



**Agenda Item 2:           Review of Air Navigation matters**  
**2.2     NAM/CAR Regional Air Navigation Implementation Plan**

**NAM/CAR PERFORMANCE BASED REGIONAL  
AIR NAVIGATION IMPLEMENTATION PLAN**

(Presented by the Secretariat)

**SUMMARY**

This working paper presents the NAM/CAR Performance Based Regional Air Navigation Implementation Plan, endorsed by the NACC/DCA/3 Meeting. The plan considers ATM performance objectives approved by GREPECAS to ensure harmonized implementation of air navigation services in line with the needs and requirements of the NAM and CAR Regions.

<b>Strategic Objectives</b>	<i>This working paper is related to Strategic Objective D – Efficiency.</i>
-----------------------------	---

**1.           Introduction**

1.1           The Fifth Meeting of the All Planning and Implementation Regional Groups (ALLPIRG)/Advisory Group (ALLPIRG/5) held in Montreal, Canada, from 23 to 24 March 2006, agreed to adopt a performance based approach in its work and to undertake steps to ensure harmonization of regional and national work aligned under the ATM Global Operational Concept, in support of ICAO planning and implementation processes and the guidelines of the ICAO Council.

1.2           GREPECAS, through its Conclusion 14/51, agreed to reorganize the ATM work programme; this review is expected to conclude by the end 2009. As a follow-up to these guidelines, GREPECAS agreed to harmonize work programmes in line with the Global Air Navigation Plan (Doc 9750) and ICAO vision as established in the Global Air Traffic Management Operational Concept (Doc 9854).

**2.           Analysis**

2.1           The NACC/DCA/3 Meeting, through Decision 3/3, approved the harmonization of work programmes into a single NAM/CAR Implementation Plan. The initiative comes from the need to ensure close coordination between all ANS fields, such as ATM, CNS, AGA, AIM and MET, toward a seamless ATM system in line with the operational initiatives of the Global Air Navigation Plan (Doc 9750).

2.2 The Meeting also recognized that the work of all air navigation fields was being merged and that work had to be addressed in a holistic and strategic way. The Meeting therefore agreed to develop terms of reference with no division between CNS and ATM work, and noted that accomplishing the work associated with performance objectives would require both CNS and ATM efforts.

2.3 Similarly, it was recalled that the current use of the term “ATM” refers to all elements of the air navigation system, given due consideration to facilitate and harmonize the implementation process. It was agreed that considering the ATM Operational Concept, ATM implementation had to be faced as a system requiring the support of all the fields that traditionally are considered in the air navigation system.

2.4 The Meeting recognized that it is critical to align all work programmes within this regional implementation plan, and agreed that the terms of reference should consider the ATM performance objectives already approved by the NACC/WG/2 meeting, detailed tasks with deadlines, and periodic monitoring activity that will be conducted by ICAO.

2.5 The Meeting agreed that restructured and coordinated work between all ANS fields will ensure efficient implementation in the short and medium terms in order to achieve harmonized enhancements within the ATM Operational Concept approach. The Meeting unanimously agreed to the performance based approach, including the review of terms of reference of all the NACC Working Groups.

2.6 The Meeting concurred that the main tasks should be carried out under the project development concept, establishing other projects, if applicable, in order to obtain short term regional enhancements that may be required by the ATM community.

2.7 While complying with a reorganization of work programmes and future meetings, the plan also seeks to improve decision-making processes and to ensure that resources be addressed in a suitable manner to support the ICAO Strategic Plan objectives. Moreover, it seeks to comply with the following principles:

- identify implementation tasks with regard to the Global Plan Initiatives (GPIs) of the GANP (Doc 9750), in order to facilitate the objectives and results targeted by each performance objective;
- associate, in a logical manner, the tasks with the seven components of Doc 9854, (AOM, DCB, AO, TS, CM, AUO ATMSDM) as appropriate;
- avoid unnecessary task duplications;
- quantify cost/benefit analysis in terms of performance metrics, deadlines, responsible body for implementation and results;
- offer specific solutions to ensure that expectations of the ATM community and system requirements are fulfilled;
- facilitate a dynamic and periodical review, based on the States/Territories implementation needs and requirements; and
- foster the use of electronic tools and teleconferences to ensure full information exchange.

### 3 Conclusion

3.1 The evolution of modern air navigation systems needs more efficiency in regional implementation works. In order to comply with established goals, the Meeting should update the C/CAR WG work programme with tasks and action plans according to the NAM/CAR Implementation Plan, included in the **Appendix A** to this working paper.

#### *Transition to the new Flight Plan model*

3.2 Following GREPECAS Conclusion 13/25, **Appendix B** includes Guidance Material for the New Flight Plan Model prepared by ICAO so States, Territories and International Organizations in the CAR/SAM Regions initiate actions to meet this requirement that will be in force in November 2012. States should also develop their action plan for the implementation of the new flight plan model and associated ATS messages so as to ensure smooth transition at regional and national levels.

3.3 A common harmonized regional planning approach will allow the C/CAR WG to continue its own implementation tasks in line with the particular needs of the involved FIRs. The establishment of new performance objectives in line with ICAO guidelines will allow the dynamic identification of needs and periodic follow-up of attained implementation results and the optimum assignment of resources by States/Territories/International Organizations.

### 4. Suggested Action

4.1 The Meeting is invited to:

- a) update the NAM/CAR Implementation Plan included in the Appendices to this working paper with the revision to the CNS and ATM aspects and addition of the AGA, AIM and MET parts;
- b) assign deadlines to each task as follow-up to the CIP; and
- c) agree to other actions as deemed appropriate.

-----

**APPENDIX A**



**INTERNATIONAL CIVIL AVIATION ORGANIZATION**

**NORTH AMERICAN, CENTRAL AMERICAN AND CARIBBEAN**

**REGIONAL OFFICE**

*PERFORMANCE BASED REGIONAL*

**AIR NAVIGATION IMPLEMENTATION PLAN**

**FOR THE CAR/NAM REGIONS**

## 1. Background

1.1 The Global Plan describes a strategy aimed at achieving near and medium term ATM benefits on the basis of available and foreseen aircraft capabilities and ATM infrastructure. It contains guidance on ATM improvements necessary to support a uniform transition to the ATM system envisioned in the global ATM operational concept (Doc 9854). The operational concept presents the ICAO vision of an integrated, harmonized and globally interoperable ATM system.

1.2 The Strategic Vision is *“To foster implementation of a seamless, global air traffic management system that will enable aircraft operators to meet their planned times of departure and arrival and adhere to their preferred flight profiles with minimum constraints and without compromising agreed levels of safety.”*

1.3 This vision is refined in the Mission of Implementation as follows:

*To develop a seamless, globally coordinated system of air navigation services that will cope with worldwide growth in air traffic demand while:*

- *improving upon the present levels of safety;*
- *improving upon the present levels of regularity;*
- *improving upon the overall efficiency and capacity of airspace and airports;*
- *improving operations allowing for capacity increase while minimizing fuel consumption and aircraft engine emissions;*
- *increasing the availability of user-preferred flight schedules and profiles; and*
- *minimizing differing equipment carriage requirements between regions.*

1.4 Having a very strategic geographical location at the confluence of ATS routes connecting the major destinations, the airspace has become a vital link to the smooth flow of traffic between major airspace in NAM and CAR Regions.

1.5 The complexities of Caribbean airspace are unique in nature. Based on the topography, various types of aircraft from Helicopter to bigger type of jet aircraft are being operated in various sectors. Restricted airspace for Military flying and the mixed type of aircraft with unmatched capabilities occupy the airspace and their conflicting demands need to be accommodated.

1.6 Civil commercial, Military, general Aviation, Space research, hobby and adventure flying, flying training, helicopter flying have been constantly increasing and thereby the airspace has been getting congested day by day. Technological innovations provide more simple and flexible solutions not only for transportation needs but also for national security and economic development.

1.7 Entry of Low Cost carriers with attractive flying schemes has boosted the traffic in the recent past and the air transport industry is in the upswing with more and more air operations. These carriers have not only become a potential competitors to the currently established airlines but also a potential challengers to the ATM system as the airspace/ airports are getting more and more congested and leading to delay and holding resulting in burning of extra fuel.

1.8 Military flying activities with frequent airspace and airport closures implies additional civil flight operations and workload on the capacity and air traffic management point of view.

1.9 Recently the rate of traffic growth at an average of 3.3% with the advent of new routes and airlines commencing operations as Caribbean destinations have become more popular for international tourist and commercial interest. The total of operations of the main airports of the CAR Region in the period 2002 to 2005 reflected a positive trend of 1.92%, the global trend is 6%. The main rates of traffic growing are:

Cuba	6.41%
Dominican Republic	5.74%
Belize	4.77%
El Salvador	3.06%
México	2.57%
U. S. (P. R) (V. I)	2.51%
Guatemala	2.51%
Costa Rica	2.42%

1.10 More challenges are in the horizon for ATM seamless system in CAR and NAM Regions. It is expected more and more air operations among CAR and NAM Regions which will require gradual operational developments of ATM system to ensure an optimum air traffic flow towards among certain areas or through them, during periods in which the demand exceeds or is foreseen to exceed the available capacity.

1.11 New aircraft are capable of extremely accurate navigation during all phases of flight and many are equipped with satellite based communication. Aircraft operations growth also has resulted in a relatively young airline fleet, most equipped with some or all of enhanced capabilities.

1.12 Implementation programmes are required to be addressed with a performance-based approach, in order to achieve improvements to the air navigation system and environmental benefits, thus preventing costly implementation processes.

-----

## NAM/CAR IMPLEMENTATION PLAN

### SEAMLESS ATM SYSTEM

#### REGIONAL PLANNING PROCESS

The regional planning process should be conducted in accordance with the global plan initiatives (GPIs) of the Global Plan (Doc 9750) and the ICAO vision for an integrated ATM system, harmonized and interoperable, as established in the Global ATM Operational Concept (Doc 9854).

The objective is to achieve the maximum level of inter-operability and harmonization among sub-systems for a seamless and interoperable regional ATM system for all users during all phases of flight, complying with agreed levels of safety, providing optimum economic operations, to be environmentally sustainable and to fulfil national aviation security requirements.

The planning should be developed based on clearly defined performance objectives. The planning horizon should be focused on the strategies of development, activities or main tasks for two periods – that of less than 5 years (short-term) and 6 to 10 years (medium-term). Some already identified tasks to be analyzed beyond this period may be included if they conform to ICAO ATM requirements.

#### ATM PERFORMANCE OBJECTIVES

The performance objectives for regional ATM work programmes should be developed using a performance approach so as to reflect the necessary activities needed to support regional ATM system implementation.

During its life cycle, the performance objectives may change in a dynamic manner depending on the ATM system's evolution; therefore, these should be coordinated with and available to all interested parties within the ATM Community in order to achieve timely communication throughout the implementation process. The establishment of collaborative decision making processes (CDM) ensures that all stakeholders are involved in and concur with the requirements, tasks and timelines.

The following sections describe aspects pertaining to the performance objectives and required changes, and how these changes foster harmonized improvements throughout the regional ATM system.

##### *Benefits*

The ATM implementation strategies should provide a group of common benefits for all stakeholders and be achieved through the operational and technical activities planned in each performance objective. These benefits should be in accordance with the ICAO strategic objectives.

##### *Identification of work*

Each task should be identified firstly by the activity associated with components of the ATM system when describing the tasks. According to the Doc 9854, the designators for ATM components are as follows:

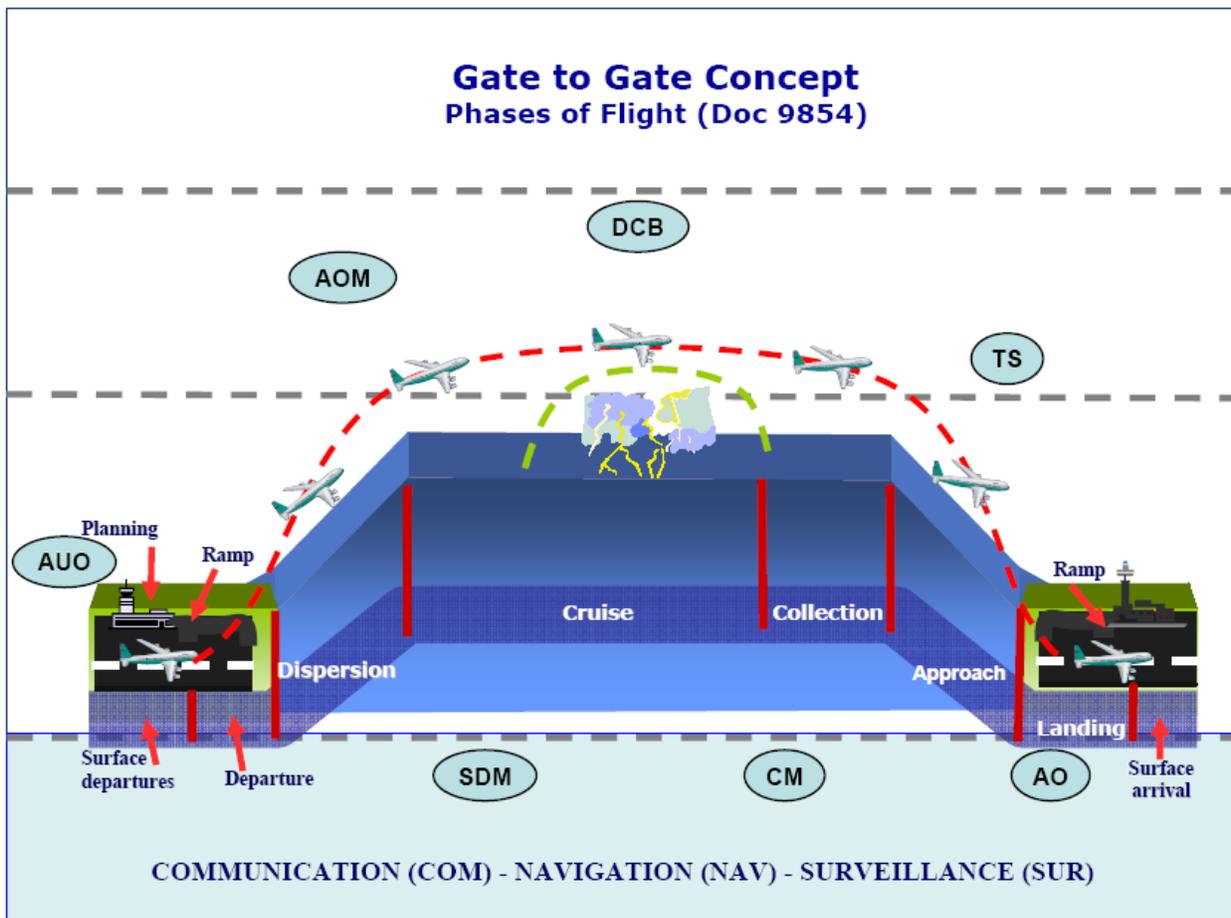
- **AOM** — Airspace organization and management

- A5 -

- **DCB** — Demand and capacity balancing
- **AO** — Aerodrome operations
- **TS** — Traffic synchronization
- **CM** — Conflict management
- **AUO** — Airspace user operations
- **ATM SDM** — ATM service delivery management

Each designator looks to link ATM system component pertains to tasks and activities related to phases of air operations, ATC en-route, terminal and airport, capacity management, airspace management including its flexible use and aeronautical information management.

The infrastructure includes the ground technical systems and capacity required to support operations such as communications, navigation and surveillance, data processing, inter-operability of systems, information management system and spectrum management, including both civil and military systems. The following diagram shows the ATM components in relation to the phases of flight:



This means the need to develop short and medium term work programmes, focusing on the necessary changes to the system in which a clear work commitment will be carried out by the parties involved.

The regional work programmes should define additional tasks and activities, maintaining a direct relation with ATM system components such as airspace organization, civil-military coordination, human factors,

aeronautical regulations, operational safety management systems and environmental protection, among others.

The framework for regional activities should also include the coordination of activities with military authorities who play an important role in helping to ensure that the best use is made of the available airspace resources by all airspace users while still safeguarding national security.

The following principles should be considered when developing work programmes:

- The work should be organized using project management techniques and performance-based objectives in alignment with the Global Plan and the strategic objectives of ICAO. The work programmes should be in accordance with the progress, characteristics and regional implementation needs.
- All activities involved in accomplishing the performance objectives should be designed following strategies, concepts, action plans and roadmaps which can be shared among States to align the regional work with the fundamental objective of achieving interoperability and seamlessness to the highest level.
- The planning of all activities should include optimizing human resources, as well as encouraging dynamic use of electronic communication between States such as the Internet, videoconferences, teleconferences, e-mail, telephone and facsimile. It should be ensured that all resources will be efficiently used, avoiding any duplication or unnecessary work.
- The new work process and methods should ensure that performance objectives can be measured against timelines and the regional progress achieved can be easily reported to the Air Navigation Commission and to the ICAO Council.

### *Status*

The status is mainly focused on monitoring the progress of the implementation activity as it progresses toward a specific completion date. The status of the activity is defined as follows:

- |                   |   |
|-------------------|---|
| <b>■Valid</b>     | the feasibility and benefits of an activity has been confirmed, work has been initiated but the activity itself has not been finalized. |
| <b>■Completed</b> | implementation of the activity has been finalized by the involved parties.  |
| <b>■Tentative</b> | the feasibility and benefits of an activity investigated or to be developed.  |

A tentative status indicates a potential activity; normally this activity will not be included in the regional planning documents unless it is an ICAO defined requirement.

### *Relationship between Performance Objectives and Global Plan Initiatives*

The 23 GPIs provide a global strategic framework and are designed to contribute to achieving the regional performance objectives and to support the logical progression of regional implementation work programmes.

Each performance objective should be referenced to the pertinent GPIs. The goal is to ensure that the work process will be integrated into the global planning framework

## NATIONAL ACTION PLANS

States should develop their own national action plans reflecting the specific activities or tasks along with the expected benefits to be obtained and the date by which each should be completed according to the national needs and based on the regionally-agreed performance objectives.

The activities should include the necessary detailed actions to successfully achieve the national performance objectives, relating these activities with the short and medium term regionally-agreed performance objectives.

National plans should identify the individuals or teamwork responsible for achieving the objectives as well as a means for monitoring and eventually reporting progress on the actions to ICAO. The responsibilities and time-tables should be clearly defined so that the involved parties are aware of their commitments throughout the planning process.

Additionally, national action plans should include adequate means to provide information on implementation progress achieved such as through a periodic reporting process. This facilitates senior management levels' efforts to prioritize the actions and resources required. The same information provided to ICAO will allow feedback and assistance to be provided specific for each Region as they work to achieve a Global ATM system.

## CAR/NAM REGIONS PERFORMANCE OBJECTIVES

<b>1. OPTIMIZE THE ATS ROUTE STRUCTURE EN-ROUTE AIRSPACE</b>				
<b>Benefits</b>				
<b>Environment Efficiency</b>	<ul style="list-style-type: none"> <li>• reductions in fuel consumption;</li> <li>• ability of aircraft to conduct flight more closely to preferred trajectories;</li> <li>• increase in airspace capacity;</li> <li>• facilitate the utilization of advanced technologies (e.g., FMS based arrivals) and ATC decision support tools (e.g., metering and sequencing), thereby increasing efficiency.</li> </ul>			
<i>Strategy (2008 - 2015)</i>				
<i>ATM OC Component</i>	<i>TASK DESCRIPTION</i>	<b>START- END</b>	<b>RESPON- SIBLE</b>	<b>STATUS</b>
<b>AOM</b>	<i>a)</i> Develop regional action plan	2007	GREPECAS	Completed
	<i>b)</i> Develop Airspace Concept based in CAR /SAM PBN Roadmap, in order to design and implement a trunk route network, connecting major city pairs in the upper airspace and for transit to/from aerodromes, on the basis of PBN and, in particular, RNAV/5, taking into account interregional harmonization	2010	States	Valid
	<i>c)</i> Develop performance measurement plan	2010	States	Valid
	<i>d)</i> Formulate safety plan	2010	States	Valid
	<i>e)</i> Establish collaborative decision making (CDM) process	2010	States	Valid
	<i>f)</i> Publish national regulations for aircraft and operators approval using PBN manual as guidance material	2010	States	Valid
	<i>g)</i> Identify training needs and develop corresponding guidelines	2010	States	Valid
	<i>h)</i> Implementation of ATS routes enroutes	2010	States	Valid
	<i>i)</i> Monitor implementation progress in accordance with CAR/SAM PBN implementation roadmap and State implementation plan	On going	GREPECAS	Valid
<b>References</b>	GPI/5: performance-based navigation, GPI/7: dynamic and flexible ATS route management, GPI/8: collaborative airspace design and management, GPI/10: terminal area design and management, GPI/11: RNP and RNAV SIDs and STARs and GPI/12: FMS-based arrival procedures			

<b>2. OPTIMIZE THE ATS ROUTE STRUCTURE IN TERMINAL AIRSPACE</b>				
<b>Benefits</b>				
<b>Environment</b>	<ul style="list-style-type: none"> <li>• reductions in fuel consumption;</li> <li>• ability of aircraft to conduct flight more closely to preferred trajectories;</li> <li>• increase in airspace capacity;</li> <li>• facilitate utilization of advanced technologies (e.g., FMS based arrivals) and ATC decision support tools (e.g., metering and sequencing), thereby increasing efficiency.</li> </ul>			
<i>Strategy (2008 - 2015)</i>				
<i>ATM OC Component</i>	<b>TASK DESCRIPTION</b>	<b>START- END</b>	<b>RESPON- SIBLE</b>	<b>STATUS</b>
<b>AOM</b>	<i>a)</i> Develop regional PBN implementation plan	2007	<i>GREPECAS</i>	Completed
	<i>b)</i> Develop State PBN implementation plan	2010	States	<i>Valid</i>
	<i>c)</i> Develop Airspace Concept based in CAR/SAM PBN Roadmap, in order to design and implement optimized standard instrument departures (SIDs), standard instrument arrivals (STARs), instrument flight procedures, holding, approach and associated procedures, on the basis of PBN and, in particular RNAV-#1 and Basic-RNP1	2011	States	<i>Valid</i>
	<i>d)</i> Develop performance measurement plan	2010	States	<i>Valid</i>
	<i>e)</i> Formulate safety plan	2010	States	<i>Valid</i>
	<i>f)</i> Establish collaborative decision making (CDM) process	2010	States	<i>Valid</i>
	<i>g)</i> Publish national regulations for aircraft and operators approval using PBN manual as guidance material	2010	States	<i>Valid</i>
	<i>h)</i> Identify training needs and develop corresponding guidelines	2010	States	<i>Valid</i>
	<i>i)</i> Develop system performance monitoring plan	2010	States	<i>Valid</i>
	<i>j)</i> Develop a regional strategy and work programme for implementation of SIDs and STARs	2011	States	<i>Valid</i>
	<i>k)</i> Monitor implementation progress in accordance with CAR/SAM PBN implementation roadmap and State implementation plan	<i>On going</i>	<i>GREPECAS</i>	<i>Valid</i>
<b>References</b>	GPI/5: performance-based navigation, GPI/7: dynamic and flexible ATS route management, GPI/8: collaborative airspace design and management, GPI/10: terminal area design and management, GPI/11: RNP and RNAV SIDs and STARs and GPI/12: FMS-based arrival procedures.			

<b>3. IMPLEMENT RNP APPROACHES</b>				
<b>Benefits</b>				
<b>Efficiency</b>	• Improvements in capacity and efficiency at aerodromes.			
<b>Safety</b>	• Improvements in safety at aerodromes.			
<i>Strategy (2008-2015)</i>				
<i>ATM OC Component</i>	<i>TASK DESCRIPTION</i>	<i>START- END</i>	<i>RESPON-SIBLE</i>	<i>STATUS</i>
<b>AOM</b>	<i>a)</i> Develop State PBN implementation plan.	<i>2009</i>	States	<i>Valid</i>
	<i>b)</i> Develop Airspace Concept based in CAR /SAM PBN Roadmap, in order to design and implement RNP APCH with Baro-VNAV in accordance with assembly resolution A36-23, and RNP AR APCH where beneficial	<i>2010</i>	States	<i>Valid</i>
	<i>c)</i> Develop performance measurement plan	<i>2010</i>	States	<i>Valid</i>
	<i>d)</i> Formulate safety plan	<i>2010</i>	States	<i>Valid</i>
	<i>e)</i> Establish collaborative decision making (CDM) process	<i>2010</i>	States	<i>Valid</i>
	<i>f)</i> Publish national regulations for aircraft and operators approval using PBN manual as guidance material.	<i>2010</i>	States	<i>Valid</i>
	<i>g)</i> Identify training needs and develop corresponding guidelines	<i>2010</i>	States	<i>Valid</i>
	<i>h)</i> Implementation of APV procedures	<i>-2016</i>	States	<i>Valid</i>
	<i>i)</i> Formulate system performance monitoring plan	<i>2011</i>	States	<i>Valid</i>
	<i>j)</i> Monitor implementation progress in accordance with CAR/SAM PBN implementation roadmap and State implementation plan	<i>On going</i>	<i>GREPECAS</i>	<i>Valid</i>
<b>References</b>	GPI/5: performance-based navigation, GPI/7: dynamic and flexible ATS route management, GPI/8: collaborative airspace design and management, GPI/10: terminal area design and management, GPI/11: RNP and RNAV SIDs and STARs and GPI/12: FMS-based arrival procedures.			

<b>4. ENHANCE CIVIL/MILITARY COORDINATION AND CO-OPERATION</b>				
<b>Benefits</b>				
<b>Efficiency</b>	<ul style="list-style-type: none"> <li>increase airspace capacity;</li> </ul>			
<b>Continuity</b>	<ul style="list-style-type: none"> <li>allow a more efficient ATS route structure</li> <li>ensure safe and efficient action in the event of unlawful interference;</li> <li>make available military restricted airspace more hours of the day so that aircraft can fly on their preferred trajectories; and</li> <li>improve search and rescue services.</li> </ul>			
<i>Strategy (2008-2012)</i>				
<i>ATM OC Component</i>	<i>TASK DESCRIPTION</i>	<i>START- END</i>	<i>RESPON- SIBLE</i>	<i>STATUS</i>
<b>AOM</b>	<i>a)</i> Develop guidance material on civil/military coordination and co-operation to be used by States/Territories to develop national policies, procedures and rules.	<i>2007</i>	ICAO	<i>Completed</i>
	<i>b)</i> Establish civil/military coordination bodies.	<i>2008 – 2012</i>	States	<i>Valid</i>
	<i>c)</i> Arrange for permanent liaison and close cooperation between civil ATS units and appropriate air defence units.	<i>2008 – 2012</i>	States	<i>Valid</i>
	<i>d)</i> Conduct a regional review of special use airspace.	<i>2008 – 2012</i>	<i>GREPECAS</i>	<i>Valid</i>
	<i>e)</i> Develop a regional strategy and work programme for implementation of flexible use of airspace in a phased approach for dynamic sharing of restricted airspace	<i>2008 – 2010</i>	States	<i>Valid</i>
	<i>f)</i> full integration of civil and military aviation activities by 2012.	<i>2008 – 2012</i>	States	<i>Valid</i>
	<i>g)</i> Monitor implementation progress.	<i>On going</i>	<i>GREPECAS</i>	<i>Valid</i>
<b>References</b>	GPI/1: flexible use of airspace.			

<b>5. ALIGN UPPER AIRSPACE CLASSIFICATION</b>					
<b>Benefits</b>					
<b>Efficiency</b>	<ul style="list-style-type: none"> <li>• better utilization of data link communication;</li> <li>• optimize use of flight plan data processing systems;</li> <li>• enhance airspace management coordination, message exchange capabilities and utilization of flexible and dynamic airspace management techniques;</li> </ul>				
<b>Continuity</b>	<ul style="list-style-type: none"> <li>• harmonization of interregional coordination processes;</li> <li>• improvement of airspace interoperability and seamlessness; and</li> <li>• ensure the provision of positive air traffic control services to all aircraft operations.</li> </ul>				
<i>Strategy</i> (Target: 2008)					
<i>ATM OC</i> <i>Component</i>	<i>TASK</i>	<i>TASK DESCRIPTION</i>	<i>START-END</i>	<i>RESPON-SIBLE</i>	<i>STATUS</i>
<b>AOM</b>	<i>a)</i>	Develop a regional implementation strategy and work programme for the implementation of ICAO Annex 11 airspace Class A above FL 195.	2007	<i>GREPECAS</i>	Completed
	<i>b)</i>	Identify key stakeholders, ATCOs, pilots, and relevant international organisations for coordination and cooperation on changes for new airspace organization, using a CDM process.	<i>2008 – 2010</i>	States	<i>Valid</i>
	<i>c)</i>	Develop new national airspace organization in accordance with ICAO provisions, as needed.	<i>2008 – 2010</i>	States	<i>Valid</i>
	<i>d)</i>	Coordinate changes for regional and national documents; <ul style="list-style-type: none"> <li>•• Doc 8733, CAR/SAM ANP;</li> <li>•• AIP; and,</li> <li>•• ATS letters of agreement.</li> </ul>	<i>2008 – 2012</i>	ICAO - States	<i>Valid</i>
	<i>e)</i>	Carry out improvements in ground systems to support new airspace organization configurations, as necessary.	<i>2008 – 2012</i>	States	<i>Valid</i>
	<i>f)</i>	Publish national regulatory material for implementation of new rules and procedures to reflect airspace organizational changes.	<i>2008 – 2010</i>	States	<i>Valid</i>
	<i>g)</i>	Train ATCOs and pilots in new procedures, including all civil and military airspace users, as required;	<i>2008 – 2012</i>	States	<i>Valid</i>
	<i>h)</i>	Monitor implementation progress.	<i>On going</i>	<i>GREPECAS</i>	<i>Valid</i>
<b>References</b>	GPI/4: align upper airspace classification.				

6. IMPROVE DEMAND AND CAPACITY BALANCING				
Benefits				
<b>Environment</b>	<ul style="list-style-type: none"> <li>reduction in weather- and traffic-induced holding, leading to reduced fuel consumption and emissions;</li> </ul>			
<b>Efficiency</b>	<ul style="list-style-type: none"> <li>improved and smoother traffic flows;</li> <li>improved predictability;</li> <li>improved management of excess demand for service in ATC sectors and aerodromes;</li> <li>improved operational efficiency;</li> <li>enhanced airport capacity;</li> <li>enhanced airspace capacity; and</li> </ul>			
<b>Safety</b>	<ul style="list-style-type: none"> <li>improved safety management.</li> </ul>			
Strategy Near term (2008)				
ATM OC Component/TASK	TASK DESCRIPTION	START- END	RESPON-SIBLE	STATUS
DCB	a) Identify key stakeholders (ATC service providers and users, military authorities, airport authorities, aircraft operators and relevant international organisations) for purposes of coordination and cooperation, using a CDM process.	2008	GREPECAS	Valid
	b) Identify and analyse traffic flow problems and develop methods for improving efficiencies on a gradual basis, as needed, through enhancements in current: <ul style="list-style-type: none"> <li>ei. airspace organization and management (AOM) and ATS routes structure (unidirectional routes) and SID and STARS;</li> <li>eii. communication, navigation and surveillance systems;</li> <li>eiii. aerodrome capacity;</li> <li>eiv. ATS capacity;</li> <li>ev. training for pilots and Controllers; and</li> <li>evi. ATS letters of agreement.</li> </ul>	2008 – 2012	GREPECAS	Valid
	c) Define common elements of situational awareness between FMUs; <ul style="list-style-type: none"> <li>ei. common traffic displays,</li> <li>eii. common weather displays (Internet),</li> <li>eiii. communications (teleconferences, web), and</li> <li>eiv. daily teleconference/messages methodology advisories.</li> </ul>	2010 – 2012	GREPECAS	Valid
	d) Develop methods to establish demand/capacity forecasting;	2007 – 2012	GREPECAS	Valid
	e) Develop a regional strategy and work programme for harmonized implementation of ATFM service.	2007	GREPECAS	Completed

<i>Medium term (2010)</i>				
<b>DCB</b>	<i>f)</i> Develop a regional strategy for the implementation of flexible use of airspace (FUA);			
	<i>i.</i> assess use of airspace management processes;			
	<i>ii.</i> improve current national airspace management to adjust dynamic changes in tactical stage to traffic flows;			
	<i>iii.</i> introduce improvements in ground support systems and associated procedures for the extension of FUA with dynamic airspace management processes; and	<i>2008 – 2010</i>	<i>GREPECAS States</i>	<i>Valid</i>
	<i>iv.</i> implement dynamic ATC sectorization in order to provide the best balance between demand and capacity to respond in real-time to changing situations in traffic flows, and to accommodate in short-term the preferred routes of users.			
	<i>g)</i> Define common electronic information and minimum databases required for decision support and alerting systems for interoperable situational awareness between Centralized ATFM units.	<i>2008 – 2014</i>	<i>GREPECAS States</i>	<i>Valid</i>
	<i>h)</i> Develop regional procedures for efficient and optimum use of aerodrome and runway capacity.	<i>2008 – 2012</i>	<i>GREPECAS</i>	<i>Valid</i>
<i>i)</i> Develop a regional ATFM procedural manual to manage demand/capacity balancing.	<i>2008 – 2010</i>	<i>GREPECAS</i>	<i>Valid</i>	
<i>j)</i> Develop a regional strategy and framework for the implementation of a Centralized ATFM unit.	<i>2008 – 2012</i>	<i>GREPECAS</i>	<i>Valid</i>	
<i>k)</i> Develop operational agreements between Centralized ATFM units for interregional demand/capacity balancing.	<i>2008 – 2015</i>	<i>GREPECAS</i>	<i>Valid</i>	
<i>l)</i> Monitor implementation progress.	<i>On going</i>	<i>GREPECAS</i>	<i>Valid</i>	
<b>References</b>	GPI/1: flexible use of airspace; GPI/6: air traffic flow management; GPI/7: dynamic and flexible ATS route management; GPI/9: Situational awareness; GPI/13: aerodrome design and management; GPI/14: runway operations; and GPI/16: decision support and alerting systems.			

<b>7. IMPROVE ATM SITUATIONAL AWARENESS</b>				
<b>Benefits</b>				
<b>Efficiency</b>	<ul style="list-style-type: none"> <li>enhanced traffic surveillance;</li> <li>enhanced collaboration between flight crew and the ATM system;</li> <li>improved collaborative decision-making through sharing electronic aeronautical data information;</li> <li>reduced of workload for both pilots and controllers;</li> <li>improved operational efficiency;</li> <li>enhanced airspace capacity;</li> </ul>			
<b>Safety</b>	<ul style="list-style-type: none"> <li>improved implementation on a cost-effective basis;</li> <li>improved available electronic terrain and obstacle data in the cockpit;</li> <li>reduced of the number of controlled flight into terrain related accidents; and</li> <li>improved safety management.</li> </ul>			
<i>Strategy Near term (2010)</i>				
<i>ATM OC Component</i>	<i>TASK DESCRIPTION</i>	<i>START- END</i>	<i>RESPON-SIBLE</i>	<i>STATU S</i>
<b>SDM</b>	<i>a)</i> Identify parties concerned.	<i>2009</i>	<i>GREPECAS</i>	<i>Comple ted</i>
	<i>b)</i> Identify the automation level required according to the ATM service provided in airspace and international aerodromes, assessing <i>1.1.i.</i> operational architecture design, <i>1.2.ii.</i> characteristics and attributes for interoperability, <i>1.3.iii.</i> data bases and software, and <i>1.4.iv.</i> technical requirements.	<i>2008 – 2010</i>	States	<i>Valid</i>
	<i>c)</i> Improve ATS interfacility communication.	<i>2008 – 2015</i>	States	<i>Valid</i>
	<i>d)</i> Implement flight plan data processing system and electronic transmission tools.	<i>2008 – 2012</i>	States	<i>Valid</i>
	<i>e)</i> Implement radar data sharing programs where benefits can be obtained.	<i>2008 – 2012</i>	States	
	<i>f)</i> Develop situational awareness training programmes for pilots and controllers.	<i>2008 – 2012</i>	States	
	<i>g)</i> Implement ATM surveillance systems for situational traffic information and associated procedures.	<i>2010 – 2015</i>	States	
	<i>h)</i> Implement ATS automated message exchanges, as required <i>a.i)</i> FPL, CPL, CNL, DLA, etc.	<i>2008 – 2012</i>	<i>GREPECAS</i> States	
	<i>j)</i> Implement automated radar handovers, where able.	<i>2008 – 2014</i>	States	

	<p><i>k)</i> Implement ground and air electronic warnings, as needed</p> <ul style="list-style-type: none"> <li><i>a.i.</i> Conflict prediction</li> <li><i>b.ii.</i> Terrain proximity</li> <li><i>e.iii.</i> MSAW</li> <li><i>d.iv.</i> DAIW</li> <li><i>e.v.</i> Surveillance system for surface movement.</li> </ul>	2008 – 2012	States	
	<p><i>l)</i> Implement data link surveillance technologies and applications: ADS, CPDLC, AIDC, as required.</p>		States	<i>Valid</i>
<b>Medium term (2015)</b>				
<b>ATM OC Component</b>	<b>TASK DESCRIPTION</b>	<b>START- END</b>	<b>RESPON-SIBLE</b>	<b>STATUS</b>
	<p><i>m)</i> Implement additional/advanced automation support tools to increase sharing of aeronautical information</p> <ul style="list-style-type: none"> <li><i>a.i.</i> ETMS or similar</li> <li><i>b.ii.</i> MET information</li> <li><i>e.iii.</i> AIS/NOTAM dissemination</li> <li><i>d.iv.</i> Surveillance tools to identify airspace sector constraints</li> <li><i>e.v.</i> A-SMGC in specific aerodromes, as required.</li> </ul>	2010 – 2013	States	<i>Valid</i>
	<p><i>n)</i> Implement teleconferences with ATM stakeholders.</p>	2009 - 2010	States	
	<p><i>o)</i> Monitor implementation progress</p>	<i>On going</i>	<i>GREPECAS</i>	<i>Valid</i>
<b>References</b>	<p>GPI/1: flexible use of airspace; GPI/6: air traffic flow management; and GPI/7: dynamic and flexible ATS route management; GPI/9: Situational awareness; GPI/13: aerodrome design and management; GPI/14: runway operations; and GPI/16: decision support and alerting systems; GPI/17: implementation of data link applications; GPI/18: aeronautical Information; GPI/19: meteorological systems.</p>			

<b>8. ELIMINATION OF IDENTIFIED AOP DEFICIENCIES</b> <i>(wildlife and bird hazard reduction, rescue and fire fighting services and aerodrome emergency planning)</i>				
<b>Benefits</b>				
<i>Safety</i>	<ul style="list-style-type: none"> <li>Strengthen States' safety oversight responsibility on aerodrome operations</li> </ul>			
<i>Efficiency</i>	<ul style="list-style-type: none"> <li>Enhanced safety, efficiency and regularity of aerodrome operations in the States.</li> <li>Uniform implementation of the relevant ICAO SARPs and/or applicable national regulations in the CAR States/Territories.</li> </ul>			
<b>Strategy</b> <b>Short Term (2010)</b> <b>Medium term (2011 – 2015)</b>				
<b>ATM OC COMPONENT AO</b>	<b>TASKS DESCRIPTION</b>	<b>START – END</b>	<b>RESPONSIBIL</b>	<b>STATUS</b>
	<i>a) to carry out a survey within States to determine the current level of implementation with respect to the three major deficiencies in the NAM/CAR Regions.</i>	<i>August 2009 – December 2009</i>	<i>Regional Office</i>	<i>Valid</i>
	<i>b) to evaluate training needs in the CAR Region, if any; and coordinate these with the training needs for aerodrome certification</i>	<i>August 2009 – December 2009.</i>	<i>Regional Office</i>	<i>Valid</i>
	<i>c) to identify specific technical assistance needs, if any</i>	<i>August 2009 – December 2009.</i>	<i>Regional Office / States</i>	<i>Valid</i>
	<i>d) to develop and implement an action plan to meet the identified training needs in coordination with those for aerodrome certification</i>	<i>August 2009 – December 2009</i>	<i>Regional Office</i>	<i>Valid</i>
	<i>e) to develop and implement an action plan for technical assistance needs in coordination with the respective States and TCB</i>	<i>August 2009 – December 2009</i>	<i>Regional Office</i>	<i>Valid</i>
	<i>f) to develop and implement an action plan to remove the three major deficiencies</i>	<i>December 2009 – March 2010.</i>	<i>States</i>	<i>Valid</i>
	<i>g) To implement a regular monitoring system</i>	<i>December 2009 – June 2010.</i>	<i>Regional Office</i>	<i>Valid</i>
<b>References</b>	<i>GPI/13: Aerodrome operations.</i>			

<b>9. IMPLEMENTATION OF AERODROME CERTIFICATION</b>				
<b>Benefits</b>				
<i>Efficiency</i>	<ul style="list-style-type: none"> <li>• Ensure aerodrome operators comply with relevant ICAO SARPs and/or applicable national regulations.</li> <li>• Continued provision of safe and efficient aircraft operations at aerodromes</li> </ul>			
<i>Safety</i>	<ul style="list-style-type: none"> <li>• Strengthen States' safety oversight responsibility on aerodrome operations</li> </ul>			
<b>Strategy</b>				
<b>Short Term (2010)</b>				
<b>Medium term (2011 – 2015)</b>				
<b>ATM OC COMPONENTS</b>	<b>TASK DESCRIPTION</b>	<b>START – END</b>	<b>RESPONSIBLE</b>	<b>STATUS</b>
<b>AO</b>	a) Create a scrutiny group to assist and monitor the implementation of aerodrome certification in the CAR Region.	August 2009 – December 2009.		Valid
	b) Analyze Annex 14, Volume I provisions on aerodrome certification vis-avis national legislations and regulations	August 2009 – December 2009.		Valid
	c) Analyze guidance in the Manual on Certification of Aerodromes (Doc 9774) vis-avis national regulations	August 2009 – December 2009		Valid
	d) Develop and/or complete national regulations on aerodrome certification as necessary; and training of aerodrome inspectors	August 2009 – December 2009		Valid
	e) Develop an action plan for certifying all remaining aerodromes used for international operations, including implementation of SMS	On going		Valid
	f) Implement the action plan; and the scrutiny group to provide yearly feedback to NACC Regional Office regarding the status of the implementation of aerodrome certification	On going		Valid
<b>References</b>	GPI/13: diseño y gestión de aeródromos; GPI/14: operaciones en la pista.			

<b>10. PROTECTION AND OPTIMUM USAGE OF RADIOFREQUENCY SPECTRUM</b>				
<b>Benefits</b>				
<b>Efficiency</b>		Efficient use of aviation radio spectrum		
<b>Safety</b>		Assurance of aviation spectrum		
<b>Strategy</b>				
<b>Near term (2012)</b>				
<b>ATM OC Component</b>	<b>TASK DESCRIPTION</b>	<b>START-END</b>	<b>RESPONSIBLE</b>	<b>STATUS</b>
<b>AOM, DCB, AO, TS, CM, AUO, SDM</b>	a) Ensure Regional coordination for the protection of the aviation spectrum at WRC-11, and beyond	2009-2011	S/T/O, ICAO	
	b) Ensure Participation of Civil Aviation Experts in State's delegation to ITU WRC Meetings	2009-2010	S/T/O	
	c) Disseminate ICAO policy statements of requirements for aeronautical radio frequency spectrum	2009-2010	ICAO	
	d) Implement frequency spectrum management	2009-2011	S/T/O	
	e) Support ICAO Position during WRC-11	2012	S/T/O	
	f) Monitor the understanding of radio spectrum management and support on WRC-2011	2009-2012	ICAO	
<b>References</b>	GPI/1: flexible use of airspace; GPI/6: air traffic flow management; GPI/7: dynamic and flexible ATS route management; GPI/9: Situational awareness; GPI/14: runway operations; GPI-21: Navigation Systems, GPI-22: Communications Infrastructure and GPI-23: Aeronautical radio spectrum.			

## **11. OPTIMIZATION AND MODERNIZATION OF COMMUNICATION INFRASTRUCTURE**

### **Benefits**

- Efficiency**
- Improvements in coordinations
  - Increase availability of communications
  - Avoid misunderstandings in communications
  - Facilitate the utilization of advanced technologies
- Continuity**
- improvement of airspace interoperability and seamlessness; and
  - ensure the provision of positive air traffic control services to all aircraft operations.
- Safety**
- Improvement in safety in airspaces and aerodromes

### **Strategy Near Term (2012)**

<b>ATM OC Component</b>	<b>TASK DESCRIPTION</b>	<b>START- END</b>	<b>RESPON- SIBLE</b>	<b>STATUS</b>
<i>AO, TS, CM, AUO AOM, SDM</i>	a) Review the status of performance of current AFS Services and identify deficiencies or improvements (AFTN, oral ATS services, A/G communications)	2009	WGs	
	b) Analysis and formulation of plans for implementing improvement or solving deficiencies	2009- 2010	WG	
	c) Develop Regional ATN Planning documents	2009- 2012	CNS/ATM/SG	
	d) Coordination and testing of ATN G-G Application implementation aspects	2009- 2012	WGs	
	e) Planning and trial activities for A-G Application implementation	2010- 2011	WGs	
	f) Technical review of Regional Telecommunication networks for ATN implementation	2009- 2010	MEVA TMG, WGs	
	g) Implement available technologies in to facilitate ground and airborne applications (CPDLC, ADS-C, ADS-B)	2009- 2012	States , user	
<b>References</b>	GPI/1: flexible use of airspace; GPI/6: air traffic flow management; GPI/7: dynamic and flexible ATS route management; GPI/9: Situational awareness; GPI/14: runway operations; GPI-17: Data Link Application, GPI-21: Navigation Systems and GPI-22: Communications Infrastructure			

<b>12. AIM PERFORMANCE OBJECTIVE IMPLEMENTATION OF WGS-84 AND e-TOD</b>				
<b>Benefits</b>				
<b>Efficiency</b>	<ul style="list-style-type: none"> <li>◆ implementation of WGS-84 in support PBN approach and departure procedures design</li> <li>• improve aircraft operating limitations analysis</li> <li>• support aeronautical chart production and on-board databases</li> </ul>			
<b>Safety</b>	<ul style="list-style-type: none"> <li>◆ improve situational awareness</li> <li>• improve electronic terrain and obstacle data in display cockpit</li> <li>• support technologies such as ground proximity and minimum safe altitude warning systems (GPWS)</li> </ul>			
<b>Strategy</b>				
<b>Short term (2010)</b>				
<b>Medium term (2011 - 2015)</b>				
<b>ATM OC Component</b>	<b>TASK DESCRIPTION</b>	<b>START- END</b>	<b>RESPON- SIBLE</b>	<b>STATUS</b>
<b>CM</b>	<b>Electronic terrain and obstacle data (eTOD)</b>			
	a. share experience and resources in the implementation of e-TOD through the establishment of an e-TOD Regional working group.	2011 – 2014	GREPECAS States	Valid
	b. Technical requirements.	2010-2014	GREPECAS States	
	c. report requirements and monitor implementation status of e-TOD using electronic media to ICAO NACC Regional Office	2010-2011	States	
	develop a high level policy for the management of a national eTOD programme.			
<b>AUO</b>	<b>WGS-84</b>			
	a. establish WGS-84 implementation goals in coordination with the national PBN implementation	2010-2012	GREPECAS States	Valid
	b. Technical requirements.		GREPECAS States	
	monitor implementation status of WGS-84 using the AIS-5 Table of the FASID and take remedial action if required.	On going	GREPECAS States	Valid
<b>References</b>	GPI-5: Performance-based navigation; GPI-9: Situational awareness; GPI-11: RNP and RNAV SIDs and STARs; GPI-18: Aeronautical Information; GPI-20: WGS-84; GPI-21: Navigation systems			

<b>IMPROVE AVAILABILITY OF METEOROLOGICAL INFORMATION</b>				
<b>Beneficios</b>				
<b>Efficiency</b>	<ul style="list-style-type: none"> <li>Assist ATM in tactical decision making for aircraft surveillance, air traffic flow management and flexible and dynamic routing of aircraft</li> <li>improve aerodrome and air space capacity</li> <li>improve situational awareness of pilots</li> <li>reduce unnecessary consumption of fuel and prevent unnecessary delays due to minimal meteorological conditions at the airports</li> </ul>			
<b>Operational safety</b>	<ul style="list-style-type: none"> <li>improve planning of flight itineraries</li> <li>Increase the number of flights in areas of fair weather conditions and prevent or reduce flights in areas of unfavorable meteorological conditions and volcanic ash clouds</li> <li>prevent landing operations at aerodromes under minimal meteorological conditions</li> </ul>			
<b>Strategy</b>				
<b>Short Term (2010)</b>				
<b>TASK</b>	<b>DESCRIPCIÓN DESCRIPTION</b>	<b>START - END</b>	<b>RESPONSIBLE</b>	<b>STATUS</b>
	<p>Increase and protect facilities to disseminate and Exchange aeronautical meteorological information</p> <ul style="list-style-type: none"> <li>Increase AFTN, WAFS and internet facilities to disseminate OPMET data at meteorological offices and stations.</li> <li>Increase AFTN communications facilities to relay aircraft special reports from the air traffic control units to the meteorological offices</li> <li>Implement lightning and other protection systems for the AFTN and WAFS facilities used for OPMET exchange</li> </ul> <p>Maintain and expand the number of workstations used to receive meteorological products of the World Area Forecast System</p>		States	Valid
	<ul style="list-style-type: none"> <li>Increase availability, timeliness and quality of OPMET data</li> <li>Improve the use of the METAR and TAF codes/templates used to disseminate meteorological reports and aerodrome forecasts</li> <li>Enhance preparation and availability of SIGMET information on hazardous meteorological conditions and volcanic ash clouds</li> <li>Enhance the availability of landing forecasts, TREND, considering user (IATA) requirements</li> </ul>		States	Valid
	<p>Establish contingency procedures to disseminate OPMET data, via Internet, in case of failure of the AFTN and WAFS facilities.</p>		States ICAO	Valid

	<p><i>Improve the quality of data, provided by meteorological sensors, used in meteorological reports</i></p> <ul style="list-style-type: none"> <li><i>Establish verification and calibration programmes of data provided by meteorological instruments and automated weather systems at the aerodromes</i></li> </ul>		<i>States</i>	<i>Valid</i>
	<i>Monitor availability and quality of OPMET data issued by CAR States and Territorios and provide asistanse if required</i>		<i>States</i>	<i>Valid</i>
	<i>Monitor participation of States in the International Airways Volcano Watch and provide assistance if necessary</i>		<i>ICAO Washington VAAC</i>	<i>Valid</i>
	<i>Monitor participation of States in the International Tropical Cyclone Watch and provide assistance if necessary</i>		<i>ICAO Miami</i>	<i>Valid</i>
	<i>Establish Quality Assurance Systems provided to the aeronautical users</i>		<i>ICAO States</i>	<i>Valid</i>
	<i>Conduct, every year, update seminars and courses on relevant operational aeronautical meteorological matters</i>		<i>States ICAO NACC</i>	<i>Valid</i>
	<i>Consider standards and recommendations ICAO and WMO for the training and recruitment of aeronautical meteorological personnel</i>		<i>States</i>	<i>Valid</i>
<b>Mediano plazo (2015)</b>				
	<ul style="list-style-type: none"> <li><i>Establshi cost recovery schemes for the aeronautical meteorological services</i></li> <li><i></i></li> </ul>		<i>Estados States</i>	<i>Válido Valid</i>
	<ul style="list-style-type: none"> <li><i>Increase the number of automated weather systems at the aerodromes</i></li> <li><i></i></li> </ul>		<i>Estados States</i>	<i>Válido Valid</i>
	<i>Implement meteorological data downlinks at the MET and ATS units</i>		<i>Estados States</i>	<i>Válido Valid</i>
	<i>Implement meteorological data uplinks from the automated weather systems, ATS and meteorological units</i>			<i>Valid</i>
	<i>Prepare hourly-monthly climatological tables of the aerodromes for itinerary planning</i>		<i>States</i>	<i>Valid</i>
<b>=References</b>	<i>. GPI/1. flexible use of air space, GPI/6 air traffic flor management, GPI/7 flexible/dynamic ATS route management, GPI/9 situational awareness, GPI/14 runway operations, GPI/17 implementation of datalink applications, GPI/18. aeronautical information, GPI. Meteorological systems..</i>			

**SAR PERFORMANCE OBJECTIVE**

**IMPROVE SAR SYSTEM**

**Benefits**

- Efficiency**
- enhanced traffic surveillance;
  - enhanced collaboration between stakeholders;
  - improved operational efficiency;
  - improved implementation on a cost-effective basis;
- Safety**
- improved safety management.

**Strategy**

*Near term (2010)*

<b>TASK</b>	<b>DESCRIPTION</b>	<b>START- END</b>	<b>RESPON- SIBLE</b>	<b>STATUS</b>
	<i>Develop regional strategy to improve SAR System</i>			
	<i>Identify parties concerned</i>			
	<i>Conduct comprehensive analysis of SAR requirements based on risk assessment and quality assurance principles</i>			
	<i>Foster the harmonization of policies, regulations, practices and procedures of the aeronautical/maritime SAR services, in accordance with ICAO Standards and Recommended Methods.</i>			
	<i>Develop, update and ratify SAR agreements with RCCs of adjacent States.</i>			
	<i>Develop, update and ratify SAR agreements with SAR service International agencies.</i>			
	<i>Foster the establishment of joint aeronautical/maritime SAR Committees, including the integration of voluntary SAR organizations, as well as the development of agreements between all the stakeholders of the national SAR service</i>			
	<i>Develop a human resources and training planning strategy in line with ICAO SAR guidelines and the regional agreements reached.</i>			
	<i>Monitor implementation progress</i>			
<b>References</b>	<i>GPI/6: air traffic flow management; and GPI/9: Situational awareness;</i>			

-----

## **APPENDIX B**

### **GUIDANCE FOR IMPLEMENTATION OF FLIGHT PLAN INFORMATION TO SUPPORT AMENDMENT 1 TO PANS-ATM, DOC 4444, FIFTEENTH EDITION**

#### **1. INTRODUCTION**

1.1. The guidance contained herein is provided to assist airspace users and Air Navigation Service Providers (ANSP) implement the flight planning changes incorporated by Amendment 1 to Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM, Doc 4444) Fifteenth Edition.

1.2. This guidance do not change any provision in Annex 2 or PANS-ATM regarding completion and acceptance of a flight plan.

1.3. The changes were announced by ICAO on the 25 June 2008 in State Letter 50/2008 and will become applicable on 15 November 2012.

1.4. The changes have considerable consequences on ANSP flight data processing systems. Changes are required to ANSP flight data processing systems that check and accept flight plans and related messages, use flight plan data in displays for controller reference, use data in ANSP automation and affect information that is communicated between ANSPs as the flight progresses. Preparation for the changes should therefore be made well in advance of 15 November 2012.

1.5. The changes also have consequences for airspace users. If a flight plan with new content is sent to an ANSP that has not yet changed to accept the new content then it is likely that some information will be lost, misinterpreted or cause a rejection of the flight plan.

1.6. No start date has been given for implementation of the changes to commence, however one reason for the ICAO State Letter on 25 June 2008 was to allow recipients “to begin updating your flight plan data processing systems”. The transition period for the changes is therefore from 25 June 2008 until 15 November 2012.

1.7. It is recognized that changes will be implemented by airspace users and ANSPs on individual schedules due to individual needs, however some coordination will occur.

1.8. It is essential to the success of this implementation that all airspace users and ANSPs be able to submit and process flight information in accordance with Amendment 1 to PANS-ATM (Doc 4444) Fifteenth Edition by 15 November 2012, as processing via present methods is not assured after that date.

#### **2. OBJECTIVE**

2.1. The purpose of the guidance contained herein is to support a coordinated global effort during the transition period so that a successful transition is achieved by the applicable date of 15 November 2012.

#### **3. APPLICABILITY**

3.1. This guidance applies to airspace users, ANSPs, Planning and Implementation Regional Groups (PIRG). Note that flight planning services and related organizations involved in the processing of flight plans are considered part of the airspace user community and, as such, are covered under this guidance.

3.2. This document presents guidelines which should be considered when developing implementation plans for this Amendment. Adherence to these guidelines will mitigate risks associated with the technical challenges inherent during the transition period and assure that users are able to meet flight planning requirements as individual ANSPs implement changes.

3.3. This document applies with immediate effect and continues until the complete implementation of Amendment 1 to PANS-ATM Fifteenth Edition.

#### **4. SCOPE**

4.1. This guidance is limited to transitioning to flight planning and Air Traffic Services (ATS) message changes defined in Amendment 1 to PANS-ATM Fifteenth Edition, including message content and submission instructions.

#### **5. FLIGHT PLANNING ENVIRONMENT**

5.1. In order to allow performance case considerations to drive individual airspace user and ANSP implementation schedules, the ATM system will need to simultaneously support both present and new flight plan information and content for a period of time.

5.2. Amendment 1 to PANS-ATM Fifteenth Edition contains changes to length and content of items. The changes to content are:

- Change the way aircraft equipage and capabilities are communicated to provide more detail;
- Provide additional means of describing route way points (specifically bearing and distance from points other than navigation aids); and,
- Permit specification of the date of flight in a standardised manner.

5.3. The existing flight planning environment supports a variety of means of filing flight plans. For example flight plans can be filed directly by the airspace user to each ANSP individually or flight plans can be filed by the airspace user at one location and then the ATM system distributes the flight plan. Amendment 1 does not specifically change these options; however the means of transitioning to Amendment 1 may impose some requirements during the transition.

5.4. The existing ATM system supports a variety of means of ANSPs communicating flight plan data between ANSP systems, for example use of coordination messages where Amendment 1 implies changes of content.

#### **6. IMPLEMENTATION GUIDELINES**

6.1. PRESENT is defined as the present flight planning and ATS message formats as defined in the current version of PANS-ATM (Doc 4444) Fifteenth Edition.

6.2. NEW is defined as the flight planning and ATS message formats as specified in Amendment 1 to PANS-ATM (Doc 4444) Fifteenth Edition.

6.3. The transition period is from 25 June 2008 until the applicability date of 15 November 2012.

6.4. These guidelines have been developed to facilitate concurrent use of both PRESENT and NEW formats by airspace user and ANSP flight data processing systems during the transition period.

6.5. **Guideline 1:** As each ANSP transitions to NEW content, it is essential that they also support present content until the applicability date of 15 November 2012.

6.5.1. There is no requirement for ANSPs to accept and process PRESENT after the applicability date, unless specified by the appropriate authority.

6.5.2. This guideline relates directly to the transition environment in which a segment of airspace users (and ANSPs) do not amend their flight planning systems until the end of the transition period.

6.6. **Guideline 2:** PIRGs are encouraged to plan and publish regional implementations sufficiently in advance of the applicability date so that airspace users and ANSPs can respond to and resolve any unforeseen operational issues.

6.6.1. It is anticipated that implementation will occur progressively as each PIRG works with their member States/International Organizations and airspace users to coordinate a regional transition prior to 15 November 2012.

6.6.2. Transition plans should encourage all ANSPs transition to NEW a period of time before 15 November 2012 to allow airspace users a transition period to NEW before the applicability date.

6.6.3. Transition plans should take into account that the airspace user may not be able to make use of the new opportunities provided by NEW content until an ANSP has transitioned. Even then, use of NEW content may be restricted in its application if the flight still involves ANSPs who have not transitioned.

6.7. **Guideline 3:** During the transition period and after an ANSP has advised that they can accept NEW flight plans, the determination to file NEW content or PRESENT content with that ANSP is the choice of the airspace user.

6.7.1. It is expected that airspace users will make the decision on what format to file based on performance gains which may be achieved through capability information in Items 10 and/or 18 of the NEW flight plan form.

6.7.2. It is intended that all airspace users will file NEW from the applicability date forward, as using PRESENT is not assured after that date.

**Note: The following guidelines apply only to situations where ANSPs affected by a flight have not all transitioned to NEW.**

6.8. **Guideline 4:** During the transition period when not all ANSPs affected by a flight have transitioned to NEW, the airspace user must ensure that PRESENT flight plan information is filed with ANSPs who have not transitioned.

6.8.1. This can be achieved by the airspace user filing only PRESENT information with all ANSPs (as ANSPs supporting NEW will also support PRESENT during transition).

6.8.2. ANSPs using PRESENT may misinterpret, and may reject, flight plan information that is filed more than 24 hours in advance of flight. Filing more than 24 hours in advance of flight cannot be used if

one or more ANSPs affected by a flight have not transitioned (unless those ANSPs already support filing more than 24 hours in advance of flight). Although ANSPs using NEW could accept the flight plan they may not be able to pass essential coordination to ANSPs using PRESENT.

6.8.3. The airspace user may choose to file NEW to ANSPs that have transitioned and PRESENT to ANSPs that have not transitioned. However without special transitional procedures, a situation can occur where the NEW information would only be useable until the first ANSP along route of flight using PRESENT. This is because the ANSP using NEW will not be able to coordinate NEW information with ANSPs using PRESENT.

6.9. **Guideline 5:** To facilitate user decisions on whether to file PRESENT, NEW or a combination of PRESENT/NEW, ICAO will maintain a repository of information on the ICAO website regarding the ability of each ANSP to accept PRESENT or NEW.

6.9.1. This information which will be publicly available is in addition to the normal methods of communication between an ANSP and its airspace users.

6.9.2. Each ANSP will communicate, via State and ICAO Regional Offices, their ability to accept NEW to ICAO as soon as possible so that ICAO can ensure that complete and updated information is posted. An ANSP advising NEW will mean that they can not only receive and process the new information but also coordinate with other ANSPs who have transitioned to NEW.

6.10. **Guideline 6:** During the transition period, ANSPs who accept NEW may need to convert flight information to PRESENT format for coordination with adjacent ANSPs who have not transitioned.

6.10.1. It is strongly suggested for consistency that all ANSPs utilize the conversion table provided below so airspace users and ANSPs have a common understanding of how NEW will be converted to PRESENT.

6.10.2. PIRGSs, States and ANSPs should be aware that valuable planning information may be lost during the conversion process, as shown in the conversion table.

6.10.3. There is no intent for PRESENT to be converted to NEW during the transition period.

#### **CONVERSION OF NEW ITEMS 10 AND 18 TO PRESENT**

It is strongly suggested that all ANSPs utilize the table below to convert NEW flight information in Items 10 and 18 to the PRESENT format for coordination with adjacent ANSPs which only accept PRESENT.

- Modified agreements may be worked between ANSPs for Item 18 information if the conversion would cause the message to be rejected by an ANSP which only accepts PRESENT.
- CAUTION: Some capability information will be lost during conversion.

	NEW data in these columns		Converts to PRESENT data in these columns	
	Item 10	Item 18	Item 10	Item 18
<b>Com-Nav</b>	N		N	
	S		VOL	
	SF		S	
	A		Z	NAV/GBAS
	B		Z	NAV/LPV
	C		C	
	D		D	
	E1		J	DAT/
	E2		J	DAT/
	E3		J	DAT/
	F		F	
	G	NAV/	G	
	H		H	
	I		I	
	J1		J	DAT/V
	J2		J	DAT/H
	J3		J	DAT/V
	J4		J	DAT/V
	J5		J	DAT/S
	J6		J	DAT/S
	J7		J	DAT/S
	K		K	
	L		L	
	M1		Z	COM/INMARSAT
	M2		Z	COM/MTSAT
	M3		Z	COM/IRIDIUM
	O		O	
	P1-P9 (Reserved)			
	R	PBN/	R	
	T		T	
	U		U	
	V		V	

Com-Nav	NEW data in these columns		Converts to <b>PRESENT</b> data in these columns	
	Item 10	Item 18	Item 10	Item 18
	W		When prescribed by ATS	
	X		When prescribed by ATS	
	Y		When prescribed by ATS	
	Z	COM/NAV/DAT	Z	COM/ NAV
<b>Surveillance</b>	N		N	
	A		A	
	C		C	
	E			
	H		S	
	I		I	
	L		S	
	P		P	
	S		S	
	X		X	
	B1			
	B2			
	U1			
	U2			
	V1			
	V2			
	D1		D	
	G1		D	