International Civil Aviation Organization

The Twenty-Second Meeting of the APANPIRG ATM/AIS/SAR Sub-Group (ATM/AIS/SAR/SG/22)

Bangkok, Thailand, 25 – 29 June 2012

Agenda Item 4: Review outcome of relevant meetings

SEACG OUTCOMES

(Presented by the Secretariat)

SUMMARY

This paper presents the outcomes from the Nineteenth Meeting of South-East Asia ATM Coordination Group (SEACG/19, Bangkok, Thailand, 1 to 4 May 2012). The Sixth Meeting of the South-East Asia Route Review Task Force (SEA-RR/TF/6 had been conducted prior to the SEACG/19 meeting on 30 April 2012, at the same venue.

This paper relates to –

Strategic Objectives:

A: ***Safety*** *– Enhance global civil aviation safety*

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

Global Plan Initiatives:

GPI-1 Flexible use of airspace
GPI-3 Harmonization of level systems
GPI-4 Alignment of upper airspace classifications
GPI-5 RNAV and RNP (Performance-based navigation)
GPI-6 Air traffic flow management
GPI-7 Dynamic and flexible ATS route management
GPI-8 Collaborative airspace design and management
GPI-9 Situational awareness
GPI-10 Terminal area design and management
GPI-11 RNP and RNAV SIDs and STARs
GPI-12 Functional integration of ground systems with airborne systems
GPI-15 Match IMC and VMC operating capacity
GPI-16 Decision support systems and alerting systems
GPI-17 Data link applications
GPI-18 Aeronautical information
GPI-21 Navigation systems
GPI-22 Communication infrastructure

1. INTRODUCTION

1.1 Fifty-six (56) participants attended the SEA-RR/TF/6 meeting from Cambodia, China, Hong Kong China, Indonesia, Lao PDR, Malaysia, the Philippines, Singapore, Thailand, Viet Nam, IATA, IFATCA and ARINC.

1.2 Thirteen (13) working papers (WP) and six (6) information papers (IP) were presented to SEACG/19. One (1) Draft Conclusion and one (1) Decision were developed by the SEACG/19.

2. DISCUSSION

Seamless ATM

2.1 SEACG/19 was presented with the 53 draft Seamless ATM Principles developed by the ICAO Asia/Pacific Seamless ATM Planning Group (APSAPG).

AIDC Implementation

2.2 SEACG/19 was presented with information from the Sixteenth Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/16, Bangkok, 20 to 23 February 2012). RASMAG had noted the continued lack of compliance in the West Pacific/South China Sea and Indonesian airspace with the Reduced Vertical separation Minimum (RVSM) Target Level of Safety (TLS) of 5×10^{-9}. SEACG was reminded of the importance of ATS Inter-facility Data-link Communications (AIDC) to minimize Large Height Deviations, which constituted a major cause or factor of RVSM safety issues.

2.3 Considering the importance of the issue, a SEACG Capability Planning ad hoc survey was conducted of matters such as AIDC implementation status. The survey revealed that no SEACG administrations were using AIDC operationally except for China (Sanya) and Hong Kong, China – partial implementation. Only two other trials (Singapore-Viet Nam and Malaysia-Indonesia) were taking place, despite APANPIRG *Conclusion 19/19*, urging administrations to expedite AIDC implementation.

South China Sea ADS-B Developments

2.4 Hong Kong, China highlighted good progress in aircraft equipage of ADS-B along two ATS routes, L642 and M771, and recommended extending the framework formulated for harmonizing ADS-B implementation over South China Sea to other high density routes. Data on ATS route L642 indicated there were 197 airborne targets with ADS-B data broadcast out of 240 airborne targets (82% equipped), while there were 158 airborne targets with ADS-B out of 196 aircraft (81% equipped) on M771 data within the survey period. Of the M771 aircraft, 154 (79%) had good NUC values. Within the Hong Kong FIR for the same period, a total of 2,163 ADS-B airborne targets were detected out of 3,041 aircraft (71% equipped), and 66% (2,008) of these had good NUC values.

2.5 Hong Kong, China felt that ADS-B mandates provided a very clear message to aircraft operators to plan for retro-fitting and forward-fitting their fleets. IATA advised that they saw ADS-B as the key for long-term height keeping monitoring. They noted that ADS-B compliance with the Australian mandate would be achieved by airlines in time for the mandate in 2013.

Philippines ADS-C/CPDLC trials

2.6 It was reported at the RASMAG/15 meeting that Phase 2 of the trial ADS-C/CPDLC operations was estimated to commence during the first quarter of 2012. However, the project was under review and evaluation by the Philippines Department of Transportation and Communications (DOTC). Resumption of the ADS/CPDLC trial operations could not commence until the department had finalized its review. As soon as issues with the equipment had been settled, the Philippines would be working to resume the ADS/CPDLC trial operations.

ATS Surveillance-Based Separations

2.7 IATA highlighted an apparent disconnect between declared availability and actual day-to-day application of longitudinal separation on ATS Routes L642 and M771. IATA urged that disparities between declared availability and actual operational application should be identified and addressed. The meeting discussed this issue extensively with Viet Nam, Hong Kong, China and China affirming that they applied the agreed 50NM longitudinal separation and did not impose restrictions on flights operating on these routes, so it was agreed that should such matters recur, Singapore could feedback the information to the States concerned and would monitor the situation.

2.8 The meeting noted that Southeast Asia contained some of the busiest city pairs in the world and there had been significant Air Navigation Service (ANS) infrastructure improvements in the area. All the SEACG states had some form of Air Traffic Services (ATS) surveillance capability and operational Letters of Agreement (LOA) with neighbouring ACCs. However, there was no coherent plan to provide ATS surveillance separation to cross-FIR flights, and there were gaps in surveillance coverage over the South China Sea, which prevented the seamless application of ATS surveillance separation in the area.

2.9 The meeting was also informed the meeting that despite the infrastructure improvements in individual FIRs, there was no regional plan to ensure that the benefits arising from the new infrastructure were harnessed for flights crossing several FIRs. There was however, coordination and cooperation between some States joined by busy city pairs and this had translated into effective and efficient ATM procedures.

2.10 IATA acknowledged the extraordinary traffic growth in Asia, and stated that it was time to approach planning and start providing an Air Traffic Control (ATC) service like Europe using ATS surveillance as the basis. IATA further noted the increasing delays, so suggested that we needed to make major changes to the way ATM was conducted.

2.11 The meeting was asked, as a first step to provide a more effective and seamless service to flights, to commit to providing surveillance separation where surveillance capability was available, and where areas with overlapping radar coverage already had existing radar hand-off procedures, commit to providing seamless surveillance separation between the busy city pairs which they serve. Where there was no surveillance capability, but Direct Controller Pilot Communications (DCPC) capability, the meeting was asked to commit to providing 50NM longitudinal separation; and eventually moving to providing 30/30NM for aircraft meeting RNP4 (Required Navigation Performance) navigation capability.

ATS Route Developments

2.12 Singapore and Indonesia informed the meeting that on 9 February 2012, 50/50NM separation on RNAV10 routes M635 and M774 had been implemented, increasing capacity by 50%. These routes replaced ATS routes A576 and M774/A464 that connected Australasia – Southeast Asia.

2.13 Hong Kong, China suggested that ATS routes A461 (from Hong Kong FIR to Manila FIR) and A583 (from Manila FIR to Hong Kong FIR) be reconfigured as unidirectional PBN routes. A Flight Level Allocation Scheme (FLAS) was being discussed between Hong Kong ATCC and Manila ACC.

2.14 Subject to ADS-C CPDLC implementation within the Manila FIR, RNP10 50/50NM separation minima was being considered in 2013. RNP4 30/30NM separation minima would be considered between the fourth quarter of 2014 and the first quarter of 2015. There was also a consideration to shift A583 under RNP10/4 designation to the northeast (towards A461) for possible addition of an RNP4 route east of M771.

2.15 Hong Kong, China was willing to continue consultations with the Philippines on this subject, with the caveat that they would not be able to implement changes from approximately July 2013 to June 2014 due to the commissioning of new ATM system and ACC. The Philippines were not able to consider this proposal at this juncture due to its issues with the current radar system.

2.16 Hong Kong, China provided the meeting with the results of an evaluation which indicated the proposed track shortening of L642 would merge with A1/P901 at the Hong Kong/Sanya FIR boundary, resulting in a loss of combined capacity on these two routes. With respect to M771, Hong Kong China was taking a more holistic view to its realignment, considering the agreed Regional PBN Roadmap. China advised that the reconfiguration of these two routes could not be realised within a relatively long period, considering other stakeholder's interests. However, China was willing to consider a reduction of longitudinal spacing along these two routes. IATA objected to this, due to the severe cost implications and pointed out that airlines expected to receive the benefit from overflight charges. After extensive discussions, Hong Kong, China agreed to consider the possibility of track saving strategies wholly contained within the Hong Kong FIR.

2.17 The meeting was also updated on the plan to enhance the capacity on ATS routes B470 and G579 which were among the busiest international routes in the world, for flights between Jakarta and Singapore. There were plans to also implement RNAV5 routes by enabling closer spaced routes to segregate traffic between these airports against overflights in both directions. IATA congratulated Singapore and Indonesia for their collaborative efforts.

2.18 Malaysia informed the meeting about the implementation of an RNAV route structure over the southern portion of KL FIR and portions of Singapore FIR to segregate arrival traffic into Kuala Lumpur and Singapore from overflying flights for a more seamless transition between both FIRs. These proposed new RNAV routes were M630, Y339, Y440, and were expected to be implemented by 26 July 2012. Malaysia thanked Singapore for their cooperation in this proposal.

2.19 The SEA-RR/TF/6 had transferred five new tasks to the SEACG Task List which concerned ATS route proposals. Each of the following proposals was discussed by SEACG/19, and any progress would be reported to SEACG/20:

- Proposal 11, M768;
- Proposal 10, L628;
- Proposal 14 and 15, M771 and L642;
- Proposals 2 and 9, A202 & A1; and
- Proposal 5 M756 TSN-ENREP.

Air Traffic Flow Management

2.20 Singapore informed the meeting that there had been recurring instances of ad hoc air traffic flow restrictions which were not in accordance with expected Large Scale Weather Deviation (LSWD) procedures. Such restriction includes time-based spacing of flights regardless of flight level and some instances where restrictions were in place for as long as nine hours. The meeting noted the lack of a formalised Air Traffic Flow Management (ATFM) system to respond to such events.

2.21 During adverse weather conditions, many flights between Hong Kong and Ho Chi Minh were diverted through the Manila FIR, even though they were not flight planned through this airspace; hence no flight plan details would be available to Manila ACC. The Philippines proposed to the meeting a detailed scheme to handle these diversions due to weather. A side meeting was arranged between Hong Kong, Vietnam and Philippines and the issue was satisfactorily resolved by the controlling ACCs providing the original flight plan information and the incorporation of the weather contingency route scheme into the Philippines AIP.

2.22 Hong Kong, China informed the meeting about the details of a capacity notification scheme which provided other ACCs and airline operators with advance advice on the anticipated arrival acceptance rate at Hong Kong International Airport and any associated delays. Under the scheme, determination of runway and airspace capacity was made by Hong Kong ACC supervisory staff on a twice-daily basis using a standard template which took into account not only airport conditions but also the surrounding terminal airspace and holding areas. The objectives were to ensure that flow restrictions were only implemented when absolutely necessary, that Hong Kong's internal FIR capacity was utilized to the fullest extent possible and that as much prior notice was given as possible to upstream ATS units and operators.

2.23 Hong Kong, China recognised that this was the starting point of a series of Collaborative Decision-Making/Air Traffic Flow Management (CDM/ATFM) initiatives by Hong Kong to improve regional ATM towards the objective of a Seamless Asian sky. IATA and IFATCA congratulated Hong Kong, China on the development of this initial system. Hong Kong, China was happy to share this simple tool with any adjacent state who might wish to explore its use.

Air Navigation Concept of Operations Mandate

2.24 The SEACG meeting noted that although the Asia/Pacific Air Navigation Concept of Operations included reference to certain PBN airspace capabilities[1] and expected safety net standards (such as Airborne Collision Avoidance Systems), there was no equivalent to *Conclusion 22/8 - ADS-B Airspace Mandate* for these areas in terms of airspace mandates and application of priorities. As some Asia/Pacific administrations were planning to mandate requirements within international airspace such as RNP4 and other PBN specifications, the SEACG agreed to the following Draft Conclusion for APANPIRG's consideration:

Draft Conclusion SEACG 19/1 – Asia/Pacific Air Navigation Concept of Operations Mandates

That, States intending to implement Performance-Based Navigation (PBN) and Safety Nets may, after appropriate consultation with airspace users, designate portions of airspace within their area of responsibility:

a) as providing priority for access to such airspace for aircraft with prescribed PBN specifications; and

b) mandating the carriage and use of an operable mode A/C and/or mode S transponder, Airborne Collision Avoidance System (ACAS) and Terrain Awareness Warning Systems (TAWS) as appropriate.

SEACG Small Working Groups (SWG)

2.25 The ad hoc survey conducted by SEACG/19 revealed a large number of SEACG administrations were either not planning to use AIDC in the near future or did not have this capability. It was noted the RVSM TLS was frequently breached in the Western Pacific/South China Sea and Indonesian airspace, and AIDC would help to improve the situation.

2.26 It was also clear from an ad hoc informal survey that all States except one had the capability of using a separation standard based on ATS surveillance. The Philippines used 40NM longitudinal separation within radar coverage due to lack of redundancy concerns, but advised that it was planning to reduce this separation with the future installation of additional ATS surveillance.

[1] Air-routes above FL195 and within terminal controlled airspace (CTA and CTR) associated with major international aerodrome must be PBN-based with an appropriate specification determined by the Airspace Authority (such as en-route RNP2, terminal RNP1/0.3) based on the GANP and the Regional Navigation Strategy.

2.27 The survey indicated that those administrations which had airspace not served by radar, multilateration (MLAT) or Automatic Dependent Surveillance – Broadcast (ADS-B) and Very High Frequency (VHF) communications had either already implemented the 50NM standard using ADS-C (Contract) and Controller Pilot Data-link Communications (CPDLC), or planned to do so. Only Indonesia and Viet Nam had not planned to implement the 30NM standard based on RNP4. However, it was evident that none of these separation applications had been planned from a regional or sub-regional basis, which had led to a fragmented approach in the Southeast Asian and South China Sea area

2.28 The inconsistency in approach in the AIDC, ATFM and ATS surveillance fields meant it was important to approach the planning, development and implementation of these areas in a much more disciplined and coordinated manner, with more regular appraisal of the status of progress, barriers, and solutions that supported SEACG future planning.

2.29 It was noted by the meeting that each of the three fields mentioned were key components of the Aviation System Block Upgrade (ASBU) and Seamless ATM initiatives, so there was every reason to start a concerted effort to manage these developments in the near future. An option to establish three SEACG Small Working Groups (SWG) that dealt with the AIDC, ATFM (including large scale weather deviation (LSWD)) and ATS surveillance areas was discussed by the meeting. The intent was for the three SWG to report at the SEACG/20 and be terminated at that time, unless there was outstanding or continuing work required that could not be progressed by SEACG itself. The meeting agreed to the following Decision, which established the three SWGs:

Decision SEACG 19/2 – Establishment of SEACG Small Working Groups

That, SEACG AIDC, ATFM/LSWD and ATS Surveillance Small Working Groups (SWG) be established to:

a) assess the current status and planning of implementation;

b) identify barriers to implementation;

c) make recommendations to assist harmonized ATM procedures and applications; and

d) make recommendations that assist implementation in accordance with the Asia/Pacific Air Navigation and ATFM Concepts of Operations, and the Asia/Pacific Seamless ATM initiatives, related to the AIDC, ATFM/LSWD and ATS Surveillance fields.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper;

b) discuss and note[1] Draft Conclusion SEACG 19/1 regarding Asia/Pacific Air Navigation Concept of Operations Mandates;

c) note the establishment of SEACG SWG in Decision SEACG 19/2; and

d) discuss any relevant matters as appropriate.

…….

[1] Draft Conclusion SEACG 19/1 was superseded by a later SAIOACG Draft Conclusion