



International Civil Aviation Organization

**FIFTEENTH MEETING OF THE
COMMUNICATIONS/NAVIGATION/SURVEILLANCE AND
METEOROLOGY SUB-GROUP (CNS/MET SG/15) OF APANPIRG**

Bangkok, Thailand, 25 – 29 July 2011

Agenda Item 2: Review

3) outcome of meetings of other related groups of APANPIRG

ATM/AIS/SAR SUBGROUP OUTCOMES

(Presented by the Secretariat)

SUMMARY

This paper presents the key outcomes relevant to the CNS/MET SG from the Twenty-first Meeting of the APANPIRG Air Traffic Management/Aeronautical Information Services/Search and Rescue Sub-Group (ATM/AIS/SAR/SG/21, Bangkok, Thailand, 27 June – 01 July 2011).

This paper relates to –

Strategic Objectives:

- A: *Safety – Enhance global civil aviation safety*
- C: *Environmental Protection and Sustainable Development of Air Transport – Foster harmonized and economically viable development of international civil aviation that does not unduly harm the environment*

Global Plan Initiatives:

All GPIs

1. INTRODUCTION

1.1 The Twenty-First Meeting of the APANPIRG Air Traffic Management/Aeronautical Information Services/Search and Rescue Sub-Group (ATM/AIS/SAR/SG/21) was held at the Kotaite Wing of the ICAO Asia and Pacific (APAC) Regional Office, Bangkok, Thailand from 27 June to 01 July 2011. The meeting was attended by 97 participants from 22 States, two Special Administrative Regions of China, two Dependent Territories and three International Organizations.

2. DISCUSSION

Review and update Conclusions and Decisions of APANPIRG (WP02)

2.1 With regard to Conclusion 21/1 (*States air navigation modernization plans*), India presented IP31, which provided information on the modernization of India's system, including automation features and safety nets, covering six major and 38 secondary airports. The system would provide complete radar and VHF coverage over Indian continental airspace, and the plan was to

integrate radar and Automatic Dependent Surveillance – Broadcast (ADS-B). India urged States with adjoining centres to implement ATS Inter-facility Datalink Communications (AIDC).

Endorsement of Automatic Dependent Surveillance-Broadcast Data for Monitoring RVSM Aircraft Altimetry System Error (IP08)

2.2 This paper presented information on a joint research activity undertaken between Airservices Australia and the FAA to prove the use of ADS-B geometric height data for estimating Altimetry System Error (ASE). This work had been formally endorsed by both the ICAO Separation and Airspace Safety Panel (SASP) and Regional Monitoring Agencies Coordination Group (RMACG), and thus was well received by States and airspace users alike as a potentially bonus attribute for ADS-B systems.

ICAO Asia/Pacific Seamless ATM Symposium and Ad-Hoc Group Meeting (WP06)

2.3 The 46th Conference of Directors General of Civil Aviation, Asia and Pacific Regions (DGCA/46, Osaka, October 2009) first addressed the ‘Seamless Sky’ and how this may affect the Asia and Pacific (APAC) Regions. DGCA/46 issued the Kansai Statement, which requested, inter alia, the APANPIRG to be ‘a starting platform for the discussion on ‘Seamless ATM’.

2.4 Subsequent to this, the ATM/AIS/SAR/SG/20 (Singapore, 05 – 09 July 2010), considered it important to extend knowledge about the ICAO Global ATM Operational Concept and the future ATM visions such as NextGen (United States), SESAR (Europe) and CARATS (Japan). To achieve this objective, the Federal Aviation Administration (FAA) and Japan Civil Aviation Bureau (JCAB) proposed a forum on future air traffic systems in collaboration with ICAO Asia and Pacific Office.

2.5 The 21st Meeting of APANPIRG, (Bangkok, 6 – 10 September 2010) agreed to the following Conclusions:

Conclusion 21/8 – ICAO Asia/Pacific Seamless ATM Workshop

That, ICAO be invited to organize the Asia and Pacific Seamless ATM Workshop to be held in early 2011 inviting the APANPIRG member States and other parties of interest in order to foster discussion and action for the Asia and Pacific States in the planning of the future air traffic management system, considering the overall vision for the region for seamless ATM.

Conclusion 21/12 – Convening of the Seamless ATM Ad-Hoc Meeting

That, while recognizing the seamless ATM needs to be addressed in a holistic manner, ICAO Regional Office be invited to organize a seamless ATM Ad Hoc working group meeting as soon as possible.

2.6 The CANSO (Civil Air Navigation Services Organisation) Seamless Airspace Workgroup considered the following terms as key to describe the general concept of Seamless ATM: standardised, harmonised, and interoperable. Thus a vision of a future Seamless ATM environment was conceptualised as having:

- consistent and harmonised¹ standards and operating practices; and
- using interoperable² ATM and supporting systems.

2.7 In this connection, the meeting noted that there must be an alignment between bodies that support APAC Regional planning and implementation and Seamless objectives. In the context of Seamless ATM, it was clear that optimal, harmonised systems and procedures cannot be achieved without appropriate ATM coordination between:

- State ATS Authorities;
- Air Navigation Service Providers (ANSP);
- Communication Service Providers (CSP);
- Military authorities; and
- airspace users such as the International Air Transport Association (IATA).

2.8 It was recognized by the meeting that it was important that the Major Traffic Flows (MTF) were not constrained by ICAO Regions and in the future, the need to work across regional boundaries would be increasingly required. The meeting noted the need for integrated, trans-regional ATM Coordination that could apply Seamless ATM principles to all MTF.

2.9 The APAC Seamless ATM Symposium and Ad-Hoc Meeting would be held in Bangkok, Thailand from 15 - 17 August 2011. The Secretariat urged all APAC administrations to attend this important forum.

Future Air Navigation System Implementation Teams (FITS)

13th Meeting of the FANS Implementation Team - Bay of Bengal Outcomes (FIT-BOB/13) (WP11)

2.10 The Thirteenth Meeting of the FANS Implementation Team for the Bay of Bengal (FIT-BOB/13) was held in Bangkok from 07 to 08 February 2011. Unfortunately, there was no central reporting agency (CRA, provided by Boeing in the BOB area) represented at the meeting.

2.11 It was noted by the meeting that there had been a lack of Problem Reports (PRs), which should be encouraged as these were a vital part of the safety oversight of data link operations. FIT-BOB recognized that it was necessary for FIT-BOB as a technical oversight body, to be provided with datalink safety data from each concerned States and for appropriate technical experts to assess this data from a sub-regional perspective. States should be encouraged to continue providing such data to each FIT meeting.

2.12 FIT-BOB recommended that the:

Bay of Bengal ATS Coordination Group (BBACG) review the TOR of the FIT-BOB, noting the meeting views RASMAG as a safety monitoring steering body, while FIT-

¹ Accord or agreement for a consistent and orderly implementation of systems/procedures (achieved through common timing or appropriate tools).

² Ability to transfer information or effect functionality across any discontinuity to enable operations (achieved through common standards, designs and procedures).

BOB was a technical assessment forum that is intended to deal with data link system issues; and

FIT-BOB is also expected to review issues in the Arabian Sea and Indian Ocean areas in accordance with the current TOR. In that respect, the competency of the assessment process of safety data was viewed as a matter for RASMAG, whereas CRA safety output was a matter for the FIT-BOB.

Such a review should take into account the possibility that FIT-BOB and FIT-SEA may be combined in future.

2.13 FIT-BOB recognised that FIT-BOB and FIT-SEA (South-East Asia) could be combined in order to include more experts that deal with similar issues, enable lessons learnt in one sub-region to assist other areas, and to reduce meeting costs. There was a lack of datalink performance monitoring technical experts and also a lack of PRs and other data needed to assess performance.

2.14 The meeting discussed the possibility of combining FIT-BOB and FIT-SEA to reduce meeting costs and make one 'FIT-Asia'. This body would address these issues as a separate body from the BBACG itself, which was mainly composed of ATM people. The original intention was to have the BBACG review this proposal but as the BBACG did not deal with South-East Asia issues, and the APANPIRG Contributory Bodies Structure Review Task Force (ACBSRTF) was planned, it was decided to delay this discussion until the Sub-Group. As it transpired, the ACBSRTF did not deal with sub-ordinate bodies to the Sub-Groups as these should be dealt with by the Sub-Groups themselves.

2.15 The Sub-Group discussed this, and while recognizing the benefits of reducing the number of meetings and the knowledge transfer, some members asked how a combined meeting might work with respect to the ATM Coordination Groups. The Secretariat responded that it might be useful to hold a FIT-Asia meeting immediately prior to a RASMAG, so the safety performance output could be provided directly to this body, and many of the safety performance experts that were needed in the FIT would also be able to attend the RASMAG. With respect to the flow of information to the ATM Coordination Group, safety performance monitoring at this level was by definition after the fact and not tactical in nature, so the data did not immediately need to go to ATM Coordination Groups.

2.16 The Sub-Group decided that the Secretariat should discuss this with the RASMAG and FIT-BOB and FIT-SEA chairs, in order to determine if a common position could be agreed, and thus a Draft Conclusion could be determined by RASMAG/15.

Eleventh Meeting of FANS Implementation Team for South-East Asia (FIT-SEA/11) (WP12)

2.17 This meeting noted the report of the 11th Meeting of FIT-SEA, held at Bangkok on 03 May 2011. The key issues relevant to the CNS-MET SG were as follows:

- PRs were from a single source; the meeting encouraged all States and airline operators to submit PRs to the CRA (at that time, the Japan CRA);
- Monthly Periodic Status Reports were prepared and submitted regularly from Singapore to CRA-Japan, which indicated that the ATS data link system performance were within the criteria except for downlink message delivery;

- there were performance issues for downlinks in both the Singapore and the Ho Chi Minh FIR, which was a known issue attributed to the B777 type (Boeing had since provided a fix to operators);
- from 14 February 2011, Manila progressed to the Phase 1B of the trial operations with seven airlines, with PRs and system performance reports being regularly submitted to CRA-Japan (which would continue to provide services to the Philippines on a bilateral basis); and
- CRA-Japan had terminated its services to the South China Sea area at the end of March 2011 at which time CRA services could be provided by Singapore.

2.18 The Chairman urged all concerned States to complete the CRA confidentiality agreements with Singapore. The meeting noted the main issue with the FIT-SEA was again a lack of technical expertise at the meeting and a lack of PRs.

South-East Asia

Eighteenth Meeting of the South-East Asia ATS Coordination Group (SEACG/18) (WP/13)

2.19 SEACG/18 was held in May 2011 in Bangkok, Thailand, following the 11th Meeting of FANS Implementation Team for Southeast Asia (FIT-SEA/11).

2.20 A side-bar meeting was held with Indonesia, the Philippines, Singapore, Viet Nam, MAAR and the Secretary, which dealt with the Category E (ATC coordination) issues identified at RASMAG/14. SEACG urged its members to enhance coordination between area control supervisors and requested Indonesia, the Philippines, Singapore and Viet Nam to implement AIDC as soon as possible. IATA noted that no ICAO group had responsibility for conducting an overall review of the Southeast Asia/Northeast Asia route structure (AR-9).

2.21 With the implementation of ADS-B in the Singapore FIR, there would be seamless surveillance coverage from end-to-end on South China Sea routes, so States were urged to discuss reductions of longitudinal spacing for ADS-B equipped flights. Singapore would apply ADS-B surveillance separation at or above FL350 on opportunity basis as the first phase of a trial and then in Phase Two offer priority at or above FL350 to ADS-B aircraft.

South East Asia Route Review Task Force (WP/14)

2.22 The Third and Fourth meetings of the South-East Asia Route Review Task Force (SEA-RR/TF), had been held in August and November 2010. There have been no further meetings of the Task Force, and the next meeting was scheduled to take place from 03 to 05 October 2011.

2.23 The Sub-Group noted that the overall achievements of this Task Force had been somewhat discouraging, with no specific deliverables, although a route concept had been established, including the use of unidirectional routing in the South China Sea area for crossing routes.

2.24 A number of route proposals had been developed, including:

- China and Hong Kong China jointly presented a proposal to reduce the longitudinal spacing from 40NM to 30NM on A1/P901 to take advantage of the communication and surveillance capabilities along these routes;
- Viet Nam proposed three new routes: Ha Noi - Yangon; Ha Noi - Siem Reap and Ho Chi Minh - Siem Reap;
- Singapore and Thailand agreed to establish RNAV Route M752 and also agreed on further collaboration to enhance surveillance with discussions of ADS-B data sharing and VHF radio communications; and
- Indonesia and Singapore proposed route structure changes to M774 and A576 utilising Direct Controller – Pilot Communication (DCPC) facilities.

2.25 The Chairman stated that the Task Force was taking longer than expected to produce deliverables. The meeting then had an extensive discussion on whether the Task Force should be terminated, as the Chairman had stated that any Task Force that was not delivering or had achieved its aims should be wound up.

**The Twenty-First Meeting of the Bay of Bengal ATS Coordination Group
(BBACG/21) (WP15)**

2.26 This paper presented the outcomes from the Bay of Bengal ATS Coordination Group (BBACG/21, Bangkok, 7-10 March 2011).

2.27 Bangladesh and India met during the BBACG/21 Meeting to immediately improve the coordination processes between Kolkata and Dhaka ATC Centres. Bangladesh advised that they planned to upgrade the radar service in Dhaka.

2.28 Indonesia had a side-bar discussion with Malaysia, which resulted in good progress towards solutions to the issue of major traffic routes crossing RNAV route P627.

2.29 India had many on-going development projects:

- 24-hour availability of CPDLC (Controller Pilot Datalink Communications);
- new automated ATM systems in Delhi and Mumbai and new radar systems;
- AIDC (ATS Inter-facility Datalink Communications) would continue to be tested between Delhi and Karachi ACCs, and later between Mumbai and Muscat ACCs; and
- testing operations being conducted until mid-2011 for the Indian GNSS (Global Navigation Satellite System) called GAGAN (GPS-Aided Geo Augmented Satellite Navigation System).

2.30 Malaysia advised that all area radar and non- area radar controllers in Kuala Lumpur ACC were now trained and ready for ADS-C and CPDLC (Automatic Dependent Surveillance – Contract). The ADS-C/CPDLC installation in Kuala Lumpur was not yet operationally stable however this matter was being worked on to meet the target date for implementation for the reduction of these reduced horizontal separation standards.

Kabul ACC Status Report and Overview of Significant Events (WP34)

2.31 Radio communications throughout the Kabul FIR continued to improve with the installation of Very Small Aperture Telecommunication (VSAT) systems at 13 locations. The current VSAT communications system complied with the requirement for continuous communications over Afghanistan to facilitate RHS on primary transit routes within the Kabul FIR. VSAT system capability would determine the surveillance potential.

2.32 Three ASR8 radars had been installed and flight checked with plans for an additional fourth sensor. The radar feeds are currently being integrated into Kabul ACC. These systems would initially provide situational awareness of air traffic within the Kabul FIR for the Kabul ACC, however there were coverage difficulties due to mountainous terrain.

2.33 Through the efforts of Germany and contributions from Australia, a multilateration (MLAT) surveillance system was progressing rapidly. It was planned to have 30 sensors installed at different locations throughout Afghanistan to fill in radar blind spot areas. Sixteen of the planned 30 sensors had already been installed, with the remaining 14 due for completion in October-November 2011. Once the sensors were flight checked, Kabul ACC would be able to implement enroute surveillance operations.

**25th Meeting of the Informal South Pacific ATS Coordinating Group
(ISPACG/25) (WP27)**

2.34 The United States presented the results from the 25th Meeting of the Informal South Pacific Air Traffic Services Coordinating Group (ISPACG/25), Honolulu, Hawaii 24-25 March 2011.

2.35 Australia reported that ADS-B has been mandated for implementation in Australian Airspace by December 2013. A new CPDLC Editor was incorporated into the Australian Advanced Air Traffic System (TAAATS) in April 2010 and the implementation of the Flight Plan conflict function was planned for the third quarter of 2011.

2.36 Service d'Etat de l'Aviation Civile en Polynesie Francaise (SEAC-PF) reported that AIDC was now operational with the United States and New Zealand.

2.37 The United States advised that DARPs remain underutilized while User Preferred Routes were expanding rapidly in the South Pacific. San Francisco (KSFO) Oceanic Tailored Arrivals (TAs) continued to be successful with 33% of aircraft receiving a full TA benefits and even a higher percentage receiving a partial TA. At Los Angeles (KLAX), 17% of aircraft have received a full TA. The United States and Japan began cross boundary ADS-C based 30/30 separation in May 2011.

2.38 New Zealand reported that performance of FANS-1A overall system was improving, and AIDC was operational with Nadi and Oakland Center (KZOA).

2.39 Chile reported that it continued to work on implementation of required navigation performance (RNP10) in its oceanic airspace. Chile was also working to improve the reliability of CPDLC and ADS systems as current high frequency (HF) communications capability was very poor.

2.40 Airport Fiji Limited (AFL) reported that it completed its automation upgrade in May 2010 and would completed an upgrade on Aurora, its common flight data processor (FDP), for approach control and towers by May 2011. MLAT and ADS-B solutions would be implemented at Nadi Airport and others by the fourth quarter of 2013. Fiji planned for non-FANS 1/A equipped UPRs and was testing DARPs with Oakland, Brisbane and Auckland Centers.

Future APAC Airspace Concept of Operations (WP22)

2.41 IATA presented a future Concept of Operations, which was intended as a planning tool for ANSP and airlines. The Concept was not intended to compel States, although this framework was expected be followed unless there were compelling reasons to do otherwise. The Concept was likely to be iterative, although it was written in a generic fashion to minimize the need for updates.

2.42 Hong Kong, China asked about the apparent incongruity with the Asia/Pacific Regional PBN Plan, in terms of the suggested navigation specifications and what was already in the Regional PBN Plan. It was explained that the Concept of Operations was a longer-term objective than the Regional PBN Plan milestones, and in any case the PBN Plan would need updating to incorporate the new PBN specifications expected in 2012. It was further noted that the table of navigation standards for each MTF was just an example of application, and the table did not form part of the Concept of Operations itself.

2.43 IFATCA was happy with the Concept but suggested a minor amendment to remove the specific examples of surveillance separation standards. A copy of the agreed Concept of Operations is appended at **Appendix A** to this Working Paper. The Sub-Group meeting agreed to the following Draft Conclusion:

Draft Conclusion SG 21/8 – Asia/Pacific Air Navigation Concept of Operations

That, the Asia/Pacific Air Navigation Concept of Operations be included on the APAC website as guidance for State air navigation service facility and airline equipage planning, and States be advised of the Concept of Operations accordingly.

Outcome of the Tenth Meeting of Automatic Dependent Surveillance-Broadcast (ADS-B) Study and Implementation Task Force (WP23)

2.44 The meeting noted the outcome of the Tenth Meeting of ADS-B Study and Implementation Task Force (ADS-B SITF/10). The meeting was held from 26-29 April 2011, hosted by Civil Aviation Authority of Singapore. The main outcomes of the meeting were as follows:

- development of draft ADS-B separation service safety case guidance material for consideration by APANPIRG;
- revised Sample Agreement for Data Sharing;
- amendment to AIGD (ADS-B Implementation Guidance Document);
- recommended coordination procedure for allocation of VHF for sharing Voice Communication Capability;
- recommendation to defer the Forward Fit requirement for SA (Selective Availability) aware GNSS Equipment until December 2013;
- upgrading ADS-B ground stations in time (2012-2015) to receive DO260B standard compliant transmissions;
- name change proposal for the ADS-B SEA Implementation Working Group;
- expedition of actions and coordination to achieve harmonized ADS-B implementation in the South China Sea area.

2.45 IATA reconfirmed its full support to the implementation of ADS-B and stated that the Asia/Pacific Regions had embraced ADS-B more than any other area, noting that this technology was a key enabler for CNS/ATM technology increase ATM capacity and flight safety. IATA also recognized the required guidance material developed by the Task Force in facilitating implementation of ADS-B based surveillance service. It was noted that full consultation with airspace users was necessary to ensure aircraft equipage was appropriate for any mandated airspace.

2.46 The ATM/AIS/SAR SG/21 noted the target implementation date of 12 December 2013 for the sub-regional airspace that provided priority for ADS-B equipped aircraft within certain South China Sea area FIRs. The ATM related operational issues with respect to implementation of ADS-B in the South China Sea area including requirements for safety assessment were also discussed.

2.47 APANPIRG/19 had established Conclusions pertaining to ADS-B mandates and urged States to ‘choose a date after mid 2012 on which the ADS-B equipage mandate will become effective in airspace served by ADS-B ground stations’.

Conclusion 19/37 – Revised Mandate Regional ADS-B Out Implementation

States intending to implement ADS-B based surveillance service, be urged to

- a) *determine ADS-B OUT equipage mandates based upon the ability to provide ADS-B OUT separation services;*
- b) *expedite the implementation of ADS-B OUT in accordance with the Regional Air Navigation Plan and the provision of separation services based on ADS-B OUT;*
- c) *publish their equipage mandates as soon as possible, with a target publication date of no later than 2010 so that operators can plan ahead their forward purchasing and retrofit; and*
- d) *choose a date after mid 2012 on which the ADS-B out equipage mandate will become effective in airspace served by ADS-B ground stations with sufficient transition period to enable fleet equipage.*

2.48 This Conclusion was a mandate for aircraft equipage but was not a mandate for the designation of airspace itself, and nor was it a mandate for the prioritization of ADS-B aircraft in such airspace. Therefore, the Sub-Group agreed on the following Draft Conclusion, which enabled a mandate for the use of ADS-B equipped aircraft and priority for ADS-B equipped aircraft in designated portions of airspace, if the State concerned desired such a requirement (note: this would not compel a State to designate ADS-B airspace):

Draft Conclusion SG 21/9 – ADS-B Airspace Mandate

That, States intending to implement ADS-B based surveillance services may designate portions of airspace within their area of responsibility:

- a) mandate the carriage and use of ADS-B equipment; or
- b) provide priority for access to such airspace for aircraft with operative ADS-B as equipment over those aircraft not operating ADS-B equipment.

Regional CNS Update (IP09)

2.49 The ATM/AIS/SAR SG/21 noted several CNS related activities since APANPIRG/21 Meeting. The ATN Implementation Coordination Group and its working group had several meetings. With respect to improvement of Aeronautical Fixed Service (AFS), in addition to AMHS circuit implemented between Macao China and Hong Kong China in 2010, ATS MHS between Mumbai and Singapore was put into operation in March 2011 and ATS MHS service also became operational between Beijing and Seoul since early June 2011.

Support of XML-Based Traffic

2.50 It was anticipated that the AFS would initially support NOTAM using XML and XML based OPMET in the near future. States were requested to coordinate within their administrations for collection of information necessary for implementation of XML, such as file size, target timeline and interface needed. Understanding of the requirements would assist in planning implementation of XML based applications to be supported by AMHS. States capable of doing so were also encouraged to conduct trials for transmitting XML based application over AMHS. The result of such trials conducted should be shared at meetings of ATN implementation Coordination Group and its working group meetings.

AIDC Seminar

2.51 In response to the APANPIRG's concern regarding the coordination errors across FIR boundaries that are the most crucial aspect of APAC regional RVSM operations, APANPIRG adopted several Conclusions urging States to expedite implementation of AIDC between neighboring ATS facilities. In this connection, a Special Implementation Project - AIDC Seminar was held in October 2010 in Bangkok. A brief summary of the Seminar was provided to the meeting in an IP.

Workshop on Ionospheric Data Collection, Analysis and Sharing

2.52 To facilitate GNSS implementation in Asia and Pacific Regions by mitigating ionospheric effects, a two-day Workshop on Ionospheric Data Collection, Analysis and sharing in Support of GNSS Implementation was organized in ICAO APAC Office from 5 to 6 May 2011. In addition to exchanging information/experience on the subject during the workshop, States were urged to coordinate with their relevant national organizations for sharing available GNSS data collected to facilitate characterization of the ionosphere.

Satellite Data-link Communication Seminar and Second Satellite Data Link Operational Continuity Meeting (SOCM/2)

2.53 A Satellite Data-link Communication Seminar and the Second Satellite Data Link Operational Continuity Meeting (SOCM/2) Meeting was scheduled for 15-18 November 2011, Bangkok Thailand. The Seminar would provide information on developments related to the implementation of Satellite Data-link Communication. The objective of the meeting was to review the status of satellite communications (SATCOM) data link performance, collaborate on planning and implementation programs and contribute to the development of a global strategy for use of SATCOM services. States were encouraged to nominate technical and operational experts to participate in the meeting.

Harmonization of the ICD for the North Atlantic and Asia/Pacific Regions Status (PAN ICD) (IP6)

2.54 The meeting noted the progress on the effort to consolidate the Interface Control Document (ICD) for the North Atlantic and APAC Regions, to provide for harmonized AIDC. The North Atlantic Common Coordination Interface Control Document, v1.2.8, was published December, 2010. Once the NAT (North Atlantic) and APAC Planning and Implementation Regional Groups (PIRGs) have endorsed the resulting ICD, a new round of drafting and review could begin as part of the ongoing inter-regional maintenance of the document.

Automatic Dependent Surveillance – Broadcast (ADS-B) In-Trail Procedures (ITP) Operational Flight Trial Project Overview (IP13)

2.55 IATA looked forward to the results from the trial, but cautioned that retrofitting had a cost issue and things would depend on the business case. ITP was viewed as a medium-term solution. IFATCA requested clarification about the onboard decision support system. IATA stated there were some concerns about one aircraft being able to climb through the level of another non-equipped aircraft, without that aircraft's knowledge. The United States noted that the 'blocking' aircraft did not need ADS-B In capability. The meeting was informed that the Separations and Airspace Safety Panel had been assessing this standard.

CDP Development and Implementation Status (IP14)

2.56 The United States presented this paper on the progress of Climb/Descend Procedure (CDP), which was based on ADS-C. The trial was hampered by lack of opportunity targets. IATA was trying to improve the number of RNP4 capable aircraft to take advantage of this capability.

NextGen (IP21)

2.57 The United States presented information on the extensive FAA's Next Generation Air Transportation System (NextGen), which was to a large degree dependent on GNSS and ADS-B technologies, but involved multiple components, all seeking to improve safety and efficiency using technology. The Chairman asked about NextGen funding. The USA responded that it continued to see an increase of budget allocation for NextGen.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) discuss the Draft APAC Airspace Concept of Operations (Draft Conclusion SG 21/8);
- c) agree with the ADS-B Airspace Mandate (Draft Conclusion SG 21/9); and
- d) discuss any relevant matters as appropriate.
