



International Civil Aviation Organization

**The Twentieth Meeting of APANPIRG ATM/AIS/SAR Sub-Group
(ATM/AIS/SAR/SG/20)**

Singapore, 05 – 09 July 2009

Agenda Item 3: Regional Performance Framework and Metrics

**REVIEW OF REGIONAL PERFORMANCE OBJECTIVES, PERFORMANCE FRAMEWORK
FORMS AND METRICS**

(Presented by the Secretariat)

SUMMARY

This paper presents Asia/Pacific Regional Performance Objectives adopted by the 20th meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/20, September 2009), associated performance framework forms (PFFs) for ATM, AIM and SAR, and metrics, for the meeting's review.

Strategic Objectives:

- A: Safety – Enhance global civil aviation safety*
- C: Environmental Protection – Minimize the adverse effect of global civil aviation on the environment*
- D: Efficiency – Enhance the efficiency of aviation operations*
- E: Continuity – Maintain the continuity of aviation operations*

Global Plan Initiatives:

All GPIs

1. INTRODUCTION

1.1 Noting that the ICAO planning objective is to achieve a performance-based global air traffic management (ATM) system through the implementation of air navigation systems and procedures in a progressive, cost-effective and cooperative manner, APANPIRG/19 (September 2008, Bangkok) adopted Conclusion 19 /1 — Regional performance framework.

2. DISCUSSION

Regional Performance Objectives and Performance Framework Forms

2.1 APANPIRG/20 noted that one of the key aspects of the performance-based approach was the development of regional performance objectives with measurable outcomes and metrics. The following regional performance objectives in the ATM, AIS and SAR fields were developed in conjunction with supporting performance framework forms (PFFs) based on the current regional work programme and supported by reviews in State meeting forums.

- APAC Objective 1 – Airspace Safety Monitoring to achieve regional TLS;
- APAC Objective 2 – Optimise Traffic Flow;
- APAC Objective 3 – Optimise Route Structure in En-route Airspace;
- APAC Objective 4 – Optimise Route Structure in Terminal Airspace;
- APAC Objective 5 – Implementation of New ICAO Flight Plan Provisions;
- APAC Objective 6 – Enhanced Provision of AIS/AIM; and
- APAC Objective 7 – Enhanced Search and Rescue Capability.

2.2 Following the review of the regional performance objectives and associated PFFs, APANPIRG/20 agreed to the following Conclusion:

Conclusion 20/2 – Asia Pacific Regional Performance Objectives

That, the Asia Pacific Regional Performance Objectives and associated Performance Framework Forms (PFFs) as contained in Appendix A to the APANPIRG/20 Report on Agenda Item 3.0 [Attachment to this paper] be adopted.

2.3 APANPIRG/20 agreed that wherever possible, States should use the regional performance objectives adopted above as the basis for development of their national performance objectives. This would ensure a complementary linkage between regional and national activities, and accelerate implementation of the objectives. Encouraging States to use the template format from the regional objectives as the basis for their national objectives, the meeting adopted Conclusion 20/3 – Align Regional & National Performance Objectives.

Metrics supporting a Performance Based Approach

2.4 Assessment of performance achievements must be periodically checked through performance reviews, which in turn require adequate performance measurement and data collection capabilities. In order to ensure that appropriate data was available to enable the measurement of suitable regional metrics, APANPIRG/20 agreed to the following Conclusion:

Conclusion 20/4 – Asia/Pacific Performance Metrics

That the following metrics be adopted as a part of Asia/Pacific regional performance monitoring and measurement:

- APAC Metric 1*** *Percentage of RMA sub-regions achieving the regional Target Level of Safety (TLS) for RVSM operations, referenced as of April each year*
- APAC Metric 2*** *Percentage of instrument runway ends with an approach procedure with vertical guidance.*
- APAC Metric 3*** *Percentage of en-route and terminal PBN routes implemented on a sub-regional basis in accordance with the regional PBN plan*
- APAC Metric 4*** *Average delays for departures at State's primary international airports for the busiest hour on a weekly basis*

Conclusion 20/5 – Data Collection for Regional Metrics

That States, organizations and stakeholders collect and process data to support the regional metrics adopted by APANPIRG, leveraging to the extent possible all existing data and ongoing efforts, and provide a progress report to APANPIRG/21.

2.5 To support the expeditious transition to the performance objectives and metrics, APANPIRG/20 urged States to develop national performance objectives and complete national performance framework forms, and collect and provide the required data to the Regional Office to support the regional metrics.

Discontinue APANPIRG Key Priorities List

2.6 APANPIRG/20 agreed that as the ATM, CNS and MET related aspects of the APANPIRG *List of Key Priorities for the CNS/ATM Implementation in the Asia/Pacific Region* had been adequately incorporated into the PFFs, the Key Priorities List would be discontinued, with immediate effect.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) review, as may be amended by the meeting, the Asia Pacific Regional Performance Objectives and associated performance framework forms shown in the attachments to this paper,
- b) review the Asia/Pacific Performance Metrics; and
- c) urge States to collect and report the necessary data to APANPIRG/21 in September, as required in Conclusion 20/5.

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ASIA/PACIFIC REGION

PERFORMANCE FRAMEWORK FORM
(REGIONAL)

(amended 11 September 2009)

REGIONAL PERFORMANCE OBJECTIVE: <u>APAC Objective 1</u>				
AIRSPACE SAFETY MONITORING TO ACHIEVE REGIONAL TLS				
Benefits				
Safety	<ul style="list-style-type: none"> Improved safety management, Compliance with regional Target Level of Safety (TLS) 			
<i>Strategy</i>				
Short term/medium term (2009-2015)				
ATM OC COMPONENTS	TASKS	TIME FRAME	RESPONSIBILITY	STATUS
AOM <i>(Airspace Organization and Management)</i>	<ul style="list-style-type: none"> Facilitate cooperative arrangements between States to undertake airspace safety assessments Review airspace safety monitoring that supports reduction in vertical and horizontal aircraft separation standards 	2009-2015	RASMAG	In progress
	<ul style="list-style-type: none"> Assist States to achieve established regional Target Levels of Safety (TLS) Provide advice to States to establish aspects of ATS safety management systems that support compliance with the regional TLS 	2009-2015	RASMAG SEA RR/TF BOB RHS/TF PBN/TF	In progress
GPIs	GPI/2 Reduced vertical separation minima, GPI/5 Performance based navigation, GPI/7 Dynamic and Flexible ATS route management			
References	<ul style="list-style-type: none"> <i>Asia/Pacific Guidance Material for ADS/CPDLC/AIDC Ground Systems Procurement and Implementation;</i> <i>Guidance Material for End-to-End Safety and Performance Monitoring of Air Traffic Service (ATS) Data Link Systems in the Asia/Pacific Region</i> <i>Asia/Pacific En-route Monitoring Agency (EMA) Handbook</i> <i>Regional Monitoring Agency (RMA) Manual</i> <i>Global Operational Data Link Document (GOLD).</i> 			

ASIA/PACIFIC REGION

PERFORMANCE FRAMEWORK FORM
(REGIONAL)

(amended 11 September 2009)

REGIONAL PERFORMANCE OBJECTIVE: <u>APAC Objective 2</u>				
OPTIMISE TRAFFIC FLOWS				
Benefits				
Environment	<ul style="list-style-type: none"> • reductions in fuel consumption 			
Efficiency	<ul style="list-style-type: none"> • reduction in weather and traffic induced holding • improved and smoother traffic flows • improved predictability • optimized demand and capacity balancing through the efficient exchange of information 			
Strategy				
Short term (2009-2010)				
Medium term (2011–2015)				
ATM OC COMPONENTS	TASKS	TIME FRAME	RESPONSIBILITY	STATUS
DCB (Demand and capacity management)	Bay of Bengal <ul style="list-style-type: none"> • Enhance and facilitate the orderly flow of traffic across the Bay of Bengal and south Asia 	2009-2010	Air Traffic Flow Management Task Force (ATFM/TF)	Implemented and reviewed regularly by the Bay of Bengal ATFM/TF ATM/AIS/SAR/SG/19 drafted Conclusion to establish regional ATFM steering group
DCB (Demand and capacity management)	South China Sea <ul style="list-style-type: none"> • Enhance and facilitate the orderly flow of traffic in the South China Sea area 	2011-2015	SEACG	ATM/AIS/SAR/SG/19 drafted Conclusion to establish regional ATFM steering group
DCB (Demand and capacity management)	Northeast Asia/Southeast Asia <ul style="list-style-type: none"> • Enhance and facilitate the orderly flow between Northeast Asia and Southeast Asia, as well as within and between the North and the South Pacific regions 	2009/2015	IPACG, ISPACG, EATMCG SEA RR/TF (ATS routes)	ATM/AIS/SAR/SG/19 drafted Conclusion to establish regional ATFM steering group
GPIs	GPI/6 air traffic flow management, GPI/7 Dynamic and Flexible ATS route management, GPI/8 Collaborative airspace design and development, GPI/16 Decision support and alerting system			
References	<ul style="list-style-type: none"> • Draft Air Traffic Flow Management Communications Handbook for the Asia/Pacific Region APANPIRG Conclusions 20/10, 20/11, 20/12 and 20/13 			

ASIA/PACIFIC REGION

PERFORMANCE FRAMEWORK FORM
(REGIONAL)

(amended 11 September 2009)

REGIONAL PERFORMANCE OBJECTIVE: <u>APAC Objective 3</u>				
OPTIMISE ROUTE STRUCTURE IN ENROUTE AIRSPACE				
Benefits				
Environment	<ul style="list-style-type: none"> • reductions in fuel consumption 			
Efficiency	<ul style="list-style-type: none"> • increase airspace capacity • ability of aircraft to conduct flights more closely to preferred trajectories • facilitate utilization of advanced technologies thereby increasing efficiency • optimized demand and capacity balancing through the efficient exchange of information 			
Safety	<ul style="list-style-type: none"> • enhance safety by use of modern capabilities onboard aircraft 			
Strategy				
Short term (2010)				
Medium term (2011 - 2015)				
ATM OC COMPONENTS	TASKS	TIME FRAME	RESPONSIBILITY	STATUS
AOM <i>(Airspace Organization and Management)</i>	<ul style="list-style-type: none"> • Implement ATS route enhancements in the Asia Pacific Region, in collaboration with stakeholders, based on new technologies and procedures and in accordance with APANPIRG PBN Regional Plan, to improve en-route airspace efficiency. 	2009 -2015	<p><u>Bay of Bengal and Arabian Sea</u> BBACG, FIT-BOB, Bay of Bengal Reduced Horizontal Separation Implementation Task Force (BOB-RHS/TF)</p> <p>(Informal Arabian Sea/Indian Ocean ATS Coordination Group - ASIOACG)</p>	Target for 50 NM longitudinal separation in Bay of Bengal is 2010
	<ul style="list-style-type: none"> • Identify ATS and aeronautical communications problems in the Asia Pacific Region including Indian Ocean and the Arabian Sea, and prepare coordinated plans for actions for their resolution. 	2009-2015	<p><u>Southeast Asia AR9 Flow</u> SEACG, FIT-SEA Southeast Asia Route Review Task Force (SEA RR/TF)</p>	ATM/AIS/SAR/SG/19 (2009) established the SEA Route Review Task Force (SEA RR/TF)

		2009-2015	<p>Pacific Area No APANPIRG regional working group established</p> <p>(Informal</p> <ul style="list-style-type: none"> • South Pacific ATS Coordination Group – ISPACG, • Pacific ATS Coordinating Group – IPACG, and • East Asia ATM Coordination Group EATMG) 	<p>50 NM longitudinal implemented North Pacific in 2008</p> <p>30/30 NM (RNP4) implemented Honiara, Nauru, Brisbane, Nadia Auckland Oceanic FIRs in January 2005</p> <p>30/30 NM Operational trial Oakland FIR commenced 2007, Fukuoka FIR from August 2008, Anchorage FIR estimated 2011</p>
<p>AOM <i>(Airspace Organization and Management)</i></p>	<p>Cross-Polar routes</p> <ul style="list-style-type: none"> • Improve alignment and use of cross polar routes at their south (Asian) ends. 	2010-2015	<p>Special ATS coordination meeting – China, Mongolia, Russian Federation, IATA (CMRI)</p> <p>Informal Cross Polar Working Group (CPWG)</p>	In progress
GPIs	GPI/5 Performance based navigation, GPI/8 Collaborative airspace design and management			
References	<ul style="list-style-type: none"> • <i>Asia/Pacific Regional Performance Based Navigation Implementation Plan</i> • <i>ICAO Performance Based Navigation Manual (Doc 9613)</i> • <i>Terms of Reference of the ATM Coordination Groups and Task Forces implementing PBN based route structures and reduced horizontal separation minima.</i> 			

ASIA/PACIFIC REGION

PERFORMANCE FRAMEWORK FORM
(REGIONAL)

(amended 11 September 2009)

REGIONAL PERFORMANCE OBJECTIVE: <u>APAC Objective 4</u>				
OPTIMISE ROUTE STRUCTURE IN TERMINAL AIRSPACE				
Benefits				
Environment	<ul style="list-style-type: none"> • reductions in fuel consumption 			
Efficiency	<ul style="list-style-type: none"> • increase airspace capacity • ability of aircraft to conduct flights more closely to preferred trajectories • facilitate utilization of advanced technologies thereby increasing efficiency • optimized demand and capacity balancing through the efficient exchange of information 			
Safety	<ul style="list-style-type: none"> • enhance safety by use of modern capabilities onboard aircraft 			
Strategy Short term (2010) Medium term (2011 - 2015)				
ATM OC COMPONENTS	TASKS	TIME FRAME	RESPONSIBILITY	STATUS
AOM <i>(Airspace Organization and Management)</i> AUO <i>(Airspace Users Operations)</i>	Implement ICAO Performance Based Navigation (PBN) provisions for terminal area operations in collaboration with stakeholders based on the Regional PBN Implementation Plan agreed by APANPIRG, to improve terminal area efficiency by use of advanced navigation specifications for SIDs, STARs and instrument approach procedures.	In accordance with PBN Regional Plan	Performance Based Navigation Task Force (PBN/TF)	PBN/TF prepared Regional PBN Plan adopted by APANPIRG/19
GPIs	GPI/5 Performance based navigation, GPI/8 Collaborative airspace design and management. GPI/10 Terminal area design and management, GPI/11 GPI-11 RNP and RNAV Standard Instrument Departures (SIDs) and Standard Terminal Arrivals (STARs), GPI-12 Flight Management System (FMS) – based arrival procedures			
References	<ul style="list-style-type: none"> • <i>Asia/Pacific Regional Performance Based Navigation Implementation Plan</i> • <i>ICAO Performance Based Navigation Manual (Doc 9613)</i> 			

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PERFORMANCE FRAMEWORK FORM
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(amended 11 September 2009)

REGIONAL PERFORMANCE OBJECTIVE: <u>APAC Objective 5</u>				
IMPLEMENTATION OF NEW ICAO FLIGHT PLAN PROVISIONS				
Benefits				
Environment	<ul style="list-style-type: none"> • reductions in fuel consumption and gaseous emissions as a result of efficiency gains. 			
Safety	<ul style="list-style-type: none"> • enhance safety by use of modern capabilities onboard aircraft 			
Continuity	<ul style="list-style-type: none"> • maintains continuity of aviation operations across the region 			
Efficiency	<ul style="list-style-type: none"> • ability of air navigation service providers to make maximum use of aircraft capabilities, • ability of aircraft to conduct flights more closely to their preferred trajectories, • facilitate utilization of advanced technologies thereby increasing efficiency, and • optimized demand and capacity balancing through the efficient exchange of information. 			
Strategy Short/Medium Term (2009-2012)				
ATM OC COMPONENTS	TASKS	TIME FRAME	RESPONSIBILITY	STATUS
SDM (ATM Service Delivery Management)	<ul style="list-style-type: none"> • Implement the provisions of Amendment 1 to the Fifteenth Edition of the PANS ATM (Doc 4444), comprising amended PANS ATM Chapter 4, Chapter 11, Appendix 2 and Appendix 3 provisions relating to the ICAO Flight Plan and associated ATS Message formats, with applicability date 15 November 2012. 	2009-2012	ICAO Flight Plan and ATS Messages Task Force (FPL&AM/TF)	APANPIRG/20 adopted the <i>Interim Strategy for the Implementation of New ICAO Flight Plan Format and supporting ATS Messages 1</i>
GPIs	GPI/5: Performance based navigation, GPI/9: Situational awareness, GPI/11: RNP and RNAV SIDs & STARs, GPI/17: Implementation of data link applications and GPI/18: Aeronautical Information			
References	<ul style="list-style-type: none"> • <i>Amendment 1 to 15th Edition of PANS-ATM (Doc 4444, ICAO State Letter Ref: AN13/2.1-08/50, dated 25 June 2008)</i> • <i>ICAO Guidance Material for Implementation (ICAO State Letter Ref: AN 13/2/1-09/9, dated 6 February 2009)</i> • <i>Asia/Pacific Region – Interim strategy for the implementation of new ICAO flight plan format and supporting ATS messages</i> • <i>APANPIRG Decision 19/6, Conclusions 20/7 and 20/8</i> 			

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PERFORMANCE FRAMEWORK FORM
(REGIONAL)

(amended 11 September 2009)

REGIONAL PERFORMANCE OBJECTIVE: <u>APAC Objective 6</u>				
ENHANCED PROVISION OF AIS/AIM				
Benefits				
Efficiency	<ul style="list-style-type: none"> enhanced collaboration between flight crew and the ATM system, improved collaborative decision making, improved predictability, and reduction of workload for aircrew and ATC. 			
<i>Strategy</i> Short to Medium term (2009 – 2012)				
ATM OC COMPONENTS	TASKS	TIME FRAME	RESPONSIBILITY	STATUS
SDM <i>(ATM Service Delivery Management)</i>	<ul style="list-style-type: none"> Implement the enhanced provisions for AIM becoming available through the work of the Aeronautical Information Services-Aeronautical Information Management Study Group (AIS-AIMSG); Monitor implementation progress 	2009-2016	AAITF	In progress
GPIs	GPI/18: Aeronautical Information			
References	<ul style="list-style-type: none"> <i>Annex 4 – Aeronautical Charts</i> <i>Annex 15 – Aeronautical Information Services</i> <i>AIS Manual (Doc 8126)</i> <i>Aeronautical Chart Manual (Doc 8697)</i> <i>EUROCONTROL Operating Procedures for AIS Dynamic Data (OPADD)</i> <i>APANPIRG Conclusion 20/16</i> 			

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PERFORMANCE FRAMEWORK FORM
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(amended 11 September 2009)

REGIONAL PERFORMANCE OBJECTIVE: <u>APAC Objective 7</u>				
ENHANCED SEARCH AND RESCUE CAPABILITY				
Benefits				
Safety & Efficiency	<ul style="list-style-type: none"> • cost-efficient use of RCC accommodation and equipment on a shared basis, • development of a pool of experienced SAR mission coordinators skilled across both aviation and maritime domains thus reducing coordination and fragmentation, • proficient services provided near and within States with limited resources, • harmonization of aviation / maritime procedures, and • inter-operability of life-saving equipment 			
<i>Strategy</i> Short to Medium term (2009 – 2015)				
ATM OC COMPONENTS	TASKS	TIME FRAME	RESPONSIBILITY	STATUS
IM <i>(Information Management)</i>	Implementation of Annex 12 Standards and Recommended Practices and related APANPIRG Conclusions to ensure appropriate SAR capabilities for the Asia/Pacific regions.			
	<ul style="list-style-type: none"> • Periodic review of SAR facilities, services and procedures in the region; 	2009-2015	States, ATM/AIS/SAR Sub Group	In progress
	<ul style="list-style-type: none"> • Encourage States to delegate or negotiate SAR services in accordance with Annex 12 provisions; 	2009-2015	States, ATM/AIS/SAR Sub Group	In progress
	<ul style="list-style-type: none"> • APANPIRG Asia/Pacific “SAR Capability Matrix” and “Register of SAR Agreements” be kept up to date and distributed to States for information and action; 	2009 - 2015	States, ATM/AIS/SAR Sub Group	In progress
	<ul style="list-style-type: none"> • States designate an agency for registering ELT Beacons, coded with the country code of the State and unique code of that beacon in a database as required by Annex 10. 	2010	States	In progress
GPIs	None applicable			
References	<ul style="list-style-type: none"> • <i>Annex 12 – Search and Rescue</i> • <i>International Aeronautical and Maritime Search and Rescue Manual (IAMSAR Manual, Doc 9731)</i> • <i>APANPIRG Conclusions 18/19, 18/20, 20/17 and 20/18</i> 			