

**INTERNATIONAL CIVIL AVIATION ORGANIZATION**



**REPORT OF THE THIRD MEETING OF THE ATM SUB-GROUP OF APANPIRG  
(ATM/SG/3)**

BANGKOK, THAILAND, 03 – 07 AUGUST 2015

The views expressed in this Report should be taken as those of the  
Meeting and not the Organization

Approved by the Meeting  
and published by the ICAO Asia and Pacific Office, Bangkok

ATM/SG/3  
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## **INTRODUCTION**

### **Meeting**

1.1 The Third Meeting of the APANPIRG Air Traffic Management Sub-Group (ATM/SG/3) was held at the ICAO Regional Office, Bangkok, Thailand from 03 to 07 August 2015.

### **Attendance**

2.1 The meeting was attended by 94 participants from 24 States, two Special Administrative Regions of China and four International Organizations, including Australia, Bangladesh, Cambodia, China, Hong Kong China, Macao China, Democratic People's Republic Of Korea (DPRK), French Polynesia, India, Indonesia, Japan, Lao People's Democratic Republic (PDR), Malaysia, Maldives, Mongolia, Myanmar, New Zealand, Pakistan, Philippines, Republic of Korea (ROK), Singapore, Sri Lanka, Thailand, Tonga, USA, Viet Nam, EU, IATA, IFATCA, IFALPA and ICAO. A list of participants is provided at **Appendix A** to this Report.

### **Officer and Secretariat**

3.1 Mr. Kuah Kong Beng, ATM Operations, Singapore Air Navigation Services Group Civil Aviation Authority of Singapore presided over the meeting throughout its duration as Sub-Group Chairman.

3.2 Mr. Len Wicks, Regional Officer Air Traffic Management (ATM), ICAO Asia and Pacific Office, was the Secretary for the meeting. He was assisted by Mr. Shane Sumner, Regional Officer ATM/AIM, ICAO Asia and Pacific Office.

### **Language and Documentation**

4.1 The ATM Sub-Group met as a plenary throughout the meeting. The working language of the meeting was English inclusive of all documentation and this Report. A total of 35 working papers (WP), 20 information papers (IP) and nine flimsies were considered by the meeting. The list of working and information papers is attached at **Appendix B** to this report (IP01).

### **Opening of the Meeting**

#### ICAO Regional Office

5.1 On behalf of Mr. Arun Mishra, Regional Director of the ICAO Asia and Pacific Office, Mr. Len Wicks welcomed all the participants to the meeting.

#### Chairman of the Sub-Group

5.2 Mr. Kuah Kong Beng welcomed participants to the meeting.

## **Draft Conclusions, Draft Decisions and Decisions of ATM/SG – Definition**

6.1 The ATM Sub-Group recorded its actions in the form of Draft Conclusions, Draft Decisions and Decisions within the following definitions:

- a) **Draft Conclusions** deal with matters that, according to APANPIRG terms of reference, require the attention of States, or action by the ICAO in accordance with established procedures;
- b) **Draft Decisions** deal with the matters of concern only to APANPIRG and its contributory bodies; and
- c) **Decisions** of ATM Sub-Group relate solely to matters dealing with the internal working arrangements of the ATM Sub-Group.

## **List of Draft Conclusions and Decisions**

### 7.1 List of ATM/SG/3 Draft Conclusions

#### **Draft Conclusion ATM/SG/3-2: Regional Cross-border ATFM Implementation Support**

That, to support regional cross-border Air Traffic Flow Management (ATFM) progress and implementation, States are urged to:

- support the multi-nodal ATFM operational trial program commencing June 2015;
- ensure timely completion of planning, procurement and resource allocation to enable participation in the multi-nodal ATFM operational trial program; and
- implement cross-border ATFM in accordance with the performance objectives of the Regional Framework for Collaborative ATFM.

#### **Draft Conclusion ATM/SG/3-3: Asia/Pacific Regional Framework for Collaborative ATFM**

That, regarding the Asia/Pacific Regional Framework for Collaborative ATFM Version 1.0 attached as **Appendix E** to the Report, and the Regional ATFM Concept of Operations Version 1.0 attached as **Appendix D** to the Report, ICAO be requested to:

- a) make the Framework and the Concept of Operations available on the ICAO Asia/Pacific Regional Office web site, replacing the earlier APAC ATFM Regional Concept of Operations and ATFM Communications Handbook for the Asia Pacific Region; and
- b) reference the Framework within the Asia/Pacific Seamless ATM Plan.

#### **Draft Conclusion ATM/SG/3-4: ATFM Seminars/Workshops**

That, ICAO be urged to facilitate Asia/Pacific ATFM Seminars/Workshops for Asia/Pacific and trans-regional States, to:

- a) familiarize stakeholders with the Asia/Pacific Regional Framework for Collaborative ATFM;
- b) assist implementation of ATFM; and
- c) act as a forum for further development of the Asia/Pacific Regional Framework for Collaborative ATFM, and the associated ATFM Information Requirements document and Interface Control Document (ICD).

**Draft Conclusion ATM/SG/3-5: Implementation of FPL 2012 Capability**

That, noting the relevant aircraft separation and track spacing minimums specified in ICAO Doc 4444 PANS-ATM, and the performance objectives of the Asia/Pacific Seamless ATM Plan;

States are urged to include in ATM automation system specifications the processing and presentation in ATC human-machine interfaces and decision support and alerting tools, the communications, navigation and approach aid indicators received in items 10 and 18 of FPL and ATS messages, where applicable, and the following Mode S SSR or ADS-B downlinked aircraft parameters as a minimum:

- Aircraft Identification;
- Aircraft magnetic heading;
- Aircraft indicated airspeed or Mach Number;
- Pilot selected altitude.

**Draft Conclusion ATM/SG/3-6: Flight Plan Item 19 Information**

That, States are urged to ensure that item 19 information contained in submitted flight plans is not included in Flight Plan (FPL) messages

**Draft Conclusion ATM/SG/3-7: Consistent PANS-ATM Provisions for RNP 2/RNAV 2**

That, ICAO be requested to take action to provide consistency in ICAO Doc 4444 – PANS-ATM, noting the specification of RNP 2-based separation while RNAV 2 is specified for entry in the flight plan.

**Draft Conclusion ATM/SG/3-8: Draft Regional ATM Contingency Plan**

That, regarding the Draft Asia/Pacific Regional ATM Contingency Plan version 0.2 attached as **Appendix F** to the Report:

1. ICAO be requested to make the Draft Regional ATM Contingency Plan available on the Asia/Pacific Regional Office website; and
2. States are urged to consider the following sections of the Draft Regional ATM Contingency Plan in the planning and development of State contingency plans and inter-State contingency agreements, pending finalization of the Regional ATM Contingency Plan:
  - a) Section 7 - Performance Improvement Plan;
  - b) Appendix A – ATM Contingency Planning Principles;
  - c) Appendix B – Basic Plan Elements; and
  - d) Other relevant information and guidance provided in the document.

**Draft Conclusion ATM/SG/3-10: ATS Route Catalogue Version 14**

That Version 14 of the *Asia and Pacific Region ATS Route Catalogue* at **Appendix L to the Report** replaces Version 13 on the Asia/Pacific Regional Office's web site, noting that:

- Chapter A had been transitioned to the electronic Air Navigation Plan (eANP); and
- the remaining ATS route proposals in the ATS Route Catalogue may be amended by the ICAO Regional Office without reference to an APANPIRG Conclusion in future.

**Draft Conclusion ATM/SG/3-12: Publication of RESA availability on Aerodrome Charts**

That, States/Administrations are encouraged to publish information on the availability of RESA on Aerodrome Charts, considering that most pilots refer to Aerodrome Charts for aeronautical data/information, and report action taken to ICAO Regional Office by 31 December 2015.

**Draft Conclusion ATM/SG/3-13: Sample Regulations for Water Aerodromes**

That, in accordance with Decision ATMSG/2-7, the sample regulations for water aerodromes developed by the Small Working Group be adopted for use as a reference document in the Asia/Pacific Region.

**Draft Conclusion ATM/SG/3-14: Roll out of PANS–Aerodromes**

That, ICAO be invited to organize a seminar/workshop in the Asia/Pacific region to roll out the first edition of PANS Aerodromes (Doc 9981) during first quarter of 2016.

**Draft Conclusion ATM/SG/3-15: Airport Master Plans**

That, recognizing the importance of long term development of an airport to cater to the growing traffic, States should encourage airport operators to develop long term airport master plan to assist in the timely phased airport expansions, thereby increasing capacity and enhancing the safety and regularity of aircraft operations, and report progress to AOPWG/4.

**Draft Conclusion ATM/SG/3-16: Aerodrome Carbon Emissions Management**

That States:

- a) support the inclusion of Aerodrome Carbon Accreditation into their State Action Plans for CO<sub>2</sub> reduction; and
- b) encourage aerodrome operators to consider adopting the ACERT (Airport Carbon and Emission Reporting Tool), and to participate in the ACI Airport Carbon Accreditation Programme.

**Draft Conclusion ATM/SG/3-17: eAIP from Digital Database**

That, States providing updated AIM transition information in accordance with **Conclusion APANPIRG/25-15** should advise whether their eAIP is generated from a digital database of aeronautical information.

**Draft Conclusion ATM/SG/3-18: Interim AIM Transition Guidance**

That, the *Guidance Manual for Aeronautical Information Services (AIS) in the Asia/Pacific Region* be updated to include as an appendix the Interim AIM Transition Guidance appended at **Appendix M** to the report.

**Draft Conclusion ATM/SG/3-19: AIM Transition Seminars/Workshops**

That, ICAO be urged to facilitate Asia/Pacific AIM Transition Seminars/Workshops to:

- a) familiarize stakeholders with the new and amended ICAO publications developed by the ICAO AIS-AIM Study Group;
- b) assist States in developing AIM implementation plans; and

- c) act as a forum for further development and updating of the *Guidance Manual for Aeronautical Information Services (AIS) in the Asia/Pacific Region*.

**Draft Conclusion ATM/SG/3-20: Volcanic Ash Information Coordination and Collaboration**

That, States are urged to:

- a) establish a mechanism to provide regular and timely updates of information during a volcanic eruption and/or ash cloud event to ensure all stakeholders are up to date with current information, situation reports and contingency planning;
- b) participate in volcanic ash exercises; and
- c) consider establishing an internal crisis management centre to support the collaborative sharing of information during volcanic events or other crises.

**Draft Conclusion ATM/SG/3-21: SAR Air Navigation Report Form**

That, the Search and Rescue (SAR) Air Navigation Report Form (ANRF) as appended in **Appendix S to the Report** be utilised by Asia/Pacific States as a means of regional strategic SAR planning and implementation in the Asia/Pacific Region.

**Draft Conclusion ATM/SG/3-22: SAR Lessons Learnt**

That, considering the implications for Search and Rescue standards from the MH370 and other related events, ICAO, in coordination with the IMO through the ICAO/IMO Joint Working Group on Harmonisation of Aeronautical and Maritime SAR (JWG), should consider urgently updating global SAR documents from the lessons learnt.

**Draft Conclusion ATM/SG/3-23: Asia/Pacific SAR Plan**

That, regarding the Asia/Pacific Search and Rescue (SAR) Plan Version 1.0 attached as **Appendix U to the Report**, ICAO be requested to:

- a) make the SAR Plan available on the ICAO Asia/Pacific Regional Office web site;
- b) reference the SAR Plan within the Asia/Pacific Seamless ATM Plan;
- c) add the following elements to the Asia/Pacific Seamless ATM monitoring and reporting scheme:
  - SAR Regulatory and Coordination Mechanisms;
  - SAR Facilities and Assets;
  - SAR Information;
  - SAR Improvement; and
- d) conduct Asia/Pacific SAR Planning and Implementation Seminars/ Workshops for Asia/Pacific States.



**Draft Conclusion ATM/SG/3-24: State SAR Planning**

That, States should be urged to:

- a) review Version 1.0 of the Asia/Pacific SAR Plan and utilise the SAR Plan to develop planning for State implementation of applicable SAR elements;
- b) ensure relevant decision-makers are briefed on the SAR Plan;
- c) submit the first SAR Plan Seamless ATM monitoring information to the ICAO Regional Office by 01 March 2016; and
- d) where possible, participate and contribute to SAR Plan system collaborative training and research initiatives.

**Draft Decision ATM/SG/3-25: Asia/Pacific SAR Workgroup**

That, the Asia/Pacific Search and Rescue (SAR) Task Force be disestablished and an Asia/Pacific SAR Workgroup (APSAR/WG) be established in accordance with the Terms of Reference at **Appendix V to the Report**.

**Draft Conclusion ATM/SG/3-26: APANPIRG Deficiencies**

That, the ATM/AIS/SAR List of Deficiencies is updated in accordance with **Appendix W to the Report**.

7.2 List of ATM/SG/3 Decisions

**Decision ATM/SG/3-1: Regional ATM Performance Measurement Framework Small Working Group (RAPMF/SWG)**

That, a Small Working Group of Asia/Pacific States and Administrations, and International Organizations be established to draft a Regional Performance Measurement Framework that supports Asia/Pacific Seamless ATM implementation, in accordance with the Terms of Reference at **Appendix C to the Report**.

**Decision ATM/SG/3-9: Disestablishment of the AHACG**

That, the Asia/Pacific Ad Hoc Afghanistan Contingency Group (AHACG) be disestablished.

**Decision ATM/SG/3-11: SAIOACG Terms of Reference**

That South Asia Indian Ocean Air Traffic Management Coordination Group (SAIOACG) Terms of Reference be amended in accordance with **ATM/SG/3/WP21/Attachment H**.

## REPORT ON AGENDA ITEMS

### Agenda Item 1: Adoption of Provisional Agenda

1.1 The provisional agenda (WP01) was adopted by the meeting.

### Agenda Item 2: Review of Related High Level Meetings

#### APANPIRG/24 Outcomes (WP02)

2.1 The ATM/SG/3 reviewed the Air Traffic Management (ATM), Aeronautical Information Management (AIM), Search and Rescue (SAR) and airspace safety – related Conclusions and Decisions from the Twenty Fifth Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/25, Kuala Lumpur, Malaysia, 08-11 September 2014).

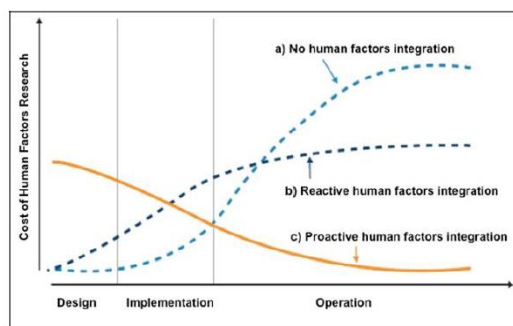
#### Human Performance Mini-Seminar- Human Factors in System Development (PR01 and 02)

2.2 In accordance with APANPIRG/25 *Conclusion 25/11 Human Performance Initiatives*, the opportunity was taken at the ATM/SG to conduct a mini-seminar to meet this requirement. The United States kindly provided a presentation on human factors to be considered in ATM system development. **Figure 1** highlighted the financial importance and advantage of a proactive approach to human factors consideration in system development.

#### Funding requirements

- ❖ High budget estimate is 10% of program
- ❖ Median budget estimate is 7% of program
- ❖ Lowest budget estimate is 2% of program

#### Proactive cost estimate is less than reactive cost estimate



**Figure 1:** Cost Advantages for Proactive Human Factors Consideration

2.3 IFATCA emphasised that vendors should be asked by Air Navigation Service Providers (ANSPs) to consider human performance at the earliest conceptual stages of system development. IFALPA also commented that pilot human factors inputs were essential in the development of ATM systems (such as new procedures for runway operations at times of high cockpit workload). ICAO stated that these aspects could be considered as part of an additional expectation within the Asia/Pacific Seamless ATM Plan.

2.4 The meeting noted the resource on the subject highlighted in the presentation entitled *Human Factors Acquisition Job Aid* document was at <http://fast.faa.gov/docs/HFACqJobAid.doc>.

#### Human-in-the-Loop Planning (PR03)

2.5 As part of the mini-seminar on human performance, India also kindly provided a presentation on Human-in-the-Loop Planning (HILP). The United States thanked India for the presentation, and commented positively on India's work in this area.

2.6 IFALPA stated that human-in-the-loop planning must also include consideration of pilot human factors in new procedures and systems.

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Second APANPIRG - RASG Coordination Meeting Outcomes (WP03)

2.7 The meeting was informed about the outcomes of the Second APANPIRG- Regional Aviation Safety Group (RASG –APAC Coordination Meeting (Bangkok, Thailand, 11 May 2015). Of principle interest to the ATM/SG was coordination in fields of interests to both bodies that supported Control Flight into Terrain (CFIT), Runway Safety (RS) and Loss of Control (LOC) safety initiatives.

2.8 The meeting noted India’s comment that matters such as runway safety, control of obstacles and management of the operating environment were important for both the Aerodrome Operations (AOP) and ATM/SG bodies, so a coordination mechanism was necessary in this regard.

2.9 **Table 1** illustrated the ATM/SG’s proposed correlation between the identified RASG study and the associated Aviation Safety Block Upgrades (ASBUs), after reviewing the CNS/SG discussion on the matter (red = priority ASBU elements):

CFIT	RS	LOC
<i>B0-SNET Safety Nets</i>	<i>B0-APTA Optimization of Approach Procedures</i>	<i>B0-APTA Optimization of Approach Procedures</i>
<del>B0 TBO Trajectory Based Operations</del>	<del>B0 ASUR Initial Surveillance</del>	<i>B0-ACAS Collision Avoidance Systems</i>
<del>B0 NOPS Network Operations</del>	<i>B0-SURF Surface Operations</i>	<i>B0-AMET Advanced Meteorological Information</i>
	<del>10 Apron Management</del>	
	<del>340 Safety Assessment of Changes</del>	
	<del>350 ATM Operators’ Performance</del>	

**Table 1:** RASG Safety Priorities (proposed as amended)

\*B0-AMET may be considered by the MET/SG for inclusion under RS

2.10 The ATM/SG meeting studied the European Region’s Key Performance Indicators (KPIs) and determined that these metrics would not be able to be easily applied across the Asia/Pacific Region due to a lack of State data and sub-regional Air Traffic Flow Management (ATFM). Notwithstanding this, some States might implement performance monitoring measures (ATM/SG/3/WP08 referred).

RASG/4 Meeting Outcomes (WP04)

2.11 ICAO provided brief information related to the ATM/SG from the Regional Aviation Safety Group Asia and Pacific Regions (RASG-APAC/4, Hong Kong, China, 20-21 November 2014). Key issues discussed by the ATM/SG were related to the:

- RASG-APAC Decision 4/21: recommendation for APANPIRG to establish an analysis body that manages ATS Safety incidents/ concerns/occurrences for onward reporting to RASG-APAC APRAST for further action;
- RASG-APAC Decision 4/18: request for support for a demonstration project on regional safety data collection, analysis and information sharing system for the Asia/Pacific Region (ATM/SG/3/WP11 refers); and
- RASG-APAC Decision 4/9: model Advisory Circulars for CFIT/3 and CFIT/8 and Runway Safety Maturity Checklist for SEI RS/1.

2.12 Noting that safety analysis was primarily the role of the RASG-APAC and that there was no established APANPIRG body to conduct such analysis (RASMAG was an airspace safety monitoring body), the ATM/SG agreed to reject the proposal by the RASG-APAC under Decision 4/21 that *APANPIRG consider the establishment of an analysis body that manages ATS Safety incidents/ concerns/occurrences for onward reporting to RASG-APAC APRAST for further action.*

ABSRTF/2 Meeting Outcomes (IP02)

2.13 A summary of the Second Meeting of the APANPIRG Contributory Bodies Structure Review Task Force (ABSRTF/2, Bangkok, Thailand, 24-25 June 2015) were reviewed by the ATM/SG. Of major interest were the following ABSRTF outcomes:

- Draft Decision ABSRTF/2/1: Empowerment of Sub Groups, to increase efficiency of response to technical issues identified by the ATM/SG by empowerment, for those Conclusions or Decisions that do not have significant additional economic, environmental or political effects, which should be considered at APANPIRG.
- Draft Decision ABSRTF/2/2: Reorganization of APANPIRG Structure, which would create a new AOP (Aerodrome Operations) Sub-Group by 2017, but retain the other existing Sub-Groups, including the RASMAG reporting line to APANPIRG.

2.14 The ATM/SG/3 also noted that the ABSRTF recommendations would also promote a more project-management-driven approach in accordance with APANPIRG Decision 25/50 and reference ASBU priority modules and Asia/Pacific Seamless ATM Plan elements within the Terms of Reference (TOR).

50<sup>th</sup> Conference of Directors General of Civil Aviation Outcomes (WP05)

2.15 Information relevant to ATM, AIS, SAR and airspace safety from the 51<sup>st</sup> Conference of Directors General of Civil Aviation Asia and Pacific Regions (DGCA/51, Hong Kong, China, 24-27 November 2014) was presented. The DGCA/51 agreed on Action Items related to the:

- Global Aeronautical Distress and Safety System (GADSS)
- work of Major Traffic Flow (MTF) Review Group;
- ADS-B data sharing;
- training programmes on human factors in ATM;
- regional ATFM solutions;
- English language proficiency of air traffic controllers;
- report of progress on implementation of the Seamless ATM Plan;
- contingency plans for major disasters; and
- Remotely Piloted Aircraft Systems (RPAS).

2.16 Regarding Action Item 51/12 and the possibility of ‘a regional plan for English language proficiency of air traffic controllers’, this would be considered as an additional element within the Seamless ATM Plan, with the review process taking place in the next 12 months (Flimsy 04).

### **Agenda Item 3: Performance Frameworks and Metrics**

#### FIT-Asia/4 and RASMAG/20 Outcomes (WP06)

3.1 The ATM/SG/3 meeting reviewed relevant major outcomes from the Fourth Meeting of the Future Air Navigation Systems Interoperability Team-Asia (FIT-Asia/4, 25 May 2015, Bangkok, Thailand) and the Twentieth Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/20, 26-28 May 2015).

3.2 FIT-Asia/4 discussed the operational significance of the 99.9% data link performance criteria, and what could be done in cases of Actual Communication Performance (ACP), Actual Communication Technical Performance (ACTP) and Automatic Dependent Surveillance-Contract (ADS-C) downlink latency 'just' failing to meet the standard.

3.3 The Global Operational Datalink Document (GOLD) Appendix D paragraph D 2.4.7.5 had been reviewed, and FIT-Asia/4 agreed to a Draft Conclusion to clarify the situation to ensure consistency of performance monitoring, analysis and reporting and CRA problem reporting among FIT-Asia States. The ATM/SG noted that the following Draft Conclusion was endorsed by RASMAG/20 and noted by the ATM/SG, for consideration by APANPIRG/26: *Draft Conclusion RASMAG/20-2: Data Link Performance Guidelines*.

3.4 Regarding the lack of response by ANSPs to Conclusion24/24: ADS/C and CPDLC Problem Reporting and Analysis, the ATM/SG also noted the following Draft Conclusion, which was endorsed by RASMAG/20, for consideration by APANPIRG/26: *Draft Conclusion RASMAG/20-3: ANS Deficiencies Relating to Data Link Performance Monitoring and Analysis*.

3.5 An overview of RASMAG safety assessment results from a regional perspective was presented to the ATM/SG, which indicated the sub-regional regional problem areas of note to the ATM/SG in South Asia (Bay of Bengal (BOB), Southeast Asia (mainly related to Philippines airspace), and East Asia (Shanghai/Taipei, Guangzhou/Hong Kong and Sanya/Hong Kong Flight Information Regions (FIRs) interfaces, and the Incheon FIR 'AKARA' corridor.

3.6 The ATM/SG/3 noted that RASMAG/20 had agreed to the following Draft Conclusion related to Special Coordination Meetings (SCM) in order of assumed risk (as presented to RASMAG) to ensure an urgent reduction of risk in Large Height Deviation (LHD) 'hot spots', for consideration by APANPIRG/26: *Draft Conclusion RASMAG/20-4: Asia/Pacific LHD Hot Spot Action Plans*.

3.7 The ATM/SG/3 noted that the application of 50NM and 30NM horizontal standards met the regional TLS.

3.8 Overall, the number of non-RVSM aircraft had decreased by 5% in the past year. This indicated that there was still considerable work to do and APANPIRG Conclusion 24/6 (*Repetitive Non-RVSM Approved Aircraft Operating as RVSM Approved Flights*) had not yet been effective.

3.9 The United States provided a summary to RASMAG/20 of the observed usage of the Standard Lateral Offset Procedure (SLOP) within the Oakland Oceanic FIR for data link aircraft using ADS-C. The purpose of SLOP was to reduce the concentration of operations about 'oceanic' route centrelines, which was characteristic of aircraft with highly accurate navigational systems, such as Global Navigation Satellite Systems (GNSS), thus reducing the risk of collision. The analysis showed that the observed SLOP usage was below the optimal recommended behaviour, where crews are encouraged to use all three options equally, including the centreline. RASMAG/20 had noted that SLOP was not relevant on User Preferred Routes (UPR).

Seamless ATM Reporting and Monitoring Update (WP07)

3.10 The ATM/SG/3 was provided with a briefing on the status of Seamless ATM Reporting. As at late July, a total of 18 States/Administrations had submitted the report on the ICAO Seamless ATM Reporting web site (42%). Two States/Administrations had prepared their initial report, which was expected to be submitted via the online ICAO Reporting website soon. However, there were a total of 24 States/Administrations that had not prepared reports.

3.11 A total of 24 States/Administrations (57%) had nominated their Seamless ATM Point of Contact (POC), but 20 States/Administration had not reported the nomination of their POC. Overall, this represented a poor response to an important, region-wide tool and APANPIRG *Conclusion 24/55 State Seamless ATM Planning*, which expected States to submit the first Regional Seamless ATM Reporting Form to the ICAO Regional Office by 01 March 2014.

3.12 Some States had experienced difficulty in their interaction with the online reporting function. The meeting was advised that States having difficulties should contact the ICAO Regional Office for information or assistance.

3.13 The ATM/SG was responsible for 29 Seamless ATM elements. However it would not be possible to analyse results and regional trends until such time as the dataset was as complete as it could be, to reveal a comprehensive Regional Picture and the data was in a mature state (some information needed to be reviewed and amended after further analysis).

Measuring Regional Air Traffic Management Performance (WP08)

3.14 As highlighted at APANPIRG/25 and DGCA/51, Singapore discussed the importance of ATM performance measurement in the Asia/Pacific Region. They noted that measurements of positive ATM efficiency gains following a successful implementation of a certain initiative can be used to support a business case in other areas of similar characteristics, leading to better resource planning and optimization, while achieving maximum returns on investment.

3.15 ATM/SG/3 noted that according to Part I, Chapter 2 of the ICAO Manual on the Global Performance of the Air Navigation System (Doc 9883), there can be many variations to performance management process but all were based on a similar philosophy and principles. Objectives should be specific, measurable, achievable, relevant and time-bound (SMART). Singapore suggested that the Asia/Pacific implement a quantitative performance measurement framework to support the implementation of the APAC Seamless ATM Plan and for measuring, monitoring and reviewing the regional ATM system performance.

3.16 The meeting discussed Singapore's proposal regarding the development of a regional ATM performance measurement framework to support Seamless ATM implementation. IATA stressed the need for such development. ICAO suggested that Singapore take the lead to develop a framework, with input and support of other Asia/Pacific States. The following Decision (related to ATM/SG/3/WP11) was agreed by the ATM/SG/3:

**Decision ATM/SG/3-1: Regional ATM Performance Measurement Framework  
Small Working Group (RAPMF/SWG)**

That, a Small Working Group of Asia/Pacific States and Administrations, and International Organizations be established to draft a Regional Performance Measurement Framework that supports Asia/Pacific Seamless ATM implementation, in accordance with the Terms of Reference at **Appendix C to the Report**.

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

##### Air Traffic Flow Management Steering Group Outcomes (WP09)

4.1 The 4<sup>th</sup> Meeting of the Asia/Pacific Air Traffic Flow Management Steering Group (ATFM/SG/4) was held in Bangkok, Thailand, from 1 to 5 December 2014, and ATFM/SG/5, also in Bangkok, Thailand, from 30 March to 3 April 2015.

4.2 The ATFM/SG TOR included a linkage to the Aerodromes Operations and Planning Working Group (AOP/WG) which would take responsibility for regional activities relating to Airport Collaborative Decision Making (CDM) implementation. Harmonization of ATFM/A-CDM interfaces and terminologies would be coordinated between AOP/WG and ATFM/SG.

4.3 An analysis and overview of westbound flights through the Kabul FIR associated with the Bay of Bengal Cooperative ATFM System (BOBCAT) program revealed that poor addressing of aircraft movement messages and poor on-time departure performance were major causes of 28% of participating aircraft transiting the Kabul FIR at flight levels not transiting the Kabul FIR at their slot-allocated flight level. Correct and timely addressing of aircraft movement messages conforming with the requirements of ICAO Doc 4444 – Procedures for Air Navigation Services – Air Traffic Management (PANS/ATM) were a key component of ATFM processes, as was the collaborative achievement of departure punctuality for aircraft subject to ATFM measures, particularly ground-delay programs.

4.4 In accordance with *Decision ATFM/SG 3/1: Distributed Multi-Nodal Networked ATFM Concept*, the ATFM/SG had reviewed a draft *Regional ATFM Concept of Operations (CONOPS)* based on the CONOPS proposed by Singapore for inclusion in the draft ATFM Framework.

4.5 The Regional ATFM Concept of Operations (**Appendix D**) would be made available on the ICAO Asia/Pacific Regional Office website, with a hyperlink to the document included in the ATFM Framework. The two documents would replace the earlier *APAC ATFM Regional Concept of Operations (2011)*, and the *Air Traffic Flow Management (ATFM) Communications Handbook for the Asia/Pacific Region*, the contents of which had been subsumed into ICAO Doc 9971 – *Manual on Collaborative ATFM* and the draft ATFM Framework.

4.6 ATFM/SG/4 was provided with an update on proceedings at an ATC Sector Capacity Assessment workshop held in Bangkok, Thailand, on 26 and 27 November 2014. The information highlighted that a correct understanding of the capacity of sectors/airports was a vital input for any decision on the application of ATFM measures.

4.7 An IATA study had been undertaken under *Decision ATFM/SG 2/2: Asia/Pacific Region ATFM Study* to establish a regional baseline view of ATFM capability and interoperability and develop recommended implementation strategies for collaborative Regional and Sub-Regional ATFM. Only five States had indicated that they currently declared sector capacity, possibly indicating the difficulty States were experiencing in establishing capacity data. The meeting discussed the need for a regionally agreed capacity analysis and declaration methodology, and agreed that the development of guidance in this regard should be undertaken by ATFM/SG. The findings and recommendations from the IATA study report's recommendations were included in the 'Current Situation' section of the draft ATFM Framework. The ATFM/SG/4 had agreed to the following Decisions:

- *Decision ATFM/SG/4-1: Asia Pacific Regional ATFM Concept of Operations and Timeline*, adopting the Multi Nodal ATM Concept of Operations as the foundation of the Regional concept and implementation strategy, and confirming 8 November 2018 as the target date for cross-border ATFM implementation; and

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- *Decision ATM/SG/4-3: IATA Asia Pacific Regional Air Traffic Flow Management Project – Phase Two*, supporting Phase Two of the IATA Regional Air Traffic Flow Management Project that would develop a regional cross-border implementation plan and assist in supporting cross-border ATFM workshops

4.8 The ATM/SG/3 meeting agreed to the following Draft Conclusion, for further consideration by APANPIRG/26:

**Draft Conclusion ATM/SG/3-2: Regional Cross-border ATFM Implementation Support**

That, to support regional cross-border Air Traffic Flow Management (ATFM) progress and implementation, States are urged to:

- support the multi-nodal ATFM operational trial program commencing June 2015;
- ensure timely completion of planning, procurement and resource allocation to enable participation in the multi-nodal ATFM operational trial program; and
- implement cross-border ATFM in accordance with the performance objectives of the Regional Framework for Collaborative ATFM.

4.9 ATFM/SG had agreed to the following Decision establishing a Small Working Group to draft an Operational Requirements document for the exchange of and interaction with ATFM information and a technical interface control document (ICD): *Decision ATM/SG/5-1 – ATFM Information Requirements Small Working Group (ATFM/IR/SWG)*.

4.10 ATFM/SG was provided with an ATFM Training Requirements document prepared by the European Union (EU) - ASEAN Air Transport Integration Project (AATIP), supported by and in coordination with AEROTHAI, Thailand. While presented as an EU-AATIP deliverable, when the document reached an acceptable level of maturity it would also be submitted to ICAO as draft material for inclusion in a future version of ICAO Doc. 9971. The finalized training requirements document formed an appendix to the draft ATFM Framework.

4.11 Having considered the short time frame between the anticipated endorsement of the ATFM Framework by APANPIRG and the Phase I expectations of the Seamless ATM Plan, Regional ATFM Capability was expected to be implemented in accordance with the draft ATFM Framework (**Appendix E**) in the following phases:

- Phase IA, expected implementation by 12 November 2015;
- Phase IB, expected implementation by 25 May 2017; and
- Phase II, expected implementation by 08 November 2018.

4.12 Phase IA introduced early/introductory ATFM capability improvements including State ATFM regulations, strategic and pre-tactical capacity and demand monitoring and analysis, preparation and distribution of ATFM daily plans (ADP), and post-operations analysis.

4.13 Phase IB expectations included those related to ATFM systems, capacity improvement, strategic airport slot allocation, expansion of pre-tactical capacity and demand monitoring and analysis, CDM/information-sharing implementation, tactical capacity and demand monitoring, implementation of tactical ATFM measures for arrivals at constrained airports, and expansion of post-operations analysis.

4.14 Phase II expanded information monitoring, distribution capability and interactivity, and pre-tactical and tactical capacity and demand monitoring and analysis, introduced MET services to support ATM in the terminal area, and ATFM measures to aircraft within constrained airspace sectors.



4.15 The meeting agreed to the following Draft Conclusions:

**Draft Conclusion ATM/SG/3-3: Asia/Pacific Regional Framework for Collaborative ATFM**

That, regarding the Asia/Pacific Regional Framework for Collaborative ATFM Version 1.0 attached as **Appendix E** to the Report, and the Regional ATFM Concept of Operations Version 1.0 attached as **Appendix D** to the Report, ICAO be requested to:

- a) make the Framework and the Concept of Operations available on the ICAO Asia/Pacific Regional Office web site, replacing the earlier APAC ATFM Regional Concept of Operations and ATFM Communications Handbook for the Asia Pacific Region; and
- b) reference the Framework within the Asia/Pacific Seamless ATM Plan.

**Draft Conclusion ATM/SG/3-4: ATFM Seminars/Workshops**

That, ICAO be urged to facilitate Asia/Pacific ATFM Seminars/Workshops for Asia/Pacific and trans-regional States, to:

- a) familiarize stakeholders with the Asia/Pacific Regional Framework for Collaborative ATFM;
- b) assist implementation of ATFM; and
- c) act as a forum for further development of the Asia/Pacific Regional Framework for Collaborative ATFM, and the associated ATFM Information Requirements document and Interface Control Document (ICD).

4.16 The meeting discussed the continuance of the ATFM/SG, noting the developmental nature of the concept of operations and the iterative nature of the ATFM Framework. A statement in support of the continuation of the group was provided by IATA and the ATFM/SG Co-Chairs. The ATM/SG/3 meeting agreed to the continuation of the ATFM/SG, as it was considered critical that ATFM/SG continued to oversee and guide regional ATFM development and implementation.

Cross Border ATFM Operational Trial (WP10)

4.17 Australia, Cambodia, China, Hong Kong China, Indonesia, Malaysia, Philippines, Singapore, Thailand, Viet Nam, CANSO and IATA presented information on the developments and collaborative efforts to conduct a cross border ATFM Operational Trial using the Distributed Multi-Nodal ATFM concept, and discussed the need for collaboration with MET service providers.

4.18 Commencing on 29 June 2015, the Cross Border ATFM Operational Trial was based on the Distributed Multi-Nodal ATFM concept involving each ANSP operating an independent ATFM node comprised of the ANSP and its associated airport operators and airspace users. The network of ATFM nodes formed a “virtual” ATFM network for efficient interconnected information sharing and effective CDM.

4.19 Phase 1 of the trial, to be conducted over 12 months, would focus on addressing Demand-Capacity Balancing (DCB) at individual airports by regulating arriving flights using Ground Delay Program (GDP) through the issuance of Calculated Take-Off Time (CTOT). Hong Kong, China highlighted that interim traffic metering measures were still required within the Hong Kong FIR to address unexpected overflight growth until such time as a sub-regional ATFM programme was agreed and implemented. Phase 2 would focus on DCB within sectors and airspace managed by participating ANSPs as well as the inclusion of flow management of long-haul international flights.

4.20 China informed the ATM/SG/3 that only four Chinese airports were involved in the trial initially. India expressed an interest in joining the trial at a later date. IATA recalled that the initiative was at a very early stage of a complex project.

India's C-ATFM Project Implementation Progress (IP09)

4.21 The meeting was provided a brief overview of the progress of implementation of a Central ATFM (C-ATFM) system. The C-ATFM system would facilitate ATFM to effectively balance demand and capacity in the tactical time frame. The platform would be implemented in phases, and would facilitate participation in the regional ATFM effort.

4.22 The system project began in July 2014, and a nationwide ATFM system covering all major airports throughout India would be made gradually operational by the end of 2016. Operational trials for Phase 1 of the C-ATFM system were expected to begin in December 2015.

ATFM and CDM operation in East China (IP10)

4.23 China provided information on the implementation of ATFM in the Shanghai FIR by the East China Regional Air Traffic Management Bureau (ATMB) and 42 civil airports through networked CDM. IATA stressed the need for international air carriers to be involved in development of the ATFM system, noting that foreign airlines were not receiving all the benefits of the improvement programme. IFALPA asked if there was a set timeline for implementation due to the large delays being experienced. China noted the large increase in traffic that was being managed, and stated that the intention was to integrate the East China work with Northeast China, and in 2016 with systems in the Republic of Korea and Japan.

ATFM / CDM Workshops in 2015 (IP11)

4.24 ICAO and IATA presented information on workshop activities and outcomes that ICAO, through the APAC Regional Sub-Office (RSO), had conducted to support States in their ATFM/CDM implementation. The schedule of upcoming workshops was also provided, including the Cross-Border ATFM Workshops that would be conducted in partnership with IATA.

4.25 Foundation workshops had been conducted in three Asia/Pacific States in February, June and July 2015. Outcomes included recommendations on language requirements/proficiency for ATFM officers, a further workshop to promote better understanding of capacity assessment and improvement, and a request for ICAO facilitation of data sharing with neighbouring FIRs.

4.26 The schedule for further workshops to be conducted in 2015 was provided, including one advanced ATFM workshop and three cross-border ATFM workshops. The meeting was informed of an additional workshop to be held in Singapore from 09 – 10 December 2015.

CDM in Japan (PR07)

4.27 Japan presented information on CDM in Japan, discussing CDM stakeholders, processes and tools, conditional route (CDR) operations, information sharing with neighbouring ANSPs, and ATFM Service Conference oversight of CDM performance and performance improvement.

Harnessing the Power of Data Sharing for ATM (WP11)

4.28 Singapore urged States to consider the sharing of ATM information, such as historical and forecast traffic data, which would enable analyses of current stress points as well as future traffic demands in the Asia/Pacific Region.

4.29 WP11 discussed the EUROCONTROL Demand Data Repository (DDR), which provided open data sharing platform to enable analysis of current operations performance in Europe and for planning. The European Union–ASEAN Air Transport Integration Programme (EU-AATIP) and Singapore-based ATM Research Institute (ATMRI) project had an ATM modelling and simulation function to assess the Major Traffic Flows (MTF) in Southeast Asia. The ATM/SG/3 agreed on the usefulness and benefits of data sharing and analysis (ATM/SG/3/WP08 also refers).

Speed Control in the Final Approach Phase (WP12)

4.30 China discussed some of the problems they were having managing capacity and efficiency at busy airports caused by lack of the final speed control regulation. Citing an example from London Heathrow, China wanted to impose speed control on final for its major aerodromes with an AIP amendment, but had received advice from some airlines that it was contrary to safety standards in their operating manuals. The ATM/SG/3 meeting advised China that the implementation of such measures were subject to the conduct of a safety case that took into account the characteristics of the operating environment and the other factors, in accordance with consultation with airspace users.

Closely-Spaced Parallel Runway Operations (WP13)

4.31 China discussed the problem of Closely Spaced Parallel Runways (CSPR), noting that when the spacing between runways was less than 760m (2,500 feet), the operation of two parallel runways should be regarded as a single runway. They stated that this adversely affected Pudong and Hongqiao Airport in Shanghai, and that the United States used a CSPR solution at San Francisco called Simultaneous Offset Instrument Approaches (SOIA). The ATM/SG/3 meeting noted that this was also a matter for the State to determine after a safety case, and could not be a universal ICAO standard.

Implementation of Independent Parallel Runway Visual Approaches at Beijing Capital Airport (IP15, PR06)

4.32 China presented information on the implementation of visual approach procedures at Beijing Capital International Airport. In accordance with ICAO Doc 4444 – *Procedures for Air Navigation Services – Air Traffic Management* (PANS ATM, 6.5.3 Visual approach and 8.9.5 Vectoring for Visual Approach), China implemented independent visual approaches to parallel runways at Beijing Capital International Airport on 28 October 2014. The meeting recalled that visual approaches were conducted under IFR, and could derive efficiency benefits (such as reducing the spacing on final so the average flight time had been reduced about three to four minutes for each arrival), while understanding that there was a cockpit workload issue that pilots needed to manage and wake turbulence needed to be considered.

Communication/Navigation and Surveillance Sub-Group Outcomes (WP14)

4.33 ICAO presented an overview of the Nineteenth Meeting of the Communications, Navigation and Surveillance Sub-group (CNS SG/19, Bangkok, Thailand, 20-24 July 2015). The ATM/SG commented on or noted the following key issues from the overview:

- the CNS/SG asked for guidance from ICAO on ATC separation minima regarding the standard that can be applied using ADS-B with CPDLC and ADS-B with Direct Controller Pilot Communications (DCPC) in remote airspace outside the range of VHF voice communications (*Draft Conclusion CNS SG/19-13 – Need Guidance on Separation Minima*); and
- the CNS SG/19 endorsed three Draft Conclusions advising that States do not require operational approval for the operational use of ADS-B OUT by ATC, and the mandatory carriage of serviceable 1090 MHz ES Automatic Dependent Surveillance-Broadcast (ADS-B) transmitting equipment by aircraft.

4.34 In discussing Draft Conclusion CNS SG/19-13, the meeting noted that the presentation of any proposal on development of separation standards to the Separation and Airspace Safety Panel (SASP) needed to clearly define the purpose, benefits and priority. It was also noted that the work of establishing a separation standard normally required complex modelling.

4.35 The ATM/SG/3 noted that requests for development of a separation standard normally required delivery of a fully developed working paper to SASP with the necessary details and supporting arguments, so it was not considered appropriate to agree to an APANPIRG Conclusion without this material. Therefore, the meeting did not support the Draft Conclusion CNS SG/19-13.

ADS-C Climb/Descend Procedure Project Update (IP03)

4.36 IP03 detailed progress on Federal Aviation Administration (FAA) activities associated with the Automatic Dependent Surveillance – Contract Climb/Descend Procedure (ADS-C CDP). This standard was applied on a trial basis between manoeuvring and blocking aircraft pairs utilizing 15NM or 25NM longitudinal separation. The SASP had conducted a final review of the Proposal for Amendment for the Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM), and it was anticipated that the standard could be applicable in November 2016.

ADS-B ITP (IP04)

4.37 The United States presented information on the FAA’s Surveillance and Broadcast Services (SBS) Program, which had developed an airborne Automatic Dependent Surveillance - Broadcast (ADS-B) In-Trail Procedure (ITP). This procedure allowed same direction traffic with a maximum closing Mach differential of 0.06 or less to transition through the altitude of the non-maneuvring aircraft utilising the 10NM ITP longitudinal separation standard (15 NM at initiation of the ITP), and was effective in PANS-ATM on 13 November 2014. New York, Oakland and Anchorage Area Control Centres (ACCs) would receive a software update to automate the procedure in January 2016 for application in June 2016.

U.S. Department of Defense Aircraft ADS-B Equipage Update (IP05)

4.38 IP05 provided information on progress of U.S. Department of Defense (DoD) aircraft ADS-B equipage and modernization efforts. It was expected that approximately 44 % of DoD aircraft would be equipped with ADS-B Out by 01 January 2020. However, additional funding may allow approximately 70% of DoD aircraft to be equipped by this date.

4.39 The meeting noted that although Article 3 of the Chicago Convention exempted State aircraft from civil mandates, the U.S. DoD acknowledged that the sharing of surveillance data such as ADS-B was a major safety benefit to both civil and military air traffic. The DoD fleet equipage for other capabilities was approximately:

- 50% RNAV 1 and 60% for RNAV 2;
- 60% for GPS approaches; and
- 7% equipped for LPV approaches.

ATC Tower Operation in China (IP12, PR04)

4.40 China presented a brief introduction of the Tower Operation Management System (TOMS) used in seven major airports in China. TOMS connected to other ATC tower systems such as Datalink Departure Clearance (DCL), Digital Automatic Terminal Information Service (D-ATIS) and Surface Movement Radar (SMR), providing a data integration and exchange platform capability to other tools such as Departure Manager (DMAN).

DCL & D-ATIS Service in China (IP13 PR05)

4.41 IP13 discussed the positive aspects of DCL service and D-ATIS applications as part of a Datalink Flight Information Service (DFIS). By the end of 2015, 44 airports in China would have DCL and D-ATIS capability. The current service rate for DCL was 82%, while the use of D-ATIS had increased 757% between 2009 and 2014.

DCL Implementation in the New Zealand FIR (IP14)

4.42 New Zealand provided a summary of the problems encountered in the design and implementation of DCL within the New Zealand FIR. The following key issues were identified:

- Clearance Delivery (CLD) message format conflicting with initial clearance content;
- avionics issues with message format or content (omission of supplementary address, use of symbols in free text messages, cockpit display of CLD detail);
- exposure to real request messages during live ‘end-to-end’ testing; and
- non-compliant ED-85A/AIRINC622 airspace users who were wanting to participate.

4.43 Successful solutions were enabled by the close cooperation of both ATC and airline technical staff reviewing message transactions after successive rounds of coordinated end-to-end tests.

New Technology to Improve the Efficiency of Busy Airports (IP16)

4.44 China presented new research on D-TAXI (which provides a visual display of planned taxi routing) and their weather forecast system used in East China (which allowed an animated display of the forecast weather up to 24 hours from the current time).

Flight Plan 2012 Functional Implementation Survey (WP15)

4.45 ICAO provided the results of a survey of functional implementation status of Amendment 1 to PANS-ATM, which became effective in November 2012. The purpose of the amendment, generally known as *FPL 2012*, was to update the ICAO model flight plan form in order to meet the needs of aircraft with advanced capabilities and the evolving requirements of automated air traffic management (ATM) systems.

4.46 APANPIRG/24 had adopted the following Conclusion: *Conclusion 24/11: Reliance on FPL and ATS Message Converters*. APANPIRG/25 had noted IATA’s presentation of the results of a CANSO post-implementation survey of FPL 2012. It was agreed that the ICAO Asia/Pacific Regional Office would conduct a follow-up survey of implementation status (ATM/SG/3/WP/15/Attachment A).

4.47 A summary of the status of key items in the survey was provided to the ATM/SG/3 meeting, together with information on lateral separation standards defined in PANS-ATM and supporting Performance-based Navigation (PBN) specifications, related performance objectives of the Asia/Pacific Seamless ATM Plan, and a PANS-ATM incongruity between the definition of required navigation performance 2 (RNP-2) for separation and the flight planning provisions limited to RNAV 2.

4.48 The survey also included questions on the acceptance and processing of non-PANS-ATM items including wake turbulence category ‘J’, runway visual range (RVR), and FPL Item 19 information.

4.49 IATA advised that some airspace users were including Item 19 in transmitted FPL due to one State's AIP requirement. This matter would be further addressed by ICAO. The use of Mode S SSR downlinked aircraft parameters (DAPs) in ATM systems was also assessed, noting draft proposals to include the expectation of this capability in the 2016 update of the Seamless ATM Plan.

4.50 The ATM/SG/3 meeting agreed to the following Draft Conclusions, for further consideration by APANPIRG/26:

**Draft Conclusion ATM/SG/3-5: Implementation of FPL 2012 Capability**

That, noting the relevant aircraft separation and track spacing minimums specified in ICAO Doc 4444 PANS-ATM, and the performance objectives of the Asia/Pacific Seamless ATM Plan;

States are urged to include in ATM automation system specifications the processing and presentation in ATC human-machine interfaces and decision support and alerting tools, the communications, navigation and approach aid indicators received in items 10 and 18 of FPL and ATS messages, where applicable, and the following Mode S SSR or ADS-B downlinked aircraft parameters as a minimum:

- Aircraft Identification;
- Aircraft magnetic heading;
- Aircraft indicated airspeed or Mach Number;
- Pilot selected altitude.

**Draft Conclusion ATM/SG/3-6: Flight Plan Item 19 Information**

That, States are urged to ensure that item 19 information contained in submitted flight plans is not included in Flight Plan (FPL) messages.

**Draft Conclusion ATM/SG/3-7: Consistent PANS-ATM Provisions for RNP 2/RNAV 2**

That, ICAO be requested to take action to provide consistency in ICAO Doc 4444 – PANS-ATM, noting the specification of RNP 2-based separation while RNAV 2 is specified for entry in the flight plan.

Optimization of Airspace and Procedures (IP06)

4.51 The United States updated the ATM/SG on their 'metroplex' terminal airspace planning methodology that focussed on a geographic area, rather than a single airport. They noted that this approach considered multiple airports and the airspace surrounding a metropolitan area, including all types of operations, as well as connectivity with other metroplexes. These initiatives had identified considerable fuel burn benefits from Optimized Profile Descents (OPDs) and other efficiencies, including reduced ATC task complexity and pilot/controller communications.

TEM - Exploiting Capabilities of Air Traffic Simulators (IP07)

4.52 IP07 discussed concepts from the ICAO Circular on Threat and Error Management (TEM). India had decided to focus the curriculum of training in air traffic simulators, to enhance the skills of air traffic controllers in dealing with threats and errors. India had implemented simulators at Kolkata, Chennai, Mumbai and Delhi ACCs for such areas as pre On-the-Job Training (OJT) and refresher (cyclical) training, skill enhancement (specialized training and performance evaluation), and change management.

4.53 India described their Training for Unusual Circumstances and Emergencies (TRUCE) programme, which was similar to simulator training of flight crew to enable the effective handling of unusual circumstances. With an emphasis on the detection of human errors and the failure of automation systems, the aim was to keep controllers always prepared for such events. India commented that controllers were observed to comply with expected actions listed in Contingency Plans and Airport Emergency Plans in real emergency situations as a result of this training.

Quantitative Performance Assessment: Air Traffic Controllers (IP08)

4.54 IP08 presented the methodology used by India for the performance assessment of air traffic controllers in various ATC units. The methodology was an improvement from a previously qualitative assessment to a quantitative assessment, aimed at better safety and efficiency of aircraft operations through directed remedial training. The assessment process was in four areas with Performance identifiers (PI) in each assessment form: Safety, Skill, Behaviour and Knowledge.

**Agenda Item 5: ATM Coordination (Meetings, Route Development, Contingency Planning)**

Rocket Launch Airspace Closures (WP16)

5.1 IATA presented an overview of issues faced by airlines due to the frequent closure of large portions of airspace for major rocket launches and space re-entry activity, and proposed certain measures to reduce the consequences for civil flights. To facilitate rocket launches, ANSPs were required to create temporary danger areas that could affect several FIRs. Airline experience indicated an urgent need to improve coordination among ANSPs, as well as airlines, which addresses the following areas:

- a) appropriate advance notice;
- b) accuracy and minimisation of launch windows;
- c) timely NOTAM information from all affected States concerned about launch cancellations; and
- d) launch timing windows not set during busy traffic hours.

5.2 Noting that reports from airlines that costs to airlines can exceed USD250,000 for each launch, IATA urged States involved to improve coordination and consideration of measures to minimise the negative effects on civil aviation. The meeting agreed that the work of developing guidance material would be undertaken out of the ICAO Regional Office, in consultation with relevant stakeholders, for inclusion in the 2016 update of the Asia/Pacific Seamless ATM Plan.

FUA Implementation in India (Validation of FUA Manual) (WP17)

5.3 India provided an overview on the development and validation of a Manual on Flexible Use Airspace (FUA), which was based on ICAO Circular 330. The Manual on FUA, India, V1.0 was adopted at the second meeting of the National High Level Airspace Policy Body meeting, which demonstrated an effective strategic decision-making process. The ATM/SG noted with appreciation the generic version based on the FUA Manual that would be presented by India at a forthcoming ICAO civil/military seminar/workshop, so it could be used as a resource by Asia/Pacific States.

Pacific Military Altitude Reservation Function (IP17)

5.4 The United States presented information on the responsibilities and operations of the U.S. Pacific Military Altitude Reservation Function (PACMARF). The preferred method of moving large numbers of tactical aircraft through civil airspace was the use of moving altitude reservations (ALTRVs), managed by PACMARF. The United States noted that coordination procedures, timelines and change requests were outlined in Memorandums of Understanding (MOU) between ANSPs and PACMARF. The PACMARF AFTN address was: PHIKYWYX.

Civil/Military Cooperation Lecture and Seminar Outcomes (IP18)

5.5 The ICAO Regional Sub-Office (RSO) presented the outcomes from the Asia/Pacific Civil/Military Cooperation Lecture and Seminar, held from 19 to 21 November 2014, at the RSO Offices, Beijing, China. The Lecture and Seminar was supported by EUROCONTROL, IATA, the FAA, the German Air Navigation Services (DFS) and the ASEAN Air Transport Integration Project (AATIP). The following were key points from the Lecture and Seminar for civil/military cooperation enhancement:

- a) common understanding and mutual trust were fundamental;
- b) ICAO Circular 330 was a valuable resource for State planning;
- c) consistency of civil/military terminology and data structure were important;



- d) there was a link between civil/military airspace management, ATFM/CDM and ATS;
- e) proper communication process, data sharing mechanism, decision-making framework and negotiation guideline are some of the fundamental requirements;
- f) governmental support at the policy level is necessary to facilitate effective civil/military coordination; and
- g) civil/military cooperation was required to support effective SAR operations.

#### Regional ATM Contingency Plan Task Force Outcomes (WP18)

5.6 The 4<sup>th</sup> Meeting of the Regional ATM contingency Plan Task Force (RACP/TF/4) was held in Bangkok, Thailand, from 26 to 30 January 2015. RACP/TF/4 was briefed on relevant outcomes from ATFM/SG/4. Some of the information provided was superseded by amendments made in the finalized draft Regional Framework for Collaborative ATFM made by ATFM/SG/5.

5.7 Contingency plan status updates were provided to RACP/TF/4 by Australia, Indonesia, Myanmar and Singapore. Singapore had reviewed and revised its contingency plan based on the draft template for ATM contingency plans presented at RACP/TF/3. RACP/TF/4 reviewed and updated the Draft Contingency Plan Template, which formed an appendix to the draft Regional ATM Contingency Plan (the Contingency Plan).

5.8 It was considered that the specification of particular ATFM measures for contingency response in the Draft Contingency Plan was not appropriate, and a more generic statement regarding the use of ATFM should be used. The description of communications facilities that could be applicable to contingency events such as satellite telephone systems, were expected to be included.

5.9 *Collaborative trajectory options*, discussed in the Research and Future Development section of the draft ATFM Framework, could provide the capability to re-route traffic around airspace constraints using collaboratively developed pre-defined or tactically devised routes to manage Large Scale Weather Deviations (LSWD) related to tropical cyclones, or for the avoidance of volcanic ash clouds. The implementation of multi-FIR collaborative trajectory options capability, particularly in South East Asia, would require a coordinated multi-partite effort to develop full understanding of airspace capacity and improve the regional ATS route network to provide sufficient ATS route options for the program.

5.10 The RACP/TF had discussed the need for harmonized ATS contingency routes, including the benefits and need for fully *harmonized* contingency routes, recognizing it was unlikely that there would be a circumstance of neighbouring States simultaneously experiencing Category A ATM contingency events. A fully harmonized network of contingency routes/FLAS could also reduce the flexibility that would be essential in tactical management of contingency situations. It had been further recognized that managing the routing of aircraft that must first join a contingency route from the normal ATS route network and then re-join that network after exiting the affected airspace could be flexibly achieved through robust and up-to-date contingency coordination processes and contact details.

5.11 For major, complex contingency events it was noted a full Post-Activation Review (PAR) was required. The analysis could take one year or more. It was considered more feasible to expect a preliminary PAR within 28 or 30 days, with a more comprehensive PAR only required in cases where a major event or one involving an air safety investigation had occurred.

5.12 Rather than specifying that contingency plans should include direction on the exclusion or inclusion of Visual Flight Rules (VFR) or other specified flights, it was agreed that a more generic statement would be more useful. It was also suggested that the terms 'not available' or 'restricted' should be used to describe airspace, rather than 'closed'.

5.13 RACP/TF/4 conducted further review of the draft Regional ATM Contingency Plan provided at **Appendix F to the report**.

5.14 It was envisaged that consideration of existing bilateral and multilateral contingency arrangements, which were practiced by some Asia/Pacific States (e.g. ATM coordination between Singapore and Indonesia in case of a volcanic ash event), would support development of the regional contingency plans. The list of State Contingency Points of Contact for Volcanic Ash Events could be accessed at the ICAO APAC eDocuments website: <http://www.icao.int/APAC/Pages/edocs.aspx>, under the heading 'MET'. Lessons learned from volcanic ash exercises would be used to develop specific guidance and performance objectives for inclusion in the Regional ATM Contingency Plan.

5.15 The draft Contingency Plan in its current form included key information for the guidance of States, and the agreed performance improvement plan with an expected implementation date of 10 November 2016. It was proposed that the Plan in its current form should be uploaded to the ICAO Asia/Pacific Regional Office website for immediate use by States in planning their development of ATM contingency plans. The ATM/SG/3 meeting agreed to the following Draft Conclusion, for further consideration by APANPIRG/26:

**Draft Conclusion ATM/SG/3-8: Draft Regional ATM Contingency Plan**

That, regarding the Draft Asia/Pacific Regional ATM Contingency Plan version 0.2 attached as **Appendix F** to the Report:

1. ICAO be requested to make the Draft Regional ATM Contingency Plan available on the Asia/Pacific Regional Office website; and
2. States are urged to consider the following sections of the Draft Regional ATM Contingency Plan in the planning and development of State contingency plans and inter-State contingency agreements, pending finalization of the Regional ATM Contingency Plan:
  - a) Section 7 - Performance Improvement Plan;
  - b) Appendix A – ATM Contingency Planning Principles;
  - c) Appendix B – Basic Plan Elements; and
  - d) Other relevant information and guidance provided in the document.

5.16 The ATM/SG/3 noted that further development of the plan would require at least one further meeting of the RACP/TF. Items to be finalized or developed included:

- Collation and presentation of sub-regional ATS contingency route information;
- Regional contingency guidance for volcanic ash, radioactive cloud and toxic chemical cloud;

**AHACG Outcomes (WP19)**

5.17 ICAO presented the outcomes of the Second Meeting of the Ad Hoc Afghanistan Contingency Group (AHACG/2, Istanbul, Turkey, 17-19 November 2014) and Third Meeting AHACG/3, Muscat, Sultanate of Oman, 11-14 May 2015) and made recommendations for the preparedness of potentially affected States.

5.18 Iran had offered to send Communication, Navigation and Surveillance (CNS) technical officers to Afghanistan to assist with identifying and solving the CNS issues regarding interoperability of flight plan and ATS messaging between them and Afghanistan. IATA stated that if there was no assurance of flight plans being handled correctly, then it was likely that some airlines would avoid the applicable airspace.

5.19 Regarding capacity building, Afghanistan, India and Pakistan all confirmed to the AHACG/3 meeting that they were ready to implement 50NM separation. The blockage of FL300 within the Kabul FIR was discussed at AHACG/3 with a view to using FUA principles.

5.20 Pakistan had recently optimized the route structure by providing an efficient connectivity from ATS Route L509 (SAMAR-LAJAK) by providing a route segment between JABAR and PS VOR (T400) to join ATS route P500 (DI – ADINA – PS – PADDY – FIRUZ). This ATS route connected with a new route segment through Tajikistan and Central Asia, as a bypass alternative north of Afghanistan.

5.21 The AHACG/3 meeting extensively reviewed the draft Afghanistan ATM Contingency Plan, so that comments and suggestions could be made to improve the plan. Afghanistan agreed to incorporate all comments, and ensure close consultation with stakeholders such as IATA, airlines and the military to ensure the finalisation of the plan by mid-June, but not later than 30 June 2015. However, as at 05 August, the Contingency Plan had still not been presented to the ICAO Regional Office.

5.22 Due to crossing traffic, Pakistan stated that Tehran should only release traffic at METBI/EGRON with 5 minute or 50NM separation once agreed by India at only those levels (FL 390 and above, FL 330 and FL 290 and below) in accordance with the ‘Royal Road’ Organised Track System (OTS) already implemented within the Tehran FIR for crossing traffic. Pakistan emphasised, therefore, that the Iranian OTS restrictions would be extended through the Karachi FIR as well. The meeting noted that Iran now had nine ATC Sectors, which could be amalgamated or activated as the traffic situation required.

5.23 In order to provide parallel route for traffic from Tehran ACC, Pakistan was considering an additional flow on a new direct route (Bi-directional) between PEKES and NH VOR which depended on India creating an onward suitable bi-directional connectivity from Nawabshah. In addition, Pakistan was in the process of releasing two levels (FL410 and FL430) which were presently not available within Pakistan airspace due to operational reasons. It was likely that these levels would be available in case of any such contingency.

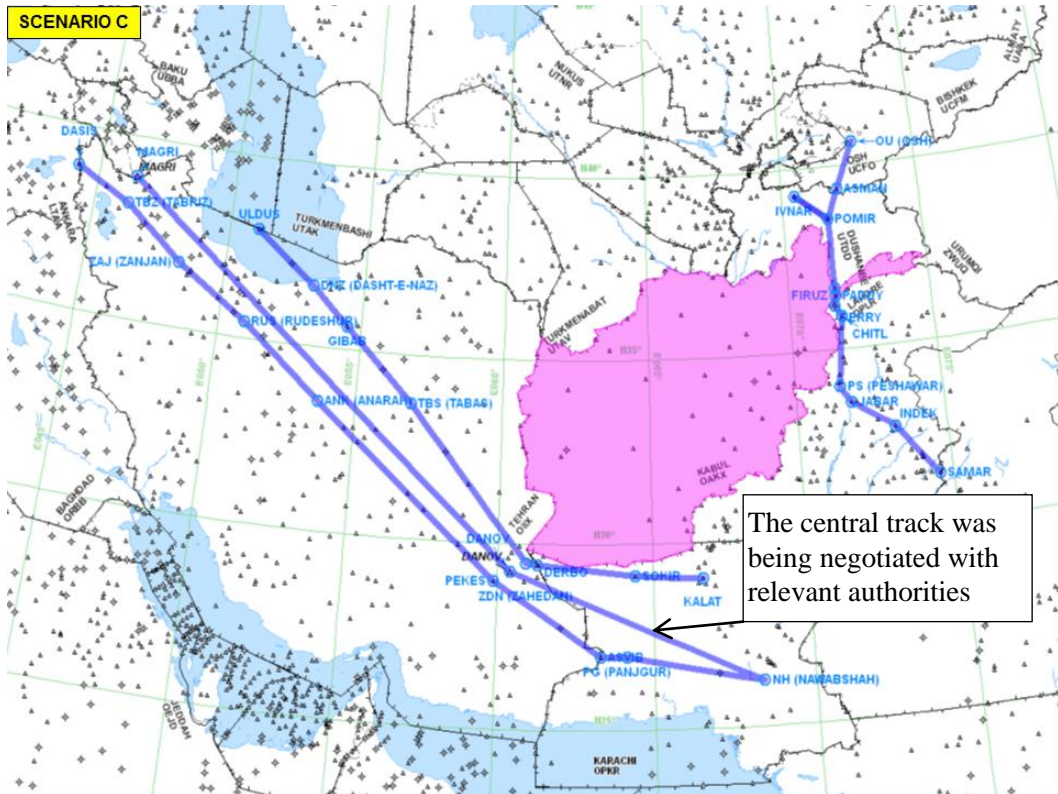
5.24 AHACG/3 noted that the other routing alternatives north of the Himalayas involved RNAV ATS route L888 and other routes through China; however L888 was constrained by aircraft capability (oxygen, escape routes) and China’s ATM capability in remote airspace. China was requested to advise ICAO regarding the capacity of L888, and whether there were any interface issues with Laos with increased traffic using L888.

5.25 India stated that as ATS route R 462 was a bi-directional route that provided connectivity to UUD from Nawabshah via RAMSA and the realignment/ extension of L 518 (effective from 30 April 2015), provided onward connectivity to PRA and the proposed requirement to convert A325 as a bi-directional route was no longer necessary.

5.26 The AHACG/3 meeting was apprised of the ICAO MID Region experience related to contingency planning, in particular to the implementation of the MID Region ATM Contingency Plan and the latest developments related to the Yemen situation. The meeting agreed to use the same coordination mechanism implemented in the ICAO MID Region, in particular the Contingency Coordination Team (CCT) and the Notification Procedures.

5.27 A CCT was established for the Afghanistan contingency arrangements. In case of degradation or potential disruption of ATS or related services within the Kabul FIR, the AHACG/3 recognised that the provisions of the Afghanistan State Contingency Plan applied, but if these were not available, the meeting agreed on possible temporary provisions.

5.28 The AHACG/3 agreed to the contingency scheme in the Inter-regional Afghanistan ATM Contingency Arrangements document, which would be provided to the key States involved (Iran, Pakistan and Afghanistan), and monitored by the ICAO MID and APAC Offices. The agreed OTS within the Tehran and Karachi FIRs and northern diversion was illustrated in **Figure 2**:



**Figure 2:** Circumnavigation Routes (Extended Royal Road OTS)

5.29 The ATM/SG/3 were informed that a new ANS contract had been agreed to by Afghanistan, and that funding arrangements were in place for between one and two years. Notwithstanding this, the ATM/SG/3 agreed to the Inter-regional Afghanistan ATM Contingency Arrangements, and urged States to continue necessary preparations in the event of any ANS issues.

5.30 Noting IATA’s comment that there was a need for follow-up by ICAO on the many actions that had not been completed, with appropriate contingency arrangements planned, the ATM/SG agreed to the disestablishment of the AHACG with the following Decision:

**Decision ATM/SG/3-9: Disestablishment of the AHACG**

That, the Asia/Pacific Ad Hoc Afghanistan Contingency Group (AHACG) be disestablished.

Collaborative/Proactive Approaches to Manage Contingencies (WP20)

5.31 India provided planning considerations for the management of airspace in contingency situations after their experience of Mumbai FIR being involved in the contingency situation arising from the sudden closure of Sana’a FIR. India stated that the situation posed difficulties for airlines and ANSPs, with additional traffic and traffic conflict situations, which resulted in an increase in ATC workload. Noting that there had been an increase in coordination failures and ICAO involvement, they stressed the importance of ANSP communication and planning, and procedures such as offset tracks. The lessons learnt from this situation were used in planning for any Afghanistan contingency.

5.32 India stated that it was important that the lessons learnt from the closure of Sana's FIR were used to develop strategic planning methodology for facilitating the flow of international traffic, by-passing such closed airspace. In such critical situations, timely coordination among concerned ANSPs, Regional Office/s of ICAO and IATA was significant. India reaffirmed that during the next BOBASIO Meeting, the coordination issues and contingency planning would be discussed with neighbouring ANSPs.

SAIOACG/4 and SEACG/21 Meeting Outcomes (WP21)

5.33 The ATM/SG/3 were briefed about the outcomes of the Fifth Meeting of the South Asia/Indian Ocean ATM Coordination Group (SAIOACG/5, Bangkok, Thailand, 03-05 March 2015), and the Twenty-Second Meeting of the South East Asia ATS Coordination Group (SEACG/22, Bangkok, Thailand, 09-12 March 2015).

5.34 The ATS interface issues in the Bay of Bengal and South China Sea (SCS) that had been analysed by the Nineteenth Meeting of the RASMAG/19 were highlighted. SAIOACG/5 and SEACG/22 States were urged to support the ATS Inter-facility Data Communications (AIDC) Task Force and other measures to improve safety.

5.35 Participants at both the SAIOACG/5 and SEACG/22 were urged to review the draft material provided by ICAO on the new Asia/Pacific electronic Regional Air Navigation Plan (eANP). The meeting agreed that the FIR Descriptions (and later, the Search and Rescue Region Descriptions - SRR) were not sufficiently mature and required further verification and quality checking, and thus were expected to be endorsed by APANPIRG/27. The following eANP drafts were provided for consideration by the ATM/SG/3:

- **Appendix G:** eANP Excerpts;
- **Appendix H:** Volume I, Part I Table Gen I-1 FIRS;
- **Appendix I:** Table ATM I-1 Draft FIR Descriptions;
- **Appendix J:** Volume II, Part IV Table ATM II-1 SSR Codes; and
- **Appendix K:** Volume II, Part IV, Table ATM II-ASIAPAC-2 ATS Routes.

5.36 The Secretariat presented draft Version 14 of the *Asia and Pacific Region ATS Route Catalogue* for review and update. The meetings noted the transition of Chapter A (ATS routes that had been designated by the Council) was being moved into the eANP, and that the remaining proposals within the ATS Route Catalogue could be updated by the Regional Office without reference to an APANPIRG Conclusion in future (**Attachment L**). SAIOACG/5 and SAIOACG/22 agreed to the following Draft Conclusion for consideration by the ATM Sub-Group and APANPIRG:

**Draft Conclusion ATM/SG/3-10: ATS Route Catalogue Version 14**

That Version 14 of the *Asia and Pacific Region ATS Route Catalogue* at **Appendix L to the Report** replaces Version 13 on the Asia/Pacific Regional Office's web site, noting that:

- Chapter A had been transitioned to the electronic Air Navigation Plan (eANP); and
- the remaining ATS route proposals in the ATS Route Catalogue may be amended by the ICAO Regional Office without reference to an APANPIRG Conclusion in future.

5.37 The ATM/SG/3 agreed to the following Decision regarding the minor amendment to the SAIOACG Terms of Reference:

**Decision ATM/SG/3-11: SAIOACG Terms of Reference**

That South Asia Indian Ocean Air Traffic Management Coordination Group (SAIOACG) Terms of Reference be amended in accordance with **ATM/SG/3/WP21/Attachment H**.

5.38 Recognizing the need for high capacity MTF between Southeast Asia and East Asia, and the effect of the current modified single alternate Flight Level Orientation Scheme (FLOS) that caused conflicts with crossing traffic, the SAIOACG4/SEACG22 combined meeting had established under *Decision SAIOACG4/SEACG21-2 – Establishment of a Major Traffic Flow Review Group (SCS MTFRG)*.

5.39 Unfortunately, progress had been limited at the SCS MTFRG/1 by the non-participation of China and the lack of a clear TOR for the group. Therefore, after a submission by IATA and discussion at the SEACG/22, the meeting agreed that the TOR needed to be more concise, to ensure implementation plans and recommendations would be provided to SEACG that dealt with the important task of meeting Seamless ATM Plan expectations. SEACG/22 agreed with the following Decision: *Decision SEACG/22-1: SCS-MTFRG Terms of Reference*.

5.40 SAIOACG/5 and SEACG/22 discussed the future of the SAIOACG and SEACG meetings, noting that there were a number of ‘informal’ (non-ICAO) ATM coordination meetings in existence. The Regional Sub-Office had been building more capability in managing day to day implementation matters, including crucial areas such as PBN, ATS route development, ATFM and Airspace Organisation and Management (AOM). Therefore, from 2016 it appeared that the RSO was best placed to manage the SAIOACG and SEACG Secretariat. IATA expressed the view that regardless of whether the Regional Office or the RSO provided the Secretariat service, the ATM Coordination meetings must continue to be held at the ICAO Regional Office in Bangkok, to continue to take advantage of the associated accessibility, cost and convenience that permitted all relevant States to more readily attend.

Fourth Meeting of the Mekong ATM Coordination Group Outcomes (WP22)

5.41 The meeting was briefed on the outcomes of the Fourth Meeting of the Mekong ATM Coordination Group (MK-ATM/CG/4, Siem Reap, Cambodia, June 2-4, 2015) involving participants from Cambodia, Lao PDR, Myanmar, Thailand, Viet Nam and IATA. MK-ATM/CG had been established to discuss and collaborate on ATM coordination issues.

5.42 The MK-ATM/CG had developed the ATS route network across the Mekong sub-region, and planned for the reduction of aircraft spacing with the goal of achieving seamless ATM operations. Other matters discussed included ATS operational difficulties relating to air traffic inbound to China, AIDC implementation, surveillance data sharing, cross-border ATFM workshops and the ASEAN Strategic Planning Group.

Side Meeting between Mekong/SEACG States on Traffic Delays (Flimsy 3)

5.43 A side meeting of China, Hong Kong China, Republic of Korea, Viet Nam, IATA and ICAO discussed the issue of major traffic delays stemming from Chinese airspace, with a view to developing a proposal for ICAO assistance.

5.44 Flimsy 3, presented by IATA, presented the airline industry’s concerns regarding severe flight delays in in China, requesting that China pay urgent attention to flight delay reduction by focusing on increasing airspace/airport capacity, permitting operational flexibility, improving ATFM predictability, strengthening civil-military ATM cooperation and adopting international best practice where appropriate.

## **Agenda Item 6: AOP, AIM, MET, SAR**

### AOP Working Group Outcomes (WP23)

6.1 The outcomes of the Third Meeting of the AOP Working-Group (AOPWG/3, Putrajaya, Malaysia, 02-04 June 2015) were presented.

6.2 The AOP/WG meeting noted that even though the information on the availability of (Runway End Safety Areas (RESAs) was published by States in their State AIP, it would be helpful to pilots if the information was also made available in Aerodrome Charts considering that most pilots refer to Aerodrome Charts for aeronautical information. The AOP/WG formulated the following draft Conclusion which was endorsed by the ATM/SG, for further consideration by APANPIRG/26:

#### **Draft Conclusion ATM/SG/3-12: Publication of RESA availability on Aerodrome Charts**

That, States/Administrations are encouraged to publish information on the availability of RESA on Aerodrome Charts, considering that most pilots refer to Aerodrome Charts for aeronautical data/information, and report action taken to ICAO Regional Office by 31 December 2015.

6.3 The AOP/WG reviewed the draft sample regulations for water aerodromes and formulated the following Draft Conclusion, which was endorsed by the ATM/SG, for further consideration by APANPIRG/26:

#### **Draft Conclusion ATM/SG/3-13: Sample Regulations for Water Aerodromes**

That, in accordance with Decision ATMSG/2-7, the sample regulations for water aerodromes developed by the Small Working Group be adopted for use as a reference document in the Asia/Pacific Region.

6.4 The ATM/SG noted the AOP/WG's Decision to amend the Water Aerodromes Small Working Group's (WASWG) TOR.

6.5 The AOP/WG meeting had urged States to implement the provisions of the PANS–Aerodromes (Doc 9981) and to publish up-to-date lists of significant differences from this document in their AIP by 10 November 2016. The meeting formulated the following Draft Conclusion, which was endorsed by the ATM/SG, for further consideration by APANPIRG/26:

#### **Draft Conclusion ATM/SG/3-14: Roll out of PANS–Aerodromes**

That, ICAO be invited to organize a seminar/workshop in the Asia/Pacific region to roll out the first edition of PANS Aerodromes (Doc 9981) during first quarter of 2016.

6.6 The AOP/WG agreed to the following Draft Conclusion regarding the development of Airport Master plans to support the modernisation of existing airports and creation of new airports, regardless of size, complexity, and role. The Draft Conclusion was endorsed by the ATM/SG/3 for further consideration by APANPIRG/26:

#### **Draft Conclusion ATM/SG/3-15: Airport Master Plans**

That, recognizing the importance of long term development of an airport to cater to the growing traffic, States should encourage airport operators to develop long term airport master plan to assist in the timely phased airport expansions, thereby increasing capacity and enhancing the safety and regularity of aircraft operations, and report progress to AOPWG/4.

6.7 ACI explained the benefits in respect of guidance materials, training, measuring tools and accreditation services to help airports reduce greenhouse gas emissions and urged Asia/Pacific States to encourage airports to use them. The AOP/WG meeting invited States to include Airport Carbon Accreditation, in their State Action Plans on Climate Change and formulated the following Draft Conclusion, which was endorsed by the ATM/SG, for further consideration by APANPIRG/26:

**Draft Conclusion ATM/SG/3-16: Aerodrome Carbon Emissions Management**

That States:

- a) support the inclusion of Aerodrome Carbon Accreditation into their State Action Plans for CO<sub>2</sub> reduction; and
- b) encourage aerodrome operators to consider adopting the ACERT (Airport Carbon and Emission Reporting Tool), and to participate in the ACI Airport Carbon Accreditation Programme.

Arrangements between Data Originators and AIS WP24

6.8 Japan provided information on a practice of establishing an aeronautical data chain between data originators and aeronautical information services (AIS), which was one of the steps of the ICAO Roadmap for Transition from AIS to Aeronautical Information Management (AIM) Roadmap, and the importance of involvement of State authorities other than those in the AIS field. The scope of aeronautical information and aeronautical data was wide and varied, requiring coordination with numerous originators of information and data to be notified by AIS.

6.9 Annex 15 – *Aeronautical Information Services* required that States ensure that formal arrangements were established between originators and aeronautical information services to maintain the quality of the information or data to the end users. Annex 11 – *Air Traffic Services* and Annex 14 - *Aerodromes* also required that arrangements be made between AIS and the responsible authorities. be made between responsible authorities and aeronautical information services.

6.10 The Japan Civil Aviation Bureau (JCAB) had established ‘Aeronautical Information Issuance Procedures’ and ‘Guidance for Aeronautical Information Publication’, containing requirements for persons and organizations forming the aeronautical information data chain.

6.11 Information was provided on the certification of aerodromes and the provision of information and data by aerodrome operators to AIS, electronic terrain and obstacle data (eTOD), and the involvement of regulatory bodies.

6.12 The meeting was invited to recognize the importance of involvement of regulatory bodies of originators, as well as the originators themselves, for establishing arrangements with AIS. ICAO noted that the matter of data originator agreements was covered in the Interim AIM Guidance Material.

AIS – AIM Implementation Task Force Outcomes (WP25)

6.13 The 10<sup>th</sup> Meeting of the AIS – AIM Implementation Task Force (AAITF/10) was held in Bangkok, Thailand, from 27 – 30 April 2015. A range of issues related to AIS and the transition to AIM were considered, including coordination between relevant ICAO regional groups, AIS-AIM air navigation deficiencies, Regional AIM transition progress and reporting, State updates on AIM implementation, and the ICAO International Codes and Route Designators (ICARD) application.

6.14 Recognizing the scale and importance of the ICARD to both groups, coordination between AAITF and the Asia/Pacific Region Performance-based Navigation Implementation Coordination Group (PBNICG) would be handled by the ICAO Secretariat.



6.15 Regarding *Conclusion APANPIRG/25-15: Aeronautical Information Management (AIM) Transition Reporting* that urged States to verify the information recorded in the AIM Transition Table and update the information at least once annually, by April 30 each year, the following administrations had provided updated information:

Australia, Bangladesh, China, Macao China, Fiji, Malaysia, Maldives, Singapore, Sri Lanka, Thailand, Tonga, USA.

6.16 The following States had not provided any information on AIM transition since the AIM Transition Table was created in 2011:

Bhutan, Brunei Darussalam, Kiribati, Marshall Islands, Micronesia, Nauru, Samoa.

6.17 Regional implementation of Phase 1- *Consolidation* of the Roadmap for Transition from AIS to AIM was summarized as follows:

- 15 Administrations ( $\approx 36\%$ ) had completed implementation of Phase 1;
- 16 Administrations ( $\approx 38\%$ ) had partly implemented Phase 1;
- 11 Administrations ( $\approx 26\%$ ) had not implemented any Phase 1 step; and
- Overall Regional implementation of Phase 1  $\approx 60\%$ .

6.18 The performance objectives of the Asia/Pacific Seamless ATM Plan included the expectation that Phases 1 and 2 of the Roadmap for Transition from AIS – AIM would be completed by November 2015. Regional implementation of Phase 2 – *Going Digital* was summarized as follows:

- No Administrations had completed implementation of Phase 2;
- 25 Administrations ( $\approx 59\%$ ) had partly implemented Phase 2
  - 11 Administrations ( $\approx 26\%$ ) have completed more than 50% of Phase 2;
- 17 Administrations ( $\approx 40\%$ ) had not completed any Phase 2 step; and
- Overall Regional implementation of Phase 2  $\approx 27\%$ .

6.19 AAITF/10 had supported the proposal for a website to share experience between States, and agreed to *Decision AAITF/10-1: AIM Transition Information Sharing Website*, facilitating a project by Mongolia to develop a website for the sharing of information related to the implementation of Aeronautical Information Management steps defined in the ICAO Roadmap for Transition from AIS to AIM.

6.20 In the matter of the electronic AIP (eAIP), the AIM Implementation Table did not differentiate between a simple web-accessible, printable AIP provided via PDF or other files, and an AIP based on a digital database of information that could be exchanged through the use of an appropriate information exchange model. The ATM/SG/3 meeting agreed to the following Draft Conclusion, for further consideration by APANPIRG/26:

**Draft Conclusion ATM/SG/3-17: eAIP from Digital Database**

That, States providing updated AIM transition information in accordance with **Conclusion APANPIRG/25-15** should advise whether their eAIP is generated from a digital database of aeronautical information.

6.21 It was noted by the AAITF that some States may have implemented eAIP generated from a digital database that may not be suitable for future digital exchange. The performance objectives of the Asia/Pacific Seamless ATM Plan specified the Aeronautical Information Exchange Model (AIXM) version 5.1 or later.

6.22 In discussing eAIP and the Asia/Pacific Seamless ATM Plan's performance objectives it was noted that the use of the Aeronautical Information Exchange Model may not be applicable to Phases 1 and 2 of the Roadmap for Transition from AIS to AIM. Transition Phase 2 step P-11 – *Electronic AIP* related to the implementation of the electronic version of the AIP in two forms; a printable document, and one that could be viewed by web browsers. The Phase 3 Step P-09 – *Aeronautical Data Exchange* related to the definition of the information exchange model.

6.23 The lack of global guidance material for AIS-AIM transition was viewed by AAITF/9 (Pattaya, Thailand, 24 to 27 June 2014) as a significant obstacle in States' AIM implementation progress, and presented challenges to their efforts to implement AIM transition steps within timeframes defined by Annex 15 applicability and the Asia/Pacific Seamless ATM Plan's performance objectives. Delivery of the guidance documents had been further delayed beyond the latest advised timeframe (Q2/3 2014). The latest information from ICAO Headquarters at the time of the AAITF/10 meeting (April 2015) was that most of these documents were undergoing final drafting and/or editing, but publication dates had not yet been finalized.

6.24 While recognizing that any independently developed regional guidance material could risk encouraging States to implement AIM in ways that were either not supported by or running counter to the delayed global guidance material, AAITF had agreed to work on Regional AIM transition guidance material for four identified priority AIM transition steps: P-17 – *Quality*, P-16 – *Training*, P18 – *Agreements with data originators*, and P-11 *Electronic AIP*.

6.25 Draft Interim AIM Transition Guidance, intended to provide States with a simple checklist of references and information pending publication of the ICAO global guidance documents and PANS-AIM, was reviewed and finalized by AAITF/10. It was proposed that the Interim AIM Transition Guidance should form an appendix to the *Guidance Manual for Aeronautical Information Services (AIS) in the Asia/Pacific Region*, which was available on the ICAO Asia/Pacific Regional Office website at <http://www.icao.int/APAC/Pages/edocs.aspx>.

6.26 The ATM/SG/3 meeting agreed to the following Draft Conclusion, for further consideration by APANPIRG/26:

**Draft Conclusion ATM/SG/3-18: Interim AIM Transition Guidance**

That, the *Guidance Manual for Aeronautical Information Services (AIS) in the Asia/Pacific Region* be updated to include as an appendix the Interim AIM Transition Guidance appended at **Appendix M** to the report.

6.27 Following the availability of the ICAO publications supporting AIM transition there would be a need to familiarize stakeholders with their contents. Recognizing also the performance objectives of the Asia/Pacific Seamless ATM Plan (AIM Transition Phases 1 and 2 implemented by November 2015), there would be a need for amendment or further development of the Regional AIM guidance manual. The ATM/SG/3 meeting agreed to the following Draft Conclusion, for further consideration by APANPIRG/26:

**Draft Conclusion ATM/SG/3-19: AIM Transition Seminars/Workshops**

That, ICAO be urged to facilitate Asia/Pacific AIM Transition Seminars/Workshops to:

- a) familiarize stakeholders with the new and amended ICAO publications developed by the ICAO AIS-AIM Study Group;
- b) assist States in developing AIM implementation plans; and
- c) act as a forum for further development and updating of the *Guidance Manual for Aeronautical Information Services (AIS) in the Asia/Pacific Region*.

6.28 During the review of its TOR the AAITF/10 discussed the future direction of the task force and what it was expected to achieve. It was noted that only seven working papers and six information papers had been presented to the AAITF/10 meeting, and that no States had presented working papers.

6.29 It was again noted that achievement of the AAITF objectives listed in the TOR were dependent on global guidance material supporting AIM transition that had not yet been delivered, most notably including the updated Doc 8126 – *AIS Manual*, and the new AIS Training and AIS Quality manuals. However, it was agreed that AAITF could continue to work towards its objectives pending the delivery of the relevant documents. It was therefore agreed that AAITF would, as near term objectives:

- a) review and update the quality management guidance and sample quality manual provided in the *Guidance Manual for AIS in the Asia/Pacific Region*;
- b) review the global guidance material relating to AIM transition when it became available, and draft recommendations for implementation within the Asia/Pacific Region; and
- c) conduct one-day seminars/workshops on selected topics in conjunction with each future AAITF meeting. A topic agreed for AAITF/11 was *processes, considerations and challenges in the migration of aeronautical information into digital databases*.

6.30 The following sections of the eANP relating to AIS/AIM were appended to the working paper for review and feedback to the Secretariat:

- **Appendix N:** Volume II Table AIM II-1 – AIS/AIM Facilities and Services; and
- **Appendix O:** Volume II Table AIM II-2 Aeronautical Chart Production.

MET-ATM Collaboration: Taking the Lead to Develop and Harmonise Requirements (WP26)

6.31 Hong Kong China, Japan, Philippines and Singapore encouraged the ATM community, including ANSPs and Civil Aviation Authorities (CAAs), to engage the Aeronautical Meteorology (MET) community to develop and harmonise requirements for ATM-tailored MET products, and to push for greater coordination and collaboration between MET service providers to share real-time meteorological observation data. Australia noted that whilst they were unable to co-sponsor the WP, they offered to collaborate with the existing sponsors in order to achieve the required outcomes.

Meteorology Issues relevant to ATM (WP27)

6.32 The Secretariat presented consolidated information from a number of ICAO Asia/Pacific meetings on activities in the field of Aviation Meteorology related to ATM requirements for MET information for ATFM, and for ATM contingency planning, including:

- ATFM/SG/4&5 and RACP/TF/4;
- the 1<sup>st</sup> Meeting of the Asia/Pacific Volcanic Ash Exercises Steering Group (VOLCEX/SG/1), held in Manila, Philippines, from 27 to 29 May 2015; and
- The ICAO Asia/Pacific Meteorology/Air Traffic Management (MET/ATM) Seminar and 4<sup>th</sup> Meeting of the Asia/Pacific Meteorological Requirements Task Force (MET/R TF/4), held in Tokyo, Japan, from 29 June to 3 July 2015.

6.33 The VOLCEX/SG/1 meeting agreed to conduct two volcanic ash exercises. The first exercise, VOLPHIN15/01, was scheduled to be held on August 11 2015. The second meeting of the VOLCEX/SG, scheduled for 14 – 16 September 2015 would include an exercise debrief of VOLPHIN/15/01, and conduct planning for VOLPHIN/15/02, tentatively scheduled for mid-December 2015. VOLPHIN/15/01 had the primary objective of testing information flows by checking AFTN addressing, message distribution, information handling and coordination between agencies.

6.34 The overall objective of the VOLPHIN/15/1 exercise was to maintain enhanced safety, regularity and efficiency of aviation in the event of a volcanic eruption by demonstrating the provision and exchange of volcanic ash information in support of flexible airspace management, improved situational awareness and CDM, and dynamically-optimized flight trajectory planning.

6.35 Lessons learned from the exercises would be used in the development of guidance and performance objectives for inclusion in the Regional ATM Contingency Plan.

6.36 Outcomes of the Asia/Pacific MET/ATM Seminar 2015 considered by the MET/R TF/4 meeting included examples of ATM-tailored solutions being developed for the provision of MET information to support ATM.

6.37 The MET/R TF/4 meeting considered that further action was required for the provision of additional guidance to States on the alignment of SIGMET for cross-FIR boundary phenomena. Further coordination would be conducted with the MET/H TF on this issue, with a view to possibly updating the Asia/pacific Regional SIGMET Guide.

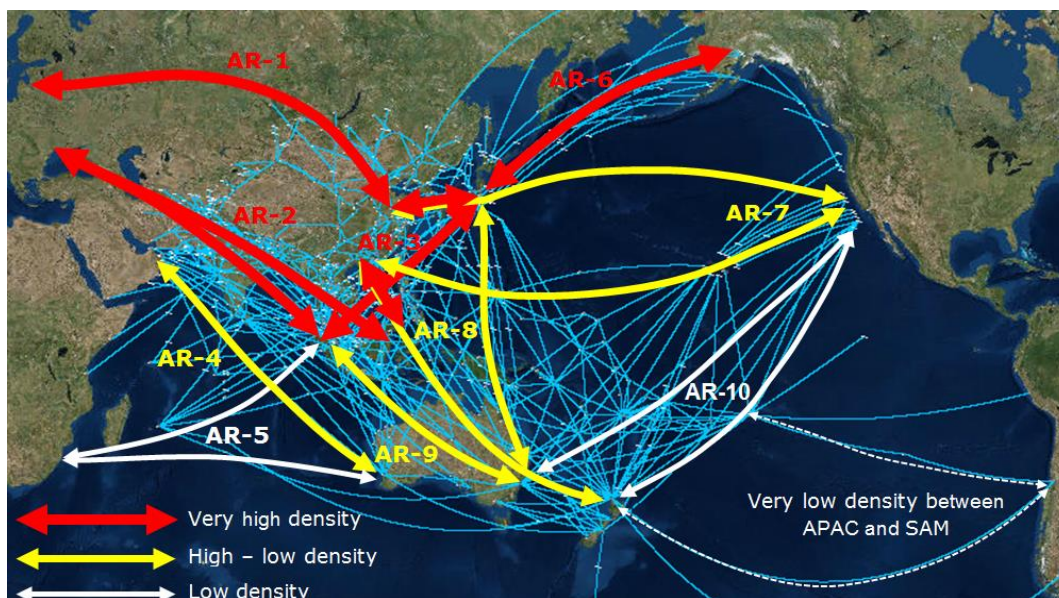
6.38 MET/R TF/4 noted that the ATFM survey conducted by ATFM/SG did not include analysis of MET information that States may have developed to support ATFM. A survey of this information would provide important input to the development of regional guidance. The following Draft Conclusion had been agreed:

***Draft Conclusion MET/R TF 4/2: Survey of State Meteorological Information Supporting Air Traffic Management***

*That, States are urged to respond to a survey of meteorological information provided by MET services to support Air Traffic Management including Air Traffic Flow Management operations.*

6.39 MET/R TF/4 agreed that collaboration and information/data sharing between States' MET service providers would be a key initiative supporting the Regional collaborative ATFM program and other ATM operations. Future meetings of MET/R TF should, after the analysis of survey information on current MET information supporting ATM/ATFM, encourage collaboration, sharing of relevant MET data and harmonization of MET information. It was acknowledged that there would be issues to be identified and managed relating to the sources, format and content of shared data.

6.40 MET/R TF was informed of the information and performance objectives contained in the draft Regional Framework for Collaborative ATFM, and that the performance objectives may be updated to extend the objective of near term (now-casting) forecasts of convective weather activity to en-route ATC sectors supporting high density MTF (**Figure 3**), the busiest Asia/Pacific city pairs, and to other en-route airspace where there was an identified need to support collaborative ATFM.



**Figure 3:** eANP Major Traffic Flow Depiction

6.41 The ATM/SG/3 noted that the MET/R TF/4 had discussed the development of regional guidance material to assist States in developing tailored MET information and services to support ATM and ATFM. MET/R TF/4 had also agreed to commence the development of regional guidance material to assist States in developing tailored MET information and services to support ATM and ATFM.

#### Volcanic Events – The Need for a Collaborative Approach (WP28)

6.42 IATA presented information discussing the importance of timely and ongoing information sharing during a volcanic event. Following an eruption, the first information received by operators was usually a NOTAM issued by the State. That NOTAM typically indicated that an eruption was in progress and sometimes included actions (such as aerodrome closures) taken by the State to ensure safety of operations. Frequently, that was the only communication operators would receive from the State until the NOTAM was cancelled.

6.43 The meeting noted that ICAO DOC 9974 - *Information for Regulators and operators on operations in airspace potentially contaminate by volcanic ash* included a provision that an operator should not be prevented from operating through, under or over airspace forecast to be affected by a VAA, VAG or SIGMET provided it has demonstrated in its SMS the capability to do so safely. From an airspace perspective this left the decision on whether to operate or not in the hands of the operator. However, Doc 9691- *Hazards of operating in airspace and aerodromes contaminated by VA* contained the following, somewhat contradictory, statement:

*A decision has to be taken by the airport authority regarding the feasibility or necessity to continue aircraft operations at the airport.*

6.44 The ATM/SG/3 noted that recent events relating to a volcanic eruption had highlighted the discrepancy between these two documents and demonstrated the lack of a collaborative approach amongst all stakeholders in ensuring critical information was available to all parties in a timely manner. Given the significant disruptive and economic potential of an aerodrome closure, the State concerned should take a proactive approach to collaboratively work with stakeholders (including other States) in ensuring information is shared regularly. Indonesia provided information (Flimsy 07) on activities undertaken to provide improved coordination of information relating to volcanic ash cloud events.

6.45 IATA proposed that States with potential or regular volcanic activity urgently implement a communications mechanism that would provide regular and timely information sharing before, during and after an event, which would facilitate consultation with the airspace users. Noting that the development of Regional guidance material for volcanic ash cloud contingency events would be developed, and the guidance included in the Draft Regional ATM Contingency Plan, the ATM/SG/3 meeting agreed to the following Draft Conclusion, for further consideration by APANPIRG/26:

**Draft Conclusion ATM/SG/3-20: Volcanic Ash Information Coordination and Collaboration**

That, States are urged to:

- a) establish a mechanism to provide regular and timely updates of information during a volcanic eruption and/or ash cloud event to ensure all stakeholders are up to date with current information, situation reports and contingency planning;
- b) participate in volcanic ash exercises; and
- c) consider establishing an internal crisis management centre to support the collaborative sharing of information during volcanic events or other crises.

International Aeronautical and Maritime Search and Rescue Manual (WP29)

6.46 The United States recalled that the 2016 edition of the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual had extensive updates and new content throughout all three volumes, including two items developed by the Asia/Pacific Region and one item of high relevance to aeronautical SAR (available via ICAO at [www.icao.int/](http://www.icao.int/) or the International Maritime Organization (IMO) at [www.imo.org/](http://www.imo.org/)):

- a) Sample SAR agreement for cooperation and coordination with neighbouring States;
- b) Sample SAR coordinating committee agreement for cooperation and coordination among aeronautical and maritime SAR agencies and also between civil and military authorities; and
- c) ‘Multiple aircraft SAR operations’ guidance in all three volumes, which was considered to be particularly useful for aircraft responses during a major incident and also when the area may include several nearby FIRs and SAR regions.

APSAR/TF – Next Steps (WP30)

6.47 WP30 discussed the history and the possible future of the Asia/Pacific Regional Search and Rescue Task Force (APSAR/TF). The United States noted that though certain APSAR/TF tasks would be completed, it had become obvious that much work remained, especially now that ICAO HQ had new SAR-related initiatives.

6.48 The United States recognised the quality of the work related to SAR already produced under the guidance of the ICAO Bangkok Regional Office, quoting the ICAO Council working paper for its 205th session, C-WP/14280 dated 21/5/15 as an indicator of the role that the Asia/Pacific Office had played and the reputation it had earned.

ADS-C Reporting Rate for RNP10 Aircraft (IP19)

6.49 The United States presented information relevant to the use of Automatic Dependent Surveillance – Contract (ADS-C) for Global Flight Tracking (GFT) and the implementation of a 14 minute reporting rate for Required Navigation Performance (RNP) 10 aircraft in the Oakland and Anchorage Flight Information Regions. IATA appreciated the effort and stated that the primary responsibility for flight tracking should remain with the ANSP.

Asia/Pacific Search and Rescue Task Force Outcomes (WP31)

6.50 ICAO presented the outcomes of the Third Meeting of the Asia/Pacific Regional Search and Rescue Task Force (APSAR/TF/3, Maldives, 25-29 January 2015) and the Fourth Meeting of the APSAR/TF (APSAR/TF/4, Bangkok, Thailand, 06-10 July 2015).

6.51 The ATM/SG/3 noted that on 06 July 2015, a SAR Exercise (SAREX) Planning Workshop was also held immediately prior to the APSAR/TF/4 meeting. The Workshop discussed various suggestions for planning and conducting a regional SAREX in late 2015, which would include an ICAO human performance seminar/workshop (reference *Conclusion APANPIRG/25-11: Human Performance Initiatives*) and SAR Plan implementation activity that would precede the SAREX.

6.52 The APSAR/TF/3 meeting reviewed the draft SAR Air Navigation Report Form (ANRF, **Appendix S**). The APSAR/TF agreed to the following Draft Conclusion, which was endorsed by the ATM/SG/3, for further consideration by APANPIRG/26:

**Draft Conclusion ATM/SG/3-21: SAR Air Navigation Report Form**

That, the Search and Rescue (SAR) Air Navigation Report Form (ANRF) as appended in **Appendix S to the Report** be utilised by Asia/Pacific States as a means of regional strategic SAR planning and implementation in the Asia/Pacific Region.

6.53 ICAO had provided a brief on the SAR response to the disappearance of Malaysia Airlines Flight 370 (MH370) on 08 March 2014, while flying from Kuala Lumpur, Malaysia to Beijing, China with 239 people on board. The APSAR/TF/3 meeting had noted the issues as being possible lessons learnt that were incorporated into the Asia/Pacific Plan.

6.54 Considering the lessons learnt from the MH370 tragedy, and other relevant information on recent SAR events, APSAR/TF/3 formulated the following Draft Conclusion, which was endorsed by the ATM/SG/3 for further consideration by APANPIRG/26:

**Draft Conclusion ATM/SG/3-22: SAR Lessons Learnt**

That, considering the implications for Search and Rescue standards from the MH370 and other related events, ICAO, in coordination with the IMO through the ICAO/IMO Joint Working Group on Harmonisation of Aeronautical and Maritime SAR (JWG), should consider urgently updating global SAR documents from the lessons learnt.

6.55 Indonesia had provided initial information regarding the Air Traffic Control (ATC) and SAR operation for Air Asia QZ 8501, which had lost contact with ATC on 28 December 2014. The last known position of the aircraft was over the Karimata Strait, Java Sea. The APSAR/TF/3 commended Indonesia on the conduct of the SAR operation, noting that the post-incident analysis and reporting was on-going. The APSAR/TF/3 discussed whether military SAR Units (SRUs) were adequately trained in specific SAR procedures (such as the need to operate at optimal search altitudes). Indonesia stated that regular SAREX and liaison with the military had developed an adequate knowledge among SAR responders, and this was noted as a key lesson for other States.

6.56 The APSAR/TF/4 reviewed the eANP SAR elements, and States were requested to provide feedback on any issues found to the ICAO Regional Office. The APSAR/TF/4 noted that the change in the status of Search and Rescue Region (SRR) designation to one whereby the Council approved the eANP Vol I amendment may require a consequential change to Annex 12 to reflect the change in the approval process currently outlined in Annex 12:

*2.2.1 Contracting States shall delineate the search and rescue regions within which they will provide search and rescue services. Such regions shall not overlap and neighbouring regions shall be contiguous.*

6.57 The APSAR/TF/4 was provided with an extensive briefing on matters related to the global progress of SAR improvement and SAR standards development, including the:

- a) the GADSS for flight tracking, SAR activities and retrieval of Cockpit Voice Recorders (CVRs) and Flight Data Recorders (FDRs) data; and
- b) Normal Aircraft Tracking Implementation Initiative (NATII).

6.58 The meeting noted that the GADSS was enabled by System Wide Information Management (SWIM) and an Information Repository Service, and consisted of:

- a) an aircraft Tracking System; and
- b) Autonomous Distress Tracking System (ADT), in the event of a distress situation which can be activated on-board, manually, or from a ground station; and
- c) Flight Data Recovery in the event of an accident to help locate the aircraft wreckage with an automatically deployable flight recorder or an alternative solution such as streaming technology.

6.59 ELTs remained a significantly disproportionate contributor to false alerts compared to maritime Emergency Position Indicating Radio Beacon (EPIRB). This appears to be due to training and information issues for cockpit crews and maintenance personnel, who activate beacons for testing without realizing that all transmitted alert signals are treated as real. In part as a result of incidents where ELTs fail to transmit a burst before destruction in fire or submersion in water, the delay for the beacon's first-burst transmission was being reduced from 50 seconds to three seconds in the next generation of beacons. However, without proper training of cockpit crews and maintenance personnel, this could lead to an increase in false aviation-related alerts.

6.60 APSAR/TF/4 noted that as at 26 June 2015, five Low Earth Orbit SAR (LEOSAR) spacecraft were in operation. There were also seven geosynchronous SAR (GEOSAR) satellites operating at full operational capability. As at 26 June 2015, 53 Low Earth Orbit Local User Terminals (LEOLUTs), 23 geosynchronous Local User Terminals (GEOLUTs) and 31 MCCs were in operation.

6.61 Tests showed that about 25% of all tested SAR Points of Contact (SPOCs) remained insufficiently responsive or non-responsive. The majority of less responsive SPOCs were from the African region. However, many Asia/Pacific administrations region indicated a deficiency with respect to Cospas-Sarsat alert facilities and procedures in the SAR Capability Matrix.

6.62 The MEOSAR constellation currently included three operational L-band satellites (Glonass-K1, and Galileo IOV-3 and IOV-4) and 17 GPS II satellites carrying experimental repeaters with an S-band downlink used by Cospas-Sarsat. The following Asia/Pacific States had announced the planned implementation of an operational MEOSAR ground segment with an Initial Operational Capability (IOC) for 2017: Australia, China, India, Japan, New Zealand and Pakistan.

6.63 An analysis of the 35 Universal Safety Oversight Audit Programme (USOAP) SAR-related Protocol Questions (PQs) in June 2015 indicated an overall Effective Implementation (EI) of only **50.7%** for the Asia/Pacific Region. From this analysis, it appeared that the major areas of weakness was in areas of coordination with adjacent States, effective SAR oversight, and training of both SAR inspectors and staff that provide the SAR services. Therefore, regarding coordination with other States, a focus on the minimisation of barriers associated with the efficient cross-border coordination of SRU (such as pre-arranged approval) and other RCC coordination mechanisms was vital.



6.64 In addition, the APSAR/TF/4 recognised a need for improved systemic approaches (possibly on a sub-regional or regional basis) to training for both SAR inspectors and personnel responsible for the provision of SAR services, including the regular organisation of effective SAREX that actually test systems and personnel.

6.65 Many States appeared to have unclear regulatory oversight of SAR services, due in part to a lack of certification and independent SAR regulation. It was recognised that many States had SAR services provided by a non-aeronautical entity (such as a maritime safety authority), so there may be some legal difficulties in developing a SAR inspectorate oversight system within the aeronautical system (i.e.: the Civil Aviation Authority of the State concerned). In this case, the APSAR/TF agreed that a State needed to demonstrate an independent safety oversight and compliance mechanism for the SAR services.

6.66 The APSAR/TF/4 recognised that the PQ results were difficult to reconcile with the reality of challenges faced by many States, which had a priority to provide basic SAR services. The meeting was concerned that the imposition of a SAR inspectorate could reduce specialist SAR staff resources from States that were hard pressed to provide enough personnel for the provision of SAR services.

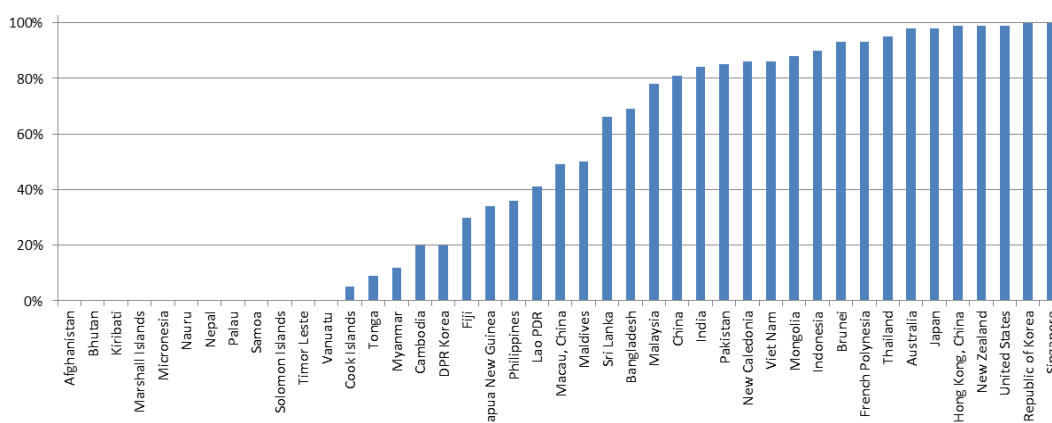
6.67 The ATM/SG/3 meeting noted that while an independent regulatory oversight was necessary, the PQs intimated that SAR inspectors needed to be SAR experts, and were a separate inspectorate to other ANS inspectorates then this appeared to be an onerous situation. APSAR/TF/4 recognised that the task of regulatory inspection for any ANS field (e.g.: ATC, AIS, MET, etc.) did not require the inspector to be an expert in the field itself but rather, it was necessary for inspectors to be experts in regulatory inspection skills, which were generic. Thus a generic ANS inspectorate could mean that inspectors could be utilised in an efficient manner and not draw too many resources away from the primary service functions such as SAR.

6.68 The following sections of the eANP relating to SAR were appended to the working paper for review and feedback to the Secretariat:

- **Appendix P:** SAR Excerpts;
- **Appendix Q:** Volume I, Part VI Table Draft SRR Descriptions; and
- **Appendix R:** Vol II, Part VI SAR Facilities.

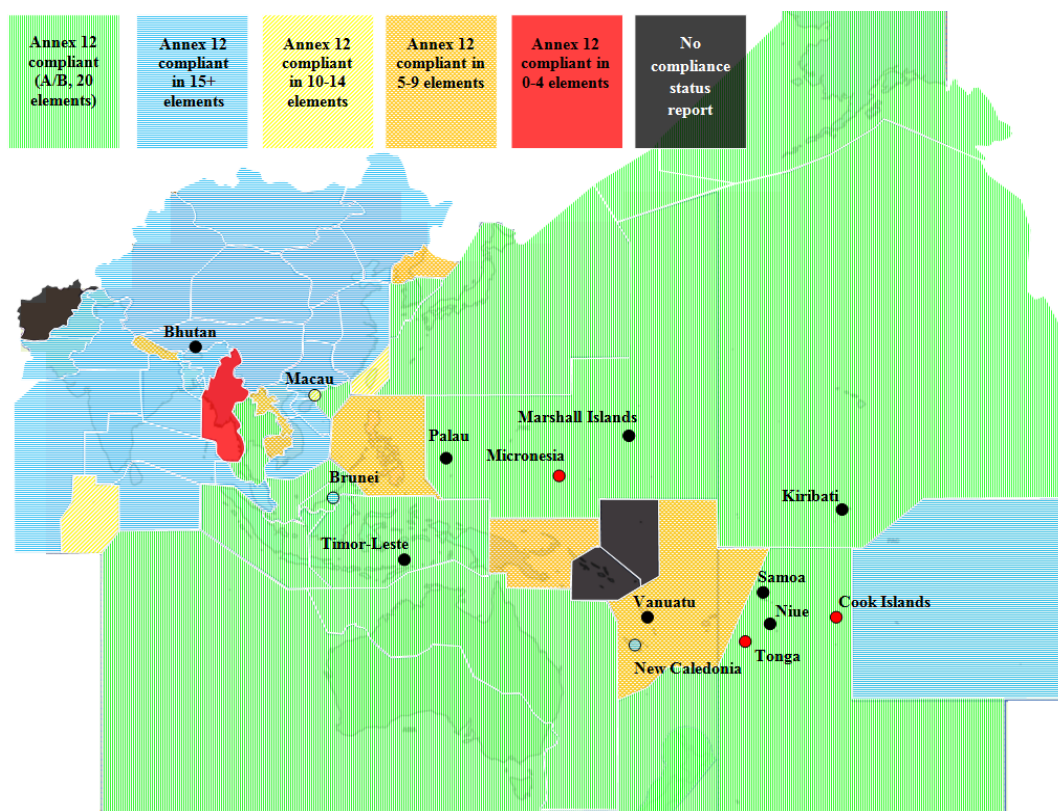
6.69 The SAR Capability Matrix Table is appended as **Appendix T**.

6.70 The overall SAR capability ranking of Asia/Pacific States (using a metric of 5% for an A and 4% for a B as assessed in the SAR Capability Matrix) is indicated in **Figure 4**:



**Figure 4: Asia/Pacific SAR Capability Ranking**

6.71 Derived from the Capability Matrix, **Figure 5** provided the updated overview for APSAR/TF/4. Five administrations had notified of substantial improvements in SAR capability in the past year: Bangladesh, India (which indicated a change from 26% to 84% compliance in their latest update), Indonesia, New Caledonia, Pakistan and Viet Nam.



**Figure 5:** APSAR/TF/4 Asia/Pacific Regional SAR Overview

6.72 The analysis indicated significant Annex 12 compliance weaknesses remained in the South Asia area and the Southwest Pacific (improvements had been noted in Fiji since APSAR/TF/2). In addition, there were parts of Southeast Asia and East Asia that indicated a need for improvement.

6.73 The APSAR/TF/4 meeting acknowledged the appraisal made by Sri Lanka that had resulted in a reduced capability score. ICAO noted that integrity and honesty in self-appraisal was crucial to ensure that a State recognised its areas of improvement and applied resources to remedy this. The meeting appreciated Sri Lanka's efforts in this regard.

6.74 In summary, the Asia/Pacific still appeared to have made only marginal progress in the past two years in the SAR area since the APSAR/TF/1 was held. There remained significant risk of poor SAR responses unless major changes, including increased resources and effort, were applied to this important area of safety. It was expected that the combination of notifying States to APANPIRG for remedial action, the development of sub-regional SAR capacity-building projects and the Asia/Pacific SAR Plan would provide the impetus for dramatic improvement by 2016.

6.75 APANPIRG/25 noted that there would be a number of States proposed for remedial action in the area of SAR capability (see Agenda Item 7). States and administrations should review and discuss the complete list of SAR compliance deficiencies proposed for APANPIRG/26's attention as follows:

Afghanistan, Bhutan, Cambodia, Cook Islands, DPR Korea, Fiji, Kiribati, Lao PDR, Macau China, Maldives, Marshall Islands, Micronesia, Myanmar, Nepal, New Caledonia, Palau, Papua New Guinea, Philippines, Samoa, Solomon Islands, Timor Leste, Tonga and Vanuatu.

6.76 The APSAR/TF/4 meeting agreed to the proposed APANPIRG SAR Deficiencies in accordance with a Draft Conclusion (see agenda item 7).

6.77 ICAO presented information on the development of the Asia/Pacific SAR Plan (**Appendix U**), including the latest draft for consideration by the APSAR/TF. The draft SAR Plan was extensively reviewed by the meeting over the course of two days of discussion. One of the key points discussed was the status of SAR agreements.

6.78 In accordance with the TOR, the following Draft Conclusion was agreed for consideration by the ATM/SG/3 and APANPIRG/26:

**Draft Conclusion ATM/SG/3-23: Asia/Pacific SAR Plan**

That, regarding the Asia/Pacific Search and Rescue (SAR) Plan Version 1.0 attached as **Appendix U to the Report**, ICAO be requested to:

- a) make the SAR Plan available on the ICAO Asia/Pacific Regional Office web site;
- b) reference the SAR Plan within the Asia/Pacific Seamless ATM Plan;
- c) add the following elements to the Asia/Pacific Seamless ATM monitoring and reporting scheme:
  - SAR Regulatory and Coordination Mechanisms;
  - SAR Facilities and Assets;
  - SAR Information;
  - SAR Improvement; and
- d) conduct Asia/Pacific SAR Planning and Implementation Seminars/ Workshops for Asia/Pacific States.

**Draft Conclusion ATM/SG/3-24: State SAR Planning**

That, States should be urged to:

- a) review Version 1.0 of the Asia/Pacific SAR Plan and utilise the SAR Plan to develop planning for State implementation of applicable SAR elements;
- b) ensure relevant decision-makers are briefed on the SAR Plan;
- c) submit the first SAR Plan Seamless ATM monitoring information to the ICAO Regional Office by 01 March 2016; and
- d) where possible, participate and contribute to SAR Plan system collaborative training and research initiatives.

6.79 The APSAR/TF/4 discussed the merits of either strengthening the SAR presence at the ATM/SG (and not continuing with a specialist SAR group), or taking advantage of the greater awareness of SAR and the improvements brought by the APSAR/TF by establishing a SAR Workgroup as an APANPIRG contributing body. Noting the emphasis that the ICAO Council had expressed with regard to the importance of SAR development work globally, Australia, New Zealand, New Caledonia, Sri Lanka, India, Singapore, Malaysia, the USA and the IMO supported the suggestion to establish an ICAO Regional SAR Workgroup.

6.80 The following Draft Decision was agreed by the APSAR/TF, and endorsed by the ATM/SG/3, for further consideration by APANPIRG/26:

**Draft Decision ATM/SG/3-25: Asia/Pacific SAR Workgroup**

That, the Asia/Pacific Search and Rescue (SAR) Task Force be disestablished and an Asia/Pacific SAR Workgroup (APSAR/WG) be established in accordance with the Terms of Reference at **Appendix V to the Report**.

**Agenda Item 7: Air Navigation Service Deficiencies**

Air Navigation Service Deficiencies List (WP32)

7.1 The meeting reviewed and discussed the ATM/AIS/SAR Deficiency List included as **Appendix W** to this report (including the proposed SAR deficiencies noted under Agenda Item 6).

7.2 Lao PDR provided an update on the status of their WGS-84 status (Flimsy 06). The APSAR/TF/4 meeting agreed to the proposed APANPIRG SAR Deficiencies in accordance with the following Draft Conclusion, which was endorsed by the ATM/SG for further consideration by APANPIRG/26:

**Draft Conclusion ATM/SG/3-26: APANPIRG Deficiencies**

That, the ATM/AIS/SAR List of Deficiencies is updated in accordance with **Appendix W to the Report**.

**Agenda Item 8: Update the ATM Task List**

APANPIRG ATM/AIS/SAR Sub-Group Task List (WP33)

8.1 The meeting agreed to the updated task list included as **Appendix X** to this report.

**Agenda Item 9: Any other Business**

ATS Provider ATM Security Requirements (WP34)

9.1 ICAO provided a briefing on Annex 17 aviation security Standards and Recommended Practices (SARPs) related to air navigation services. It was noted that Annex 17 requires States to develop and implement a National Civil Aviation Security Programme (NCASP). The NCASP addressed a range of security activities including, inter alia, threat and risk assessment, staff selection and training (in security-related matters), access control and other preventive security measures, management of response to acts of unlawful interference, and quality control.

9.2 With input from India, Malaysia, Hong Kong, Indonesia and Singapore, the Cooperative Aviation Security Programme-Asia Pacific (CASP-AP), had drafted the following:

- CASP-AP Model NCASP outlining the requirements as per Annex 17, paragraph 3.5 and the other relevant SARPs and security practices and mechanisms; and
- CASP-AP National Air Traffic Service Provider Security Programme (CASP-AP ATS Security Programme) model/template.

ATS Point of Contact Update (WP35)

9.3 The Secretariat presented the current ATS Safety Points of Contact List (**Appendix Y**), and requested that administrations update this information as required.

ANSP Management Advanced Masters Course (IP20)

9.4 India provided information on their one year ANSP Management Advanced Masters Course- India. The Masters Course was aimed at equipping ANS personnel with competencies and skills in the field of air navigation, advanced concepts and systems, safety culture, project management, system engineering, supply and procurement management, human factors and team management.

**Agenda Item 10: Date and venue for the next meeting**

10.1 As 2016 was an ICAO Assembly year, the next meeting of the ATM/SG was not able to be confirmed at the ATM/SG/3. The tentative schedule would be advised after APANPIRG/26.

**Closing**

10.2 The Chairman thanked the meeting participants for their valuable contributions.

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