International Civil Aviation Organization

The First Meeting of the APANPIRG ATM Sub-Group (ATM /SG/1)

Bangkok, Thailand, 20 – 24 May 2013

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

SAIOACG/3 and SEACG/20 Meeting Outcomes

(Presented by Secretariat)

SUMMARY

This paper presents an overview of the outcomes of the SAIOACG/3 and SEACG/20 meetings, which were held as a combined meeting with India and Hong Kong China co-chairs. 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-2 Reduced vertical separation minima
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-14 Runway operations
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 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) was held in Bangkok, Thailand from 18 to 22 February 2013. The meeting was attended by 60 participants from Brunei Darussalam, Cambodia, China, Hong Kong China, India, Indonesia, I.R. Iran, Lao PDR, Malaysia, Maldives, Myanmar, Philippines, Singapore, Thailand, United States, IATA and ICAO. India and Hong Kong China co-chaired the meeting.

2. DISCUSSION

Outcomes of Relevant Meetings

2.1 The SAIOACG and SEACG took over the residual work of the Bay of Bengal Reduced Horizontal Separation Task Force (BOBRHS/TF) and the Southeast Asia Route Review Task Force (SEARRT/F) respectively, which had been dissolved by APANPIRG/23.

2.2 The meeting noted that there were still issues with data link implementation in the Bay of Bengal area, as highlighted by the lack of Problem Reports mentioned in the Fans Interoperability Team (FIT)-Asia/1 report. The meeting also noted that IATA would continue to support the Boeing Central Reporting Agency (CRA) until 2015 at least. The future possibility of collaboratively forming a CRA for Asia, with a direct link to the Boeing CRA, was supported by several Asia/Pacific States.

2.3 India had briefed the informal Automatic Dependent Surveillance-Broadcast (ADS-B) Focus Group meeting on its Phase 1 plans to install and commission 14 ADS-B stations by October 2012. Under Phase 2, more ADS-B stations were slated to be installed at eight more sites by the first half of 2013. Under Phase 3, tentatively, six more ADS-B stations would be added. Myanmar also shared implementation plans to commission two ADS-B stations at Coco Island and Sittwe by first half 2013, and tentatively, more ADS-B stations at Lashio, Myeik and Yangon by the second half of 2014.

2.4 The meeting also noted the work of the Seventh Meeting of the Arabian Sea Indian Ocean ATM Coordination Group (ASIOACG/7) and the Third Meeting of the Indian Ocean Indian Ocean Strategic Partnership to Reduce Emissions (INSPIRE/3.

Small Working Group Reports

2.5 Small Working Groups (SWG) were formed by SAIOACG/2 and SEACG/19 to:

- assess the current status and planning of implementation;
- identify barriers to implementation;
- make recommendations to assist harmonized ATM procedures and applications;
- 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 Air Traffic Flow Management (ATFM), Communication (COM) and ATS Surveillance (SUR) fields.

2.6 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: ATFM 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.

Draft Decision SAIOACG3/SEACG20-3: Asia/Pacific ATFM Steering Group

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

2.7 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

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).

2.8 In summary, recommendations identified by the SAIOACG and SEACG **SUR** SWGs 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.

Airspace Capacity and ATM Service Enhancement

2.9 ICAO requested that States optimize utilization of existing facilities and capabilities to enhance route capacity, suggesting that the current Communications, Navigation and Surveillance (CNS) capabilities be used to provide surveillance separation or RNP10 separation where surveillance or ADS/CPDLC is available. The SAIOACG/SEACG meeting noted that 50/50NM separation had been implemented in 2005 and RNP4 30/30NM separation since 2007 in the South Pacific.

2.10 The SAIOACG/SEACG meeting noted that in South Asia, traffic continued to be separated by 50NM or even 80NM at some identified transfer of control points within ATS surveillance coverage. Moreover, noted that in the South China Sea 30NM to 40NM was applied within ATS surveillance capability, while conservative procedural separations such as 60NM and 80NM were applied outside ATS surveillance coverage, and not in accordance with the Asia/Pacific Air Navigation Concept of Operations.

2.11 The reports of the Small Working Groups indicated that there was multiple overlapping surveillance coverage in a large part of both the airspaces under review, except for some small segments in the oceanic areas. The meeting noted that ADS/CPDLC was also available. Hence, even without further enhancement from ADSB work currently taking place, there was huge potential to enhance the capacity of the airspace further through implementing surveillance separation in the areas already under surveillance, and RNP10 or RNP4 in the areas with ADS/CPDLC.

2.12 Given the fact that the traffic had more than doubled in the last ten years and the increasing delays for arriving as well as departing traffic at airports in the area, meeting should be focusing its attention on the outcomes of these infrastructure improvements.

2.13 It was recalled that at the SEACGG/19 meeting, States were requested to give consideration to, and agree to commit to:

a) ATS surveillance separation within surveillance coverage;

b) seamless surveillance separation between the busy city pairs using radar hand-off procedures;

c) 50/50NM separation where there was Direct Controller Pilot Communications (DCPC) but no ATS surveillance; and

d) 30/30NM separation where Automatic Dependent Surveillance-Contract (ADS-C)/ CPDLC capability existed for RNP4 approved aircraft.

BOBCAT Operational Updates and Future Arrangement

2.14 The SAIOACG/SEACG meeting noted that the average traffic volume each night from January 2012 until December 2012 was 57, with a peak of 71 in March. A total of 56 airlines had participated in the BOBCAT system. Eight major airports contributed 97% of total BOBCAT traffic:

(1) Singapore 29%;

(2) Bangkok Suvarnabhumi 29%;

(3) New Delhi 17%;

(4) Kuala Lumpur 9%;

(5) Mumbai 5%;

(6) Noi Bai – Ha Noi 3%;

(7) Tan Son Nhat – Ho Chi Minh City 3%; and

(8) Hong Kong, China 2%.

2.15 Thailand advised that traffic sample data of average and peak westbound flights transiting the Kabul FIR during the month of December 2012 indicated peak traffic volumes during 2000-2359 UTC, which was the BOBCAT period of interest. The next peak period was during 0900 – 1159UTC.

2.16 The SAIOACG/SEACG meeting was also advised that the software development progress of the BOBCAT system in Stage 1 included flight plan and ATS message processing, along with Flexible Taxi Time, and was progressing as planned. The flight plan processing component of the update was expected to be trialled by April 2013, supporting expansion to enable City Pair Collaborative Decision-Making (CDM) data exchange.

2.17 India stated that it was unfortunate that both Pakistan and Afghanistan were not present at the meeting, noting that without these States the meeting could not discuss the issues concerning airspace west of India. To this end, the Secretariat has planned a two day Special Coordination Meeting between Afghanistan, Pakistan and India and other stakeholders, immediately following the ATMSG meeting, on 27& 28 May 2013.

ADS-B Implementation and Data Sharing

2.18 The Meeting noted the work of India in ADS-B implementation. The Indian ADS-B plan was aimed at providing redundancy where radar coverage existed and also to fill the surveillance gaps, where radar coverage was not possible due to high terrain and remote areas. India reiterated its willingness to share ADS-B data with Myanmar, Maldives, Sri Lanka, Malaysia and Indonesia.

2.19 In addition to the fourteen stations, India planned to install seven ADS-B ground stations by mid 2013. This plan was consistent with the Upper Airspace Harmonisation plan of the Kolkata and Delhi FIRs, and to supplement surveillance coverage in the Kolkata and Chennai FIRs.

2.20 Hong Kong, China also provided the meeting with an update of the status and progress of ADS-B implementation in Hong Kong, China.

Implementation of Data-Link Services in India

2.21 India had implemented Data-link Departure Clearance, D-ATIS and D-VOLMET services to enhance ATM operational efficiency in the provision of ATS so as to provide efficient and reliable departure clearance services at Mumbai, Delhi, Kolkata, Chennai, Bangalore and Hyderabad, D-ATIS messages from more than 55 airports and D-VOLMET messages from Mumbai and Kolkata airport, thereby reducing the workload for both pilots and air traffic controllers.

2.22 India advised that ATC would continue to provide a standard service for departure clearance on the notified Very High Frequency (VHF), and VOLMET service would be available via notified High Frequency (HF) for those operators not participating in the data-link service.

2.23 India was disappointed that despite extensive efforts in briefing and highlighting the many advantages and benefits, the uptake by airlines, both low cost carriers as well as others, was low. Most of the low cost airlines had expressed reservations regarding upgrades due to the cost. Airlines preferred VHF to data-link over continental airspace, which resulted in radiotelephony congestion. Moreover, India noted that many aircraft equipped with an Aircraft Communications Addressing and Reporting System (ACARS) were not logging in to get departure clearance via data-link. IATA shared India's disappointment, and would support India to improve the uptake of these data-link services.

Improvement of Southeast-MID-EUR/NAT Inter Regional ATS Route Network

2.24 The Islamic Republic of Iran proposed a new direct and more economical ATS route network for the flow of traffic crossing the Tehran FIR to and from Europe. Tehran ACC was ready to accept traffic from Kabul FIR via CHARN (ATS route G792), SOKAM (ATS route UL333) and KAMAR (ATS route G202), based on RNAV separation (50NM), but this would require changes within the Kabul FIR affecting ATS route UL333 and routing via KAMAR to SERKA.

2.25 The Islamic Republic of Iran also proposed a new bidirectional ATS route L430 intended to be more efficient for traffic departing from South Asia to European countries, and vice versa.

2.26 More discussion was required as IATA sought clarification on the safety issue regarding the request to create a new route from KAMAR-SERKA, and was concerned by the extra 24NM track miles this would require. IATA would assist in updating the ATS route catalogue with their alternative proposal and this could be discussed at a Special Coordination Meeting.

South China Sea Route

2.27 Brunei Darussalam presented a proposal for a more efficient route northbound between Brunei and Hong Kong, China, which would involve extending ATS route R223 northwards from the Brunei VOR to waypoint LAXOR on ATS route M772. This would require the amendment of Restricted Airspace WBR519 in the Kota Kinabalu FIR from being active 22:30 until 15:30 UTC daily to 'active by NOTAM', and lifting any departure aerodrome restrictions on ATS route M772. Hong Kong China, Malaysia and Singapore did not raise any objections to the proposal, while the Philippines advised that they had some difficulties regarding their HF communications. The meeting noted that consideration of this issue would be the subject of the formal BANP amendment process.

ATS Route Catalogue

2.28 The Secretariat presented draft Version 12 of the *Asia and Pacific Region ATS Route Catalogue* for review and update. It was intended that all ATS route change proposals, including those submitted by WP07, WP08, WP10, WP11, and IP02 would be incorporated into this iteration as required and presented to the ATM Sub-Group for consideration. The meeting agreed to the following Draft Conclusion for consideration by the ATM Sub-Group and APANPIRG:

Draft Conclusion SAIOACG3/SEACG20: ATS Route Catalogue Version 12

That Version 12 **(Appendix 1**) of the *Asia and Pacific Region ATS Route Catalogue* replaces Version 11 on the Asia/Pacific Regional Office's web site.

Forward Planning South China Sea Routes M771 and L642

2.29 IATA proposed that ANSPs implement ATS surveillance-based 20NM separations on South China Sea ATS routes M771 and L642 by the first quarter of 2015. They noted that the routes were already covered by surveillance, and bearing in mind the upgrades to the ATM systems at Hong Kong China were expected to be complete by the end of 2014. Hong Kong, China and Singapore indicated agreement for ATS surveillance-based separations within the 2015 timeline. This would be progressed through the SUR SWG.

Proposal to Implement 30NM Separation

2.30 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). India suggested that 30NM longitudinal separation be used on four routes: N571, M300, P570 and P574. Furthermore, India suggested a complete restructuring of the RNP routes in the airspace concerned to support 30/30NM separation. The meeting congratulated India on the advancement of this more efficient standard, but noted that it was unnecessary to restructure the routes themselves at this time. Moreover, the meeting noted that it was preferable to designate portions of airspace, rather than routes in a piecemeal fashion.

Implementation of ATS Route R202

2.31 Thailand and Viet Nam presented background information on the development details of a new conventional ATS route R202 between PAE and TATEL within Bangkok FIR, which was a more direct route from Hanoi to Yangon.

Airspace Harmonization and Route Developments in India

2.32 The meeting noted India's efforts on the restructuring of Indian airspace and ATS routes to improve efficiency, and reduce adverse environmental impacts through improved ATS automation systems and implementation of PBN-based RNP10 and RNAV5 city pair ATS routes. 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.

2.33 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).

2.34 India was willing to cooperate and support its neighbouring States to jointly develop PBN RNAV5 routes and arrival/departure procedures to form a seamless network of PBN routes and arrival/departure procedures in the sub-continent. The meeting noted that the use of RNAV5 routes should be considered with respect to RNAV2 and RNP2 navigation specifications, which would become increasingly preferred in the near future.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper;

b) discuss and endorse –

i) Draft Conclusion SAIOACG3/SEACG20-1: ATFM Capacity Assessments (paragraph 2.6);

ii) Draft Conclusion SAIOACG3/SEACG20-2: ATFM Information Sharing (paragraph 2.6);

iii) Draft Decision SAIOACG3/SEACG20-3: Asia/Pacific ATFM Steering Group (paragraph 2.6);

iv) Draft Conclusion SAIOACG3/SEACG20-4: South China Sea ATS Facilities (paragraph 2.7);

v) Draft Conclusion SAIOACG3/SEACG20-5: AIDC Implementation (Paragraph 2.7);

vi) Draft Conclusion SAIOACG3/SEACG20-6: ATS Route Catalogue Version 12 (paragraph 2.28); and

c) discuss any relevant matters as appropriate.

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