issued on or after 8 January 2018 (two years after the European forward fitment mandate is effective) be equipped with ADS-B avionics compliant with Version 2 ES (equivalent to RTCA DO260B).*

2.45 The meeting recalled that ADS-B SITF/13 meeting decided not to endorse a similar draft Conclusion proposed by the Working Group regarding the regional ADS-B OUT forward fit mandate commencing from December 2017 as there were cost concerns for those aircraft which would only fly within non-ADS-B airspace, as well as costly implementation for GA aircraft with such a mandate. Japan expressed the need for more time to consult with stakeholders, and also that new emerging space based ADS-B technology should also be considered. Pakistan indicated that there was a need to consult with airworthiness experts in this regard. As a result of discussion, the meeting referred Australia's proposal for an ADS-B OUT forward fit mandate to the ADS-B SITF for further consideration.

2.46 The meeting encouraged States/Administration, when planning their transition to ADS-B, to consider the cost effectiveness of publishing forward fit and retrofit mandates as well as early promulgation of such mandates and transition plan for forward fit and retrofit of ADS-B avionics for aircraft in their airspace. Member states of the ADS-B SITF were also urged to consult with domestic stakeholders regarding the proposed forward fit mandate and actively participate in discussion prior to ADS-B SITF/14 meeting in April 2015.

ADS-B Avionics Problem Reporting Database (APRD)

2.47 Hong Kong China reported the latest progress in development of the ADS-B Avionics Problem Reporting Database, and called for support from CNS SG on continuous development of the database through collaboration with concerned States and ICAO RSO.

2.48 It was recalled that during past ADS-B SITF and SEA/BOB ADS-B WG meetings, Australia, Hong Kong China and Singapore had presented working papers highlighting work undertaken to monitor and analyse avionics performance of ADS-B equipped aircraft. A proposal to establish a centralized database at the ICAO Regional Sub-office (RSO) was initially discussed for sharing the monitoring results to enhance aviation safety for the Region. The proposal has gained support and endorsement from the ADS-B SITF/13 meeting. Since then, Hong Kong China, Australia and Singapore have been working with the RSO to develop detailed requirements and specification for the database together with access and security procedures for provision and sharing of data.

2.49 The basic requirement and procedure flow chart of the database was reviewed by the meeting. The meeting expressed support for continuous development and operation of the database by the ICAO RSO to facilitate ADS-B implementation in the Region. Hong Kong China was requested to designate a contact point for closely working together with RSO to improve database performance including detailed specification, secured access and information updating procedure.

Air Navigation Reporting Forms and Seamless ATM Reporting Form, Regional Performance Dashboard

2.50 The meeting reviewed the draft ANRF[1], amended the responsibility matrix and recommended their adoption to APANPIRG/25 through the following Draft Conclusion (for the responsibility matrix the meeting considered two scenarios, whether or not the PBNICG would be created):

Draft Conclusion 18/20 - ANRFs and Responsibility Matrix

That, the ANRF on B0-ASUR, B0-FICE, B0-TBO,B0-APTA, B0-CCO, B0-CDO, B0-SNET, B0-ACAS, B0-ASEP and B0-SURF together with the matrix of responsibilities as provided in **Appendices X to X** be adopted.

2.51 The meeting also reviewed the Seamless ATM Implementation Guidance v4.3 and recommended its adoption to APANPIRG/25 through the following Draft Conclusion:

Draft Conclusion 18/21 - Seamless ATM Implementation Guidance

That, the Seamless ATM Implementation Guidance version 4.3, (dated May 2014) be adopted by APAC States/Administrations and maintained by the ICAO Regional Office.

2.52 The meeting noted the information showcasing the web-based on-line reporting process, and recommended to APANPIRG/25 the adoption of the following Draft Conclusion:

Draft Conclusion 18/22 - Web-based reporting process

That, States/Administrations start reporting through the ICAO online process on their Seamless ATM Implementation progress at least once a year, starting from October 2014 onwards.

Human Factors (HF) in Research, Acquisitions, Operations and Maintenance of CNS/ATM Systems

2.53 India through WP/28 and USA through IP/5 highlighted the need for integration of Human factor engineering in research, acquisitions, operations and maintenance of CNS/ATM Systems.

2.54 As a result of discussion, the meeting agreed to add an agenda item on Human Factors for next year's CNS SG meeting. The Chair also proposed consideration of possible inclusion of Human Factors and other related issues such as training in the CNS SG TOR whey they are reviewed next year.

[1] No changes were proposed by the CNS SG to the draft ANRF

3. ACTION BY THE MEERTING

3.1 The meeting is invited to:

a) note the information provided in this paper; and

b) The meeting is also invited to take necessary actions as follows:

i. take action on adoption of the Data-link Guidance material as recommended by RASMAG;

ii. endorse the establishment of AIDC Implementation Task Force;

iii. endorse adoption of PAN Regional ICD for AIDC;

iv. note the support from CNS SG for establishment of PBNICG reporting directly to APANPIRG with briefings to CNS SG and ATM SG;

v. endorse the adoption of the revised ADS-B Implementation and Guidance Document;

vi. note the proposed amendment to Doc 4444 PANS-ATM Appendices 2 and 3 regarding FLIGHT PLAN Item 10 on ADS-B indicators (included in AIGD and asking for action by HQ);

vii. note the flexibility on ADS-B operational approval proposed in a draft Conclusion by the ADS-B SITF/13;

viii. note the draft Conclusion on ANRFs and responsibility Matrix;

ix. note draft Conclusions on Seamless ATM Implementation Guidance and the web-based reporting process; and

x. note discussions by CNS SG on the RCP/RSP work programme and human factors for CNS/ATM systems.

ASIA/PACIFIC

ATS INTER-FACILITY DATA-LINK COORDINATION (AIDC)

TASK FORCE (APA/TF)

TERMS OF REFERENCE

APA/TF Objective and Scope

The Asia/Pacific ATS Inter-Facility Data-Link Coordination Task Force (APA/TF) shall be responsible for overseeing the expedition of AIDC implementation in accordance with the Asia/Pacific Seamless ATM Plan within the Asian Region, with a particular focus on the Bay of Bengal (BOB) and South China Sea (SCS) areas.

Tasks

The APA/TF shall support the implementation of AIDC within the Asia/Pacific Region by:

a) identifying problems and barriers for implementation of AIDC, with a particular focus on the BOB and SCS areas and establish an **action plan** committing the stakeholders to agreed and realistic* milestones. The action plan should prioritize the actions according to the potential safety impacts of the considered issues and **use the most efficient mechanisms** including Small Working Groups (SWGs), aviation industry teams and/or Go-teams (subject to funding) where required, to directly assist Asia/Pacific administrations within the BOB and SCS areas;

b) **solving the problems** according to the action plan; and

c) taking any appropriate action **to meet the AIDC regional targets (phase 1 for 2015 and prepare phase 2018)** as far as practicable, including the development of Asia/Pacific AIDC implementation guidance material* to complement ICAO Standards and Recommended Practices and the deliverables of the ICAO Inter-Regional AIDC Task Force (IRAIDC TF).

* This means that the milestones will take into account the delays induced by funding and implementation of ATM systems upgrades and associated procedures if needed.
** Such guidance material should take into account the density and complexity of air traffic (including the prevalence of ATC coordination errors), the requirements for User Preferred Routing (UPR) and Dynamic Airborne Re-route Planning (DARP), the Flight Information Region Boundary (FIRB) proximity to departure and arrival aerodromes or other FIRBs and ancillary AIDC functions (including automated transfer of Controller-Pilot Data-link Communications (CPDLC) data authority).

Frequency

The APA/TF shall meet approximately twice a year and will use webconferences.

Schedule
The TF should complete its work in accordance with the planning. An indication could be 1 to 2 years for tasks a and b and 2 to 3 years for task c/.

Reporting
The TF should report to APANPIRG through CNS SG.

Composition of APA/TF

The APA/TF will consist of ATM and CNS representatives from Asia/Pacific States (ANS Providers), IATA, CANSO, IFALPA and IFATCA. Experts on AIDC from outside the Asia/Pacific may attend if their technical input would be beneficial to the APA/TF.
Trans-regional States to the Asia/Pacific concerned by the action plan or having an interest in AIDC may also be invited.

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