International Civil Aviation Organization

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

Bangkok, Thailand, 25 – 29 June 2012

Agenda Item 3: Regional Performance Framework and Metrics

REGIONAL AND NATIONAL PERFORMANCE FRAMEWORK

(Presented by the Secretariat)

SUMMARY

This paper presents information on Performance Frameworks, and relates to –

Strategic Objectives:

A: ***Safety*** *– Enhance global civil aviation safety*
B: ***Security*** *– Enhance global civil aviation security*
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*

1. INTRODUCTION

Global Guidance

1.1 The Eleventh Air Navigation Conference (September 2003), urged ICAO to develop a performance framework for Air Navigation Systems. The 35th Session of the ICAO Assembly, held in September 2004, adopted Resolution A35-15, Appendix B and urged ICAO to ensure that the future global ATM system was performance based and that the performance objectives and targets for the future system were developed in a timely manner.

1.2 The planning objective 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 is recognized from the Global Air Navigation Plan (Doc 9750) through the Global Plan Initiatives (GPIs) and the Operational Concept Components from the Global Air Traffic Management Operational Concept (Doc 9854). Appendix D of Doc 9854 sets out 11 Key Performance Area (KPA) expectations as follows:

- KPA 01 Access and Equity;
- KPA 02 Capacity;
- KPA 03 Cost Effectiveness;
- KPA 04 Efficiency;
- KPA 05 Environment;
- KPA 06 Flexibility;
- KPA 07 Global Interoperability;

- KPA 08 Participation by the ATM community;
- KPA 09 Predictability;
- KPA 10 Safety; and
- KPA 11 Security.

1.3 **Figure 1** provides an illustration of the performance-based system, which cascades from the KPAs to actual measurement of the system performance.

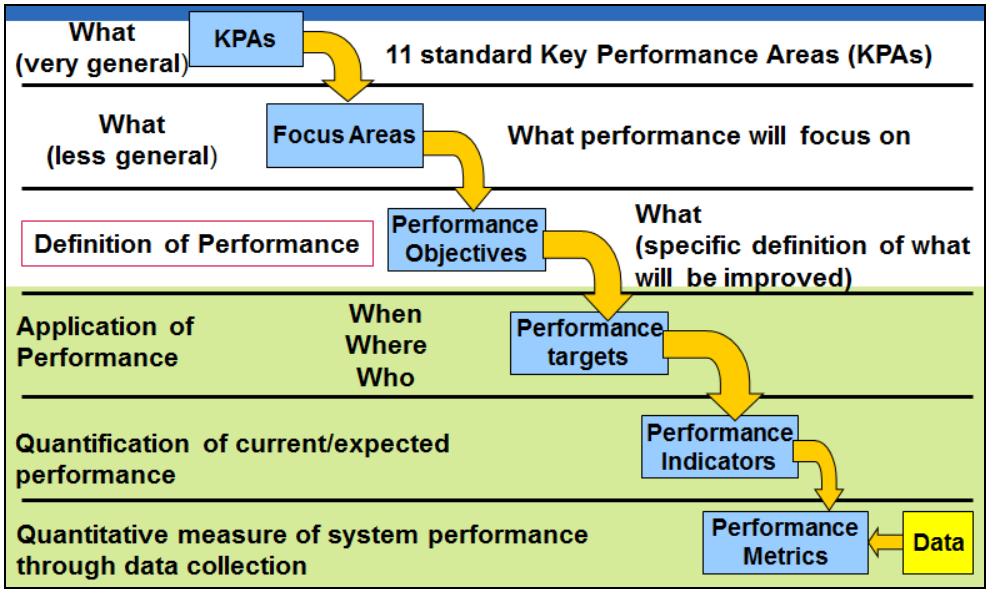

Figure 1: KPA Measurement Approach

2. DISCUSSION

Regional Performance Objectives and Metrics

2.1 APANPIRG/19 (September 2008, Bangkok) adopted *Conclusion 19/1 - Regional Performance Framework on the development of regional performance objectives with measurable outcomes and metrics*.

2.2 APANPIRG/20 adopted the Asia Pacific Regional Performance Objectives and the associated Performance Framework Forms (PFFs) under Conclusion 20/2, and agreed that wherever possible, States should use the regional performance objectives as the basis for development of their national performance objectives. APANPIRG/20 also adopted Conclusion 20/3 − *Align Regional & National Performance Objectives* to encourage States to use the template format from the regional objectives as the basis for their national objectives. The following Regional Performance Objectives in the ATM, AIS and SAR fields were developed:

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.

2.3 In addition, in order to ensure that appropriate data was available to enable the measurement of suitable regional metrics, APANPIRG/20 agreed to the following Conclusions:

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.

2.4 ATM/AIS/SAR/SG/20 recognized that a common set of performance metrics for all regions should be available, and States should continue supporting the existing four APAC Metrics. Accordingly, APANPIRG/21 formulated the following Conclusion:

Conclusion 21/3 – Common Set of Performance Metrics for all the ICAO Regions

That, ICAO be invited to:

a) develop a common set of performance metrics for all the ICAO regions so as to facilitate comparative analysis; and

b) establish the globally harmonised guidance on methodology of how to collect the data in order to achieve commonality.

Performance Framework Forms

2.1 The ATM/AIS/SAR SG/22 (June 2012) and CNS/MET SG16 (July 2012) reviewed and updated ATM, AIS, SAR CNS and MET related PFFs respectively. **Appendix 1** contains the Performance Framework Forms associated with the ATM/AIS/SAR Sub-group meeting.

2.2 APANPIRG/22 reviewed the updated status of the PFF reported by 13 Asia/Pacific administrations (Australia, Fiji, Hong Kong China, Japan, Malaysia, Maldives, Mongolia, New Zealand, Pakistan, Philippines, Republic of Korea, Singapore and Thailand). The Regional Office issued State Letter ref AN 3/3- AP077/12 (AGA) dated 29 May 2012 to urge States to update progress made in meeting the plan objectives for APAC Objectives 16 &17.

Aviation System Block Upgrade (ASBU) Methodology

2.3 The 37th Session of the ICAO General Assembly held in 2010 directed ICAO to double its efforts to meet the global requirements for airspace interoperability while maintaining its focus on safety. The need was recognized to integrate the air, ground and regulatory parts in the air navigation planning by addressing flight trajectories as a whole, distributing the decision-making process, taking into account safety risks and recognizing changing role of the human element. In response to these developments, ICAO initiated the ASBU methodology as a global framework.

2.4 The ASBU initiative will be integrated in the revised Global Air Navigation Plan with intent to seek the endorsement of ANConf/12 (19 to 30 November 2012) under the concept of One Sky. The revised GANP will also include related technology roadmaps such as CNS, AIM, and Avionics. Consequential amendments will also take place in the Regional and National Performance Framework for Air Navigation Systems and reflected appropriately in the air navigation plans.

2.5 As ICAO will be migrating to the ASBU framework, consequently, the Performance Framework Form will be modified to the Air Navigation Report Form (ANRF), which will be effective from 2013. An example ANRF is at **Attachment A**.

2.6 During the Workshop on Preparations for an- ANConf/12 − Asbu Methodology (Bangkok, Thailand, 14-18 May 2012), the new ANRF were trialed by participants. The following comment suggestions for improvement were made:

- *Modules are arranged according to the conditions of the developed countries and all States should be given the opportunity to provide input related to the modules so that modules could be further improved.*
- *To improve the modules, suggest all the modules to provide more details information and detailed steps for how to implement in the individual country.*
- *ATM Automation System is one key element to support many important new function as many ASBU such as the TBO, CDM etc. Suggest adding related module on the subject to reflect the requirement and evolution of ATC Automation Systems.*
- *Each ASBU should contain guidance material to assist States in determining what operational performance problem the ASBU addresses and triggers on when to implement the ASBU.*
- *Discuss ASBU modules together with the new GANP. In particular with the process to identify performance gaps and analyze whether/which ASBU module can close them (under section of "Airspace Modernization Planning")*
- *Propose to add a presentation on Doc 9883 PBA's Performance Case as an extension of the standard business case. If so, for example note the sensitivity to traffic forecasts, importance of senior management buy-in; steps of the PBA etc.*
- *Search and Rescue (SAR) may also be covered as one of in the modules.*
- *ICAO should publish the proposed Wake Turbulence Categories and CCO manuals as mentioned in BO-70 and BO-20 respectively for study and preparation for AN-Conf/12.*
- *ICAO should clarify the referred standards for A-SMGCS (Levels 1 and 2 in Module BO-75).*
- *ICAO should standardize the unit of measurement as it is important for interoperability & seamless operation between FIRs.*
- *Regarding the "Metrics", more options and suggested lists of indicators for each KPA are needed.*
- *Key performance area of some of the modules should be reviewed such as need to add KPA – Efficiency.*
- *There are some bugs in the IFSET which need to be fixed. En-route operation supports only single level. It would be much better if it could be programmed to support multiple levels with different type of aircraft in the same category of operation.*

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper;

b) review and suggest amendments to the Asia Pacific Regional Performance Objectives and associated PFF as required;

c) review the Asia/Pacific Performance Metrics[1];

d) urge States to continue collecting and reporting data to APANPIRG in order to support the Regional Metrics; and

e) discuss any relevant matters as appropriate.

…….

[1] Note: Metric 1 is a matter for RASMAG, Metric 2 and 3 are the responsibility of the PBN/TF, and Metric 4 is the responsibility of aerodrome operators or Air Navigation Service Providers, as appropriate.

Appendix 1: ATM/AIS/SAR PFFs

ASIA/PACIFIC REGION

PERFORMANCE FRAMEWORK FORM

(REGIONAL)

(amended 15 June 2012)

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	In progress
	• 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~~ ATM/AIS/SAR/SG ATM Coordination Groups FITs ~~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 15 June 2012)***

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)~~ APSAPG ATM/AIS/SAR/SG ATM Coordination Groups	~~Implemented and reviewed regularly by the Bay of Bengal ATFM/TF~~ ~~ATM/AIS/SAR/SG/19 drafted Conclusion to establish regional ATFM steering group~~ ATFM Concept of Operation completed and incorporated into draft global guidance material
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~~ APSAPG ATM/AIS/SAR/SG ATM Coordination Groups	~~ATM/AIS/SAR/SG/19 drafted Conclusion to establish regional ATFM steering group~~
DCB *(Demand and capacity management)*	**Northeast Asia/Southeast Asia** • Enhance and facilitate the orderly flow between Northeast Asia and Southeast Asia, and between the North and the South Pacific	2009/2015	~~IPACG, ISPACG, EATMCG~~ ~~SEA RR/TF (ATS routes)~~ APSAPG ATM/AIS/SAR/SG ATM Coordination Groups	~~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	• ~~*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 15 June 2012)

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 on board 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	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)~~ APSAPG ATM/AIS/SAR/SG ATM Coordination Groups	~~Target for 50 NM longitudinal separation in Bay of Bengal is 2011~~ 50NM horizontal separation implemented in 2012

	including Indian Ocean and the Arabian Sea, and prepare coordinated plans for actions for their resolution.	2009-2015	**Southeast Asia AR9 Flow** ~~SEACG,~~ ~~FIT-SEA~~ ~~Southeast Asia Route Review Task Force (SEA RR/TF)~~ APSAPG ATM/AIS/SAR/SG ATM Coordination Groups	~~ATM/AIS/SAR/SG/19 (2009) established the SEA Route Review Task Force (SEA RR/TF)~~
		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)~~ APSAPG ATM/AIS/SAR/SG ATM Coordination Groups	50 NM longitudinal implemented North Pacific in 2008 30/30 NM (RNP4) implemented Honiara, Nauru, Brisbane, Nadi, Auckland Oceanic, Oakland Oceanic, Anchorage Oceanic, Fukuoka 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)~~ APSAPG ATM/AIS/SAR/SG ATM Coordination Groups	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)

<table>
<tr><td colspan="5">REGIONAL PERFORMANCE OBJECTIVE: <u>APAC Objective 4</u>
OPTIMISE ROUTE STRUCTURE IN TERMINAL AIRSPACE</td></tr>
<tr><td colspan="5">Benefits</td></tr>
<tr><td>Environment</td><td colspan="4">• reductions in fuel consumption</td></tr>
<tr><td>Efficiency</td><td colspan="4">• 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</td></tr>
<tr><td>Safety</td><td colspan="4">• enhance safety by use of modern capabilities on board aircraft</td></tr>
<tr><td colspan="5">Strategy
Short term (2010)
Medium term (2011 - 2015)</td></tr>
<tr><td>ATM OC COMPONENTS</td><td>TASKS</td><td>TIME FRAME</td><td>RESPONSIBILITY</td><td>STATUS</td></tr>
<tr><td>AOM
(Airspace Organization and Management)

AUO
(Airspace Users Operations)</td><td>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.</td><td>In accordance with PBN Regional Plan</td><td>Performance Based Navigation Task Force (PBN/TF)</td><td>PBN/TF prepared Regional PBN Plan adopted by APANPIRG/19</td></tr>
<tr><td>GPIs</td><td colspan="4">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</td></tr>
<tr><td>References</td><td colspan="4">• Asia/Pacific Regional Performance Based Navigation Implementation Plan
• ICAO Performance Based Navigation Manual (Doc 9613)</td></tr>
</table>

ASIA/PACIFIC REGION

PERFORMANCE FRAMEWORK FORM

(REGIONAL)

(amended 15 June 2012)

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 Regional Guidance Material Version 4 – 9 November 2011 is current
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 15 June 2012)

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	In progress TF has developed a detailed monitoring framework to track States implementation of AIM (AAITF Task List – Action Item 6 refers)
	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 15 June 2012)

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 ATM/AIS/SAR/ SG/WP29 refers
GPIs	None applicable			
References	• *Annex 12 – Search and Rescue* • *International Aeronautical and Maritime Search and Rescue Manual (IAMSAR, Doc 9731)* • *APANPIRG Conclusions 18/19, 18/20, 20/17 and 20/18*			

SAMPLE TEMPLATE

AIR NAVIGATION REPORT FORM (ANRF)
ASBU METHODOLOGY

Regional and National planning for all ASBU Modules

REGIONAL/NATIONAL PERFORMANCE OBJECTIVE

INCREASED INTEROPERABILITY, EFFICIENCY AND CAPACITY THROUGH GROUND-GROUND INTEGRATION (ASBU B0-25)

Performance Improvement Area 2: Globally Interoperable Systems and Data – Through Globally Interoperable System Wide Information Management

Main Key Performance Areas (KPA)

	Access & Equity	Capacity	Efficiency	Environment	Safety
Applicable	N	Y	Y	Y	N

Implementation Progress

ASBU B0-25 Elements including baseline	Implementation Status
1. ATC system with FDPS functionality and a surveillance data processing system	
2. NEW Flight Plan 2012	
3. AIDC	
4. AMHS/IPS	

Implementation Roadblocks

Elements including baseline	Ground system Implementation	Avionics Implementation	Procedures Availability	Operational Approvals
1. ATC system with FDPS functionality and a surveillance data processing system				
2. NEW Flight Plan 2012				
3. AIDC				
4. AMHS/IPS				
Remarks, if any				

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AIR NAVIGATION REPORT FORM - ASBU METHODOLOGY
EXPLANATORY NOTES

1. **Air Navigation Report Form (ANRF):** This form may be used when Planning and Implementation Regional Groups (PIRGs) and States report on the implementation status of Aviation System Block Upgrades (ASBU) modules. Other formats may be appropriate but should contain as a minimum the elements described below.

2. **Performance objective:** To align with ASBU methodology, the performance objective for the regions as well as for the States will be the ASBU module title itself along with corresponding Performance Improvement area (PIA).

3. **Key Performance Areas:** Key to the achievement of a globally interoperable ATM system is a clear statement of the expectations of the ATM community. The expectations, hereafter known as Key Performance Areas (KPAs), are interrelated and cannot be considered in isolation since all are necessary for the achievement of the objectives established for the system as a whole. It should be noted that while safety is the highest priority, the eleven KPAs are shown in alphabetical order as they would appear in English. They are access/equity; capacity; cost effectiveness; efficiency; environment; flexibility; global interoperability; participation of ATM community; predictability; safety; and security. However, out of these eleven KPAs, five have been selected for reporting, which are Access & Equity, Capacity, Efficiency, Environment and Safety. KPAs applicable to ASBU module are to be identified by marking Y (Yes) or N (No).

4. **Implementation Progress:** This section, while describing different elements of ASBU Module, indicates progress in its implementation by States.

5. **Elements including baseline related to ASBU module:** The regional/national air navigation work programmes, under this section, will identify elements that are needed to achieve the said performance objective/ASBU module. For the list of elements related to of different ASBUs, refer to the description of respective ASBU Module. Furthermore, should there be elements that are not reflected in the ASBU module (example: In ASBU B0-80/Airport CDM, Aerodrome certification and data link applications D-VOLMET, D-ATIS, D-FIS are not included; Similarly in ASBU B0-30/AIM, note that WGS-84 and eTOD are not included) but at the same time they are part of baseline requirements, ANRF should specify those elements.

6. **Implementation Status:** Planned implementation date (year) and the current status are to be reported in this section It is recognized that not all ASBU modules/or elements are required in all airspaces. If that be the case, mention as “Not Applicable” in this section.

7. **Implementation Roadblocks**: Challenging issues for the implementation of Elements /baseline of the Module are to be reported in this section. The four implementation roadblocks are as follows:

    - Ground System Implementation:
    - Avionics Implementation:
    - Procedures Availability:
    - Operational Approvals:

8. **Remarks:** Comments, if any, related to any of the sections are to be reported here.

LIST OF SUGGESTED PERFORMANCE METRICS

Key Performance Area	Related Performance Metrics
1. Access & Equity	1. KPA/Access: Percentage of instrument runway ends having an APV
	2. KPA/Access: Duration of Special Use Airspace (SUA) limits Civil Operations
	3. KPA/Equity Percentage of aircraft operators by class who consider that equity is achieved
	4. KPA/Access: Percentage of requested flight level versus cleared flight level
2. Capacity	1. Number of movements per day per aerodrome
	2. Average ATFM delay per flight at an airport
	3. Number of aircraft entering a specified volume of airspace per hour
	4. Average en-route ATFM delay generated by airspace volume
3. Cost effectiveness	1.IFR movements per ATCO hour on duty
	2. IFR flights (en-route) per ATCO hour duty
4. Efficiency	1. Kilograms of fuel saved per operation
	2. Average ATFM delay per flight in the airport
	3. Percentage of PBN routes
5. Environment	1.Kilograms of CO2 emissions reduced per operation
6. Flexibility	To be decided
7. Global Interoperability	1. Number of ATC automated systems that are interconnected
8. Participation of the ATM Community	1. Level of participation in meetings
	2. Level of responses to planning activities
9. Predictability	1. Arrival/departure delay (in minutes) at airport)
10. Safety	1.Percentage of instrument runway ends having a precision approach procedure
	2.Number of runway incursions per aerodrome per year
	3.Percentage of certified aerodromes used for international operations
	4. Number of aircraft fitted with ADS-B IN
	5. Number of aircraft fitted with ACAS / logic Version 7.1
	6.Percentage of aerodromes with PBN STAR implemented
	7. Percentage of aerodromes with CDOs implemented
	8. Number of ADS-Cs available over oceanic and remote Areas
	9. Number of continental CPDLC systems established
	10. Percentage of aerodromes with PBN SIDs implemented and
	11. Percentage of aerodromes with CCOs implemented;
	12. Number of States implemented WGS-84
11. Security	Not applicable

— END —.