International Civil Aviation Organization

SIXTH MEETING OF THE SOUTHEAST ASIA SUB-REGIONAL ADS-B IMPLEMENTATION WORKING GROUP (SEA ADS-B WG/6)

Singapore, 24 - 25 February 2011

Agenda Item 6: Any other business

REVIEW REGIONAL PERFORMANCE OBJECTIVE ON ADS-B

(Presented by the Secretariat)

SUMMARY

This paper presented adopted Performance Framework Form (PFF) related to implementation on ADS-B for update and review.

1. INTRODUCTION

1.1 Nothing that the ICAO planning objective is to achieve a performance based global air traffic management system through the implementation of air navigation systems and procedures in a progressive, cost-effective and cooperative manner, the APANPIRG20 meeting held in Bangkok in September 2009 adopted Asia Pacific Regional Performance Objectives and the associated Performance Framework Forms (PFFs) under Conclusion 20/2.

2. DISCUSSION

2.1 The APAC Objective 10 in the adopted Performance Framework Forms (PFF) relates to Implementation of the ADS-B based Surveillance.

2.2 The Fourteenth Meeting of CNS/MET Sub-group of APANPIRG and ADS-B SITF/9 in 2010 reviewed and updated the PFFs. The updated Performance Framework Forms of CNS and MET fields including Objective No.10 were adopted by APANPIRG/21 under Decision 21/51.

3. ACTION BY THE MEETING

3.1 The meeting is invited to review and update the information provided in the attached Performance Framework Form.

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ASIA/PACIFIC REGION

PERFORMANCE FRAMEWORK FORM
(REGIONAL)

(Amended in September 2010)

REGIONAL PERFORMANCE OBJECTIVE: *APAC Objective 10*

IMPROVED SITUATIONAL AWARENESS AND SURFACE SURVEILLANCE-IMPLEMENTATION OF THE ADS-B TO GROUND SURVEILLANCE

Benefits

Environment	• Reductions in fuel consumption and subsequent lower gas emissions
Efficiency	• Increased flexibility and flow of traffic operations • Ultimately, when performing *radar-like* control, potential redesign of airspace taking into account the application of reduced separation minima, integrate use of aircraft navigation and surveillance capability
Safety	• Introduction of surveillance in a non-radar environment • Support to search and rescue operations

Strategy
Medium Term (2011-2015)
Short term (2010)

ATM OC COMPONENTS	TASKS	TIME FRAME STARTED	RESPONSIBILITY	STATUS	REMARKS
AOM *(Airspace Organization and Management)* **CM** *(Conflict Management)* **AUO** *(Airspace Users Operations)*	Implementation of ADS-B based surveillance service in the sub-regions.				
ATM SDM (ATM *Service Delivery Management)*	• Compare current technologies with respect to concept of operations, relative costing, technical and operational performance and maturity of alternative technology/solutions (primary, secondary radar including Mode-S, ADS-B, multilateration, ADS-C)	2009	ADS-B Study and Implementation Task Force (ADS-B SITF)	In progress	COMPLETED Regional Guidance material on comparison of technologies developed and issued

	• Develop an implementation plan for near-term ADS-B applications in the Asia Pacific Region including implementation target dates taking into account: o available equipment standards; readiness of airspace users and ATS providers; o identifying sub-regional areas (FIRs) where there is a positive cost/benefit outcome expected for near-term implementation of ADS-B OUT; o developing a standardized and systematic task-list approach to ADS-B OUT implementation; and o holding educational seminars and provide guidance material to educate States and airspace users on what is required to implement ADS-B OUT.	2009-10	ADS-B Study and Implementation Task Force	In progress	The FASID Table CNS 4A and 4B – surveillance and ATM automation being updated; ADS-B Seminar conducted annually in conjunction with Task Force meetings. Potential sub-regions for using ADS-B identified; Requirement for avionics specification for the near-term application are being developed based on AMC2024 and Australian CASA document.
	• Develop Guidance Material to support harmonized regulation of ADS-B systems required on board the aircraft.	2010	ADS-B Study and Implementation Task Force	In progress	Forty Fifth DGCA Conference, through its Action Item 45/3 invited ICAO APANPIRG ADS-B SITF to develop the. The Guidance material has been developed by Regulators Workshop and ADS-B SITF/9 held in Aug. 10.

	• Study and identify applicable multilateration applications in the Asia and Pacific Region considering: - Concept of use/operations; - Required site and network architecture; - Expected surveillance coverage; Cost of system; Recommended separation minimas; and - If multilateration can be successfully integrated into an ADS-B OUT system for air traffic control	2011	ADS-B Study and Implementation Task Force	In progress	Concept of using multlateration has been developed; Some states have plan in place to introduce multilateration in particular & integrate it with A-SMGCS and Terminal area and en-route surveillance application
	• Coordinate ADS-B implementation plan and concept of operations with other ICAO regions where ADS-B implementation is going on and with relevant external bodies such as EUROCONTROL, EUROCARE, RTCA and Industry.	2013	ADS-B Study and Implementation Task Force	On- going	Updated information on ADS-B in Europe and North American Regions is provided to Task Force Meeting annually; Some Industry representatives provide input at ADS-B Seminar and meetings

	• Develop **Terms of Co-operation** for SEA which will include: • Establishing model documents for possible use by States when - Agreeing to share ADS-B data and DCPC (such as VHF radio voice communication) capability between adjoining States for various ADS-B applications (including a sample letter of agreement); or -Establishing ADS-B avionics fitment mandates • Identifying optimum coverage for ADS-B ground stations and associated VHF radio voice communication in the sub-regional FIR boundary areas.	2011	South East Asia (SEA) Sub-Regional ADS-B Implementation Working Group	In progress	Terms of co-operation developed; sample agreement of data sharing developed; Some location for ADS-B ground stations identified. CBA for SEA project has been completed; Implementation plan for Australia-Indonesia and South China Sea Data and VHF communication capacity sharing projects are being developed by the SEA ADS-B WG.
	Develop an implementation plan for near- term ADS-B application in SEA which will deliver efficient airspace and increased safety on a regional basis that includes: • Schedule and priority dates to bring into effect ADS-B based services taking into account: - Timing of any equipage mandates; - Timing of any ATC automation upgrades to support ADS-B; - Timing of commissioning of any ADS-B data sharing and associated VHF radio voice communication facilities;	2013	South East Asia (SEA) Sub-Regional ADS-B Implementation Working Group	In progress	Major traffic flow from Australia to Singapore through Indonesia and Singapore to Hong Hong along L642 and M771 in South China Sea being progressed.

	• Consideration of major traffic flows.				
linkage to GPIs	GSI-12 Use of Technology to Enhance Safety; GPI/9 Situational Awareness; GPI/5: RNAV and RNP, GPI/7: dynamic and flexible ATS route management, GPI/17: data link applications and GPI/22: Communication Infrastructure;				
References	• *Report of AN CONF/11;* • *Global ATM Operational Concept (Doc 9854);* • *Global Air Navigation Plan (Doc 9750);* • *Technical Provisions for Mode S Services and Extended Squitter (Doc 9871)* • *APANPIRG/16, 17, 19, 20 report on ADS-B* • *ADS-B related regional guidance materials adopted by APANPIRG*				