



International Civil Aviation Organization

**The 18<sup>th</sup> Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/18)**

Bangkok, Thailand, 01 – 04 April 2013

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**Agenda Item 2: Review Outcomes of Related Meetings**

**RELEVANT MEETING OUTCOMES**

(Presented by the Secretariat)

**SUMMARY**

This paper presents the outcomes from relevant recent meetings for RASMAG to review, and relates to –

**Strategic Objectives:**

A: *Safety* – Enhance global civil aviation safety

**Global Plan Initiatives:**

- GPI-2 Reduced vertical separation minima
- GPI-8 Collaborative airspace design and management
- GPI-9 Situational awareness
- GPI-16 Decision support systems and alerting systems
- GPI-17 Data link applications
- GPI-21 Navigation systems
- GPI-22 Communication infrastructure

**1. INTRODUCTION**

1.1 The Twenty Third Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/23) was held in Bangkok, Thailand from 10-14 September 2012.

1.2 The Second and Third Meetings of the ICAO Asia/Pacific Seamless ATM Planning Group (APSAPG/2 and 3) were held in Fukuoka, Japan from 6-10 August 2012, and Chennai, India from 21 to 25 January 2013, respectively.

1.3 The Tenth Meeting of the ICAO Asia/Pacific Performance-Based Navigation Task Force (PBN/TF/10) was held at Nadi, Fiji 10-13 December 2012.

1.4 The First Meeting of the Asia/Pacific Regional Search and Rescue Task Force (APSAR/TF/1) was held in Bangkok from 5 to 7 February 2013.

1.5 The combined Third Meeting of the South Asia/Indian Ocean ATM Coordination Group (SAIOACG/3) and Twentieth Meeting of the South-East Asia ATM Coordination Group (SEACG/20) were held in Bangkok from 18 to 22 February 2013.

1.6 The Second Meeting of the Regional ATM Contingency Plan Task Force (RACP/TF/2) was held in Bangkok, Thailand from 12 to 15 March 2013.

1.7 The Second Meeting of the Future Air Navigation Systems Interoperability Team-Asia (FIT-Asia/2) was held at Bangkok from 28-29 March 2013, immediately following a Data-link Performance Monitoring Seminar held on 27 March 2013.

## 2. DISCUSSION

### APANPIRG/23

2.1 In accordance with the APSAPG Terms of Reference (TOR), a draft Seamless ATM Plan outline was required to be developed for APANPIRG/23 (10-14 September 2012), with the completed Plan to be submitted to APANPIRG/24 in 2013.

2.2 The draft Asia/Pacific Seamless ATM Plan was presented to APANPIRG for review of the draft as a framework, containing the basic structure, introductory material and agreed Seamless ATM Principles. APANPIRG/23 thanked the Secretariat for the great effort in compiling the draft APAC Seamless ATM Plan. The completed document would become useful guidance material to assist the implementation of seamless ATM. The meeting noted that the completed document should look at user expectations as well as States and ANSP's requirements, achieving seamless ATM across the APAC regions in a truly collaborative, practical and visionary manner.

2.3 IATA highlighted the airline Industry's concern at the increasing level of delay at many airports and major routes questioning the ability of the Asia Pacific ATM infrastructure to meet future air traffic demand. The meeting noted the proposed ASEAN Single Aviation Market would be implemented in 2015 and the potential loss of economic benefit to the Region if capacity constraints limit traffic levels. Airlines had reported increased delay and capacity constraints at many airports and airlines' leading to increased concern at the cost and inconvenience of delay.

2.4 IATA outlined their program for 2013 to identify key airports with capacity constraints and to work with airports and ANSP on determination and agreement of practical capacity levels. At these selected locations IATA also noted their intention to facilitate Aerodrome Collaborative Decision Making (A/CDM) agreements and to participate in existing enroute CDM programs.

2.5 Hong Kong, China, Singapore and Thailand were exploring the concept of networked CDM to manage the traffic flows between these three hubs at a sub-regional level. Given the high volume of international traffic at the three hubs, the collaboration could act as a test case of the concepts and also provide a facility for further research in applying ATFM at a regional level. Through collaboration and information sharing, the concept could potentially be further expanded to manage air traffic in sub-regional areas within 4 to 5 hours range from the hubs, using virtual ATFM units.

### APSAPG/2 and APSAPG/3

2.6 APSAPG/2 deliberated over the draft of the Seamless ATM Plan outline to be developed for APANPIRG/23 (10-14 September 2012). The meeting discussed the draft at length, and amended the draft accordingly. There was considerable discussion about the terms used to indicate the expectations of ATM service levels, and how these expectations might be presented in later versions.

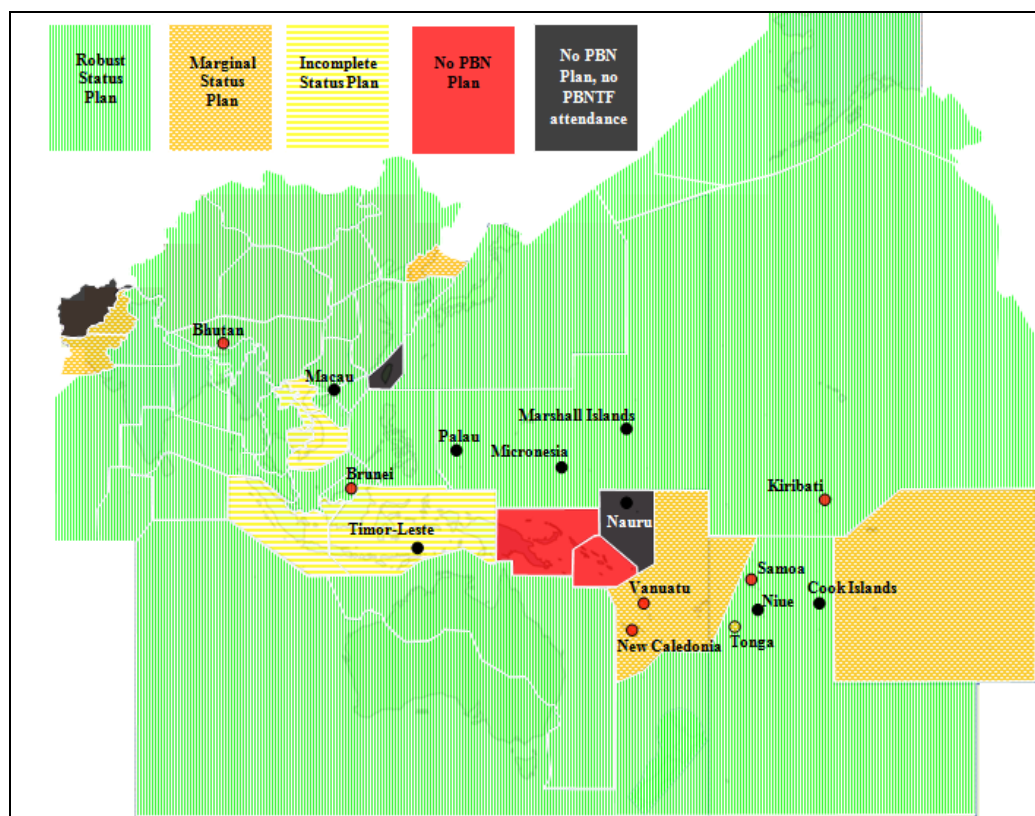
2.7 At APSAPG/3, IATA presented their initial economic study report which calculated that:

- without ASBU Block 0 improvements, aviation's contribution to Asia/Pacific Regional Gross Domestic Product (GDP) would fall from 2.22% to 0.81% by the year 2030; and
- this represented a loss of economic benefit to the Regional economies of Asia Pacific of some USD16.63B per annum, or USD815B compounded by 2030.

2.8 The Draft Seamless ATM Plan was presented by the Secretariat and further refined. Meeting participants made several suggestions regarding the contents of the Plan. The Secretariat will continue to refine the Plan taking into account the feedback provided by States and organisations at APSAPG/3. The final draft will be presented to APANPIRG/24.

PBN/TF/10

2.9 **Figure 1** provides an overall view of the Asia/Pacific PBN Plan Status.



**Figure 1:** Asia/Pacific State PBN Plan Status

2.10 The Task Force agreed that training material for Advanced RNP would be needed, particularly for the advanced ATM capabilities envisaged. However, the Advanced RNP applications need more development before training material can be produced.

2.11 The meeting considered that the most practical way to undertake these tasks and update the PBN Manual Doc 9613 was through the reconvening of the ICAO PBN Study Group. The meeting agreed to the following Draft Conclusion for consideration by the CNS Sub-Group and APANPIRG:

***Draft Conclusion PBN/TF/10-2: New PBN Navigation Specifications***

*Considering that the RNP2, RNP0.3 and Advanced RNP Navigation Specifications were to be significantly valuable for future planning, ICAO HQ was urged to:*

- a) expedite standards and guidance associated with these navigation specifications; and*
- b) provide adequate training material and courses to enable effective implementation; and*
- c) expedite the development of procedure design standards in Doc 8168 for low RNP value missed approach and departure operations.*

2.12 The Regional Navigation Strategy for the Asia/Pacific Region was a list of high-level navigation policies that had been developed by the CNS-MET Sub-Group of APANPIRG. Under the recent re-organization of APANPIRG, the Strategy fell under the responsibility of the CNS Sub-Group, which the PBN/TF reported to. The latest version of the Regional PBN Implementation Plan (Version 3.0, September 2011) provided detailed guidance for administrations in the field of PBN. APSAPG had been tasked by APANPIRG with the development of an Asia/Pacific Seamless ATM Plan, which incorporated the ASBU modules, including those related to PBN.

2.13 The PBN/TF/10 meeting extensively discussed proposed amendments to the Regional Navigation Strategy for the Asia/Pacific Region and the Regional PBN Implementation Plan, and also took the opportunity to provide feedback on the early draft excerpt of the Asia/Pacific Seamless ATM Plan related to PBN.

2.14 The draft Asia/Pacific Seamless ATM Plan excerpt included a passage that required the establishment of a PBN specification for all ATS routes. During discussion at the PBN Workshop, Australia had advised that it intended to re-designate PBN specifications for all domestic RNAV routes. RNAV5 was being used as the baseline in order to confirm the area semi-widths and minimum safe altitudes for routes. Australia advised that the RNAV specification was being supported by GNSS, and that this would be confirmed in the Australian AIP, as the RNAV5 specification allowed use of other navigation aids such as VOR and DME.

2.15 It was recognised that while the original intention of PBN was to create a harmonised world-wide navigation scheme, unfortunately there was no hierarchy between specifications; thus an aircraft with a higher performing capability such as RNP2 was not able to utilise a route with a lower specification such as RNAV5. Australia had deemed higher performing navigation specifications as being able to be used on RNAV5 routes, in effect creating a hierarchy between specifications.

2.16 The following Draft Conclusion was agreed by the PBN/TF/10 for consideration by the CNS Sub-Group and APANPIRG:

***Draft Conclusion PBN/TF/10-4: PBN Implementation Guidance Updates***

*That, recognizing the need for alignment of PBN Strategies and Guidance Material, as well as development of the Asia/Pacific Seamless ATM Plan, the following documents be updated with regard to PBN:*

- a) Regional Navigation Strategy for the Asia/Pacific Region, appended as **Appendix E**; and*
- b) Asia/Pacific Regional PBN Implementation Plan Version 4.0, appended as **Appendix F**.*

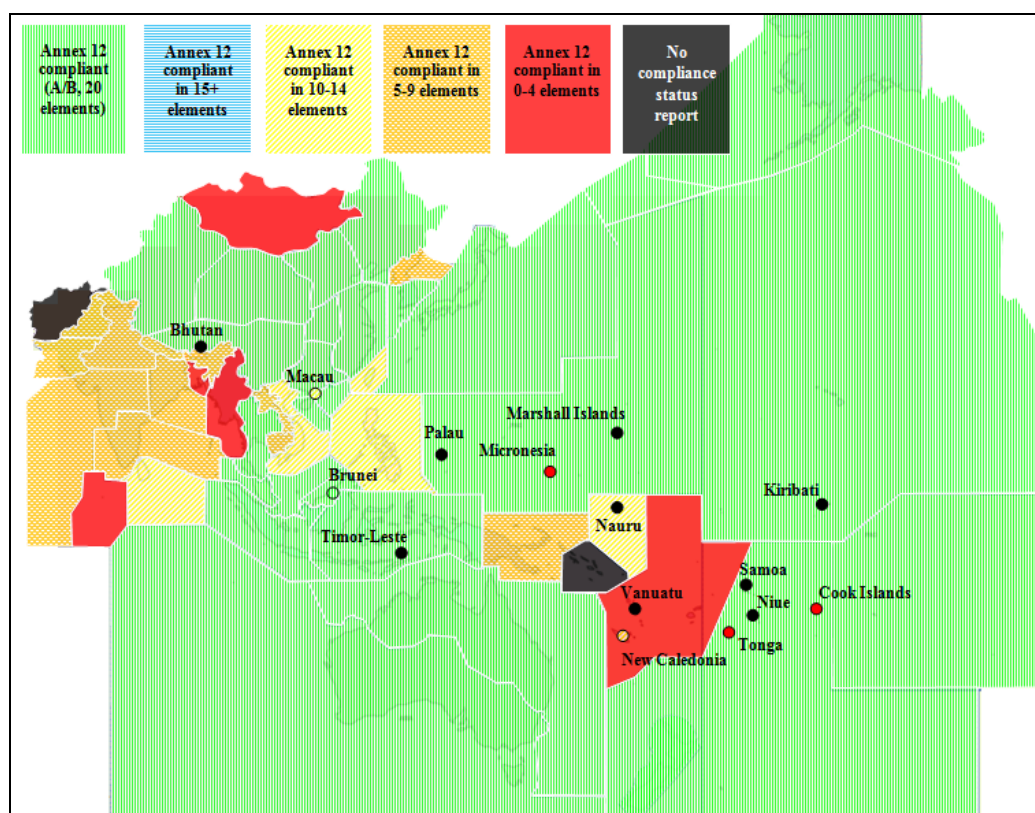
APSAR/TF/1

2.17 ICAO HQ stated that there was a desire to complete a full review of Annex 12, and present an amendment proposal in the near future.

2.18 ICAO had been tasked with a review of Standards and Recommended Practices (SARPs) and guidance material after the fatal flight of a large airliner from Brazil to France to improve surveillance, flight monitoring and communications of aircraft, including the provision of timely and adequate search and rescue services. The Operational Data Link Panel (OPLINKP) had been tasked to review data-link related procedures to address this. A proposed PANS-ATM amendment regarding ATM procedures was presented to the Air Navigation Commission (ANC), with a proposed applicability of November 2014.

2.19 ICAO had already initiated actions to address recommendations for an extended life for batteries of underwater locator beacon for flight data recorder, and the possibility of automatic Emergency Location Transmitter (ELT) activation under certain circumstances.

2.20 The Secretariat presented the status of SAR information, including the Regional SAR Compliance Overview (**Figure 2**) in the Asia/Pacific Region known to the ICAO Regional Office for reporting to APANPIRG, and requested States to update this information.



**Figure 2: Regional SAR Overview**

2.21 The SAR Status data indicated that only three Asia/Pacific administrations had Annex 12 compliance in all elements. The Regional SAR Compliance Overview indicated particular weaknesses in South Asia, Mongolia and the Southwest Pacific areas. The Chairperson and the United States acknowledged the excellent tool that the Overview provided in portraying weak areas of the region.

2.22 The meeting discussed the difficulties of enacting agreements between States, which often involved waiting for long periods for political agreement. The Philippines asked if the Secretariat could assist to facilitate new SAR Agreements. The meeting noted that ICAO/IMO may be able to facilitate some agreements involving high-level decision-makers. The Task Force agreed to the following Draft Conclusion for consideration by the ATM Sub-Group and APANPIRG:

**Draft Conclusion APSAR/TF-1: Search and Rescue Agreements**

Recognising the difficulties of enacting Search and Rescue (SAR) Agreements, States should be urged to make arrangements for senior civil and military decision-makers to facilitate the implementation and maintenance of SAR Agreements as early as possible.

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SAIOACG/3 and SEACG/20

2.23 In summary, recommendations relevant to RASMAG identified by the SAIOACG and SEACG Air Traffic Flow Management (ATFM) Small Working Groups (SWGs) were as follows.

- 1) A Pakistan-India-Afghanistan Special Coordination Meeting should be conducted by ICAO to address:
  - more uniform application of 50NM separation whenever this was possible;
  - removal of unnecessary altitude and timing restrictions on ATS routes;
  - availability of FL280 and FL300 within the Kabul FIR outside BOBCAT hours;
  - new ATS route (WP10 and Flimsy 1 refer);
  - the status of communications and ATS surveillance facilities to support ATS surveillance-based separations and procedures;
  - transition towards a more comprehensive ATFM service; and
  - prioritisation of BOBCAT approved aircraft and their level allocation.
- 2) It was recommended that all States with traffic capacity issues commenced aerodrome and airspace capacity analysis and adjustment process at the earliest opportunity (Draft Conclusion refers).
- 3) It was recommended that implementation of ATFM at a sub-regional level would involve careful synchronization of individual A-CDM programs, tightly coupled with collaborative implementation of ATFM in the form of virtual ATFM Units serving catchment areas surrounding the major air-hubs. The project could start from sharing information on arrival capacity, common traffic demand and anticipated delay, then evolving into collaborative ATFM implementation among the virtual ATFMUs (Draft Conclusion refers).

2.24 As a result of the SAIOACG/SEACG ATFM SWG discussion, the following Draft Conclusions and Draft Decision were agreed, for consideration by the ATM Sub-Group and APANPIRG:

**Draft Conclusion SAIOACG3/SEACG20-1: Capacity Assessments**

That States be urged to establish capacity assessment and adjustment mechanisms, and regular review for all aerodromes and ATC sectors where traffic demand is expected to reach capacity, or is experiencing traffic congestion, and to report the assessment outcomes to the Asia/Pacific Regional Office prior to 1 May 2014.

**Draft Conclusion SAIOACG3/SEACG20-2: ATFM Information Sharing**

That States, where ATFM processes are in place, including within adjacent airspace, be urged to share information, which may include:

- 1) capacity assessment: including factors of interest affecting capacity, such as special use airspace status, runway closures and weather information;
- 2) traffic demand information: which may include flight schedules, flight plan, repetitive flight plan data as well as associated surveillance updates of flight status; and
- 3) ATFM Daily Plan.

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**Draft Decision SAIOACG20/SEACG3-3: Asia/Pacific ATFM Steering Group**

That the Asia/Pacific ATFM Steering Group be reconvened by 1 September 2013, to address ATFM implementation issues.

2.25 Recommendations identified by the SAIOACG and SEACG COM SWGs relevant to RASMAG were as follows.

- 1) Collation of VHF coverage data, and recommendations for enhancement of coverage, reliability and availability were determined by the requirement to provide direct controller – pilot voice communications, to support current and proposed radar and ADS-B surveillance coverage. As such, these activities should more appropriately be conducted by the SWG - SUR.
- 2) Urgent attention should be paid to rectification of HF air-ground service reliability and availability issues in the western portion of the Manila FIR over the South China Sea.
- 3) States should ensure that Controller Pilot Data-link Communications (CPDLC) systems are integrated with ATM Systems to provide DCPC at the ATC workstation controlling the aircraft concerned.
- 4) States should as a matter of priority ensure that operational AIDC messaging is implemented, in accordance with APANPIRG Conclusion 19/19. Initial implementation should include a minimum suite of AIDC messages selected from the *Asia/Pacific Regional Interface Control Document (ICD) for AIDC*.

2.26 As a result of the SAIOACG/SEACG COM SWG discussion, the following Draft Conclusions were agreed, for consideration by the ATM Sub-Group and APANPIRG:

**Draft Conclusion SAIOACG3/SEACG20-4: South China Sea ATS Facilities**

That the provision of surveillance and communications services in the South China Sea area, where radar, ADS-B and/or VHF voice communications are currently not provided, be reviewed by China, Hong Kong China, Malaysia, Philippines, Singapore and Viet Nam, to consider:

- a) enhancement of current services;
- b) delegation or amendment of airspace service volumes; and
- c) cooperative agreements to exchange communications and surveillance capability.

**Draft Conclusion SAIOACG3/SEACG20-5: AIDC Implementation**

Recognizing that:

- States implementing AIDC messaging may be doing so without previous knowledge or experience;
- States may be implementing AIDC within a sub-regional environment without AIDC having previously been implemented; and
- Significant safety, ATC capacity and workload benefits will immediately arise from implementation of an appropriately selected initial suite of AIDC messages;

States be urged to:

- a) engage as soon as possible in AIDC trials to develop knowledge and address any related ATM or communications system issues;
- b) implement operational AIDC messaging as a matter of priority, in accordance with APANPIRG Conclusion 19/19; and

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- c) implement as a minimum, the AIDC messages Advanced Boundary Information (ABI), Coordinate Estimate (EST), Acceptance (ACP), Transfer of Control (TOC) and Assumption of Control (AOC).

2.27 In summary, recommendations identified by the SAIOACG and SEACG SUR SWGs relevant to RASMAG were as follows.

- 1) States with overlapping surveillance coverage should implement direct speech circuit to allow tactical coordination between surveillance controllers, in addition to AIDC, instead of relaying the information.
- 2) States with overlapping surveillance coverage should consider introducing surveillance handoff procedures.

A reduction in spacing at the transfer of control point could be reviewed on a step by step basis, starting with a comfortable agreed spacing for a period of time before reducing the spacing further. This should be subject to the safety assessment of each individual State, which should consider radar handoff requirements. Several States agreed to examine the current spacing requirements at the transfer of control points.

- 3) ADS-B with VHF Communications should be considered in areas where there was a lack of infrastructure. Sharing of ADS-B data and VHF Communications between adjacent States should also be considered to improve safety and efficiency. In this regard, India will continue liaison with Myanmar to conclude a data sharing agreement (see SAIOACG Task List). China and Hong Kong China expressed concern regarding ADS-B training for aircrew. IATA would reinforce among airlines China's request for airlines to participate in their ADS-B tests within the Sanya FIR.
- 4) The SWG would continue developing the current charts. India agreed to provide more information. ICAO would request Vietnam to provide information on their coverage to complete the picture.

2.28 India presented a proposal to introduce 30NM longitudinal separation within the Bay of Bengal Arabian Sea and Indian Ocean Airspace in a phased manner, which was a residual task from the Bay of Bengal Reduced Horizontal Separation Task Force (BOB-RHS/TF). The meeting discussed the possibility of airspace mandates to improve the incidence of data-link equipage and usage, noting the APANPIRG Conclusion in this regard (23/5). It was further noted that mandates for data-link and for RNP4 approval were two different matters, although they were linked. The meeting agreed that should India decide to mandate its airspace to facilitate a priority for RNP4 and data-link equipped aircraft, then this was consistent with regional expectations, and it would have a positive consequence for other airspace to have a higher equipage of this nature.

2.29 India's Master Plan was to restructure the entire Indian airspace, with each FIR having only one Upper Area Control Centre (ACC) with multiple sectors to be operated from four major cities, thereby amalgamating 11 ACCs into four ACCs initially and subsequently into 2 ACCs. The surveillance data from radar/ADS-B would be networked and electronically processed with relevant flight data from the flight data processor, to provide an integrated track data output correlated with flight plan combined with matching air-ground communication. This would enable application of uniform radar separation throughout the FIRs concerned. Advanced safety nets would be employed such as Short Term Conflict Alert (STCA), Airspace Proximity Warning (APW), and Minimum Safe Altitude Warning (MSAW).

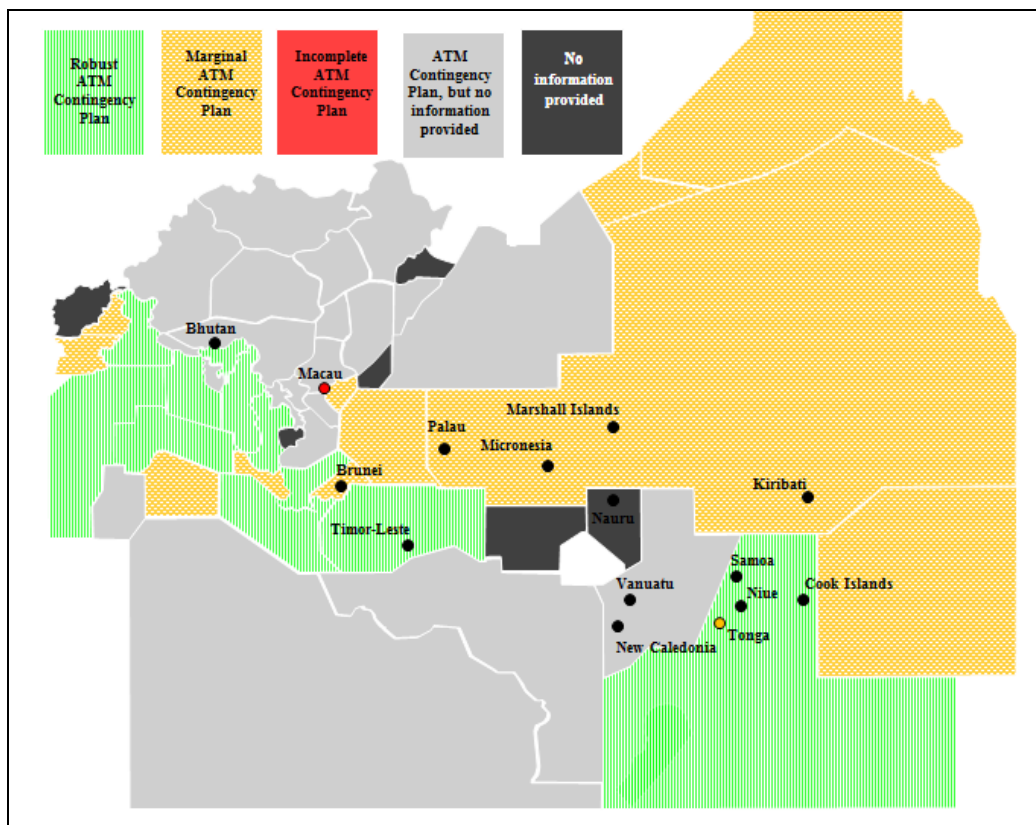


RACP/TF/2

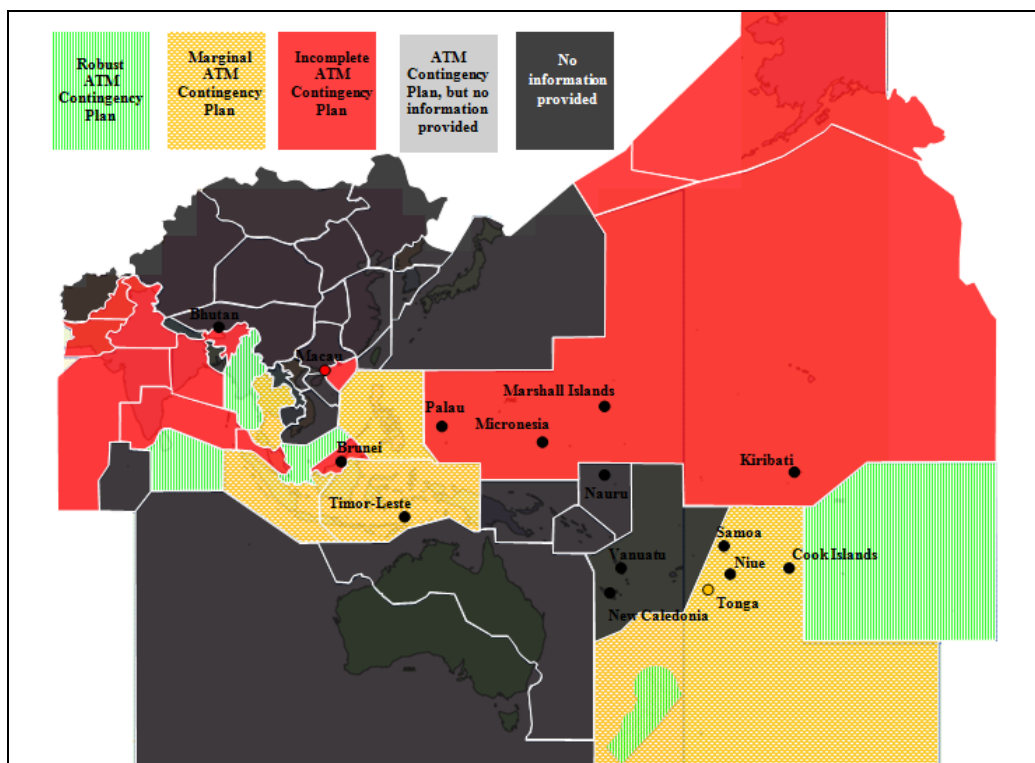
2.30 The Secretariat presented a concept of a contingency routing system north of the Himalayas, known as the ‘Silk Road’ routes joining Europe and East/Southeast Asia, in order to provide alternative regional routes in case in South Asia Major Traffic Flow (MTF-4) airspace was not available. In this case, such a routing system could form part of Level 3 Regional Contingency Planning.

2.31 The RACP/TF/1 meeting (Bangkok, 17 – 19 April 2012) had formed a Contingency Plan Review Team that considered relevant portions of Level 1 (internal State) and Level 2 (Inter-State) ATM Contingency Plans, and identified areas where ATM contingency planning required improvement, in order to support the development of a Level 3 (Regional) ATM Contingency Plan, based on Basic Planning Elements agreed by the Task Force.

2.32 A map representation of Asia/Pacific States’ Level 1 and Level 2 contingency readiness is at **Figures 3 and 4**.



**Figure 3:** Level 1 Planning



**Figure 4: Level 2 Planning**

2.33 The Chairperson noted that States would be at different levels of preparedness, but the role of the Task Force was to assist States to enhance their capability. He also noted that the Task Force needed to work on level 2 plans, as level 3 planning mainly involved the harmonisation of level 2 plans. He emphasised that any delegation of services in a contingency sense would normally be temporary in nature.

2.34 The Secretariat provided a proposed template for inter-State contingency plan arrangements. The meeting was reminded that ICAO Annex 11 Attachment C requires that, in support of the requirement for contingency planning, States should develop appropriate contingency plans in consultation with other States, whenever the effects of the service disruption are likely to affect the services in adjacent airspace.

FIT-Asia/2

2.35 The FIT-Asia/2 report from the preceding week would be presented by the Secretariat at the RASMAG/18 meeting.

**3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- a) note the information contained in this paper; and
- b) discuss any relevant matters as appropriate.

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