

INTERNATIONAL CIVIL AVIATION ORGANIZATION



**REPORT OF THE TWENTY-SECOND MEETING OF THE SOUTH-EAST
ASIA ATS COORDINATION GROUP (SEACG/22)**

BANGKOK, THAILAND, 9-12 MARCH 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

SEACG/22
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INTRODUCTION

Meeting

1.1 The Twenty-Second Meeting of the South East Asia ATS Coordination Group (SEACG/22) was held at Bangkok, Thailand from 09 to 12 March 2015.

Attendance

2.1 The meeting was attended by 43 participants from Bangladesh, Cambodia, Hong Kong China, Indonesia, Lao PDR, Malaysia, Philippines, Singapore, Thailand, Viet Nam, IATA, IFATCA, and ICAO. A list of participants is appended at **Appendix A** to this report.

Officers & Regional Office

3.1 Mr. Shane Sumner, Regional Officer ATM, ICAO Asia and Pacific Office acted as Moderator and was the Secretary for the meeting. He was assisted by Mr. Len Wicks, Regional Officer ATM, ICAO Asia and Pacific Office.

Opening of the Meeting

4.1 On behalf of Mr. Arun Mishra, Regional Director of ICAO Asia and Pacific Office, Mr. Shane Sumner welcomed participants to the meeting.

Documentation and Working Language

5.1 The working language of the meeting and all documentation was English. There were 16 Working Papers (WP) and 2 Information Papers (IP) considered by the meeting. A list of papers is included at **Appendix B** to this report.

Draft Conclusions, Draft Decisions and Decisions of SEACG – Definition

6.1 SEACG 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 SEACG that related solely to matters dealing with the internal working arrangements of these bodies.

List of Decisions and Draft Conclusions/Decisions

7.1 List of Draft Conclusions

Draft Conclusion SAIOACG5/SEACG22-2: ATS Route Catalogue Version 14

That Version 14 of the *Asia and Pacific Region ATS Route Catalogue* 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.

7.2 List of Decisions

Decision SEACG/22-1: SCS-MTFRG Terms of Reference

That the South China Sea Major Traffic Flow Review Group (SCS-MTFRG) Terms of Reference be adopted in accordance with **Appendix C** to the Report.

REPORT ON AGENDA ITEMS

Agenda Item 1: Election of Chair and Adoption of Agenda (WP01)

1.1 Due to the resignation of the incumbent from the SEACG Chair, nominations for a new Chair were called. No nominations were received. The meeting was moderated by the Secretariat.

1.2 The provisional agenda was adopted by the meeting.

Agenda Item 2: Review Outcomes of Related Meetings

Relevant Meeting Outcomes (WP02)

2.1 ICAO presented information relevant to the SEACG/22 meeting from recent ICAO meetings including the:

- Third Meeting of Air Traffic Flow Management Steering Group (ATFM/SG/3) and The Fourth Meeting of Air Traffic Flow Management Steering Group (ATFM/SG/4);
- Third Meeting of the Future Air Navigation Systems Interoperability Team-Asia (FIT-Asia/3) and the Nineteenth Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/19);
- Ninth Meeting of the Aeronautical Information Services – Aeronautical Information Management Implementation Task Force (AAITF/9);
- The Second Meeting of the APANPIRG Air Traffic Management Sub-Group (ATM/SG/2) was held in Hong Kong, China from 04 to 08 August 2014.
- Twenty Fifth Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/25);
- First Meeting of the Ad Hoc Afghanistan Contingency Group (AHACG/1) and the Second Meeting of the Ad Hoc Afghanistan Contingency Group (AHACG/2);
- Fifty First Conference of Directors General of Civil Aviation, Asia and Pacific Regions (DGCA/51);
- Third Meeting of the Asia/Pacific Regional Search and Rescue Task Force (APSAR/TF/3); and
- Fourth Meeting of the Regional ATM Contingency Plan Task Force (RACP/TF/4).

2.2 The SEACG/22 meeting noted that since 2013, States had reported their implementation status of AIM Transition Steps; however every State was behind the expected implementation progress in terms of AIS-AIM Phase 1 and 2, and some regions such as South Asia and Southeast Asia had made poor progress (**Figure 1**). In particular, South Asian nations such as Afghanistan, Bhutan, India, Maldives, Nepal and Pakistan in South Asia were identified as being deficient in this area. Both Phase 1 and 2 would be subject to APANPIRG Deficiencies in 2016, as Phase 2 elements had been included in Amendment 37 to Annex 15 (effective November 2013). Moreover, the Asia/Pacific Seamless ATM Plan expected States to implement Phase 1 and 2 by 12 November 2015.

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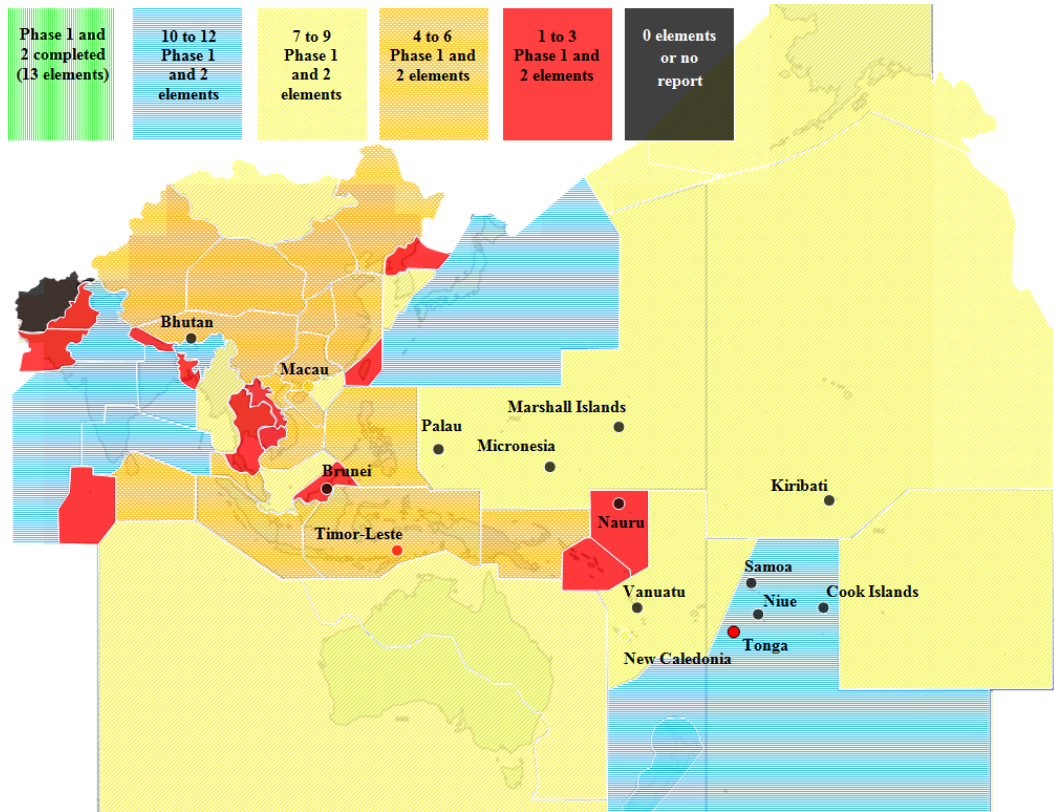


Figure 1: Asia/Pacific AIM (Phase 1 and 2) Implementation Progress

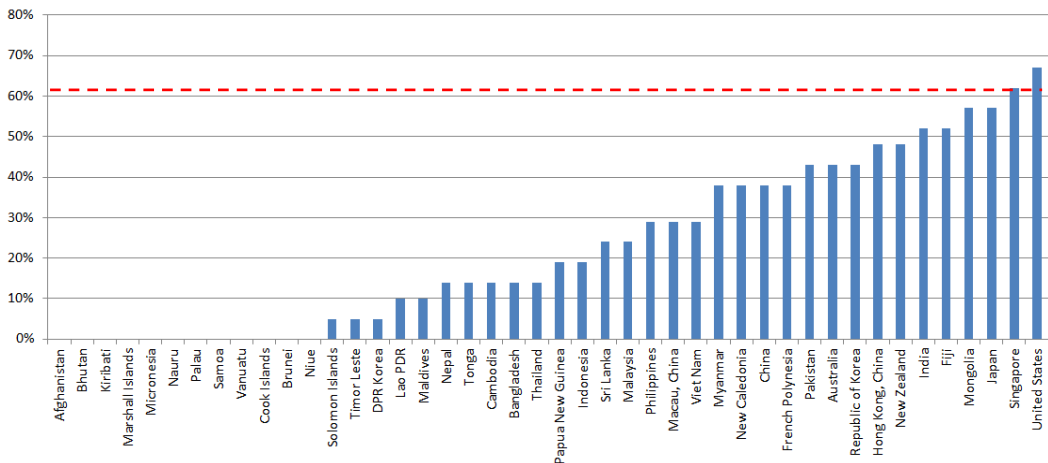


Figure 2: Asia/Pacific Overall AIS-AIM (Phase 1, 2 and 3) Implementation Progress

2.3 **Figure 2** provides information on the overall progress of Asia/Pacific States towards Phase 1, 2 and 3. SARPS related to Phase 2 elements were included in Amendment 37 to Annex 15 (effective November 2013). Given that States should have completed 13 of the 21 AIM elements (Phase 1 and 2), the dashed red line indicates this approximate value of 62% progress. It should be noted, however, that no State had completed all Phase 1 and 2 elements. Since the inception of the AIM Transition Table, the following States had provided no information: Bhutan, Brunei Darussalam, Kiribati, Marshall Islands, Micronesia, Nauru, Samoa and Tonga.

2.4 The SEACG/22 meeting noted the benefits of regional ATFM as reported by the IATA study report to ATFM/SG/4 as being USD600-800 million and of regional and domestic ATFM as being USD1.1-1.4 billion by 2019.

2.5 The SEACG/22 meeting noted that FIT-Asia/3 had agreed that monitoring, analysis and reporting of data-link performance was essential for the achievement and maintenance of system performance required for the application of RNP based separations. In the event that data-link services were implemented without a competent CRA service and a robust program of post-implementation performance monitoring, the service did not comply with Annex 11. In these cases as observed by the FIT-Asia/3, South East Asia States such as Indonesia, Malaysia and Thailand may have this recorded as an APANPIRG Deficiency.

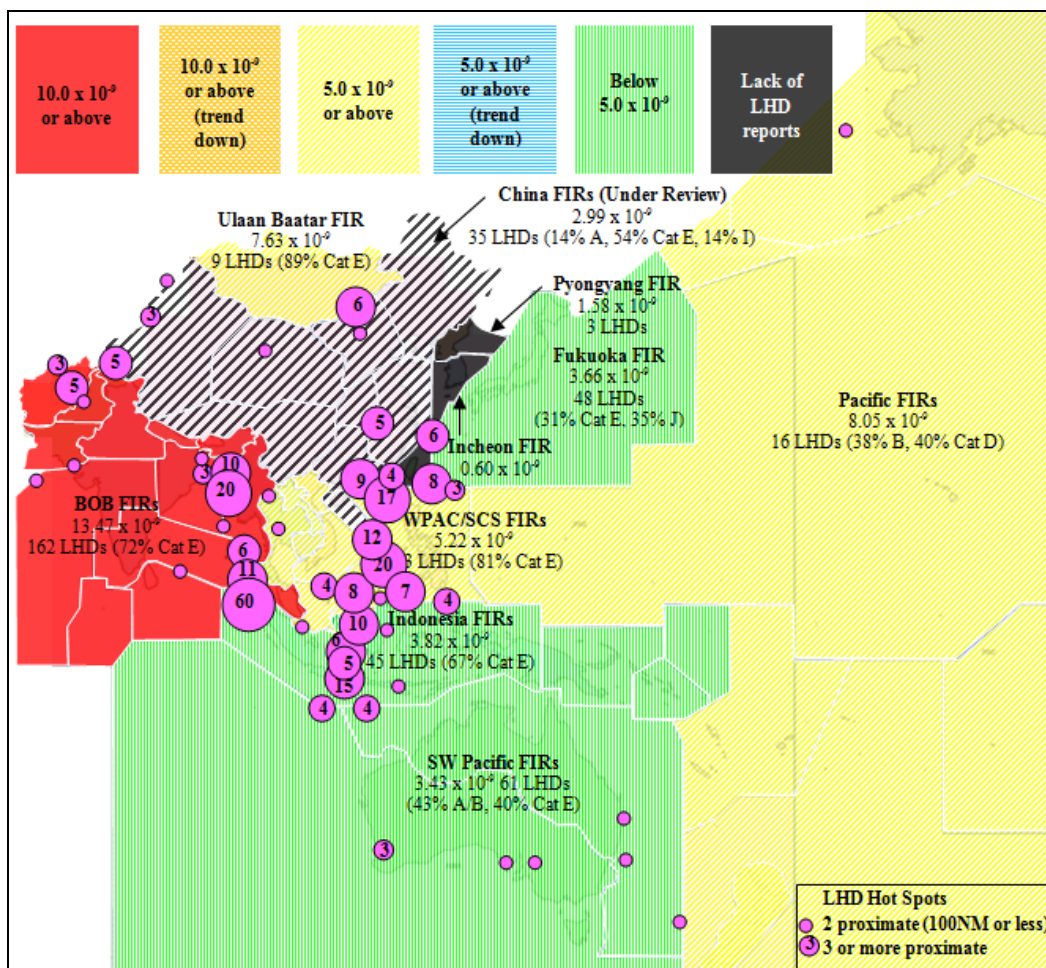


Figure 3: Asia/Pacific TLS compliance reported to RASMAG/19

2.6 Figure 3 indicated the following sub-regional regional trends to RASMAG/19 for Southeast Asia. The sub-region had not met the TLS, which was largely connected with two major interface problems. The first was between Indonesian airspace and Singapore and Philippines airspace, and continued internal problems within Indonesian airspace between the Jakarta FIR and the Ujung Pandang FIR. The second was between the Philippines airspace and Singapore, Malaysian, Viet Nam, Hong Kong and Japanese airspace. The increased reporting by Indonesia was a positive. The level of continued operational errors involving interfaces with both the Indonesian and the Philippines airspace remains deeply concerning.

2.7 Greater effort and urgency appeared to be required by both States to investigate and reduce ATC operational errors, and implement full AIDC capability. In the case of AIDC, the meeting agreed that it would be beneficial to form a short-term ATS Inter-facility Data-link Communications (AIDC) Implementation Task Force that focused on the South China Sea (SCS) and Bay of Bengal (BOB).

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2.8 In particular, the meeting noted that a Special Coordination Meeting (SCM) should be conducted involving Bangladesh, India, Indonesia, Malaysia, and Myanmar to, *inter alia*, investigate the installation of ADS-B, VHF communications and sharing data from a site on Great Nicobar Island, which was close to the Indian, Indonesian and Malaysian FIR boundaries. The First Bangladesh, India, Malaysia, Thailand Coordination Meeting (BIMT/1) was successfully held at Bangkok, Thailand, from 18 to 19 August 2014.

2.9 RASMAG/19 noted that Asia/Pacific States with the majority of non-RVSM airframes identified by the Asia/Pacific RMAs to be operating within the RVSM stratum without proof of RVSM approval were from China, India, Indonesia, Pakistan and the Philippines. **Table 1** compares the number of non-RVSM airframes reported by each RMA:

Report	AAMA	China RMA	JASMA	MAAR	PARMO
RASMAG/18	98	43	47	118	15
RASMAG/19	90	33	40	130	19

Table 1: Trend of Non-RVSM airframes Observed by Asia/Pacific RMAs

2.10 Overall, the number of non-RVSM aircraft had marginally reduced by 3% in the past year. This indicated that there was considerable work to do and APANPIRG *Conclusion 24/6 Repetitive Non-RVSM Approved Aircraft Operating as RVSM Approved Flights* which encouraged States to deny entry to operate within RVSM airspace for aircraft that have been confirmed as non-RVSM approved over a significant length of time, or by intensive checking, except where a specific non-RVSM operation was authorized, had not yet been effective.

2.11 The SEACG/22 meeting noted the work being undertaken by the Regional Office (RO) to populate or develop the new Asia/Pacific electronic Regional Air Navigation Plan (eANP), so agreement on its content might be reached by mid-2015. In this regard, the States noted the need to review the draft material and to advise the RO of any issues contained therein.

2.12 Regarding the AHACG/1 meeting, it had been noted with concern that the lack of experienced Afghan air traffic controllers was the main issue affecting the continuity of the ATS after 15 December 2014. It was anticipated that after the five year contract, Afghanistan would transition to all ANS being provided by local controllers. However, NATO had stated that the Afghanistan Civil Aviation Authority (ACAA) had made great strides in developing an organization that conformed to ICAO Standards and Recommended Practices (SARPs) but still lacked human capacities to control the airspace and operate major airports. It was also highlighted that, from a NATO viewpoint, that the Afghans were not capable of performing full safety oversight of the civil sector and there was no Safety Management System (SMS) in place.

2.13 NATO had developed a contingency plan using tactical command and control procedures, in order to support ongoing military operations and the NATO-led *Resolute Support* Mission from 2015. Although the AHACG/1 meeting had noted that Kabul Tower was already staffed by some Afghan controllers, they were not at the supervisory or management level. From the military point of view, there would be no ANS available for civil traffic. Furthermore, there would be a lack of adequate Communications, Navigation, Surveillance (CNS) infrastructure at Kabul International Airport (KAIA), as it would only have non-controlled VFR operations. The SEACG/22 were informed that the following potential contingency schemes were being focussed on by the AHACG:

- **Scenario B:** *Kabul Flight Information Region (FIR) Contingency Services* – no ATC service. Upper airspace is not affected by military or security concerns, and a number of restrictions are applied (IATA reported that a number of airlines indicated to them that they would prefer to divert around the Kabul FIR if there were no ATC services); and

- **Scenario C: Iranian Airspace Routes** – routing via Iranian airspace due to a number of ‘hot spots’ in Syrian, Iraq and European airspace using a high density Organized Track System (OTS) – this scenario was discussed in AHACG/2/WP05.

2.14 The Islamic Republic of Iran (I. R. Iran) noted that the AHACG/1 meeting had discussed proposals for an effective traffic management scheme that could manage increased traffic within the Tehran FIR, should aircraft need to avoid the Kabul FIR (AHACG/1/WP04). After careful analysis, Iran had agreed at the AHACG/2 meeting that they would implement the following Organized Track System (OTS, henceforth referred to as the ‘Royal Road’ OTS) with required levels and speeds. **Figure 4** illustrates the OTS.

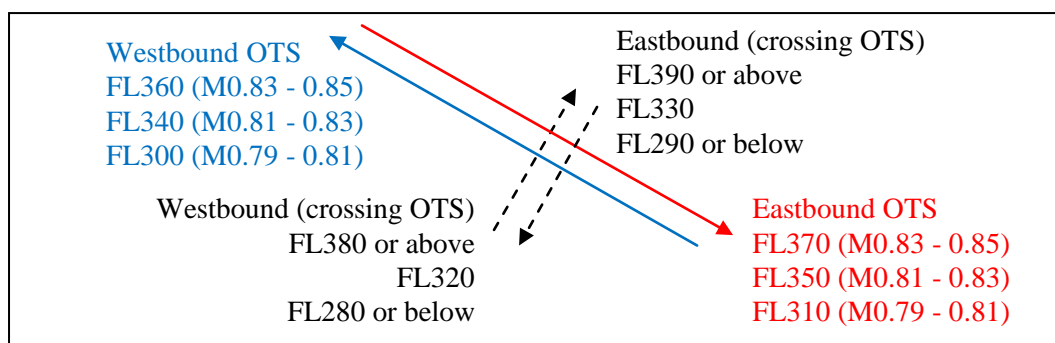


Figure 4: Royal Road OTS

2.15 **Figure 5** provides a regional SAR overview at APSAR/TF/3, indicating that significant Annex 12 weaknesses remained in the South Asia area and the Southwest Pacific (improvements were noted in Bangladesh, Indonesia, Fiji and Pakistan). There were also parts of Southeast and East Asia that indicated a need for compliance improvement.

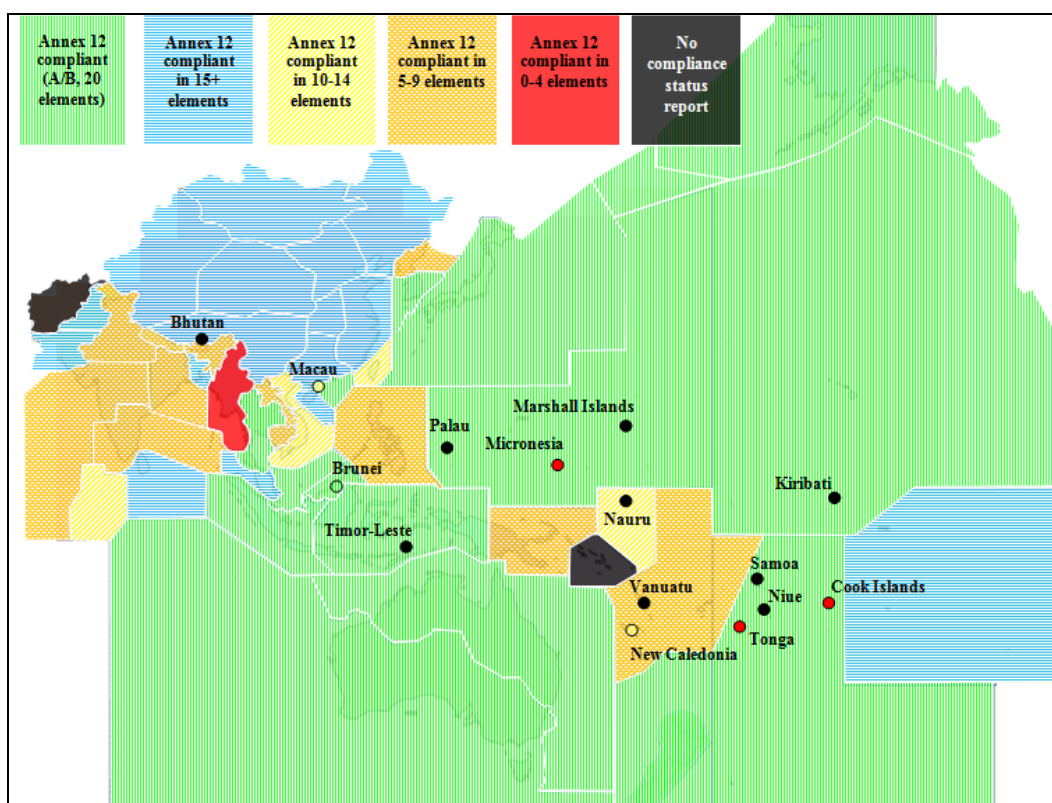


Figure 5: APSAR/TF/3 Asia/Pacific Regional SAR Overview

2.16 **Figure 6** provides a graph of SAR capability based on the SAR Capability Table category A (fully meets Annex 12) and B (meets Annex 12 in most areas) classifications only.

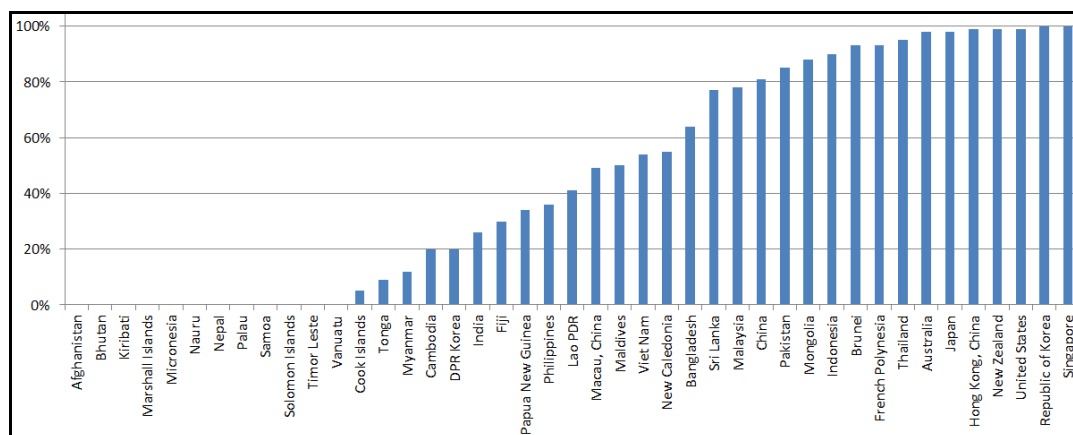


Figure 6: SAR Capability

2.17 The Task Force reviewed and discussed the list of new States and Administrations with SAR compliance deficiencies proposed for APANPIRG/26’s attention (to add to existing SAR deficiencies registered for the Cook Islands and the Maldives after APSAR/TF/4) as follows:

- South Asia: Afghanistan, Bhutan, India, Myanmar, Nepal;
- Southeast Asia: Cambodia, Lao PDR, Philippines;
- East Asia: DPR Korea, Macau China; and
- Pacific: Fiji, Kiribati, Marshall Islands, Micronesia, Nauru, New Caledonia, Palau, Papua New Guinea, Samoa, Solomon Islands, Timor Leste, Tonga and Vanuatu.

2.18 The SEACG/22 was informed of the continued development of the Asia/Pacific SAR Plan, including the latest draft for consideration by the APSAR/TF/3. The draft SAR Plan was extensively reviewed by the meeting over the course of an entire day, and was expected to be finalised by APSAR/TF/4.

2.19 SEACG/22 noted the progress during the RACP/TF/4 of the Draft Regional ATM Contingency Plan, including further development of harmonized (where practicable) sub-regional ATS contingency routes and flight level allocation schemes (FLAS), and an agreed performance improvement plan with a provisional implementation target of 10 November 2016.

Agenda Item 3: Review of Current Operations and Problem Areas

SCS-MTFRG/1 Meeting Outcomes (WP03)

3.1 Recognizing the need for high capacity major traffic flow routes (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, SAIOACG4/SEACG22 combined meeting had decided to establish a South China Sea Major Traffic Flow Review Group (SCS MTFRG) consisting of China, Hong Kong China, Malaysia, the Philippines, Singapore, Viet Nam, IATA, IFATCA and the ICAO RSO. The group's objective was to review MTF conflicts with specific ATS routes and the overall South China Sea airspace, air route and the suitability of the FLOS to optimise airspace capacity and enhance flight safety in the long term and report outcomes of the review and recommendations to the ATM/SG/2 or SEACG/22 meetings.

3.2 The following outcomes were reported to SEACG/22:

- The meeting would be moderated by the ICAO APAC RSO Secretariat;
- Terms of Reference at **Attachment A to SEACG/22 WP/03** were adopted;
- December 2013 and 2014 Traffic Sample data collected by the ICAO APAC Regional Office for safety monitoring activities would be analysed by AEROTHAI to identify the MTF in the South China Sea area, with findings reported to SCS-MTFRG and SEACG;
- The ICAO APAC RSO was requested to coordinate with the ASEAN Air Transport Improvement Project (AATIP) and Singapore's ATM Research Institute (ATMRI) to conduct fast-time simulations on scenarios developed by SCS-MTFRG to identify workloads, feasibilities and impacts on the ATM system;
- The task of reviewing the SCS FLAS/FLOS was deferred until the MTFs had been identified and studied;
- Hong Kong China and Philippines agreed to upgrade ATS routes A461 and A583 to RNP10, with further upgrades when Philippines' new CNS/ATM capabilities came on-stream;
- APAC RSO to coordinate with Indonesia and Australia to upgrade relevant portions of ATS routes A461 and A583 to RNP 10 specification to complement the agreement between Hong Kong China and Philippines;
- Management of the South China Sea area must be a collaboration between States;
- The SCS-MTFRG would examine reduced horizontal separation, extra level allocation and parallel routes to alleviate constraints along identified MTFs.

Review of South China Sea Flows (WP04)

3.3 IATA presented a high level view of short- and long-term enhancements to capacity and efficiency in the South China Sea (SCS) area, to ensure the significant investment by States in ATM capability delivered appropriate service benefits

3.4 The SCS was recognized as the “Main Trunk” for South East Asia with increasing traffic on all routes. The major routes M771 and L642 had been the focus of a number of recent improvement initiatives with further enhancements expected.

3.5 Gaps in Surveillance and communications coverage in this key area for the region required non-optimized/non-harmonized procedures and traffic handling methods.

3.6 Current ATM upgrade investments for States managing the SCS airspace were in the order of USD1.5- 2 billion. IATA stated that this investment delivered a significant improvement in capability which must be reflected in a commensurate improvement in harmonized and efficient delivery of services. Optimized procedures and utilization of improved ATM capability enabled efficiencies and the implementation of optimized separations (as opposed to spacing), providing ATC with a greater degree of flexibility when dealing with unusual situations such as en-route weather.

3.7 The meeting noted that, in accordance with the APAC Seamless ATM Plan, it was timely to strategically plan for further enhancements to services in the South China Sea to take advantage of these ATM modernization projects.

3.8 Under *Decision SAIOACG4/SEACG21-2 – Establishment of a Major Traffic Flow Review Group* The South China Sea Major Traffic Flow Review Group (SCS-MTFRG) was convened with the following objectives:

- a) to review the MTF conflicts with ATS routes A461 and A583;
- b) to analyse the MTF in the overall South China Sea airspace, air routes and the suitability of the FLOS to optimize airspace capacity and enhance flight safety in the long term; and
- c) to report outcomes of the review and **recommendations** to the ATM/SG/2 or SEACG/22 meetings.

3.9 The SCS MTFRG/1 meeting had decided that the scope of the group would be limited to reviewing current processes and capability rather than any future planning to *optimize airspace capacity in the longer term*, subject to review by SEACG/22. This did not appear to be consistent with the objective of the original Decision, namely, that the group should make recommendations ‘to optimize airspace capacity and enhance flight safety in the long term’.

3.10 Therefore there remained a need to either establish a different collaborative planning mechanism between stakeholders and States responsible for managing the SCS airspace to implement the APAC Seamless ATM Plan objectives, or to clarify the working arrangements and objectives of the South China Sea MTF Review Group.

3.11 It was suggested that the requirement for this planning to commence was now urgent, taking into account lead times required to ensure the appropriate procedure development, route design, interstate agreements, Regulatory approvals etc. were in place for implementation.

3.12 IATA proposed the following plan for consideration:

Short Term: 2015 -2018

- temporary delegation of airspace to adjacent providers who can provide surveillance and VHF coverage (and efficiencies) in areas of high seas airspace, currently not covered by the responsible State;
- declare South China Sea airspace RNP4, as an interim step toward RNP2 classification;
- Accelerate and expand data sharing (Communications and surveillance) between States managing SCS airspace;
- Request Sanya FIR to reduce longitudinal spacing on ATS routes M771 and L642 to 20NM in coordination with Viet Nam and Singapore;
- Request Hong Kong China to reduce longitudinal spacing on M771 and L642 to 20NM when their new ATM system became operational in 2016/17;
- Request reconsideration of the alignment of M771 and L642 as follows:
 - L642 realigned from VEPAM to CH
 - M771 realigned from DAMEL to CH

It was understood that Hong Kong China had found the requested changes would create increased conflict points with other routes and require changes to sector traffic management procedures. It was hoped that Hong Kong China would revisit the request on implementation of the new ATM system.

- Further reduction from the recently introduced 50NM longitudinal separation to RNP4 30/30 NM separation on M767 and N884;
 - Request a timeline from the Philippines regarding availability of ADS-C/CPDLC (or ADS-B) in the Eastern South China Sea; and
 - Request planning for RNP4 30:30 be commenced between the states involved assuming the Philippines' ADS-C/CPDLC and/or ADS-B in the short term.

Longer Term: 2018 and Beyond

- Declare South China Sea airspace RNP2 (encouraging harmonized procedures and separations);
- Re-designate routes RNP2;
- Implement additional parallel unidirectional routes for M771 and L642 and any other routes where capacity is insufficient to meet projected demand;

- Implement parallel unidirectional crossing routes to allow more access to optimal Flight levels on Main Trunk routes;
- Removal of FLAS/FLOS in airspace that has surveillance coverage

3.13 The meeting extensively discussed the information provided by the First Meeting of the Main Traffic Flow Review Group (MTFRG/1) and its proposed Terms of Reference (TOR). Recognizing that the definition of major traffic flows is changing to include the high density city pairs in a general NW-SE direction, participants noted that the term ‘Major Traffic Flow’ did not limit the scope of the group’s review to the SE Asia-East Asia flow.

3.14 Noting that IATA was concerned that specific and transparent planning should be developed to assist operators to understand future equipment and standards, the meeting agreed that the MTFRG was a flexible body that could meet as often as needed (approximately every six months was recommended) to achieve this task. IFATCA endorsed IATA’s position, noting that the whole purpose was to ensure harmonized ATC capability to handle increasing traffic in the future, as described in the Seamless ATM Plan.

3.15 SEACG/22 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

That the South China Sea Major Traffic Flow Review Group (SCS-MTFRG) Terms of Reference be adopted in accordance with **Appendix C** to the Report.

Air Navigation Service Deficiencies List (WP05)

3.16 ICAO presented a WP on specific deficiencies in the air navigation field recognised by APANPIRG. The 21st meeting of APANPIRG (APANPIRG/21, September 2010) reviewed the updated List based on information provided by concerned States to ATM/AIS/SAR/SG/20 (July 2010, Singapore). The meeting urged States who had not taken firm corrective action to eliminate the deficiencies, and adopted the following Conclusion *APANPIRG21/ 53 –Elimination of ATM Air Navigation Deficiencies*.

3.17 SEACG/22 reviewed an updated List of APANPIRG Air Navigation Deficiencies in the ATM, AIS and SAR fields and States were requested to provide updates on their progress in closing the deficiencies noted and comment on the new proposed SAR capability deficiencies proposed by the APSAR/TF/3 in grey highlight:

- **Brunei Darussalam**
 - AIS QMS
 - WGS-84
- **Cambodia**
 - AIS QMS
 - SAR Capability
- **China:**
 - Airspace Classification
- **Indonesia**
 - AIS QMS

- **Lao PDR**
 - AIS QMS
 - SAR Capability
 - WGS-84
- **Macau, China**
 - SAR Capability
- **Philippines**
 - AIS QMS
 - SAR Capability
 - WGS-84
- **Thailand**
 - AIS QMS
 - WGS-84
- **Timor Leste**
 - AIS QMS
 - SAR Capability (no data)
- **Viet Nam:**
 - AIS QMS
 - SAR Capability

3.18 The meeting recognised that the IFALPA issues presented at the meeting were provided simply for information to facilitate improved communications between the States and the International Organisation concerned. Viet Nam suggested that new proposed APANPIRG Deficiencies could be provided to the States by letter, but it was noted by the meeting that the correct process was to address the matter through the relevant contributing bodies of APANPIRG before being considered by APANPIRG itself.

Agenda Item 4: Implementation of New CNS/ATM Systems

Seamless ATM Planning and Reporting (WP06)

4.1 WP04 presented an overview of the Seamless ATM planning and reporting required by States, and provides an update on the progress towards the performance-based monitoring regime being implemented during 2014/2015. The Seamless ATM Plan version 1.0 was endorsed by APANPIRG in June 2013 (Conclusion 24/54). Seamless ATM Implementation Guidance Material was adopted at APANPIRG/25.

4.2 SEACG/22 noted that there were a total of 18 Air Navigation Reporting Forms (ANRF) corresponding to the 18 Aviation System Block Upgrade (ASBU) elements were endorsed by APANPIRG/25 – these replaced the earlier Performance Framework Forms (PFF).

4.3 The importance of Seamless ATM Plan implementation progress reporting in accordance with APANPIRG Conclusion 24/55 c) was agreed by SEACG/22 as being crucial for:

- airspace users (for planning of equipage and fleets);
- neighbouring Flight Information Regions (FIRs, for harmonisation of progress);
- Regional Office (to update the Seamless ATM Plan and for APANPIRG); and
- ICAO HQ (to update the GANP in response to regional implementation feedback).

4.4 The ICAO Asia/Pacific Regional Office had developed a web-based tool in an effort to ease the submission of Seamless ATM reports for States, and reap the benefits of data analysis for ICAO. This tool is available at https://portal.icao.int/RO_APAC/Reporting/Pages/default.aspx, and would provide the ability to submit up to four reports times a year, as well as exporting and archiving functions. It would be possible for users to prepare a report based on the previous submissions, which should minimize the input workload.

4.5 Thus far, a total of nine States and Administrations (Australia, French Polynesia, Hong Kong China, India, Japan, Macao China, Singapore, Thailand, and United States) had submitted a Seamless ATM report, while other States and Administrations (Bangladesh, China, Malaysia, New Zealand, Philippines, Republic of Korea and Sri Lanka) were known to be in the process of completing their submissions (forms in preparation). States that had not notified their points of contact and submitted their reports were urged to do so at the earliest opportunity. This allowed two levels of regional monitoring:

- performance gains, through the Regional Performance Dashboard, allowing global correlation of status and expectations for selected priority items; and
- implementation progress through a Regional Picture, one level below, allowing corrective actions by APANPIRG on the implementation. The monitoring would be done for all Seamless ATM items.

4.6 Export functions including calculation were provided to the ICAO Regional Office staff members to analyse the inputs from States/Administrations and later on, feed a GIS-based regional picture that would present a regional picture (i.e. a regional map with the progress on each item for all States/administrations). However this project was frozen, due to the lack of resources at ICAO HQ.

4.7 The SEACG meeting was informed of the Performance Dashboards, which presented up-to-date regional implementation results, highlighting what States and groups of States were achieving in collaboration with their respective Planning and Implementation Regional Groups (PIRGs) and Regional Aviation Safety Groups (RASGs). Their ultimate intention, besides ICAO's basic measurement, accountability and transparency goals, was to help motivate aviation groups and stakeholders to continue to participate in and improve upon the applicable cooperative programmes being implemented at the regional level. The dashboards were available at: <http://www.icao.int/safety/Pages/Regional-Targets.aspx>. This link would be provided in the dedicated State/administration web-based Reporting Process Home page as well.

4.8 The Planning and Implementation Regional Groups (PIRGs) and RASGs Global Coordination Meeting (GCM) was held in Montreal on 19 March 2013. The PIRG/RASG GCM urged each PIRG to establish regional priorities and targets, and to develop action plans for regional priorities. In addition, APANPIRG Contributing Bodies should be discussing action plans for each ASBU element.

4.9 Regarding the priority ASBU elements, the following areas were discussed by SEACG in order to develop action plans and monitor progress:

- a) B0-NOPS (primary responsibility – ATM/SG via the ATFM/SG):
 - the following States should submit progress reports to the ATFM/SG on their ATFM status to meet the target date of 12 November 2015 for implementation of an effective ATFM system, and if assistance is required, to detail the barriers and requested assistance that might be necessary –
 - China (Beijing FIR, Guangzhou FIR, Hong Kong FIR, Kunming FIR, Shanghai FIR, Shenyang FIR, Sanya FIR, Taipei FIR, Wuhan FIR);

- **India** (Delhi and Mumbai FIRs);
 - **Indonesia** (Jakarta FIR);
 - **Japan** (Fukuoka FIR);
 - **Laos** (Vientiane FIR);
 - **Malaysia** (Kuala Lumpur FIR, Kota Kinabalu FIR);
 - **Philippines** (Manila FIR);
 - **Republic of Korea** (Incheon FIR);
 - **Thailand** (Bangkok FIR);
 - **Singapore** (Singapore FIR);
 - **Viet Nam** (Hanoi and Ho Chi Minh FIRs);
- b) B0-DATM (primary responsibility – ATM/SG via the AAITF):
- **All Asia/Pacific States** should submit progress reports to the AAITF on their AIS – AIM transition progress to meet the target date of 12 November 2015 for implementation of Phase 1 and 2 in accordance with the Seamless ATM Plan (note the information in WP02 Attachment A), and if assistance is required, to detail the barriers and requested assistance that might be necessary;
- c) B0-FRTO (primary responsibility – ATM/SG):
- **All Asia/Pacific States** which have military operations should submit progress reports to the ATM/SG through the Seamless ATM reporting system (re paragraph 2.5) on their progress on implementing the following elements to meet the target date of 12 November 2015 in accordance with the Seamless ATM Plan, and if assistance is required, to detail the barriers and requested assistance that might be necessary:
 - A mechanism is established for the regular review of Special Use Airspace (SUA) to minimize the effect of SUA on civil air traffic;
 - A body is formed to conduct strategic civil/military cooperation; and
 - A mechanism is established to conduct tactical (day-to-day) civil/military cooperation liaison between military and civil activity.

4.10 IATA stated that the ATFM/SG should continue past its next meeting (ATFM/SG/5) when the Regional Framework for Collaborative ATFM was expected to be finalized, as there would continue to be ongoing work. The Secretariat advised that ATFM/SG/4 had discussed this issue, and it would be further addressed at ATFM/SG/5.

4.11 SEACG participants did not comment on the action plans urging States to report their progress in priority ASBU element implementation where applicable to the relevant APANPIRG contributing bodies (ATFM/SG, AAITF and ATM/SG).

ADS-B Implementation within Indonesia FIRs (WP14)

4.12 Indonesia presented information on the progress of implementation of ADS-B. By 2009 Indonesia had installed 27 ADS-B ground stations (**Figure 7**). A total of 31 ground stations were installed by 2011.



Figure 7: Indonesia ADS-B Ground Stations July 2011

4.13 ADS-B services would be fully implemented in 2015, in accordance with the following Steps:

- i. Tier-2 operations, commenced 18 Sept 2014, using ADS-B for ATC situational awareness between F290 – F460.
- ii. Tier-1 operation would commence on 25 JUN 2015, applying ATS surveillance separation within Jakarta and Ujung Pandang FIR between F245 – F460 within Radar and/or ADS-B coverage, with operational availability of 99.5%.

4.14 ATS surveillance separation would be provided between all combinations of ADS-B, radar, and merged ADS-B/radar targets.

4.15 The meeting discussed the use of 10NM separation by Indonesia, noting that if the surveillance equipment met required standards and controllers were appropriately trained, that States should plan for implementation of the 5NM PANS-ATM standard. The meeting recognized that 5NM was a minimum separation which would not be used unless appropriate between any aircraft pairs, and that the enhanced flexibility of this more efficient standard brought significant benefits to users, especially in complex and congested airspace.

4.16 AATIP asked about non-surveillance aircraft; Indonesia stated that approximately 90% of aircraft in the upper airspace had ADS-B. IATA asked about the ADS-B mandate that had been promulgated, stating that if the intent of the AIP SUP regarding the Indonesian ADS-B mandate on 25 June 2015 was not mandatory at FL290 or above, then this was not clear and the AIP SUP may be misleading. A side meeting confirmed that the mandate would remain, but that Indonesia would survey locally-based operators and if any were having difficulty with the mandate, then consideration for specific exemption procedures would be made. This issue would be raised by Indonesia with the ADS-B Implementation Team Indonesia.

ADS-B Data Sharing Between Indonesia, Australia and Singapore (WP15)

4.17 Indonesia had installed 30 duplicated ADS-B ground stations and 1 unduplicated test-bed ground station. Data from 21 ground stations was integrated with the Makassar ATC Centre and 9 with the Jakarta Centre. (**Figure 8**). The test-bed system included monitoring and control of ADS-B data from all other ground-stations.

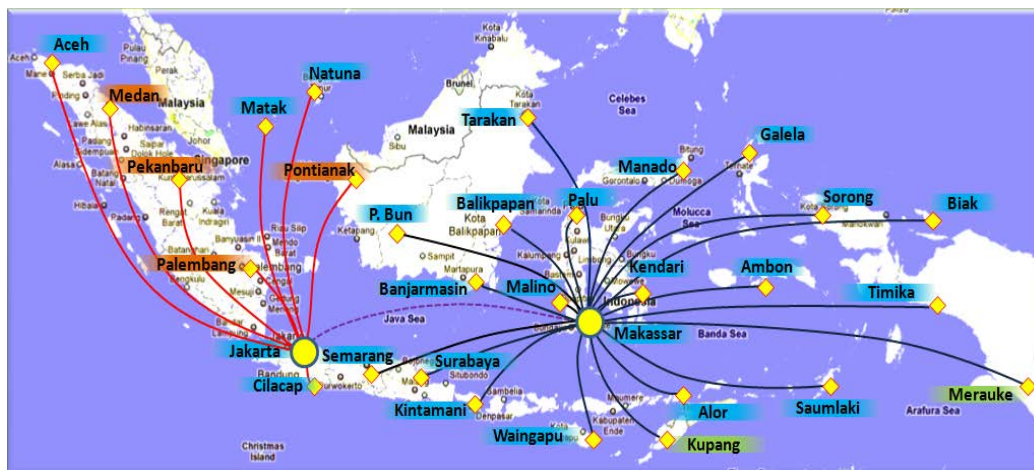


Figure 8: Indonesian ADS-B Ground Stations – ATC System Integration

4.18 Indonesia and Australia were sharing data from Merauke, Saumlaki, Kintamani, Waingapu, Alor, Semarang, Timika (Indonesian sites), and Thursday Island, Gove, Broome and Doongan (Australian Sites).

4.19 Indonesia and Singapore were sharing data from the Natuna and Matak (Indonesia) and Singapore ADS-B sites.

4.20 The history of ADS-B Letters of Agreement (LOA) between Indonesia/Australia and Indonesia/Singapore is summarized in **Table 2**.

HISTORY OF LOA AGREEMENT	
DGCA Indonesia And AUSTRALIA	DGCA Indonesia And CAAS Singapore
1. 20 September 2010 first signing of LOA	1. 22 December 2010 first signing of LOA
2. 18 June 2014 Amendment Agreement No.1	2. 27 May 2013 Amendment Agreement No.1
	3. 16 April 2014 Amendment Agreement No.2

Table 2: History of Indonesia’s ADS-B Agreements

4.21 The meeting noted with appreciation the sharing of ADS-B data from Indonesian sites, and from neighbouring States. Specifically, the proposed installation of ADS-B and VHF capability on Great Nicobar Island by India, the tripartite programme with Papua New Guinea and Australia, and the possibility of further ADS-B sites and sharing from Timor-Leste was discussed. The meeting noted the importance of ADS-B safety improvements in regard to cross-boundary monitoring and situational awareness, and enhanced alerting services.

ATN/AMHS Trial between Indonesia FIRs (IP02)

4.22 The meeting was updated on the status of the ATN/AMHS trial activities between the Jakarta and Ujung Pandang FIRs, and the status of AIDC.

4.23 In May 2014 Singapore has proposed that Indonesia upgrade bandwidth on the link between Singapore and Jakarta. Indonesia decided to upgrade bandwidth between Jakarta and Makassar (Ujung Pandang) to 128 Kbps. Inter-operability testing of the ATN/AMHS Jakarta – Makassar was successfully completed, and trial operations were scheduled for January to March 2015.

4.24 Pre-operational testing of ATN/AMHS Jakarta – Singapore would be conducted after the bandwidth link between Jakarta and Singapore was upgraded to 64 KBps.

4.25 A connectivity test of a new VPN link between Makassar and Brisbane, Australia, was planned for mid-2015.

4.26 AIDC trials were implemented between the Ujung Pandang and Brisbane FIRs. AIDC in the Jakarta FIR would be subject to the upgrading of the ATC system. The meeting urged States to attend the AIDC/TF scheduled for June 2015, and to provide lessons learnt from AIDC implementation difficulties to the AIDC/TF for the benefit of other States.

Agenda Item 5: ATS Route Developments

ATS Route Catalogue (WP07)

5.1 The Secretariat presented draft Version 14 of the *Asia and Pacific Region ATS Route Catalogue* for review and update. A number of amendments were proposed, based on the IATA review in WP08 and comments from States. The meeting noted the transition of Chapter A (ATS routes that had been designated by the Council) was being moved from the ATS Route Catalogue into the eANP (WP02 refers), and that a more flexible amendment process for the ATS Route Catalogue was now possible as in future it would only contain proposals. The remaining proposals within the ATS Route Catalogue could be updated by the Regional Office without reference to an APANPIRG Conclusion in future.

5.2 SEACG/22 agreed to the following Draft Conclusion for consideration by the ATM Sub-Group and APANPIRG:

Draft Conclusion SAIOACG5/SEACG22-2: ATS Route Catalogue Version 14

That Version 14 of the *Asia and Pacific Region ATS Route Catalogue* 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.

Airspace User Review of the Asia Pacific Regional ATS Route Catalogue (WP08)

5.3 IATA presented a review of Chapter 2 of the Asia/Pacific ATS Route Catalogue. The meeting agreed to the changes highlighted in **Appendix D** to this report.

5.4 Among the changes the following was noted:

- The meeting was informed that un-named route from NOIBAI (Ha Noi FIR) to KUNMING (proposed for removal from the catalogue) had been implemented as a domestic route from NOIBAI, intercepting the regional network of ATS routes at a point within the Ha NOI FIR where it inter.
- Viet Nam proposed retention of the ATS route SEA 2, and the un-named route from NOIBAI to HUGUANG for long-term planning.
- Route SCS9 (Manila FIR) had been implemented under a domestic ATS route designator Z902. A BANP amendment and subsequent AIP amendment should be processed to assign the route a regional ATS route designator.
- Route SCS7 should be removed as the new ATS route L649 had met this requirement.

Redesignation of ATS Routes A461 and A583 to RNP10 (WP09)

5.5 Hong Kong, China proposed reconfiguration of conventional ATS routes A461 and A583 to RNP10 to relieve increasing traffic demand. With the significant increase of traffic on the two routes there was an urgent need to raise their capacity.

5.6 A583 and A461 connected major hubs in China including Beijing, Guangzhou, Shanghai Pudong, Shenzhen and Hong Kong with the various destinations in the Philippines, Malaysia, Indonesia and Australasia. The two routes had reached their capacity in busy hours.

5.7 The longitudinal separation required on conventional ATS routes, A583 and A461, was ten minutes. Reconfiguration of the ATS routes to RNP10 would increase the capacity of the two airways by over 35%. RNP 10 was in line with the PBN specifications recommended in Category R airspace in the APAC Seamless ATM Plan and was a commonly used route specification in the region.

5.8 During the First Meeting of South China Sea Major Traffic Flow Review Group (SCS-MTFRG/1) held in Kuala Lumpur, Malaysia 19-20 January 2015, the Philippines agreed to the proposal made by Hong Kong China in SEACG/21 WP/8 – *Redesignation of ATS Routes A461 and A583 to RNP10*. The MTFRG meeting had suggested that further agreements should be sought from Indonesia and Australia in the coming SEACG/22 in order to make the PBN specifications along the entire route uniform.

5.9 Hong Kong, China clarified that the proposal was only for route portions extending south of Hong Kong, China. ICAO stated that it was normal not to assign a specific PBN specification in the Asia/Pacific Region Basic Air Navigation Plan and that this was a matter for States to establish in their AIP if necessary. Moreover, ICAO noted that some States like Australia did not normally assign a specific PBN value to routes in order to apply the most appropriate separation on a tactical basis.

5.10 Indonesia noted that the application of RNP10-based separation would require an amendment to the coordination letter-of-agreement between Australia and Indonesia.

Proposed Implementation of RNP10 on A461 (WP16)

5.11 Indonesia presented a proposal for implementation of RNP10 (50NM horizontal separation) on ATS route A461 within the Ujung Pandang FIR, to improve aircraft access to economic flight levels and increase airspace capacity.

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5.12 A461 transited the Manila, Ujung Pandang and Brisbane FIRs, converging at Ambon (AMN) VOR with R590 (southbound) and R340 (northbound). To achieve the increased airspace capacity realignment of A461, R590 and R340 could be required. 50NM horizontal separation could be implemented without realignment, but with limited improvement in airspace capacity.

5.13 **Attachments A and B to SEACG/22 WP/13** illustrated the current ATS route structure, and a proposed route realignment. Further analysis of the effect of any ATS route realignment was required.

5.14 IATA expressed appreciation to Indonesia for the realignment work that would save track miles. However IATA asked why 50NM separation was being proposed when the area was covered by ADS-B; thus a surveillance-based separation should be used in accordance with the Seamless ATM Plan. Indonesia stated that surveillance coverage of crossing traffic within the Ujung Pandang FIR needed to be considered, and that procedural separation was used at the Ujung Pandang/Manila and Ujung Pandang/Brisbane FIR boundaries.

ATM Enhancement in the South China Sea (WP/13)

5.15 An update on collaborative efforts to enhance ATM in the South China Sea area was presented by Brunei Darussalam, Hong Kong China, Indonesia, Malaysia, Philippines and Singapore.

5.16 A Proposal for Amendment (PFA) to the Asia/Pacific Region Basic Air Navigation Plan (BANP) had been approved, adding ATS route L649 from Brunei (BRU) VOR to waypoint LAXOR on ATS route M772. A special coordination meeting of the abovementioned States had agreed that the use of ATS route L649/M772 would be subject to the following conditions:

5.17 The use of ATS routes L649 / M772 for traffic originating from airports in Borneo and landing at Hong Kong;

5.18 Flight levels 300 and 380 would only be available on L649/M772 under the existing Flight Level Allocation Scheme (FLAS);

5.19 Longitudinal separation of 15 minutes, or 10 minutes based on Mach Number Technique (MNT), would be applied on L649/M772;

5.20 Contingency procedures during Large Scale Weather Deviations (LSWD) and periods of non-availability of HF communications would apply within Manila FIR. When LSWD occurred within Manila FIR, Manila ATC could suspend the usage of L649 similar to current conditions imposed on M772, with notification via NOTAM.

5.21 **Table 3** summarizes the agreed use of ATS routes L649/M772

Departure Aerodrome	Destination Aerodrome	ATS Route
Jakarta <ul style="list-style-type: none"> • Halim Perdanakusuma (WIHH) • Soekarno Hatta (WIII) 	Hong Kong (VHHH), and airports in the People's Republic of China	M772
Kuching (WBGG) Sibu (WBGS) Bintulu (WBGB)	Hong Kong only	M772

Departure Aerodrome	Destination Aerodrome	ATS Route
Miri (WBGR)	Hong Kong only	L649 / M772
Labuan (WBKL)		
Brunei (WBSB)		

Table 3: Agreed use of ATS routes L649 and M772

5.22 The target date for implementation was 23 July 2015. AIP Supplements would be published on 14 May 2015.

Agenda Item 6: ATM Contingency Plans and Search and Rescue

6.1 No papers were submitted under this agenda item.

Agenda Item 7: ANSP Coordination and Civil/Military Cooperation

ATFM Operational Trial Based on the Distributed Multi-Nodal CDM/ATFM Concept (WP12)

7.1 The meeting was provided with background information and a progress report of the collaborative effort for the Air Traffic Flow Management (ATFM)/Collaborative Decision Making (CDM) Operational Trial between Australia, China, Hong Kong China, Indonesia, Malaysia, Singapore, Thailand and Viet Nam. The ATFM Operational Trial, based on Distributed Multi-Nodal network concept, aimed to enhance operational efficiency, to optimize capacity and to pave the way for a harmonized Cross-Border ATFM solution for the Asia/Pacific Region.

7.2 The Distributed Multi-Nodal ATFM/CDM Network concept was conceived through a collaborative research project by Singapore and industry partners, with Hong Kong China, Malaysia and Thailand among those providing operational inputs to help shape the concept. The concept was presented to the Third Meeting of the ICAO Air Traffic Flow Management Steering Group (ATFM/SG/3) in March 2014 as well as the CANSO Asia/Pacific Conference in May 2014. The concept was well accepted and has been endorsed as a viable solution for the region through a Decision of the ATFM/SG/3.

ATFM/SG Decision 3/1: Distributed Multi-Nodal Networked ATFM Concept

That, the distributed multi-nodal networked ATFM concept be considered as a viable foundation to be incorporated into the regional ATFM framework for the development and implementation of ATFM for the Asia/Pacific Region, taking into account the guidance of ICAO Doc 9971.

7.3 Further, at ATFM/SG/4, IATA presented the outcomes of a study into regional flow management and resulting recommendations which led to the following Decision:

ATFM/SG Decision 4/1: Asia Pacific Regional ATFM Concept of Operations and timeline:

That, the Asia Pacific Air Traffic Flow Management Steering Group:

- *Adopts the Multi-Nodal ATFM Concept of Operations as the foundation for the Regional Concept of Operations/Implementation Strategy for regional cross-border ATFM implementation; and,*
- *Confirms 8 November 2018 as the target date for regional cross-border ATFM implementation, for inclusion in the performance objectives of the Regional Framework for Collaborative ATFM, in alignment with ASBU and the APAC Seamless ATM Plan)*

7.4 The collaborative efforts have since progressed towards an ATFM Operational Trial among participating States, and have received robust support and commitment to participate from several ANSPs, ICAO, IATA, ACI, CANSO, EU/AATIP, IFATCA, airport operators and airlines.

7.5 The ATFM Operational trial was planned to commence in June 2015 subject to a review of preparedness in May 2015. To ensure timely commencement the Trial would initially adopt only selected elements of the Distributed Multi-Nodal ATFM Network concept. Initial focus (Phase 1) would be on demand-capacity balancing (DCB) of aircraft arriving at airports of selected participating Administrations. ATFM measures such as Ground Delay Program (GDP) would be applied to regulate arriving flights through the provision of Calculated Take-Off Time (CTOT) information. The trial would subsequently include a focus on addressing Demand-Capacity Balancing within sectors and airspace (Phase 2).

7.6 ATFM measures should only be imposed when required. However, for the ATFM Operational Trial purpose ATFM measures would be implemented in a structured fashion to ensure that a comprehensive trial covering the full spectrum of ATFM was conducted and studied.

7.7 High levels of participation were necessary to ensure equitable delay absorption. Thus, the ATFM Operational Trial initiative would consider applying ATFM measures to all flights operating into participating airports. Exemptions would be accorded to special flights such as Humanitarian, Emergency, Medical Evacuation and Head-of-State, as per the ICAO Manual on Collaborative ATFM (Doc 9971).

7.8 The ATFM Operational Trial would enable participation at commencement from a wide range of stakeholders of varying levels of readiness, with a view to encouraging eventual readiness for the highest level of capability. **Attachments A and B to SEACG/22 WP/12** provide participation level models for ANSPs and aircraft operators. A model for airport operators would be subsequently developed.

7.9 To further develop the ATFM Operational Trial it had been acknowledged that operational scenarios would demonstrate how real capacity-impacting situations may look and how ATFM measures could be efficiently handled. **Attachment C to SEACG/22 WP/12** provided a sample preliminary ATFM Operational Trial Scenario.

7.10 Each participating ANSP would develop ATFM User Manuals for the ATFM Ops Trial, based on common business rules being developed for the purpose.

7.11 The ATFM Operational Trial aimed to set the stage for cross-border ATFM/CDM processes, procedures and harmonized business rules for the region, with guidance from ICAO Doc 9971 and the leadership of ICAO ATFM/SG.

Agenda Item 8: Review of SEACG Task List

SEACG Task Lists (WP10)

8.1 The Secretariat presented the SEACG Terms of Reference (ToR, **Appendix E**) and Task List (**Appendix F to this report**) for review by the meeting.

Agenda Item 9: Any Other Business

Update on EU-AATIP Activities (Presentation 1)

9.1 The meeting was provided with an update on the activities of the European Union – Association of South East Asian Nations (ASEAN) Air Transport Improvement Project (EU-AATIP).

9.2 The presentation included information on cost assumptions used in EURONTROL modelling that had been discussed at the SAIOACG/4&SEACG/21 meeting (WP21 – *PBN Track Shortening Efficiency Case Study*). A hyperlink was provided in the presentation to the EUROCONTROL document *Standard Inputs for EUROCONTROL Cost Benefit Analyses*.

Future of the APANPIRG ATM Coordination Groups (WP11)

9.3 SEACG/22 discussed the future of the meeting with the presentation of WP11 by ICAO. It noted that the precursor of the SAIOACG was the Bay Of Bengal ATS Co-ordination Group (BBACG) and that the BBACG first met in the mid-1990s in response to the challenges posed by the CNS/ATM (Communications Navigation Surveillance Air Traffic Management) concept being evolved at the time. The South East Asia ATM Coordination Group (SEACG) had been meeting since its forerunner the South-East Asia ATS Co-ordination Working Group (SEAC/WG) first met in Singapore in 1998.

9.4 Moreover, the Bay of Bengal, Arabian Sea, Indian Ocean (BOBASIO) had been developed as an ATS coordination group by India. The Third BOBASIO was conducted at Hyderabad, from 22 to 24 October, 2013. The report of BOBASIO/3 noted that ‘informal’ (non-ICAO) meetings acted as a catalyst for quick changes and excellent solutions to pending ATM issues, and discussed numerous items of interest from other bodies such as the SAIOACG, Arabian Sea Indian Ocean ATS Coordination Group (ASIOACG) and Indian Ocean Strategic Partnership to Reduce Emission (INSPIRE). It was clear that there was considerable cross-over in these meetings and a general discussion suggested that there would be benefit in consolidating meeting efforts. It was also evident that so-called ‘informal’ meetings in the Pacific, the IPACG (Informal Pacific ATC Coordinating Group) and ISPACG (Informal South Pacific ATS Coordinating Group), often led the world in implementing new technologies and procedures.

9.5 ICAO expected to maintain an active role in supporting ATM coordination meetings, including attendance when required and also through the presence of the APAC Regional Office and/or Regional Sub-Office (RSO) if this is possible. The Regional Sub-Office had been building more capability in managing day to day implementation matters, including crucial areas such as Performance-based Navigation (PBN), ATS route development, Air Traffic Flow Management (ATFM) and Airspace Organisation and Management (AOM). Therefore, from 2016 it appeared that the RSO was best placed to manage the SAIOACG and SEACG at the Secretariat level beyond SAIOACG/5 and SEACG/22.

9.6 IATA expressed the strong 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 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.

9.7 IATA also considered that it may not be appropriate to change the Secretariat from the current arrangement as SEACG, dealing with such a strategically significant part of the Region, was one of the more effective groups reporting to the ATM Sub-Group of APANPIRG.

IATA RCG Presentation

9.8 Participants at the IATA Regional Coordination Group (RCG) attended the final session of SEACG/22. A presentation was made by the IATA Asia/Pacific (ASPAC) Regional Director, discussing IATA and its history, organization and key issues, the economic and demographic influences affecting aviation globally, and the infrastructure challenges presented by increasing demand.

Agenda Item 10: Date and Venue of the Next Meeting

10.1 The next meeting of SEACG was tentatively scheduled for early 2016 (date to be advised), at Bangkok.

11. Closing of the meeting

The Secretariat thanked the meeting participants for their significant work during a busy meeting program, and acknowledged the positive direction and leadership that had been provided to SEACG by the recently resigned Chair, Mr. Raymond Li of Hong Kong, China.

SEACG/22
Attachment A to the Report

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Appendix B to the Report
International Civil Aviation Organization

**The Twenty-Second Meeting of the Southeast Asia ATM Coordination Group
(SEACG/22)**

Bangkok, Thailand, 09-12 March 2015

LIST OF WORKING AND INFORMATION PAPERS

(Presented by the Secretariat)

WORKING PAPERS

NUMBER	AGENDA	WORKING PAPERS	PRESENTED BY
WP01	1	Provisional Agenda	Secretariat
WP02	2	Relevant Meeting Outcomes	Secretariat
WP03	3	SCS-MTFRG/1 Meeting Outcomes	ICAO
WP04	3	Review of South China Sea Flows	IATA
WP05	3	Air Navigation Service ATM Deficiencies List	Secretariat
WP06	4	Seamless ATM Planning and Reporting	Secretariat
WP07	5	ATS Route Catalogue	Secretariat
WP08	5	Airspace User Review of the Asia Pacific Region ATS Route Catalogue	IATA
WP09	5	Re-designation of ATS Routes A461 and A583 to RNP10	Secretariat
WP10	8	SEACG Task List	Secretariat
WP11	9	Future of the APANPIRG ATM Coordination Groups	Secretariat
WP12	7	ATFM Operational Trial Based on the Distributed Multi-Nodal CDM/ATFM Concept	Australia, China, Hong Kong China, Indonesia, Malaysia, Singapore, Thailand, Viet Nam, IATA, CANSO, and IFATCA
WP13	5	ATM Enhancement in the South China Sea	Brunei Darussalam, Hong Kong China, Indonesia, Malaysia, Philippines and Singapore
WP14	4	ADS-B Implementation in Indonesia FIRs	Indonesia
WP15	4	ADS-B Data Sharing Between Indonesia, Australia and Singapore	Indonesia
WP16	5	Proposal for Implementation of RNP10 on A461	Indonesia

INFORMATION PAPERS

NUMBER	AGENDA	INFORMATION PAPERS	PRESENTED BY
IP01	-	List of Working and Information Papers	Secretariat
IP02	4	ATN/AMS Trial Between Indonesia FIRs	Indonesia

PRESENTATIONS

NUMBER	AGENDA	PRESENTATIONS	PRESENTED BY
1	9	Update on EU-AATIP Activities	EU-AATIP

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TERMS OF REFERENCE
SOUTH CHINA SEA MAJOR TRAFFIC FLOW REVIEW GROUP
(SCS MTRFG)

1. Objective

1.1 The objective of the SCS MTF/RG is:

- a) to analyze the MTF in the overall South China Sea airspace, air routes and the suitability of the FLOS to optimize airspace capacity and enhance flight safety in the long term; and
- b) to report outcomes of the review and recommendations to SEACG.

2. Tasks

2.1 To meet this objective the Review Group, with reference to the Asia/Pacific Region Seamless ATM Plan and expected traffic growth, shall:

- a) Review the existing MTF route structures in the SCS Airspace to establish priorities;
- b) Identify current and planned CNS/ATM capabilities and implementation timelines of States concerned;
- c) Identify reduced horizontal separation based on the current and planned CNS/ATM capabilities, taking into account aircraft approval status of the traffic operating on the relevant routes as well as the new CNS capabilities available;
- d) Review the existing FLAS/FLOS operating within the SCS with a view to enhancing efficiencies;
- e) Establish appropriate timelines/milestones/dependencies for activities planned under this Review Group; and
- f) Make recommendations to SEACG on implementation plans for route structures, airspace, FLOS and separation solutions to meet the expectations of the Asia/Pacific Seamless ATM Plan.

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Summary of SEACG Amendments to the Asia Pacific Region ATS Route Catalogue

ATS ROUTES	SIGNIFICANT PTS	COORDINATES	FIR	REMARKS
SEA 2	DANANG SYX	N1603.2 E10811.9 N1818.4 E10910.4	HOCHIMINH SANYA	Retain proposal for long-term planning (Viet Nam). Retention discussed at SEACG/22)
SEA-5	STUNG TRENG DANANG	N1331.5 E10600.9 N1603.2 E10811.9	PNOMPENH HOCHIMINH	SEACG/22
SEA-6	PAKSE ASSAD	N1511.8 E10544.5 N1820.5 E10740.9	VIENTIANE ASSAD	SEACG/22
SEA 10	QUNGI - LENKO	N1713.5 E11000.0 N1721.0 E11109.0 N1507.0 E10848.0 N0932.8 E10003.7	SANYA SANYA HOCHIMINH BANGKOK	
SEA 12	ROT HUGUANG	N1607.0 E10346.7 N2107.9 E11020.2	HOCHIMINH GUANGZHOU	
SEA 13	ASSAD-SYX- EPKAL- MAVRA-SAN		YANGON, VIENTIANE, HANOI, MANILA	New Request SEACG/22
SCS1	DAMEL CH	N1358.7 E11136.4 N2213.2 E11401.8	HOCHIMINH HONGKONG	
SCS 2	VEPAM CH	N1358.0 E11000.0 N2213.2 E11401.8	HOCHIMINH HONGKONG	
SCS-4	VKL CONSON	N0243.5 E10144.3 N0843.8 E10637.9	LUMPUR HOCHIMINH	SEACG/22
SCS-5	EXOTO DAMVO MELAS LUSMO	N1521.5 E11103.0 N1106.5 E10932.7 N0705.3 E10809.2 N0333.7 E10655.6	HOCHIMINH HOCHIMINH HOCHIMINH SINGAPORE	SEACG/22
SCS-7	BRUNEI LAXOR DULOP	N04 52.5E11453.4 N0949.6 E11448.5 N1814.2E11432.6	KINABALU SINGAPORE HONGKONG	TO JOIN M772 AT LAXOR SEACG/22

ATS ROUTES	SIGNIFICANT PTS	COORDINATES	FIR	REMARKS
SCS8	DULOP ELATO ENVAR DULOP KAPLI	N1814.2E11432.6 N2220.0 E11730.0 N2159.5 E11730.0 N1814.2E11432.6 N2110.0 E11730.0	HONGKONG HONGKONG HONGKONG HONGKONG HONGKONG	EITHER DULOP/ KAPLI G86, OR DULOP/ ELATO& ENVAR
Unnamed	NOIBAI KUNMING	2112.8N 10550.1E 2501.0N 10244.0E	HANOI KUNMING	Moved from Chapter 4. Route Requested by Vietnam. Reported at SEACG/22 as having already been implemented as a domestic ATS route intercepting the regional ATS route network at a point within the Ha Noi FIR. Awaiting BANP Amendment
Unnamed	NOIBAI CATBI SAMAS OR HUGUANG	2112.8N 10550.1E 2049.1N 10642.5E 2030.3N 11029.7E 2107.9N 11020.2	HANOI HANOI GUANGZHOU/ SANYA GUANGZHOU	Moved from Chapter 4. Route Requested by Vietnam. Retain proposal for long-term planning (Viet Nam). Retention discussed at SEACG/22
SCS10	PHUCAT ASISU		HO CHI MINH SINGAPORE KOTA KINABALU	
SCS11	R208 – VKR - BITOD		KUALA LUMPUR SINGAPORE HO CHI MINH	New request (replacing SCS4) SEACG/22
PHI 5	ENDAX VJN		MANILA	

ATS ROUTES	SIGNIFICANT PTS	COORDINATES	FIR	REMARKS
SCS9	TOKON DILIS TOKON ENDAX	N1142.0 E11940.5 N1431.1 E12600.1 N1142.0 E11940.5 N1415.0 E13000.0	MANILA MANILA MANILA MANILA	Moved from Chapter 5 part A. SEACG/22 reported route ENDAX – TOKON was already implemented as Z902. Regional ATS route designator to be assigned.

Terms of Reference

South-East Asia ATM Co-ordination Group (SEACG)

1. Terms of Reference of SEACG:
 - 1) Identify current problems or deficiencies in ATM being experienced in the Southeast Asia area;
 - 2) Develop solutions to resolve noted problems or deficiencies that do not require long-range planning in the Southeast Asia area;
 - 3) Prepare a co-ordinated action plan with time lines for implementation of the agreed actions in a manner that is harmonized with adjacent regions, consistent with ICAO SARPs and Global Air Navigation Plan (Doc 9750);
 - 4) Make specific recommendations to the APANPIRG through the ATM/AIS/SAR Sub-Group, aimed at improving ATM/AIS/SAR services within the South East Asia Region and the adjacent Regions.
 - 5) Report to the ATM/AIS/SAR Sub-Group of the APANPIRG

2. The SEACG comprises representatives from the following, but not limited to:

Australia, Brunei Darussalam, Cambodia, China, Hong Kong China, Indonesia, Japan, Lao PDR, Malaysia, Papua New Guinea, Philippines, Singapore, Thailand, Viet Nam, IATA, IFALPA, IFATCA, ARINC and SITA.

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Approved by ATM/AIS/SAR SG/20, Decision SG 20/11, July 2010

Task List

	ACTION ITEM	RESPONSIBLE PARTY	STATUS	REMARKS
2.	Update the Progress on State Contingency Plan Development	STATES	OPEN	<p>Raised at SEACG/16.</p> <p>States to develop and promulgate contingency plans according to Annex 11 – <i>Air Traffic Services</i> and update the progress to the SEACG/19.</p>
3	Radar Data Sharing	Lao PDR/ Thailand	OPEN	<p>Raised at SEACG/16.</p> <p>Lao PDR and Thailand agreed to share the radar data. Lao PDR and Thailand will further coordinate.</p>
6	FL 400 Restriction on G581	Hong Kong, China Japan	CLOSED EFF 1 JAN 2014	<p>Raised at SEACG/17</p> <p>A tripartite meeting should be held to seek resolution to FL 400 by Hong Kong, China and report the outcome to the Regional Office as soon as possible.</p> <p>Hong Kong, China has implemented an additional ATC sector in April 2011 and is developing a controller tool with a view to addressing the issue.</p> <p>Hong Kong China will keep in view of the situation and update Japan towards end 2011.</p> <p>Hong Kong discussed this at the EATMCG /5. Still some issues with conflict detection software under development and expected to be resolved by end 2012.</p>

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	ACTION ITEM	RESPONSIBLE PARTY	STATUS	REMARKS
7	Review of the Route Requirements Proposed to SEA-RR/TF by IATA (WP/6 of SEACG/18)	States	CLOSED	Raised at SEACG/18 Noting the SEA-RR/TF has not achieved a single output, States are invited to review Paragraph 2.3 of WP/6 before attending the next SEA-RR/TF. Completed.
8	Enhancement of Coordination and Awareness on LHD Occurrences	Indonesia, Philippines, Singapore and Viet Nam, Malaysia	CLOSED	Raised at SEACG/18 In order to reduce the LHD at the Manila FIR boundary, coordination should be enhanced between the ACCs and heightened the awareness of HF operators with regard to the high LHD occurrence rate at the identified reporting points. Supervisor to Supervisor consultation is currently practiced. LHDs have reduced as reported to RASMAG/18, AIDC implementation planned
9	Consideration of Implication of ADS-B Surveillance	States and IATA	CLOSED	Raised at SEACG/18 Deliverable should be the working paper from IATA and States at the next meeting. Updated at SEACG/20 ADS-B SITF and SEA-BOB ADS-B WG meetings discuss this, and it is now an element in the Seamless ATM Plan
10	ADS-B and VHF Coverage Chart	Regional Office	CLOSED	Raised at SEACG/18. ADS-B and VHF coverage chart will be created basing on the radar coverage chart. Updated at SEACG/20 Completed as part of the Seamless ATM Plan
11	SEA Route Review Implementation Plan Proposals 2 and 9, A202 & A1	Thailand, Laos, Vietnam, China, Hong Kong China	CLOSED	Proposal 2 was already noted as complete. Regarding Proposal 9, China reiterated that route changes within the Sanya FIR in the foreseeable future were not possible, due to the interest of other stakeholders.

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	ACTION ITEM	RESPONSIBLE PARTY	STATUS	REMARKS
12	SEA Route Review Implementation Plan Proposal 5 M756 TSN-ENREP	Thailand, Vietnam, Singapore	OPEN	Singapore and Viet Nam would continue the dialogue on this proposal bilaterally. Both States expressed the view that agreement was possible by the end of 2012, and would advise the results of discussion by SEACG/20. Referred by SEACG/22 to SCS-MTFRG/Mekong Group
13	SEA Route Review Implementation Plan Proposal 10, L628	Thailand, Cambodia, Viet Nam, Philippines	OPEN	The meeting discussed the reasons behind this proposal at length, describing the fact that although the route proposed to be duplicated had low traffic density, the change would allow a uni-directional flow to release some level restrictions on the main Southwest-Northeast traffic flow (at present, the crossing tracks utilised FL330, 370 and 410 eastbound and FL280 and 340 westbound). This proposal needed further consideration by the Airspace Authority of Viet Nam. Referred by SEACG/22 to SCS-MTFRG/Mekong Group
14	SEA Route Review Implementation Plan Proposal 11, M768	Thailand, Cambodia, Viet Nam, Malaysia, Philippines, Singapore	OPEN	Viet Nam was concerned about the effect of several new reporting points created by the new ATS route proposal. The Secretariat clarified that the number of reporting points should not be a factor within ATS surveillance coverage, as a State was able to advise through the AIP that pilot reports were unnecessary in such airspace, unless specifically requested by ATC. Viet Nam would consider this and advise their position at a later date. Referred by SEACG/22 to SCS-MTFRG/Mekong Group
15	SEA Route Review Implementation Plan Proposal 14 and 15, M771 and L642	Vietnam, Hong Kong China, China	OPEN	China reiterated that route changes within the Sanya FIR in the foreseeable future were not possible, due to the interest of other stakeholders. The Secretariat reminded China about the concern from IATA regarding the need to be responsive to the economic and environmental drivers. Referred by SEACG/22 to SCS-MTFRG/Mekong Group

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	ACTION ITEM	RESPONSIBLE PARTY	STATUS	REMARKS
16	Sanya FIR Restrictions	Vietnam Hong Kong China, China, China , RSO	OPEN	The SEACG/21 meeting was apprised of concerns that the Sanya FIR was occasionally imposing increased longitudinal spacing requirements. The parties to meet and discuss a resolution plan. To be considered by ATFM/SG.
17	L642/M771	China, Hong Kong, China, Vietnam, Singapore	OPEN	SEACG/21 - Reduce longitudinal separation from 50NM to 30NM surveillance-based separation on L642/M771 Hong Kong agreed to surveillance-based separation in 2016 2015 , subject to a moratorium period of six months after the implementation of the new Hong Kong system.
18	Study sub-regional Southeast Asia TA of 11,000ft	SE Asian States	OPEN CLOSED	Report to ATM/SG/2 or SEACG/22
19	The AATIP representative agreed to provide information on the cost assumptions used in the EUROCONTROL modelling used in the paper, so these could be customised using Asia/Pacific values.	AATIP	OPEN CLOSED	SAIOACG/21/SEACG/4 WP/21 – PBN Track Shortening Efficiency Case Study.
20	Establishment of a Major Traffic Flow Review Group	China, Hong Kong China, Indonesia, Malaysia the Philippines, Singapore, Thailand Viet Nam, IATA, IFALPA IFATCA and the ICAO RSO	OPEN	Report to ATM/SG/2 or SEACG/22
21	Submit BANP Amendment proposal for implemented ATS route NOIBAI to KUNMING	China, Viet Nam	OPEN	ATS route designator in use to be checked with ICAO Regional Office to ensure not previously allocated elsewhere, and if necessary replaced.
22	Assign regional ATS route designator to ATS route Z902 (Manila FIR). ATS route	Philippines	OPEN	ATS route designator to be sourced from ICAO Regional Office, followed by BANP PfA and AIP amendment.

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	ACTION ITEM	RESPONSIBLE PARTY	STATUS	REMARKS
	catalogue proposal SCS9 refers.			