INTERNATIONAL CIVIL AVIATION ORGANIZATION

TWENTY-SECOND MEETING OF THE ASIA/PACIFIC AIR NAVIGATION PLANNING AND IMPLEMENTATION REGIONAL GROUP (APANPIRG/22)

Bangkok, Thailand, 5-9 September 2011

Agenda Item 3: Performance Framework for Regional Air Navigation Planning and Implementation

3.0 Regional and National Performance Framework

REGIONAL AND NATIONAL PERFORMANCE FRAMEWORK

(Presented by the Secretariat)

SUMMARY

This paper presents Asia/Pacific Regional Performance Objectives and Metrics adopted by the 20th Meeting of the Asia/ Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/20, September 2009) and associated Performance Framework Forms(PFFs) for ATM/AIM/SAR, CNS/MET and AOP for review.

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: All GPIs

Action by the meeting is at Para 3 to this paper.

1. INTRODUCTION

1.1 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. One of the key aspects of the performance based approach is the development of regional performance objectives with measurable outcomes and metrics. APANPIRG/19 (September 2008, Bangkok) adopted Conclusion 19/1 - Regional Performance Framework.

2. DISCUSSION

Regional Performance Objectives and Performance Framework forms

2.1 The following Regional Performance Objectives in the ATM, AIS, SAR, CNS, MET, and AOP 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
APAC Objective 7	–	Enhanced Search and Rescue Capability
APAC Objective 8	–	Implementation of ATN for Ground-Ground Communication Network
APAC Objective 9	–	Enhanced Communication and Surveillance in Oceanic Area
APAC Objective 10	–	Implementation of the ADS-B Air to Ground Surveillance
APAC Objective 11	–	Implementation of ATS Inter-Facility Data Communication (AIDC) in Asia/Pacific Region
APAC Objective 12	–	Implement International Airways Volcano Watch (IAVW), International Tropical Cyclone Watch (ITCW) and SIGMETs
APAC Objective 13	–	Implement WAFS and associated developments
APAC Objective 14	–	Develop regional MET requirements to support ATM
APAC Objective 15	–	Improve OPMET exchange efficiency
APAC Objective 16	–	Enhance safety and efficiency of aerodrome operations
APAC Objective 17	–	Improve contingency measures for aerodrome operations.
APAC Objective 18	–	Implementation o of ICAO PBN provisions for terminal area operations

2.2 APANPIRG/20 adopted the Asia Pacific Regional Performance Objectives and the associated Performance Framework Forms (PFFs) under Conclusion 20/2.

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 APANPIRG/20 Report on Agenda Item 3.0 be adopted

2.3 APANPIRG/20 agreed that wherever possible States should use the regional performance objectives adopted in Conclusion 20/2 as the basis for development of their national performance 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.*

2.4 APANPIRG/21 adopted the revised PFFs proposed by the 20th Meeting of the ATM/AIS/SAR SG and 14th Meeting of the CNS/MET SG.

Metrics Supporting a Performance Based Approach

2.5 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 through Conclusion 20/4 adopted 4 metrics as a part of Asia/Pacific regional performance monitoring and measurement:

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.

2.6 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.

2.7 APANPIRG/21 formulated Conclusion 21/3 inviting ICAO to develop a common set of performance metrics for all the ICAO regions so as facilitate comparative analysis and establish the globally harmonised guidance on methodology of how to collect the data in order to achieve commonality. The APANPIRG/21 Meeting Report was reviewed by the Air Navigation Commission

on 10 March 2011 (ANC 186-7). The Air Navigation Commission (ANC) supported the conclusion 21/3 and requested the Secretariat to develop a common set of metrics applicable to all regions along with guidance for the collection of data.

2.8 The Regional Office in letter ref AN 3/3- AP003/11 (AGA) dated 13 January 2011 urged States to update the status for assessment of progress made in meeting the plan objectives for APAC Objectives 16 &17. In all, 9 member States [Australia, Fiji, Japan, Malaysia, Maldives, Mongolia, New Zealand, Pakistan, Philippines, Republic of Korea, Singapore, and Thailand], and one Administration (Hong Kong China) provided the updated status.

2.9 The ATM/AIS/SAR SG/21 (June/July 2011) and CNS/MET SG15 (July 2011) reviewed and updated ATM, AIS, SAR CNS and MET related PFFs respectively.

2.10 The **Attachment 1 to 4** to this paper contains the Performance Framework Forms associated with these Regional Performance Objectives to be reviewed by the meeting and updated if necessary.

3 ACTION BY THE MEETING

3.1 The meeting is invited to:

a) review the Asia Pacific Regional Performance Objectives and associated Performance Framework Forms shown in the Attachment to this paper;

b) review the Asia/Pacific Performance Metrics: and

c) urge States to collect and report the necessary data as required in conclusion 20/5.

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ASIA/PACIFIC REGION

PERFORMANCE FRAMEWORK FORM
(REGIONAL)

(Amended 11 September 2009)

REGIONAL PERFORMANCE OBJECTIVE: *APAC Objective 1* **AIRSPACE SAFETY MONITORING TO ACHIEVE REGIONAL TLS**				
Benefits				
Safety	• Improved safety management, • Compliance with regional Target Level of Safety (TLS)			
Strategy **Short term/medium term (2009-2015)**				
ATM OC COMPONENTS	**TASKS**	**TIME FRAME**	**RESPONSIBILITY**	**STATUS**
AOM *(Airspace Organization and Management)*	• 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	FIT ASIA has proposed to develop a RVSM non compliant aircraft strategy
	• 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	• *Asia/Pacific Guidance Material for ADS/CPDLC/AIDC Ground Systems Procurement and Implementation;* • *Guidance Material for End-to-End Safety and Performance Monitoring of Air Traffic Service (ATS) Data Link Systems in the Asia/Pacific Region* • *Asia/Pacific En-route Monitoring Agency (EMA) Handbook* • *Regional Monitoring Agency (RMA) Manual* • *Global Operational Data Link Document (GOLD).*			

ASIA/PACIFIC REGION

PERFORMANCE FRAMEWORK FORM
(REGIONAL)

(Amended 11 September 2009)

REGIONAL PERFORMANCE OBJECTIVE: *APAC Objective 2* **OPTIMISE TRAFFIC FLOWS**				
Benefits				
Environment	• reductions in fuel consumption			
Efficiency	• 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** • 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 First ATFM SG meeting held on 10 Dec 2010 Seamless ATM Symposium held 15-17 Aug 2011
DCB *(Demand and capacity management)*	**South China Sea** • Enhance and facilitate the orderly flow of traffic in the South China Sea area	2011-2015	SEACG	First ATFM SG meeting held on 10 Dec 2010 Seamless ATM Symposium held 15-17 Aug 2011
DCB *(Demand and capacity management)*	**Northeast Asia/Southeast Asia** • 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)	First ATFM SG meeting held on 10 Dec 2010 Seamless ATM Symposium held 15-17 Aug 2011
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	• *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 10 September 2010)

REGIONAL PERFORMANCE OBJECTIVE: *APAC Objective 3* **OPTIMISE ROUTE STRUCTURE IN ENROUTE AIRSPACE**	
Benefits	
Environment	• reductions in fuel consumption
Efficiency	• 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	• 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 *(Airspace Organization and Management)*	• 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. • 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	**Bay of Bengal and Arabian Sea** BBACG, FIT-BOB, Bay of Bengal Reduced Horizontal Separation Implementation Task Force (BOB-RHS/TF) (Informal Arabian Sea/Indian Ocean ATS Coordination Group - ASIOACG)	Phase I implementation of 50NM separation in the Bay of Bengal selected routes on 11 March 2011
		2009-2015	**Southeast Asia AR9 Flow** SEACG, FIT-SEA Southeast Asia Route Review Task Force (SEA RR/TF)	ATM/AIS/SAR/SG/19 (2009) established the SEA Route Review Task Force (SEA RR/TF) AI/P901 longitudinal separation to be reduced to 30NM. Implementation at an advanced stage

		2009-2015	**Pacific Area** No APANPIRG regional working group established (Informal • South Pacific ATS Coordination Group – ISPACG, • Pacific ATS Coordinating Group – IPACG, and • East Asia ATM Coordination Group EATMG)	50 NM longitudinal implemented North Pacific in 2008 30/30 NM (RNP4) implemented Honiara, Nauru, Brisbane, Nadia Auckland Oceanic FIRs in January 2005 30/30 NM Operational trial Oakland FIR commenced 2007, Fukuoka FIR from August 2008, Anchorage FIR estimated 2011
AOM *(Airspace Organization and Management*	**Cross-Polar routes** • Improve alignment and use of cross polar routes at their south (Asian) ends.	2010-2015	Special ATS coordination meeting – China, Mongolia, Russian Federation, IATA (CMRI) Informal Cross Polar Working Group (CPWG)	In progress
GPIs	GPI/5 Performance based navigation, GPI/8 Collaborative airspace design and management			
References	• *Asia/Pacific Regional Performance Based Navigation Implementation Plan* • *ICAO Performance Based Navigation Manual (Doc 9613)* • *Terms of Reference of the ATM Coordination Groups and Task Forces implementing PBN based route structures and reduced horizontal separation minima.*			

ASIA/PACIFIC REGION

PERFORMANCE FRAMEWORK FORM
(REGIONAL)

(Amended 11 September 2009)

REGIONAL PERFORMANCE OBJECTIVE: *APAC Objective 4*

OPTIMISE ROUTE STRUCTURE IN TERMINAL AIRSPACE

Benefits	
Environment	• reductions in fuel consumption
Efficiency	• 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	• 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 *(Airspace Organization and Management)* **AUO** *(Airspace Users Operations)*	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	• *Asia/Pacific Regional Performance Based Navigation Implementation Plan* • *ICAO Performance Based Navigation Manual (Doc 9613)*			

ASIA/PACIFIC REGION

PERFORMANCE FRAMEWORK FORM
(REGIONAL)

(Amended 11 September 2009)

REGIONAL PERFORMANCE OBJECTIVE*: APAC Objective 5* **IMPLEMENTATION OF NEW ICAO FLIGHT PLAN PROVISIONS**	
Benefits	
Environment	• reductions in fuel consumption and gaseous emissions as a result of efficiency gains.
Safety	• enhance safety by use of modern capabilities onboard aircraft
Continuity	• maintains continuity of aviation operations across the region
Efficiency	• 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)*	• 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 *Interim Strategy for the Implementation of New ICAO Flight Plan Format and supporting ATS Messages* 1
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	• *Amendment 1 to 15th Edition of PANS-ATM (Doc 4444, ICAO State Letter Ref: AN13/2.1-08/50, dated 25 June 2008)* • *ICAO Guidance Material for Implementation (ICAO State Letter Ref: AN 13/2/1-09/9, dated 6 February 2009)* • *Asia/Pacific Region – Interim strategy for the implementation of new ICAO flight plan format and supporting ATS messages* • *APANPIRG Decision 19/6, Conclusions 20/7 and 20/8*			

ASIA/PACIFIC REGION

PERFORMANCE FRAMEWORK FORM
(REGIONAL)

(Amended 10 September 2011)

REGIONAL PERFORMANCE OBJECTIVE: *APAC Objective 6* **ENHANCED PROVISION OF AIS/AIM**				
Benefits				
Efficiency	• enhanced collaboration between flight crew and the ATM system, • improved collaborative decision making, • improved predictability, and • reduction of workload for aircrew and ATC.			
Strategy **Short to Medium term (2009 – 2012)**				
ATM OC COMPONENTS	**TASKS**	**TIME FRAME**	**RESPONSIBILITY**	**STATUS**
SDM *(ATM Service Delivery Management)*	• 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	AAITF has developed AIS/AIM table to track States Implementation of Tasks
	Consolidation: (Refer AIM Roadmap) 1. Monitoring of Annex differences 2. AIRAC adherence monitoring 3. Quality 4. WGS-84 implementation	2009 - 2013	AAITF	As above
	Going Digital: (Refer AIM Roadmap) 1. Data integrity monitoring 2. Data quality monitoring 3. Aerodrome mapping 4. Electronic AIP 5. Obstacles 6. Terrain 7. Integrated aeronautical information database 8. Unique identifiers 9. Aeronautical information conceptual model	2009 - 2014	AAITF	As above

	Information Management: (Refer AIM Roadmap) 1. Aeronautical data exchange 2. Digital NOTAM 3. Communication networks 4. Aeronautical information briefing 5. Training Interoperability with meteorological products 7. Electronic aeronautical charts 8. Agreements with data originators	2013 - 2016	AAITF	As above
GPIs	GPI/18: Aeronautical Information			
References	• *Annex 4 – Aeronautical Charts* • *Annex 15 – Aeronautical Information Services* • *AIS Manual (Doc 8126)* • *Aeronautical Chart Manual (Doc 8697)* • *EUROCONTROL Operating Procedures for AIS Dynamic Data (OPADD)* • *APANPIRG Conclusion 20/16*			

ASIA/PACIFIC REGION

PERFORMANCE FRAMEWORK FORM
(REGIONAL)

(Amended 11 September 2009)

REGIONAL PERFORMANCE OBJECTIVE: *APAC Objective 7* **ENHANCED SEARCH AND RESCUE CAPABILITY**				
Benefits				
Safety & Efficiency	• 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			
Strategy **Short to Medium term (2009 – 2015)**				
ATM OC COMPONENTS	**TASKS**	**TIME FRAME**	**RESPONSIBILITY**	**STATUS**
IM *(Information Management)*	Implementation of Annex 12 Standards and Recommended Practices and related APANPIRG Conclusions to ensure appropriate SAR capabilities for the Asia/Pacific regions.			
	• Periodic review of SAR facilities, services and procedures in the region;	2009-2015	States, ATM/AIS/SAR Sub Group	In progress
	• Encourage States to delegate or negotiate SAR services in accordance with Annex 12 provisions;	2009-2015	States, ATM/AIS/SAR Sub Group	In progress
	• 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
	• 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	• *Annex 12 – Search and Rescue* • *International Aeronautical and Maritime Search and Rescue Manual (IAMSAR Manual, Doc 9731)* • *APANPIRG Conclusions 18/19, 18/20, 20/17 and 20/18*			

ASIA/PACIFIC REGION

PERFORMANCE FRAMEWORK FORM
(REGIONAL)

(*Amended in May 2011)*

REGIONAL PERFORMANCE OBJECTIVE: - ***APAC Objective 8***

IMPLEMENTATION OF AERONUTICAL TELECOMMUNICATION NETWORK (ATN) FOR GROUND – GROUND COMMUNICATION NETWORK

Benefits	
Safety	• Will provide reliable means of communication for Air Navigation Services, with the provision of automatic switching capability, in the event of failure of current media
Efficiency	• Routers will have the capability of choosing between different media based on defined criteria. • Multiplicity of protocols used for different communication requirements will be avoided; • Provision for lower case characters and graphic message included;

Strategy
Implementation strategy, short term (2009-2012)

ATM OC COMPONENTS	**TASKS**	**TIME FRAME**	**RESPONSIBILITY**	**STATUS**
SDM *(ATM Service Delivery Management)*	Ensure implementation of Ground to Ground Aeronautical Telecommunication Network (ATN) in the Asia and Pacific Regions			
	• Review the ATN Implementation Strategy, revise it when necessary taking into account the current developments.	2010	ATNICG.	The strategy was updated by ATNICG/5 Meeting held from 31 May to 4 June 2010 and endorsed by the CNS/MET SG/14 in July 2010
	o Review the Status of implementation of ATN at the Backbone Boundary Intermediate System hubs	2011	ATNICG	ATNICG reviews the progress of ATN Implementation in its Meetings
	• States hosting Backbone Boundary Intermediate Stations to organize Testing of their system on bilateral basis	2011	States hosting Backbone Boundary Intermediate Systems	States reported the outcome of pre-operational trials/tests carried out by them at the ATNICG meetings
	• Implementation of AMHS Off Line Directory Service. Availability of off-line support by Eurocontrol AMC considered essential for the efficient management of AMHS Addresses. ICAO HQ has directed the States to register the operating personnel with AMC.	2010	ICAO Asia/Pacific Office, Aerothai.	Progress made in the registration of operators with AMC and entering of data into AMC was reviewed by ATNICG/6.

	• States hosting Backbone Boundary Intermediate System hubs to implement dual stack ATN (ATN over OSI and ATN over IPS). APANPIRG, through Conclusion 19/20 urges States to complete the implementation of dual stack ATN by 2011	2011	Asia and Pacific Region States hosting Backbone Boundary Intermediate Systems	States hosting BBIS hubs have been reminded of APANPIRG Conclusion 19/20 and urged to complete the installation by 2011
	• Completion of Networking with the BIS States	2013	Asia and Pacific Regions States	Some States started implementation and conducted operational trials
	• Review if implementation objectives have been met.	2009 - 2012	ATNICG	ATNICG to periodically review the status and direction in which the implementation is progressing and to ensure that the implementation efforts are leading towards the defined objectives
GPIs	GPI/17: Data link applications, GPI/22: Communication infrastructure			
References	• *Annex 10, Aeronautical Telecommunications, Volume III (Part I – Digital Data Communication Systems)* • *Manual on Detailed Technical Specifications for the Aeronautical Telecommunications Network (ATN) using ISO/OSI (Doc 9880)* • *ICAO Aeronautical Telecommunication Network (ATN) Manual for ATN using IPS Standards and Protocols (Doc 9896)* • *Manual on Required Communication Performance (Doc 9869)* • *Regional Implementation guidance materials adopted by APANPIRG*			

ASIA/PACIFIC REGION

PERFORMANCE FRAMEWORK FORM
(REGIONAL)
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PERFORMANCE FRAMEWORK FORM
(REGIONAL)

(Amended in July 2011)

REGIONAL PERFORMANCE OBJECTIVE: *APAC Objective 9* **ENHANCED COMMUNICATIONS AND SURVEILLANCE CAPABILITY IN OCEANIC AREAS**				
Benefits				
Environment	• reductions in fuel consumption and gaseous emissions as a result of efficiency gains;			
Safety	• improved monitoring of airspace will result in safety enhancement			
Efficiency	• facilitate utilization of advanced technologies (e.g, area navigation, UPRs, DARPs) and ATC decision support tools (e.g., vertical and lateral adherence monitors, short and medium term conflict detection), thereby enhancing safety and increasing efficiency. • enable aircraft to conduct flight more closely to preferred trajectories; • increase airspace capacity by enabling implementation of RHSM using data link;			
Strategy **Short term (2009-2011)**				
ATM OC COMPONENTS	**TASKS**	**TIME FRAME**	**RESPONSIBILITY**	**STATUS**
AOM *(Airspace Organization and Management)* **CM** *(Conflict Management)* **AUO** *(Airspace Users Operations)*	Improve provision of satellite based communications and surveillance capabilities to enable FANS 1/A data link (ADS-C, CPDLC) to RNP 4 and RCP 240 specifications.			
	• codify/quantify existing anecdotal information and combine with available end-to-end system performance data; to summarise current satellite data link performance;	2009	Regional ANSPS, operators, FITS, CRAs. Communications Service providers (CSP)	Reported to Satellite Operational Continuity Meeting (SOCM/1), Bangkok, Thailand, August 2009
	• identify non conformities in current satellite data link performance against; o specifications in Global Operations Data Link Document (GOLD); o specifications in RCP Manual (Doc 9869); and o specifications in Oceanic SPR)	2009	Regional ANSPS, operators, FITS, CRAs.	reviewed status and identify issues at Satellite Operational Continuity Meeting (SOCM/1), August 2009

	• provide summary information on non conformities in current satellite data link performance to all affected parties in the end-to-end communications chain.	2009	Satellite Operational Continuity Meeting (SOCM) August 2009 to summarize and circulate information to affected parties, including CSP, Ground Earth Station (GES) providers, equipment suppliers and satellite service providers.	Issues identified have been summarized in the report of the first meeting of Satellite Operational Continuity Meeting (SOCM/1).
	• develop a regional strategy and work programme to identify/design suitable long term mitigations and solutions to non conformities that will enable continuous operational compliance with specifications for RNP4 and RCP 240.	2011	Regional ANSPs, operators, FITS, CRAs, CSP, Ground Earth Station (GES) providers, equipment suppliers and satellite service providers.	The Satellite Communication Datalink Service has been improved since late 2009 to some extent. But still does not meet operational requirements satisfactorily.
	• Develop a sample service level agreement for possible use by ANSPs	2011	Regional ANSPs, operators, FITS, CRAs, CSP	SOCM/2 scheduled for November 2011 to progress this work
	• Implement mitigations and solutions in accordance with timelines in regional strategy	2010	Regional ANSPS, operators, FITS, CRAs, CSP, Ground Earth Station (GES) providers, equipment suppliers and satellite service providers.	State Letter dated 12 July 2010 issued conveying mitigation solution suggested by ICAO
	• monitor implementation progress	2011	Regional FITS, CRAs provide feedback to all affected parties	Assess implementation of mitigation solution in the next SOCM meeting
GPIs	GPI/5: RNAV and RNP, GPI/7: dynamic and flexible ATS route management, GPI/17: data link applications and GPI/22: Communication Infrastructure;			
References	• *Manual on Required Communication Performance (Doc 9869)* • *RTCA DO-306/EUROCAE ED-122, Safety and Performance Standard for Air Traffic Data Link Services in Oceanic and Remote Airspace (the "Oceanic SPR')* • *FANS-1/A Operations Manual (FOM)* • *Global Operational Data Link Document (GOLD)* • *Guidance Material for End-to-End Safety and Performance Monitoring of Air Traffic Service (ATS) Data Link Systems in the Asia/Pacific Region* • *CEANS Report(2008) on ANS Infrastructure* • *APANPIRG Conclusion 19/24, 20/31, 20/32/20/33, 20/34 and 20/73*			

ASIA/PACIFIC REGION

PERFORMANCE FRAMEWORK FORM
(REGIONAL)

(Amended in July 2011)

REGIONAL PERFORMANCE OBJECTIVE: *APAC Objective 11*

IMPLEMENTATION OF ATS INTER-FACILITY DATA COMMUNICATION (AIDC) IN ASIA/PACIFIC REGION

Benefits	
Safety	• Will provide efficient and more reliable means of communication between ACCs in adjacent FIRs for the exchange of traffic coordination related operational messages. • Significantly reduce the coordination errors observed in controller to controller verbal communication across FIR boundaries thus enhance flight safety
Efficiency	• Increased efficiency for air traffic handover between ATS units • Will improve ATS direct communication between ATS units along the major traffic • Will improve the speed and capacity ; • Will facilitate inter-automation systems communication.

Strategy
Short term (2009-2015)

ATM OC COMPONENTS	**TASKS**	**TIME FRAME**	**RESPONSIBILITY**	**STATUS**
AOM *(Airspace Organisation and Management)* **CM** (Conflict management) **SDM** (ATM service delivery management)	Facilitate implementation of ATS Inter-facility Data Communication in the Asia and Pacific Regions			
	• Review the Status of Implementation	2009	ATNICG. ADS-B SITF	The status to reviewed and updated by ATNICG/4 and ADS-B SITF Meetings held in May 2009
	o Review the Options available for the implementation of AIDC in the region. Discuss options adopted by different states.	2010	SIP AIDC Seminar	Options available were reviewed at AIDC Seminar in October 2010
	• Review implementation issues related to ATS automation systems and recommend methods of mitigating those issues	2009	ADS-B SITF CNS/MET SG	The automation issues discussed in the ADS-B SIFT/8

	• AIDC Seminar: A Seminar to be conducted to discuss various implementation issues and promote implementation	2010	ICAO Asia/Pacific Office	SIP Seminar was conducted from 12-13 Oct. 2010 in Bangkok
	• Develop implementation strategy to decide whether to continue pursuing AFTN AIDC or to choose ATN AIDC over OSI or IPS	2010	APANPIRG	ATN AIDC implementation deferred.
	• Trials to be conducted. Monitoring mechanism to be developed	2011	APANPIRG	State Letter be issued urging the States to expedite implementation and status to be monitored.
	• Review to ensure implementation objectives are met.	2009 - 2015	APANPIRG	APANPIRG to periodically review the status and direction in which the implementation is progressing and to ensure that the implementation efforts are leading towards the defined objectives
GPIs	GPI/17: Data link applications, GPI/22: Communication infrastructure			
References	• *Air Traffic Management* (Doc 4444) • *Manual of Air Traffic Services Data Link Applications* (Doc 9694) • *Manual of Technical Provisions for the Aeronautical Telecommunication Network (Doc 9705)* • *Asia/Pacific Regional Interface Control Document (ICD) for ATS Inter-facility Data Communication (AIDC)*			

ASIA/PACIFIC REGION
PERFORMANCE FRAMEWORK FORM
(REGIONAL)

(*Amended in April 2011)*

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)	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.	2009-12	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; Requirements for avionics specification for the near-term application are 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	Completed	DGCA Conf.45 through its Action Item 45/3 invited ICAO APANPIRG ADS-B SITF to develop the Guidance material. The GM was developed by Regulators Workshop and ADS-B SITF/9 held in Aug. 2010

	• 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; & - If multilateration can be successfully integrated into an ADS-B OUT system for air traffic control	2012	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	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.	2012	South East Asia (SEA) Sub-Regional ADS-B Implementation Working Group	In progress	Terms of co-operation developed; sample agreement of data sharing developed further updated 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 developed .
	Develop an implementation plan for near- term ADS-B application in SEA which will deliver efficient airspace and increased safety on a sub-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; • Consideration of major traffic flows.	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. Milestones and timelines have been established. ADS-B SITF/10 Proposed to rename SEA ADS-B WG into SEA/BOB ADS-B WG

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, 20,21 reports on ADS-B* • *ADS-B related regional guidance materials adopted by APANPIRG*

ASIA/PACIFIC REGION

PERFORMANCE FRAMEWORK FORM

(REGIONAL)

(Amended July 2011)

REGIONAL PERFORMANCE OBJECTIVE: *APAC Objective 18* **IMPLEMENTATION OF ICAO PERFORMANCE BASED NAVIGATION PROVISIONS FOR TERMINAL AREA OPERATIONS**	
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 safety and efficiency by use of advanced navigation specifications for SIDs, STARs and instrument approach procedures.	
Benefits	
Environment	• reduction in fuel consumption and resulting emissions
Safety	• enhance safety by use of modern capabilities onboard aircraft; • implementation of more precise approach, departure, and arrival paths that will reduce dispersion and will foster smoother traffic flows; • increased airspace safety through the implementation of continuous and stabilized descent procedure using vertical guidance; • improved airport and airspace arrival paths in all weather conditions; and decrease ATC and pilot workload by utilizing RNAV/RNP procedures and airborne capability and reduce the need for ATC-pilot communication and radar vectoring
Efficiency	• allows for more efficient use of airspace and increase airspace capacity through reduction of lateral and longitudinal separation between aircraft; • increase of predictability of the flight path; • reduced delays in high density airspace and airports through the implementation of additional parallel routes and additional arrival and departure points in terminal areas; • reduces the possibility of missed approaches due to lower approach minima and straight-in procedures; • 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; • reduced aircraft flight time due to the implementation of optimal flight paths; • facilitate utilization of advanced technologies thereby increasing efficiency; • optimized demand and capacity balancing through the efficient exchange of information; • reduces the need to maintain sensor-specific route and procedures, and their associated costs; • avoids the need for developing sensor-specific operations with each new evolution of navigation system, which would be cost prohibitive; • GNSS and area navigation based PBN reduces the need for expensive ground-based navigation aids; • clarifies how RNAV systems are used; and • facilitate the operational approval process for operators by providing a limited set of navigation specifications intended for global use.

SAFETY COMPONENTS	TASKS	TIME FRAME	RESPONSIBILITY	STATUS
APANPIRG Conclusion 18/52	**Establishment of a Regional Performance Based Navigation Task Force (PBN/TF)** An Asia/Pacific PBN Task Force, with terms of reference as outlined in Appendix A to the APANPIRG/18 Report on Agenda Item 3.5, be established to develop a PBN implementation plan for the Asia/Pacific Region and address related regional PBN implementation issues.	**PBN TF –** As soon as practicable Regional PBN Implementation Plan – by 2008 (Before APANPIRG-19)	APANPIRG PBN Task Force	Regional PBN/TF established in 2007. PBN T/F meetings: 1st 9–11 Jan 2008 2nd 1 – 3 April 2008 3rd 14-17 July 2008 4th 4-6 March 2009 5th 15-17 July 2009 6th 3-5 Feb..2010 7th 1-3 Sep.2010 8th 12-13 May 2011 APANPIRG/19 approved the Regional PBN Plan Interim Edition RASMAG reviewed the Plan in Dec 2008 suggested some changes. PBN/TF 4 reviewed RASMAG proposals and incorporated comments in the Version 0.2 of the Plan Plan was further reviewed by: ATM/AIS/SAR/SG/19 ; and CNS/MET/SG /13 Asia/Pac Regional PBN Plan Ver.1.0 was adopted by APANPIRG/20 PBN TF/6 developed revision to the Plan Ver.2.0 PBN TF/8 developed PBN Plan Ver. 3.0

APANPIRG Conclusion 18/53	**Development of State PBN Implementation Plans** The Regional Office should encourage States to begin development of their State PBN implementation plans in harmony with the development of the Asia/Pacific Regional PBN implementation plan being coordinated by the Asia/Pacific PBN Task Force for submission to APANPIRG/19 (2008).	**State PBN Implementation Plan -** 2009	STATES PBN TF APAC Office	State PBN Implementation Plan/Road map received from 21 States prior to PBNTF/7. 9 national PBN plans assessed by the PBN Plan Review Team as robust by TF/8, 12 plans reviewed. States have not done so, were encouraged to provide their plan in 2010.
APANPIRG Conclusion 18/55	**Designation of Contact Person for PBN Implementation** States designate a focal contact person responsible for performance based navigation implementation and provide details of the contact person to ICAO Asia/Pacific Regional Office accordingly.	31 December 2007	STATES APAC Office	28 States and 3 Int'l Organizations have nominated Focal Points As at PBN TF/8, 13 administrations have not provided their PBN Point of Contact (POC). Of these administrations, 12 are small Pacific Island/Rim States.
PBN/TF Report	**Develop detailed Status (database) regarding current and planned implementation of PBN terminal instrument procedures (SIDs and STARs) and Approaches** **Data Collection – Runway ends /International Aerodromes** **Data Collection – Runway ends /Domestic Aerodromes**	 30 June 2008 31 December 2008	 STATE Focal Point STATE Focal Point	ONLY 8 States have provided information Reminders are being sent regularly PBN TF/8 developed an implementation response form to provide information on States PBN procedure development
PBN Report	**Template developed by PBN TF for reporting progress:** **- Common Template will help in harmonizing the reporting process;** **- States requested to submit PBN Implementation Progress Report by 15 August 2009 for submission to APANPIRG 20.**	15 August 2009 and prior to each future PBN/TF Meeting	STATE	18 States have submitted PBN Implementation Progress on the new Template.

Strategy **Short term (2008 – 2012)**				
• **TMA– Arrival**	1. RNAV 1 in radar environment and with adequate navigation infrastructure. 2. Basic-RNP 1 in non-radar environment	RNAV 1 STAR for 50% of international airports by 2010 and 75% by 2012. Priority should be given to airports with RNP Approach	STATES APANPIRG PBN TF	
• **TMA-Departure**	1. RNAV 1 in radar environment and with adequate navigation infrastructure. 2. Basic-RNP 1 in non-radar environment	RNAV 1 SID for 50% of international airports by 2010 and 75% by 2012. Priority should be given to airports with RNP Approach	STATES APANPIRG PBN TF	
• **Approach**	1. RNP APCH with Baro-VNAV in most possible airports 2. RNP AR APCH in airport where there are obvious operational benefits.	RNP APCH (with Baro-VNAV) in 30% of instrument runways by 2010 and 50% by 2012. Priority should be given to airports with operational benefits	STATES APANPIRG PBN TF	

Strategy **Medium Term (2013 – 2016)**				
SAFETY COMPONENTS	**TASKS**	**TIME FRAME**	**RESPONSIBILITY**	**STATUS**
• **TMA– Arrival**	1. Expand RNAV 1 or RNP 1 Application 2. Mandate RNAV 1 or RNP 1 approval for aircraft operating in higher air traffic density TMAs	RNAV 1 or RNP 1 STAR for 100% of international airports by 2016 RNAV 1 or RNP 1 STAR for 70% of busy domestic airports where there are operational benefits	STATES PBN TF APANPIRG	
• **TMA- Departure**	1. Expand RNAV 1 or RNP 1 Application 2. Mandate RNAV 1 or RNP 1 approval for aircraft operating in higher air traffic density TMAs	RNAV 1 or RNP 1 SID for 100% of international airports by 2016 RNAV 1 or RNP 1 SID for 70% of busy domestic airports where there are operational benefits	STATES PBN TF APANPIRG	
• **Approach**	1. Expansion of RNP APCH (with Baro-VNAV) and APV 2. Expansion of RNP AR APCH where there are operational benefits 3. Introduction of landing capability using GNSS and its augmentations	RNP APCH with Baro-VNAV or APV in 100% of instrument runways by 2016	STATES APANPIRG PBN TF	This requirement has been modified by Assembly Resolution A37-11, which allows LNAV procedures for airports with no VNAV capable aircraft 5700kg+

Strategy **Long Term (2016 and beyond)**	
In this phase, GNSS is expected to be a primary navigation infrastructure for PBN implementation. States should work co-operatively on a multinational basis to implement GNSS in order to facilitate seamless and inter-operable systems and undertake coordinated research and development programmes on GNSS implementation and operation. During this phase, States are encouraged to consider segregating traffic according to navigation capability and granting preferred routes to aircraft with better navigation performance. With the expectation that precision approach capability using GNSS and its augmentation systems will become available, States are encouraged to explore the use of such capability where there are operational and financial benefits.	
GPIs	GPI/5: Performance based navigation, GPI/9: Situational awareness, GPI/11: RNP and RNAV SIDs & STARs,
References	• *APANPIRG Decisions and Conclusions n* • *ICAO Guidance Material – Performance-Based Navigation Manual Doc 9613 AN/937 Third Edition – 2008* • *Assembly Resolution 36-23; Resolution A37-11*

ASIA/PACIFIC REGION

PERFORMANCE FRAMEWORK FORM
(REGIONAL)

(Amended 22 July 2011)

REGIONAL PERFORMANCE OBJECTIVE: *APAC Objective 12*

IMPLEMENT INTERNATIONAL AIRWAYS VOLCANO WATCH (IAVW), INTERNATIONAL TROPICAL CYCLONE WATCH (ITCW), AND IMPROVE THE QUALITY OF METEOROLOGICAL WARNINGS AND ADVISORIES

Benefits	
Safety Efficiency	• Improve in-flight safety by providing information on volcanic ash, tropical cyclone and other hazardous weather by way of meteorological advisories and warnings • Improve pre-flight planning by optimizing flight routes with respect to volcanic ash, tropical cyclone and other hazardous weather phenomena by way of meteorological advisories and warnings

Strategy
Short term (2011-2012)/Medium term (2013 - 2016)

ATM OC COMPONENTS	TASKS	TIME FRAME	RESPONSIBILITY	STATUS
MET	• Monitor and provide assistance in the regional implementation of meteorological warnings and advisories that include volcanic ash (VA) and tropical cyclone (TC) advisories and meteorological warnings and advisories based on current and future requirements	2011 - 2016	METWARN/I TF	In progress
	• Track and investigate deficiencies in the format and dissemination of meteorological advisories and warnings and propose remediation plans and provide information to ICAO and WMO groups for possible assistance	2011-2016	METWARN/I TF OPMET/M TF	In progress
	• Conduct periodic tests for SIGMET on VA, TC, and phenomena other than VA and TC in view of assessing improvements in their implementation	2011 – 2016	METWARN/I TF & RODB & VAACs & TCACs & OPMET/M TF	In progress
	• Provide guidance and/or training related to the implementation of meteorological advisories and warnings, including the Regional SIGMET Guide as they relate to the Annex 3 amendment cycle	2013	METWARN/I TF & OPMET/M TF & RO	In progress

	• Develop framework for emergency plan for specific phenomenon including VA, radioactive cloud, TC and Tsunami. with consideration to global ICAO groups and WMO developments	2011-2012	METWARN/I TF & MET/ATM TF	To begin
Linkage to GPIs	GPI/19 – Meteorological Systems			
References	• *Annex 3* • *Manual on Volcanic Ash, Radioactive Material and Toxic Chemical Clouds (Doc 9691)* • *Handbook on the International Airways Volcano Watch (IAVW) Operational Procedures and Contact List (Doc 9766)* • *Manual on Low-level Wind Shear (Doc 9817)* • *Asia/Pacific Regional SIGMET Guide*			

ASIA/PACIFIC REGION

PERFORMANCE FRAMEWORK FORM
(REGIONAL)

(amended 27 July 2011)

REGIONAL PERFORMANCE OBJECTIVE: *APAC Objective 13* **IMPLEMENT WAFS AND ASSOCIATED DEVELOPMENTS**				
Benefits				
Safety Efficiency	• Improve the regional implementation of weather forecasts (including upper-winds and upper-air temperatures, direction, speed and height of maximum winds and tropopause heights, as well as turbulence, icing, cumulonimbus) used by airlines and ATM needed to optimize flight routes which will provide an increase in efficiency and reduced carbon emissions			
Strategy **Short term (2011-2012)/Medium term (2013 - 2016)**				
ATM OC COMPONENTS	**TASKS**	**TIME FRAME**	**RESPONSIBILITY**	**STATUS**
MET	• Assist the regional implementation of new gridded products for turbulence, icing and CB forecasts	2011-2014	WAFS/I TF	In progress
	• Facilitate in organizing regional training of new gridded products for turbulence, icing and cumulonimbus forecasts	2011-2014	WMO & ICAO	In progress
	• Monitor the operational use of WIFS noting the planned cessation of ISCS-G2 broadcast on 1 July 2012	2011-2016	WAFS/I TF	In progress
	• Monitor the operational use of Secure SADIS FTP service noting the planned cessation of SADIS FTP on 30 November 2012	2011-2016	WAFS/I TF	In progress
	• Maintain and distribute WAFS service reference document to ASIA/PAC States	2011-2016	WAFS/I TF	In progress
	• Monitor the implementation status of WAFS within the ASIA/PAC Regions, and report to CNS/MET SG	2011-2016	WAFS/I TF	In progress

	• Report WAFS training needs of ASIA/PAC States to CNS/MET SG	2011-2016	WAFS/I TF	In progress
Linkage to GPIs	GPI/19 – Meteorological Systems			
References	• *Annex 3* • *http://www.icao.int/anb/wafsopsg/* • *http://www.icao.int/anb/sadisopsg/* • *Asia/Pac WAFS Implementation Plan and Procedures*			

ASIA/PACIFIC REGION

PERFORMANCE FRAMEWORK FORM
(REGIONAL)

(Amended 22 July 2011)

REGIONAL PERFORMANCE OBJECTIVE: *APAC Objective 14* **DEVELOP REGIONAL MET REQUIREMENTS TO SUPPORT ATM**				
Benefits				
Safety Efficiency	• Improve efficiency of ATM and airlines by providing tailored regional MET products needed to optimize flight routes in all weather conditions			
Strategy **Short term (2011-2012)/Medium term (2013 - 2016)**				
ATM OC COMPONENTS	**TASKS**	**TIME FRAME**	**RESPONSIBILITY**	**STATUS**
MET	• Conduct MET ATM meeting in 2009 to determine actions needed to obtain regional MET requirements to support ATM	2009	MET/ATM TF	complete
	• Conduct survey on regional ATM requirements for MET information	2012	MET/ATM TF	Possibly discuss at next MET/ATM event
	• Conduct MET seminar in coordination with WMO in 2011 to further develop list of possible regional MET requirements to support ATM	Jan 2011	MET/ATM TF	complete
	• Assess aviation meteorological services, systems and architecture in the region and how they can integrate weather information into decision support tools	2011-2016	MET/ATM TF	In progress
	• Investigate sub-regional exchange of MET information and associated agreements that facilitate ATM operations particularly over busy routes that overlap different FIRs	2011-2016	MET/ATM TF	In progress
	• Facilitate implementation of Meteorological Services for the Terminal Area (under development by WMO)	2013-2015+	MET/ATM TF	future

	• Monitor global policy associated with source data and delivery of MET products for ATM	2011-2016	MET/ATM TF	future
Linkage to GPIs	GPI/19 – Meteorological Systems Note that the MET/ATM TF will provide input to the METWARN/I TF in the developing a framework for contingency plan for specific phenomenon including VA, radioactive cloud, TC and Tsunami			
References	• *Manual on co-ordination between Air Traffic Services, Aeronautical Information Services and Aeronautical Meteorological Services (Doc 9377)*			

ASIA/PACIFIC REGION

PERFORMANCE FRAMEWORK FORM
(REGIONAL)

(Amended 22 July 2011)

REGIONAL PERFORMANCE OBJECTIVE: *APAC Objective 15* **IMPROVE OPMET EXCHANGE EFFICIENCY**				
Benefits				
Safety Efficiency	• Increase OPMET availability and reliability needed for flight planning (efficiency) and in-flight re-planning (safety)			
Strategy **Short term (2011-2012)/Medium term (2013 - 2016)**				
ATM OC COMPONENTS	**TASKS**	**TIME FRAME**	**RESPONSIBILITY**	**STATUS**
MET	• Improve the availability of OPMET data at the Regional OPMET Data Banks (RODB)	2011 - 2016	OPMET/M TF	In progress
	• Improve the inter-regional OPMET exchange	2011 - 2016	OPMET/M TF	In progress
	• Improve the availability of OPMET data in the Pacific	2011 - 2016	OPMET/M TF &TCB & PASO & States	In progress
	• Review and update regional ROBEX tables and guidance material	2011 - 2016	OPMET/M TF & RO	In progress
	• Facilitate and provide guidance to the implementation new/modified standards before applicability date and carry out post implementation review to ensure that standardized procedures are followed	2011 - 2016	OPMET/M TF	In progress
	• Conduct periodic quality checks and OPMET monitoring to improve the quality and timeliness of OPMET in the Asia/Pac Region	2011 – 2016	OPMET/M TF & IATA	In progress
	• *Facilitate and monitor the migration to AIM and new MET codes (e.g. XML) for METAR/SPECI, TAF and SIGMET*	*TBD*	*OPMET/M TF & RO*	*TBD*

Linkage to GPIs	GPI/19 – Meteorological Systems (Note: the OPMETM TF will assist the METWARN/I TF in SIGMET test coordination and deficiency tracking of the format and dissemination of meteorological advisories and warnings and noted in the PFF of the METWARN/I TF)
References	• *SADIS User Guide* • *ROBEX Handbook* • *Asia/Pacific OPMET Data Banks Interface Control Document*

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ASIA/PACIFIC REGION-PERFORMANCE FRAMEWORK FORM
(REGIONAL)

REGIONAL PERFORMANCE OBJECTIVE: APAC Objective 16 *ENHANCE SAFETY AND EFFICIENCY OF AERODROME OPERATIONS*				
Benefits				
Safety	• Ensure continued safety, regularity and efficiency of aircraft operations at aerodromes • Ensure the aerodromes are in compliance with the relevant ICAO SARPS and Civil Aviation Regulations. • Prevention of accidents • Reduction/elimination of deficiencies • Uniform conditions for aircraft of all other contracting states			
Efficiency	• improved aerodrome capacity			
Strategy **Short term (2009-2012)/medium term (2009-2015)**				
ATM OC COMPONENTS	**TASKS**	**TIME FRAME**	**RESPONSIBILITY**	**STATUS**
AO (Aerodrome operations)**,** **CM** (conflict management)**,** **TS** (Traffic synchronization)**,** **AUO** (Airspace user operations)	AERODROME CERTIFICATION			
	• Facilitate the implementation of Aerodrome Certification by conduct of courses and seminars.	2009 , 2010, 2011 & 2012	ICAO APAC Office	Completed in 2009/10
	• Establish a regulatory framework specifying the criteria for the certification of aerodromes.	2009-2011	State	In Progress[30 States have confirmed the existence of a basic aviation law
	• Establish a regulatory authority [CAA]	2009-2012	State	In progress
	• Develop and approve aerodrome certification regulations and standards	2009-2012	State	In progress [Aerodrome certification regulations have been promulgated in 28 States, including 1 Territory (French Polynesia) and one Administration (Hong Kong).
	• Develop, issue and maintain guidance material and Advisory circulars on aerodrome certification for service providers.	2009-2012	State	In progress

ATM OC COMPONENTS	TASKS	TIME FRAME	RESPONSIBILITY	STATUS
	• Develop, issue and maintain guidance material and Advisory circulars on aerodrome certification for service providers.	2009-2012	State	In progress
	• Establish an entity within CAA responsible for aerodrome safety oversight and staffing requirements. Develop Manual of Aerodrome oversight procedures and Aerodrome Inspector Handbook	2009-2012	State	In progress
	<u>SMS AT CERTIFIED AERODROMES</u>			
	• Facilitate the implementation of SMS by the conduct of courses	2010, 2013	ICAO	ICAO SMS Course conducted from 20 to 24 June 2011
	• Develop SMS regulations & guidance material for the implementation of SMS, staff training, enforcement policy and communication means;	2009-2014	State	In progress [. SMS regulations have been promulgated in 16 States, including one Territory and one Administration.
	• Develop and establish the action plan on safety targets, hazard reporting, staff training, safety oversight, guidance material and accepted level of safety	2009-2015	State	In progress
	<u>WILDLIFE HAZARD CONTROL AND REDUCTION</u>			
	• Survey to collect information on state's practices with respect to airport wildlife control	2010	ICAO APAC Office	Completed
	• Establishment of a national procedure for recording and reporting wildlife strikes to aircraft;	2010 -2012	State	In progress[17 States including one Administration have informed that a National Bird control committee has been established

ATM OC COMPONENTS	TASKS	TIME FRAME	RESPONSIBILITY	STATUS
	• Establishment of a national bird control committee	2009-2012	State	In progress
	• Conduct wildlife assessments and Implement wildlife control programmes. Airports develop and professionally implement management plan to reduce the risk of strikes.	2009-2012	State	In progress
	• Land use management inside and in the vicinity of airport	2010 - 2015	State	In progress
	• States collect wildlife strike reports and forward to ICAO for inclusion in the ICAO IBIS (data base)	2009-2012	State	In progress
	• Seminar on wildlife assessment /reduction	2011	ICAO APAC Office	Completed in Dec 2010
	• Wildlife hazard management training for airport personnel	Continuous basis	State	In progress
	<u>AERODROME SAFETY MEASURES</u>			
	• Monitoring the height of buildings or structures within the boundaries of OLS;	2009-2015	State	In progress
	• Measurement and reporting of friction characteristics of wet paved runways	2011	State	In progress
	▪ procurement of a friction measuring device	2011	State	In progress
	▪ establishment of maintenance friction level below which corrective action should be initiated; and	2011	State	In progress
	▪ establishment of minimum friction level below which information that a runway may be slippery when wet is made available.	2011	State	In progress

	• Provision of runway end safety area;	2014	State	In progress
ATM OC COMPONENTS	**TASKS**	**TIME FRAME**	**RESPONSIBILITY**	**STATUS**
	• Provision of runway end safety area;	2014	State	In progress
	• Provision of enhanced visual aids and markings to help prevent runway incursions • Seminar on runway surface friction measurement	2014 2011	State ICAO	In progress Targeted for 2013
Linkage to GPIs	GPI/13 Aerodrome Design and Management and GPI/14 Runway operations			
References	• *Annex 14, Volume I* • *Doc 9774 – Manual on certification of Aerodromes* • *Doc 9859 – Safety Management Manual* • *Doc 7300 – convention on International civil Aviation* • *Doc 9137 – Airport Services Manual, Part 3, bird control and reduction;* • *Doc 9332 – Manual on the ICAO Bird Strike information System(IBIS)* • *Doc 9184 – Airport Planning Manual Part 2, Land Use and Environmental Control.* • *Doc 9157 – Aerodrome Design Manual, Part 1, Runways* • *Doc 9157 – Aerodrome Design Manual, Part 3, Pavements* • *Doc 9157 – Aerodrome Design Manual, Part 4, Visual Aids* • *Doc 9137 – Airport Services Manual, Part 2, Pavement surface Conditions* • *Doc 9137 – Airport Services Manual, Part 6, Control of Obstacles* • *Doc 9137 – Airport Services Manual, Part 8, Airport Operational Services* • *Doc 9137 – Airport Services Manual, Part 9, Airport Maintenance Practices*			

ASIA/PACIFIC REGION-PERFORMANCE FRAMEWORK FORM
(REGIONAL)

REGIONAL PERFORMANCE OBJECTIVE: *APAC Objective 17* *IMPROVE CONTINGENCY MEASURES FOR AERODROME OPERATIONS*	
Benefits	
Safety	• *Ensures better coordination between the different airport agencies and of those agencies in the surrounding community* • *Minimizes the effects of an emergency particularly in respect of saving lives and maintaining aircraft operations.* • *Safe continuation of aircraft operations*
Efficiency	• *Prompt response by RFF, police/security, medical services and other agencies*

Strategy
Short term (2009 - 2012)

ATM OC COMPONENTS	**TASKS**	**TIME FRAME**	**RESPONSIBILITY**	**STATUS**
AO (Aerodrome operations)**, CM** (conflict management)**, TS** (Traffic synchronization)**, AUO** (Airspace user operations)	AERODROME EMERGENCY PLANNING			
	• Initiate a survey to assess the level of implementation on aerodrome emergency planning	2012	ICAO APAC Office	
	• Establish aerodrome emergency plan document	2009-2011	State	In progress
	• Conduct full scale aerodrome emergency exercise at intervals not exceeding two years; and	2009- 2012	State	In progress
	• Partial emergency exercises in the intervening year to ensure that any deficiencies found during the full scale aerodrome emergency exercise have been corrected	2009- 2012	State	In progress

ATM OC COMPONENTS	TASKS	TIME FRAME	RESPONSIBILITY	STATUS
	• Establish procedure for emergencies in difficult environments at those airports located close to water and/or swampy areas or difficult terrain.	2009-2011	State	**In progress**
	• Conduct seminar on AEP	2011	ICAO	Rescheduled to 2013
Linkage to GPIs	GPI/13 Aerodrome Design and Management and GPI/14 Runway operations			
References	• *Annex 14, Volume I* • *Doc 9137 – Airport Services Manual, Airport emergency Planning, Part 7*			

REGIONAL PERFORMANCE FRAMEWORK

TASKS	Australia	Hong Kong, China	Fiji Islands	Japan	Maldives	Malaysia	Mongolia	New Zealand	Pakistan	Philippines	ROK	Singapore	Thailand	ICAO
APAC Objective 16 AERODROME CERTIFICATION														
Facilitate the implementation of Aerodrome Certification by conduct of courses and seminars.														2009 & 10
Establish a regulatory framework specifying the criteria for the certification of aerodromes.	Yes	Yes	Yes	Yes	Yes	Yes	yes	Yes	Yes	Yes	Yes	Yes	In progr ess	
Establish a regulatory authority [CAA]	Yes	Yes	Yes	Yes	In progres s	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Develop and approve aerodrome certification regulations and standards	Yes	Yes	In progress	Yes	Yes	Yes	yes	Yes	Yes	Yes	Yes	Yes. Revie w ongoi ng	In progr ess	
Develop, issue and maintain guidance material and Advisory circulars on aerodrome certification for service providers.	Yes	Yes	In progress	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	On-going	In progr ess	
Establish an entity within CAA responsible for aerodrome safety oversight and staffing requirements. Develop Manual of Aerodrome oversight procedures and Aerodrome Inspector Handbook	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	In progr ess	
SMS AT CERTIFIED AERODROMES														
Facilitate the implementation of SMS by the conduct of courses														June 2011
Develop SMS regulations & guidance material for the implementation of	Yes	Yes	In progress	Yes. 2013 with ICAO	Yes	Yes	SSP In progress	In progr ess 2013	-	Yes	Yes	Yes	Yes. GM in progr	

TASKS	Australia	Hong Kong, China	Fiji Islands	Japan	Maldives	Malaysia	Mongolia	New Zealand	Pakistan	Philippines	ROK	Singapore	Thailand	ICAO
SMS, staff training, enforcement policy and communication means;				SMS 2nd editio n									ess	
Develop and establish the action plan on safety targets, hazard reporting, staff training, safety oversight, guidance material and accepted level of safety	Yes	Yes	In progress	Yes. As abov e	SSP 2012	Yes	SSP manual In progress	In progr ess 2015	-	Yes	Yes	Yes		
WILDLIFE HAZARD CONTROL AND REDUCTION														
Survey to collect information on state's practices with respect to airport wildlife control														2010
Establishment of a national procedure for recording and reporting wildlife strikes to aircraft;	Yes	Yes	In progress	Yes	Yes	Yes	Yes	Yes	-	Yes	Yes	Yes	Yes	
Establishment of a national bird control committee	Yes	Yes	YES. 2010	Yes	Yes 2008	Yes 2009	2012	Yes	Yes	In prog ress	Yes	Yes 2010	Yes	
Conduct wildlife assessments and Implement wildlife control programmes. Airports develop and professionally implement management plan to reduce the risk of strikes.	Yes	Yes	Yes, under review	Yes	in progr ess	In progr ess 2012	2012	Yes	In prog ress	On-going	Yes	Yes		
Land use management inside and in the vicinity of airport	Yes	Yes	Yes	Yes	Yes	In prog ress 2013	2012-2015	Yes	-	On-going	Yes	Yes		
States collect wildlife strike reports and forward to ICAO for inclusion in the ICAO IBIS (data base)	Yes	Yes	In progress	On going	yes	In prog ress 2012	Yes. In progr ess		In prog ress	On-going	yes	yes		
Seminar on wildlife assessment/reduction														2010

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Wildlife hazard management training for airport personnel	Yes	Yes	In progress	On going	Yes	On going	-	Yes	In progress	On-going	Yes	On-going		
AERODROME SAFETY MEASURES														
Monitoring the height of buildings or structures within the boundaries of OLS;	Yes	Yes	Yes	Yes	In progress 2012	Yes	Yes	Yes	In progress 2015	yes	Yes	On-going		
Measurement and reporting of friction characteristics of wet paved runways	Yes	Yes	Jan 2011	Yes	In progress	Yes	yes	Yes	Yes	yes	Yes	On-going		
procurement of a friction measuring device	Yes	Yes	Jan 2011	Yes	In progress Sep 2011	Yes	yes	Yes	Yes	In progress	Yes	Yes		
establishment of maintenance friction level below which corrective action should be initiated	Yes	Yes	Jan 2011	Yes	In progress	Yes	In progress	Yes	-	NIL	Yes	Yes		
Establishment of minimum friction level below which information that a runway may be slippery when wet is made available.	Yes	Yes	Jan 2011	Yes	In progress	Yes	In progress	Yes	-	In progress	Yes	Yes		
Provision of runway end safety area;	Yes	Yes	In progress	Yes	2014	Yes	2011-2014	Yes	In progress	Yes	Yes	Yes		
Provision of enhanced visual aids and markings to help prevent runway incursions	In progress	Mid 2011	In progress	Yes	In progress	Yes	2011-2014	Yes	In progress	Yes	Yes	Yes 2009		
Seminar on runway surface friction measurement														2012
APAC OBJECTIVE 17-AERODROME EMERGENCY PLANNING														

TASKS	Australia	Hong Kong, China	Fiji Islands	Japan	Maldives	Malaysia	Mongolia	New Zealand	Pakistan	Philippines	ROK	Singapore	Thailand	ICAO
•Initiate a survey to assess the level of implementation on aerodrome emergency planning														
Establish aerodrome emergency plan document	Yes	Yes	Implemented under review	Yes	MIA-yes GIA-in progress	Yes	Yes	Yes	-	On-going	Yes	Yes		
Conduct full scale aerodrome emergency exercise at intervals not exceeding two years; and	Yes	Yes	yes	Yes	MIA-yes GIA-in progress	Yes	2010-2012	yes	-	On going	Yes	Yes Every year		
Partial emergency exercises in the intervening year to ensure that any deficiencies found during the full scale aerodrome emergency exercise have been corrected	Yes	Yes	In progress	Yes	Yes	yes	2010-2012	Yes	-	On-going	Yes	Not Applicable		
Establish procedure for emergencies in difficult environments at those airports located close to water and/or swampy areas or difficult terrain.	Yes	Yes	In progress	Yes	MIA: Yes, GAN: in progress	In progress		Under review	-	Yes	Yes	Yes		
Conduct seminar on AEP														2013