International Civil Aviation Organization
North American, Central American and Caribbean Office (NACC)
Tenth Meeting of Directors of Civil Aviation of the Central Caribbean (C/CAR/DCA/10)
Grand Cayman, Cayman Islands, 18 to 21 August 2009

Agenda Item 6: Air Navigation Matters
6.2 Global and Regional Performance Based Air Navigation Implementation Plans

UPDATE OF THE PERFORMANCE BASED AIR NAVIGATION IMPLEMENTATION PLAN FOR THE NAM/CAR REGIONS

(Presented by the Secretariat)

SUMMARY

This working paper presents the update to the Performance Based Air Navigation Implementation Plan for the NAM/CAR Regions approved by the NACC/DCA/3 Meeting, which ensures coordination among all the air navigation fields, such as ATM, CNS, AGA, AIM and MET, toward a seamless ATM system.

References:

- ALLPIRG/5 Meeting Report (Montreal, Canada 23 – 24 March 2006)
- NACC/DCA/3 Meeting Report (Punta Cana, Dominican Republic, 8 to 12 September 2008).
- C/CAR DCA/9 Meeting Report (Oranjestad, Aruba, 9 to 12 July 2007)
- GREPECAS/15 Meeting Report (Rio de Janeiro, Brazil, 13 to 17 October 2008)
- ICAO Assembly Resolution 36-23

Strategic Objectives	*This working paper is related to Strategic Objective **D**.*

1. Background

1.1 The C/CAR/WG/7 Meeting, in line with recommendations of the ALLPIRG/5 and the conclusions of the NACC/DCA, C/CAR/DCA and GREPECAS meetings, reviewed its work programme with a performance-based approach. When reviewing the work programme, ICAO Assembly Resolution 36-23 on the implementation of RNAV/RNP procedures in year 2010 (included in **Appendix A** to this working paper) was also taken into account.

1.2 The GREPECAS/15 Meeting adopted the following conclusion:

CONCLUSION 15/1 DEVELOPMENT OF PERFORMANCE BASED REGIONAL AND NATIONAL PLANS

That,

a) GREPECAS develop a performance-based regional plan in accordance with the Global Air Navigation Plan and the Global ATM Operational Concept. This plan should include identification of regional performance objectives and completion of performance framework forms for all air navigation areas such as ATM, CNS, AIM, MET and AGA/AOP; and

b) States, Territories and International Organizations, taking into account user needs, develop performance-based national plans in accordance with the regional performance objectives included in the Regional Air Navigation Plan. These national plans should encompass identification of national performance objectives and completion of performance framework forms for all air navigation areas such as ATM, CNS, AIM, MET and AGA/AOP.

1.3 The NACC/DCA/3 Meeting adopted the following decision:

DECISION NACC/DCA/3/3 APPROVAL OF THE NAM/CAR IMPLEMENTATION PLAN

The North American, Central American and Caribbean Directors approved:

a) the NAM/CAR Implementation Plan, included in Appendix B to this part of the Report;

b) that NAM/CAR States, Territories and International Organizations develop their national action plans based on the air navigation system implementation plan included in the Appendix to achieve harmonized interregional implementation; and

c) that ICAO take appropriate measures to monitor the implementation of the NAM/CAR Implementation Plan and submit NACC/WG progress reports to the NACC/DCA Meetings.

1.4 The C/CAR/WG/7 Meeting updated the NAM/CAR Performance Based Air Navigation Implementation Plan to ensure coordination among all air navigation services fields, such as ATM, CNS, AGA, AIM and MET, toward a seamless ATM system in line with operational initiatives of the *Global Air Navigation Plan* (Doc 9750). The updated implementation plan is included in **Appendix B** to this working paper.

2. Analysis

2.1 The C/CAR/WG/7 Meeting recognized that the work of all air navigation fields was being merged and that this work should be addressed in a holistic and strategic way. Therefore, considering Doc 9854 - *Global Air Traffic Management Operational Concept*, ATM implementation would have to be faced as a system requiring the support of all the fields that are traditionally considered in the air navigation system.

2.2 The implementation plan updated the following performance objectives:

1. Optimize the ATS route structure in en-route airspace
2. Optimize the ATS route structure in terminal airspace
3. Implement RNP approaches
4. Enhance civil/military coordination and co-operation
5. Align upper airspace classification
6. Improve demand and capacity balancing
7. Improve ATM situational awareness

2.3 Moreover, required implementation tasks were included in new performance objectives as follows:

8. Elimination of identified AOP deficiencies
9. Implementation of aerodrome certification
10. Protection and optimum usage of radiofrequency spectrum
11. Optimization and modernization of communication infrastructure
12. Implementation of WGS-84 and e-TOD
13. Improve availability of meteorological information
14. Improve SAR system

2.4 The Meeting recognized that it is critical to align the C/CAR/WG work programme with this regional implementation plan, considering the performance objectives and related action plans with detailed tasks, deadlines and ICAO periodic monitoring activities.

2.5 The action plan models incorporated on the implementation plan could be used as detailed guidelines of some of the performance objective tasks, so that States/Territories/International Organizations may develop their own implementation plans in line with their own needs.

2.6 These performance-based work strategies will impact the dynamic update of implementation programmes and the Terms of Reference of the C/CAR/WG, as well as the dynamic definition of other future tasks towards a harmonized seamless ATM system in the CAR Region, such as:

- select the implementation tasks and/or improve ANS according to the States/Territories/International Organizations own particular needs;
- improve coordination on implementation activities related with the required Technical
  Co-operation projects;
- optimization of human and financial resources;
- harmonization of the national implementation programmes with regional strategies approved by GREPECAS, in line with ICAO Doc 9750 - *Global Air Navigation Plan* perspective; and
- improve ICAO work programmes, in order to monitor and cover regional assistance needs.

Transition to the New Flight Plan Model

2.7 Following GREPECAS Conclusion 15/35, included in **Appendix C** to this working paper, the C/CAR/WG also decided to include in the implementation plan the Guidance Material for the New Flight Plan Model prepared by ICAO so States/Territories/International Organizations in the CAR/SAM Regions initiate actions to implement the new flight plan model and associated ATS messages so as to ensure a smooth transition at regional and national levels. This transition strategy will be developed in accordance with ICAO global guidelines and GREPECAS regional guidelines for a harmonised implementation on 12 November 2012.

2.8 When developing activities of the C/CAR States/Territories/International Organizations related with the transition strategy towards the new flight plan model, the tasks reflected in Conclusions 3/4 and 3/7 of the Third Meeting of North American, Central American and Caribbean Directors of Civil Aviation (NACC/DCA/3), included in **Appendix C** to this working paper for ease of reference, should be taken into account.

2.9 This harmonized approach to all the CAR Region common implementation programme will allow the C/CAR/WG to continue its own implementation tasks according to the particular needs of the involved States/Territories. The establishment of new performance objectives in line with ICAO guidelines will also allow the dynamic identification of other implementation needs and periodic follow-up of attained results, and the optimum assignment of resources by States/Territories/International Organizations.

3. Suggested Actions

3.1 In order to ensure a seamless and timely implementation of air navigation services, the Meeting should:

a) support the updates made to the Performance Based Air Navigation Implementation Plan so that States/Territories/International Organizations develop their own National Air Navigation Implementation Plan with a performance based approach;

b) provide required resources to the C/CAR/WG so as to meet Assembly Resolution 36-23 on the RNAV/RNP (PBN) implementation; and

c) report on the PBN implementation progress achieved in the C/CAR national air navigation systems to the ICAO NACC Regional Office by **30 January 2010**.

– – – – – – – – – – – – – – – –

APPENDIX A

Assembly Resolution 36-23 on the implementation of RNAV/RNP procedures

A36-23: Performance based navigation global goals

Whereas a primary objective of ICAO is that of ensuring the safe and efficient performance of the global Air Navigation System;

Whereas the improvement of the performance of the Air Navigation System on a harmonized, worldwide basis requires the active collaboration of all stakeholders;

Whereas the Eleventh Air Navigation Conference recommended that ICAO, as a matter of urgency, address and progress the issues associated with the introduction of area navigation (RNAV) and required navigation performance (RNP);

Whereas the Eleventh Air Navigation Conference recommended that ICAO develop RNAV procedures supported by global navigation satellite system (GNSS) for fixed wing aircraft, providing high track and velocity-keeping accuracy to maintain separation through curves and enable flexible approach line-ups;

Whereas the Eleventh Air Navigation Conference recommended that ICAO develop RNAV procedures supported by GNSS for both fixed and rotary wing aircraft, enabling lower operating minima in obstacle rich or otherwise constrained environments;

Whereas Resolution A33-16 requested the Council to develop a programme to encourage States to implement approach procedures with vertical guidance (APV) utilizing such inputs as GNSS or distance measuring equipment (DME)/DME, in accordance with ICAO provisions;

Recognizing that implementation of approach with vertical guidance (APV) is still not widespread;

Recognizing that the Global Aviation Safety Plan has identified Global Safety Initiatives (GSIs) to concentrate on developing a safety strategy for the future that includes the effective use of technology to enhance safety, consistent adoption of industry best practices, alignment of global industry safety strategies and consistent regulatory oversight;

Recognizing that the Global Air Navigation Plan has identified Global Plan Initiatives (GPIs) to concentrate on the incorporation of advanced aircraft navigation capabilities into the air navigation system infrastructure, the optimization of the terminal control area through improved design and management techniques, the optimization of the terminal control area through implementation of RNP and RNAV SIDs and STARs and the optimization of terminal control area to provide for more fuel efficient aircraft operations through FMS-based arrival procedures; and

Recognizing that the continuing development of diverging navigation specifications would result in safety and efficiency impacts and penalties to States and industry;

The Assembly:

1. *Urges* all States to implement RNAV and RNP air traffic services (ATS) routes and approach procedures in accordance with the ICAO PBN concept laid down in the *Performance Based Navigation Manual* (Doc 9613);

2. *Resolves* that:

a) States and planning and implementation regional groups (PIRGs) complete a PBN implementation plan by 2009 to achieve:

1) implementation of RNAV and RNP operations (where required) for en route and terminal areas according to established timelines and intermediate milestones; and

2) implementation of approach procedures with vertical guidance (APV) (Baro-VNAV and/or augmented GNSS) for all instrument runway ends, either as the primary approach or as a back-up for precision approaches by 2016 with intermediate milestones as follows: 30 per cent by 2010, 70 per cent by 2014; and

b) ICAO develop a coordinated action plan to assist States in the implementation of PBN and to ensure development and/or maintenance of globally harmonized SARPs, Procedures for Air Navigation Services (PANS) and guidance material including a global harmonized safety assessment methodology to keep pace with operational demands;

3. *Urges* that States include in their PBN implementation plan provisions for implementation of approach procedures with vertical guidance (APV) to all runway ends serving aircraft with a maximum certificated take-off mass of 5700 kg or more, according to established timelines and intermediate milestones.

4. *Instructs* the Council to provide a progress report on PBN implementation to the next ordinary session of the Assembly; and

5. *Requests* the Planning and Implementation Regional Groups (PIRG) to include in their work programme the review of status of implementation of PBN by States according to the defined implementation plans and report to ICAO any deficiencies that may occur.

– – – – – – – – – – – – – – – –

INTERNATIONAL CIVIL AVIATION ORGANIZATION

NORTH AMERICAN, CENTRAL AMERICAN AND CARIBBEAN REGIONAL OFFICE

PERFORMANCE BASED AIR NAVIGATION IMPLEMENTATION PLAN

FOR THE NAM/CAR REGIONS

1. INTRODUCTION

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 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 unmatching 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 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 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 is 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 operations at 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 were:

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 What is reflected in the following tables is continuing growth for the next several years:

Total (international and domestic) services of airlines of ICAO contracting States (NACC States - Percentage of world traffic 2008)

Aircraft Kilometers (millions)	Aircraft Departures (thousands)	Passengers Carried (thousands)	Passenger-Kilometers Performed (millions)	Passenger load factor (%)	Tonne-kilometres Performed		Tonne Kilometers available (millions)	Weight Load Factor (%)
					Freight (millions)	Total (millions)		
13,523	10,652	782,200	1,434,423	80	41,279	17,3977	28,3610	61

International services of airlines of ICAO contracting States - NACC States - Percentage of world traffic 2008

Aircraft Kilometers (millions)	Aircraft Departures (thousands)	Passengers Carried (thousands)	Passenger-Kilometers Performed (millions)	Passenger load factor (%)	Tonne-kilometres performed		Tonne Kilometers available (millions)	Weight Load Factor (%)
					Freight (millions)	Total (millions)		
3,489	1,244	118,805	488,219	79	24,028	69,577	115,130	60

1.11 The regional distribution of scheduled traffic 2008 by aircraft departures and by passengers carried is depicted in the following Tables 1 and 2.

Regional Distribution of Scheduled Traffic – 2008

NAM/CAR Aircraft Departures 10.7 Million

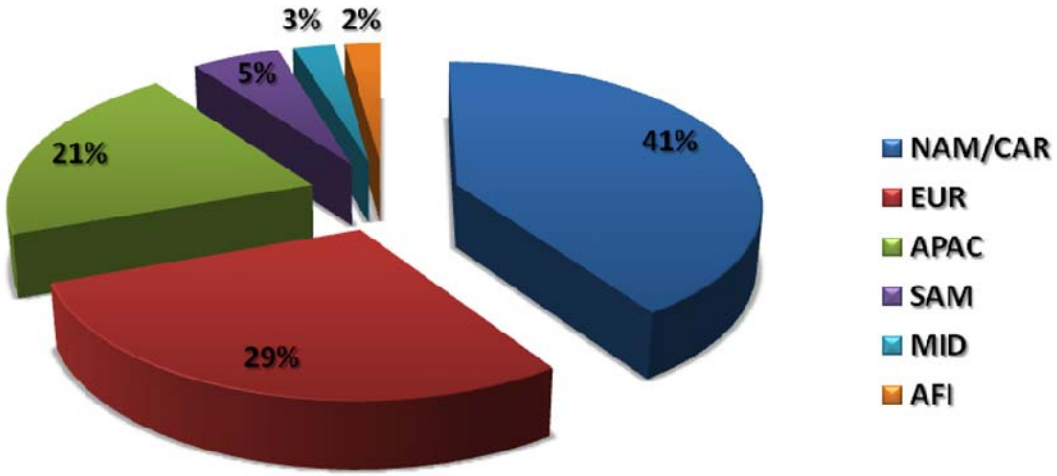


Table 1

Regional Distribution of Scheduled Traffic – 2008

NAM/CAR Passengers carried 782.2 Million

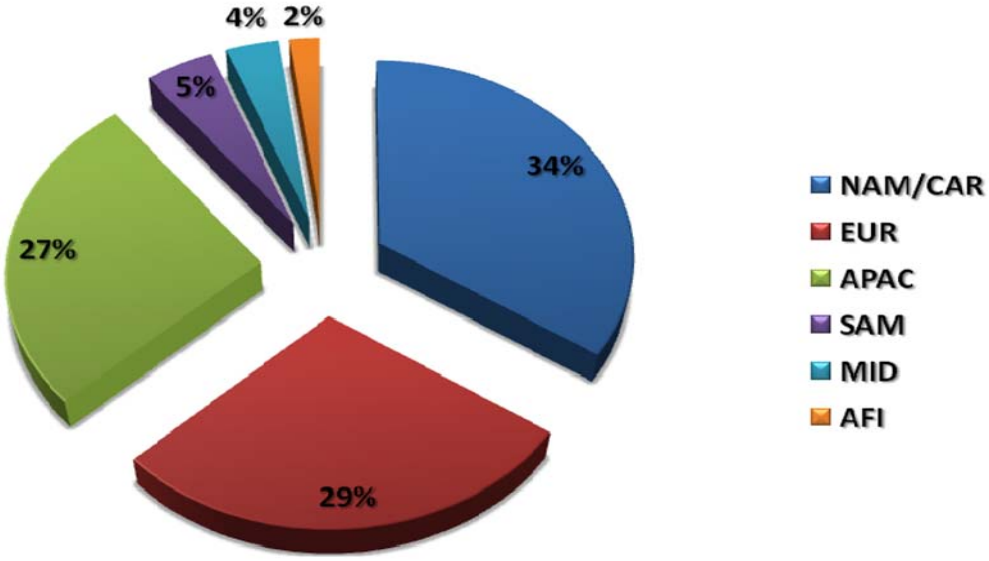


Table 2

1.12 More challenges are in the horizon for ATM seamless system in CAR and NAM Regions. The expectation is 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.

1.13 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.

1.14 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.

2. REGIONAL PLANNING PROCESS

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

2.2 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.

2.3 Planning should be developed through performance objectives with clearly defined implementation requirements. 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**.**

3. PERFORMANCE OBJECTIVES

3.1 The performance objectives should be developed using a performance approach to reflect the necessary activities needed to support regional ATM system implementation.

3.2 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.

3.3 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

3.4 Each performance objective should establish a group of common benefits for all stakeholders and be achieved through the strategies, the operational and technical activities planned. These benefits should be in accordance with the ICAO strategic objectives, and the ATM community expectations.

Strategy

3.5 The air navigation system evolution requires a progressive strategy with tasks and actions that best represent the national and regional implementation in accordance with the global planning framework. The final goal is to achieve harmonized regional implementation on a continuous evolution towards a global seamless ATM system.

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

3.7 The implementation 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.

3.8 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.

3.9 The following principles should be considered when developing implementation 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 implementation 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 to align the regional work with the fundamental objective of achieving interoperability and seamlessness to the highest level.

- The implementation tasks should encourage human resources optimization, as well as promote the use of electronic communications means such as internet, videoconference, teleconference, phone and fax. It should be ensured that all the resources will be used efficiently, avoiding any duplication or unnecessary work.

- It should be ensured 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.

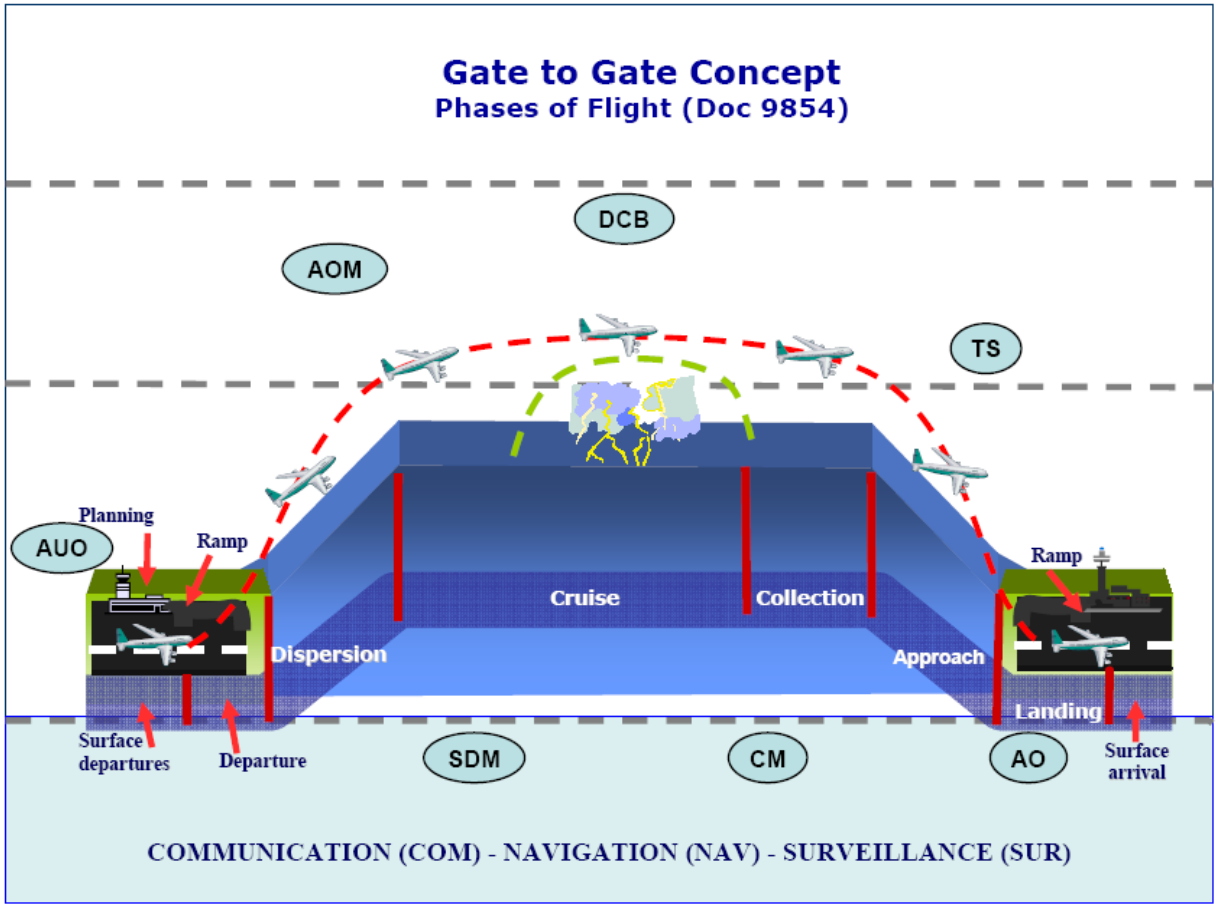
Identification of tasks

3.10 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
- **DCB** — Demand and capacity balancing
- **AO** — Aerodrome operations
- **TS** — Traffic synchronization
- **CM** — Conflict management
- **AUO** — Airspace user operations
- **ATM SDM** — ATM service delivery management

3.11 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.

3.12 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:



3.13 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:

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

3.14 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

3.15 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 programmes.

3.16 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

4 NATIONAL ACTION PLAN

4.1 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.

4.2 The strategic 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.

4.3 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 implementation process.

4.4 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.

4.5 For the development of a national action plan, the following subjects, as a minimum, should be analysed and properly documented:

a) Characteristics of the industry

Enumerate the current and projected growth of Air Traffic in your state and also identify, if any, the efficiency challenges in your State.

. b) The air navigation service provider

Describe briefly the organization providing the air navigation services in your State including its institutional format, capital structure, principal shareholders and the management.

c) Major stakeholders/partners

Identify the major stakeholders/partners such as the air navigation service providers, the airspace users (the commercial airlines using the airspace, business aviation, general aviation, military, etc.) and the potential funding sources.

d) Risks and Limitations

Enumerate the limitations of the current conventional air navigation systems that may arise and which solution would depend on the State/Territory/International Organization.

e) Risk Management

What are the identified risks and briefly describe the risk mitigation plans/techniques.

f. National Performance-based Air Navigation Plan

i) Define the geographical scope of the National Air Navigation Plan and determine the major traffic flows.
ii) Explain briefly the vision of your State/Territory/International Organization for achieving a seamless Global ATM system in accordance with ICAO Doc 9854.
iii) Determine the current air navigation infrastructure and services.
iv) Through gap analysis define near and medium term operational improvements.
v) Using a standard Performance framework form (PFF), develop different national performance objectives by determining relevant tasks and ensure the linkage to ATM components and Global Plan Initiatives (GPIs).

CAR/NAM REGIONS PERFORMANCE OBJECTIVES

1. OPTIMIZE THE ATS ROUTE STRUCTURE EN-ROUTE AIRSPACE				
Benefits				
Environment **Efficiency**	• reductions in fuel consumption; • ability of aircraft to conduct flight more closely to preferred trajectories; • increase in airspace capacity; • facilitate the utilization of advanced technologies (e.g., FMS based arrivals) and ATC decision support tools (e.g., metering and sequencing), thereby increasing efficiency.			
Strategy ***(2008 - 2015)***				
ATM OC Component	**TASK DESCRIPTION**	**START-END**	**RESPON-SIBLE**	**STATUS**
AOM	a) Develop regional action plan	2007	GREPECAS	Completed
	b) 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
	c) Develop performance measurement plan	2010	States	Valid
	d) Formulate safety plan	2010	States	Valid
	e) Establish collaborative decision making (CDM) process	2010	States	Valid
	f) Publish national regulations for aircraft and operators approval using PBN manual as guidance material	2010	States	Valid
	g) Identify training needs and develop corresponding guidelines	2010	States	Valid
	h) Implementation of ATS routes enroutes	2010	States	Valid
	i) Monitor implementation progress in accordance with CAR/SAM PBN implementation roadmap and State implementation plan	On going	GREPECAS	Valid
GPIs	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			

2. OPTIMIZE THE ATS ROUTE STRUCTURE IN TERMINAL AREA AIRSPACE				
Benefits				
Environment **Efficiency**	• reductions in fuel consumption; • ability of aircraft to conduct flight more closely to preferred trajectories; • increase in airspace capacity; • facilitate utilization of advanced technologies (e.g., FMS based arrivals) and ATC decision support tools (e.g., metering and sequencing), thereby increasing efficiency.			
Strategy ***(2008 - 2016)***				
ATM OC Component	**TASK DESCRIPTION**	**START-END**	**RESPON-SIBLE**	**STATUS**
AOM	a) Develop regional PBN implementation plan	2007	GREPECAS	Completed
	b) Develop State PBN implementation plan	2010	States	Valid
	c) 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	Valid
	d) Develop performance measurement plan	2010	States	Valid
	e) Formulate safety plan	2010	States	Valid
	f) Establish collaborative decision making (CDM) process	2010	States	Valid
	g) Publish national regulations for aircraft and operators approval using PBN manual as guidance material	2010	States	Valid
	h) Identify training needs and develop corresponding guidelines	2010	States	Valid
	i) Develop system performance monitoring plan	2010	States	Valid
	j) Develop a regional strategy and work programme for implementation of SIDs and STARs	2011	States	Valid
	k) Monitor implementation progress in accordance with CAR/SAM PBN implementation roadmap and State implementation plan	On going	GREPECAS	Valid
GPIs	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.			

3. IMPLEMENT RNP APPROACHES				
Benefits				
Efficiency **Safety**	• Improvements in capacity and efficiency at aerodromes. • Improvements in safety at aerodromes.			
Strategy (2008-2016)				
ATM Component	**TASK DESCRIPTION**	**START-END**	**RESPON-SIBLE**	**STATUS**
AOM	a) Develop State PBN implementation plan.	2009	States	Valid
	b) 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	2010	States	Valid
	c) Develop performance measurement plan	2010	States	Valid
	d) Formulate safety plan	2010	States	Valid
	e) Establish collaborative decision making (CDM) process	2010	States	Valid
	f) Publish national regulations for aircraft and operators approval using PBN manual as guidance material.	2010	States	Valid
	g) Identify training needs and develop corresponding guidelines	2010	States	Valid
	h) Implementation of APV procedures	2016	States	Valid
	i) Formulate system performance monitoring plan	2011	States	Valid
	j) Monitor implementation progress in accordance with CAR/SAM PBN implementation roadmap and State implementation plan	On going	GREPECAS	Valid
GPIs	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.			

4. ENHANCE CIVIL/MILITARY COORDINATION AND CO-OPERATION				
Benefits				
Efficiency	• increase airspace capacity;			
Continuity	• allow a more efficient ATS route structure • ensure safe and efficient action in the event of unlawful interference; • make available military restricted airspace more hours of the day so that aircraft can fly on their preferred trajectories; and • improve search and rescue services.			
Strategy (2008-2012)				
ATM Component	**TASK DESCRIPTION**	**START-END**	**RESPON-SIBLE**	**STATUS**
AOM	a) Develop guidance material on civil/military coordination and co-operation to be used by States/Territories to develop national policies, procedures and rules.	2007	ICAO	Completed
	b) Establish civil/military coordination bodies.	2008 – 2012	States	Valid
	c) Arrange for permanent liaison and close cooperation between civil ATS units and appropriate air defence units.	2008 – 2012	States	Valid
	d) Conduct a regional review of special use airspace.	2008 – 2012	GREPECAS	Valid
	e) Develop a regional strategy and work programme for implementation of flexible use of airspace in a phased approach for dynamic sharing of restricted airspace	2008 – 2010	States	Valid
	f) full integration of civil and military aviation activities by 2012.	2008 – 2012	States	Valid
	g) Monitor implementation progress.	On going	GREPECAS	Valid
GPIs	GPI/1: flexible use of airspace.			

5. ALIGN UPPER AIRSPACE CLASSIFICATION

Benefits

Efficiency	• better utilization of data link communication; • optimize use of flight plan data processing systems; • enhance airspace management coordination, message exchange capabilities and utilization of flexible and dynamic airspace management techniques; • harmonization of interregional coordination processes;
Continuity	• improvement of airspace interoperability and seamlessness; and • ensure the provision of positive air traffic control services to all aircraft operations.

Strategy

ATM Component	TASK DESCRIPTION	START-END	RESPON-SIBLE	STATUS
	a) Develop a regional implementation strategy and work programme for the implementation of ICAO Annex 11 airspace Class A above FL 195.	2007	GREPECAS	Completed
	b) Identify key stakeholders, ATCOs, pilots, and relevant international organisations for coordination and cooperation on changes for new airspace organization, using a CDM process.	2008 – 2010	States	Valid
	c) Develop new national airspace organization in accordance with ICAO provisions, as needed.	2008 – 2010	States	Valid
AOM	d) Coordinate changes for regional and national documents; • Doc 8733, CAR/SAM ANP; • AIP; and, • ATS letters of agreement.	2008 – 2012	ICAO - States	Valid
	e) Carry out improvements in ground systems to support new airspace organization configurations, as necessary.	2008 – 2012	States	Valid
	f) Publish national regulatory material for implementation of new rules and procedures to reflect airspace organizational changes.	2008 – 2010	States	Valid
	g) Train ATCOs and pilots in new procedures, including all civil and military airspace users, as required;	2008 – 2012	States	Valid
	h) Monitor implementation progress.	On going	GREPECAS	Valid
GPIs	GPI/4: align upper airspace classification.			

6. IMPROVE DEMAND AND CAPACITY BALANCING

Benefits

Environment	• reduction in weather- and traffic-induced holding, leading to reduced fuel consumption and emissions;
Efficiency	• improved and smoother traffic flows; • improved predictability; • improved management of excess demand for service in ATC sectors and aerodromes; • improved operational efficiency; • enhanced airport capacity; • enhanced airspace capacity; and
Safety	• improved safety management.

Strategy

ATM Component	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: i. airspace organization and management (AOM) and ATS routes structure (unidirectional routes) and SID and STARS; ii. communication, navigation and surveillance systems; iii. aerodrome capacity; iv. ATS capacity; v. training for pilots and Controllers; and vi. ATS letters of agreement.	2008 – 2012	GREPECAS	Valid
	c) Define common elements of situational awareness between FMUs; i. common traffic displays, ii. common weather displays (Internet), iii. communications (teleconferences, web), and, iv. daily teleconference/messages methodology advisories.	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

Medium term				
DCB	f) Develop a regional strategy for the implementation of flexible use of airspace (FUA); i. assess use of airspace management processes; ii. improve current national airspace management to adjust dynamic changes in tactical stage to traffic flows; iii. introduce improvements in ground support systems and associated procedures for the extension of FUA with dynamic airspace management processes; and iv. 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.	2008 – 2010	GREPECAS States	Valid
	g) Define common electronic information and minimum databases required for decision support and alerting systems for interoperable situational awareness between Centralized ATFM units.	2008 – 2014	GREPECAS States	Valid
	h) Develop regional procedures for efficient and optimum use of aerodrome and runway capacity.	2008 – 2012	GREPECAS	Valid
	i) Develop a regional ATFM procedural manual to manage demand/capacity balancing.	2008 – 2010	GREPECAS	Valid
	j) Develop a regional strategy and framework for the implementation of a Centralized ATFM unit.	2008 – 2012	GREPECAS	Valid
	k) Develop operational agreements between Centralized ATFM units for interregional demand/capacity balancing.	2008 – 2015	GREPECAS	Valid
	l) Monitor implementation progress.	On going	GREPECAS	Valid
GPIs	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.			

7. IMPROVE ATM SITUATIONAL AWARENESS				
Benefits				
Efficiency **Safety**	• enhanced traffic surveillance; • enhanced collaboration between flight crew and the ATM system; • improved collaborative decision-making through sharing electronic aeronautical data information; • reduced of workload for both pilots and controllers; • improved operational efficiency; • enhanced airspace capacity; • improved implementation on a cost-effective basis; • improved available electronic terrain and obstacle data in the cockpit; • reduced of the number of controlled flight into terrain related accidents; and • improved safety management.			
Strategy ***Near term***				
ATM Component	**TASK DESCRIPTION**	**START-END**	**RESPON-SIBLE**	**STATUS**
SDM	a) Identify parties concerned.	2009	GREPECAS	Completed
	b) Identify the automation level required according to the ATM service provided in airspace and international aerodromes, assessing i. operational architecture design, ii. characteristics and attributes for interoperability, iii. data bases and software, and iv. technical requirements.	2008 – 2010	States	Valid
	c) Improve ATS interfacility communication.	2008 – 2015	States	Valid
	d) Implement flight plan data processing system and electronic transmission tools.	2008 – 2012	States	Valid
	e) Implement radar data sharing programs where benefits can be obtained.	2008 – 2012	States	Valid
	f) Develop situational awareness training programmes for pilots and controllers.	2008 – 2012	States	Valid
	g) Implement ATM surveillance systems for situational traffic information and associated procedures.	2010 – 2015	States	Valid
	h) Implement ATS automated message exchanges, as required i) FPL, CPL, CNL, DLA, etc.	2008 – 2012	GREPECAS States	Valid

	j) Implement automated radar handovers, where able.	2008 – 2014	States	Valid
	k) Implement ground and air electronic warnings, as needed i. Conflict prediction ii. Terrain proximity iii. MSAW iv. DAIW v. Surveillance system for surface movement.	2008 – 2012	States	Valid
	l) Implement data link surveillance technologies and applications: ADS, CPDLC, AIDC, as required.		States	Valid
Medium term				
ATM Component	**TASK DESCRIPTION**	**START-END**	**RESPON-SIBLE**	**STATUS**
	m) Implement additional/advanced automation support tools to increase sharing of aeronautical information i. ETMS or similar ii. MET information iii. AIS/NOTAM dissemination iv. Surveillance tools to identify airspace sector constraints v. A-SMGC in specific aerodromes, as required.	2010 – 2012	States	Valid
	n) Implement teleconferences with ATM stakeholders.	2008 - 2014	States	Valid
	o) Monitor implementation progress	On going	GREPECAS	Valid
GPIs	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.			

8. ELIMINATION OF IDENTIFIED AOP DEFICIENCIES (wildlife and bird hazard reduction, rescue and fire fighting services and aerodrome emergency planning)				
Benefits				
Safety **Efficiency**	• Strengthen States´ safety oversight responsibility on aerodrome operations • Enhanced safety, efficiency and regularity of aerodrome operations in the States. • Uniform implementation of the relevant ICAO SARPs and/or applicable national regulations in the CAR States/Territories.			
Strategy ***Short Term (2010)*** ***Medium term***				
ATM COMPONENT	**TASKS DESCRIPTION**	**START – END**	**RESPON-SIBLE**	**STATUS**
AO	a) to carry out a survey to States to determine the current level of implementation with respect to the three major deficiencies in the NAM/CAR Regions.	August 2009 – December 2009	Regional Office	Valid
	b) to evaluate training needs in the CAR Region, if any; and coordinate these with the training needs for aerodrome certification	August 2009 – December 2009.	States/ Regional Office	Valid
	c) to identify in coordination with States specific technical assistance needs, if any	August 2009 – December 2009.	States / Regional Office	Valid
	d) to develop and implement an action plan to meet the identified training needs in coordination with those for aerodrome certification	August 2009 – December 2009	States	Valid
	e) to develop and implement an action plan for technical assistance needs in coordination with the respective States and TCB	August 2009 – December 2009	States /	Valid
	f) States to develop and implement an action plan to remove the three major deficiencies	December 2009 – March 2010.	States	Valid
	g) To develop and implement an efficient monitoring system for correcting the three major deficiencies in the respective CAR States/Territories.	December 2009 – June 2010.	States	Valid
GPIs	GPI/13: Aerodrome operations.			

9. IMPLEMENTATION OF AERODROME CERTIFICATION				
Benefits				
Efficiency **Safety**	• Ensure aerodrome operators comply with relevant ICAO SARPs and/or applicable national regulations. • Continued provision of safe and efficient aircraft operations at aerodromes • Strengthen States´ safety oversight responsibility on aerodrome operations			
Strategy **Short Term (2010)** **Medium term**				
ATM COMPONENTS	**TASK DESCRIPTION**	**START – END**	**RESPON-SIBLE**	**STATUS**
AO	a) States to analyze Annex 14, Volume I provisions on aerodrome certification vis-avis national legislations and regulations	August 2009 – December 2009.	States	Valid
	b) States to analyze guidance in the Manual on Certification of Aerodromes (Doc 9774) vis-avis national regulations	August 2009 – December 2009	States	Valid
	c) States to develop and/or complete national regulations on aerodrome certification as necessary; and training of aerodrome inspectors	August 2009 – December 2009	States/Regional Office	Valid
	d) States to develop an action plan for certifying all remaining aerodromes used for international operations, including implementation of SMS	On going	States	Valid
	e) States to implement the action plan; to provide yearly feedback to NACC Regional Office regarding the status of the implementation of aerodrome certification	On going	States	Valid
GPIs	GPI/13: aerodrome design and management; GPI/14: runway operations.			

10. PROTECTION AND OPTIMUM USAGE OF RADIOFREQUENCY SPECTRUM				
Benefits				
Efficiency • Efficient use of aviation radio spectrum • Ensure availability of frequencies for services and aeronautical systems **Safety** • Assurance of aviation spectrum				
Strategy ***Near term (2012)***				
ATM Component	**TASK DESCRIPTION**	**START-END**	**RESPON-SIBLE**	**STATUS**
AOM, DCB, AO, TS, CM, AUO, SDM	a) Ensure Regional coordination for the protection of the aviation spectrum at WRC-11, and beyond	2009-2011	S/T/O, ICAO	Valid
	b) Ensure Participation of Civil Aviation Experts in State's delegation to ITU WRC Meetings	2009-2010	S/T/O	Valid
	c) Disseminate ICAO policy statements of requirements for aeronautical radio frequency spectrum	2009-2010	ICAO	Valid
	d) Implement frequency spectrum management	2009-2011	S/T/O	Valid
	e) Support ICAO Position during WRC-11	2012	S/T/O	Valid
	f) Monitor the understanding of radio spectrum management and support on WRC-2011	2009-2012	ICAO	Valid
GPIs	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)

ATM Component	TASK DESCRIPTION	START-END	RESPON-SIBLE	STATUS
AO, TS, CM, AUO AOM, SDM	a) Review the status of performance of current AFS Services and identify deficiencies or improvements (AFTN, oral ATS services, A/G communications)	2009	WGs	Valid
	b) Analysis and formulation of plans for implementing improvement or solving deficiencies	2009-2010	WG	Valid
	c) Develop Regional ATN Planning documents	2009-2012	CNS/ATM/SG	Valid
	d) Coordination and testing of ATN G-G Application implementation aspects	2009-2012	WGs	Valid
	e) Planning and trial activities for A-G Application implementation	2010-2011	WGs	Valid
	f) Technical review of Regional Telecommunication networks for ATN implementation	2009-2010	MEVA TMG, WGs	Valid
	g) Implement available technologies in to facilitate ground and airborne applications (CPDLC, ADS-C, ADS-B)	2009-2012	States , user	Valid
	h) Monitor the implementation and improvement of the telecommunications and ATN applications issues.	2009-2012	States, WGs, CNS/ATM/SG, OACI	Valid
GPIs	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; GP1-17: Data Link Application, GPI-21: Navigation Systems and GPI-22: Communications Infrastructure			

12. IMPLEMENTATION OF WGS-84 AND e-TOD

Benefits

Efficiency

- implementation of WGS-84 is a requirement for the performance based navigation, benefits are described in the PBN performance objectives
- support to the approach and departure procedures design
- improve aircraft operating limitations analysis
- support aeronautical chart production and on-board databases (FMS)

Safety

- improve situational awareness
- improve electronic terrain and obstacle data in display cockpit
- CFIT reduction
- support technologies such as ground proximity and minimum safe altitude warning systems (GPWS)
- observe the benefits described in the PBM performance objectives

Strategy

Short term (2010)

Medium term (2011 - 2015)

ATM Component	TASK DESCRIPTION	START-END	RESPON-SIBLE	STATUS
SDM-CM	***Electronic terrain and obstacle data (eTOD)*** a) Share experience and resources in the implementation of e-TOD through the establishment of an e-TOD Regional working group.	2011-2015	GREPECAS States	Valid
	b) Technical requirements	2010-2015	GREPECAS States	
	c) Report requirements and monitor implementation status of e-TOD using electronic media to ICAO NACC Regional Office.	2010-2011	States	
	d) Develop a high level policy for the management of a national eTOD programme.	2010-2011	States	
AUO	e) Establish WGS-84 implementation goals in coordination with the national PBN implementation.	2010-2012	GREPECAS States	Valid
	f) Technical requirements.	2010-2011	GREPECAS States	
	g) Requirements report and monitor implementation status of WGS-84 using the AIS-5 Table of the FASID and take remedial action if required.	On going	GREPECAS States	
GPIs	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			

13. IMPROVE AVAILABILITY OF METEOROLOGICAL INFORMATION				
Benefits				
Efficiency **Operational safety**	• Assist ATM in tactical decision making for aircraft surveillance, air traffic flow management and flexible and dynamic routing of aircraft • improve aerodrome and air space capacity • improve situational awareness of pilots • reduce unnecessary consumption of fuel and prevent unnecessary delays due to minimal meteorological conditions at the airports • improve planning of flight itineraries • 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 • prevent landing operations at aerodromes under minimal meteorological conditions			
Strategy ***Short Term (2010)***				
ATM Component	**TASK DESCRIPTION**	**START - END**	**RESPONSIBLE**	**STATUS**
AOM, DCB, AO, TS, AUO	a) Increase and protect facilities to disseminate and Exchange aeronautical meteorological information • i) Increase AFTN, WAFS and internet facilities to disseminate OPMET data at meteorological offices and stations. • .ii) Increase AFTN communications facilities to relay aircraft special reports from the air traffic control units to the meteorological offices • iii) Implement lightning and other protection systems for the AFTN and WAFS facilities used for OPMET exchange • iv) Maintain and expand the number of workstations used to receive meteorological products of the World Area Forecast System	2009 - 2010	States and Territories	Valid
AOM,DCB, AO, TS, AUO	b) Increase availability, timeliness and quality of OPMET data • i) Improve the use of the METAR and TAF codes/templates used to disseminate meteorological reports and aerodrome forecasts • ii) Enhance preparation and availability of SIGMET information on hazardous meteorological conditions and volcanic ash clouds • iii) Enhance the availability of landing forecasts, TREND, considering user (IATA) requirements	2009 - 2010	States and Territories	Valid
AOM, DCB, AO, TS, AUO	c) Establish contingency procedures to disseminate OPMET data, via Internet, in case of failure of the AFTN and WAFS facilities	2009 - 2010	States and Territories ICAO NACC	Valid

AO	d) Improve the quality of data, provided by meteorological sensors, used in meteorological reports • Establish verification and calibration programmes of data provided by meteorological instruments and automated weather systems at the aerodromes	2009 - 2010	States and Territories	Valid
AUO	e) Monitor availability and quality of OPMET data issued by CAR States and Territories and Territories and provide assistance if required	2009 - 2010	States and Territories	Valid
AUO	f) Monitor participation of States and Territories in the International Airways Volcano Watch and provide assistance if necessary	2009 - 2010	ICAO NACC Washington VAAC	Valid
AUO	g) Monitor participation of States and Territories in the International Tropical Cyclone Watch and provide assistance if necessary	2009 - 2010	ICAO NACC Miami TCAC	Valid
AOM, DCB,AO, TS, AUO	h) Establish Quality Assurance Systems provided to the aeronautical users	2010	States and Territories	Valid
AUO	i) Conduct, every year, update seminars and courses on relevant operational aeronautical meteorological matters	2009-2010	States and Territories ICAO NACC, WMO AR IV	Valid
AUO	j) Consider standards and recommendations ICAO and WMO for the training and recruitment of aeronautical meteorological personnel	2009 - 2010	States and Territories	Valid
Mid Term (2015)				
AUO	k) Establish cost recovery schemes for the aeronautical meteorological services o	2010 - 2015	States and Territories	Valid
AO, TS	l) Increase the number of automated weather systems at the aerodromes o	2010 - 2015	States and Territories	Valid
AO, TS	m) Implement meteorological data downlinks at the MET and ATS units	2012-2015	States and Territories	Valid
AO, TS	n) Implement meteorological data uplinks from the automated weather systems, ATS and meteorological units	2012-2015	States and Territories	Valid
AUO	o) Prepare hourly-monthly climatological tables of the aerodromes for itinerary planning	2010 - 2015	States and Territories	Valid
GPIs	GPI/6 air traffic flow 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 19. Meteorological systems.			

14. 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)***				
ATM Component	**TASK DESCRIPTION**	**START-END**	**RESPON-SIBLE**	**STATUS**
SDM	a) Develop regional strategy to improve SAR System	End 2009	ICAO	Completed
	b) Identify parties concerned	End 2009	ICAO	Completed
	c) Conduct comprehensive analysis of SAR requirements based on risk assessment and quality assurance principles	2009 - 2010	States, ICAO	Valid
	d) Foster the harmonization of policies, regulations, practices and procedures of the aeronautical/maritime SAR services, in accordance with ICAO Standards and Recommended Methods.	2009 - 2012	States, ICAO	Valid
	e) Develop, update and ratify SAR agreements with RCCs of adjacent States.	2009 - 2012	States	Valid
	f) Develop, update and ratify SAR agreements with SAR service International agencies.	2009 - 2012	States	Valid
	g) 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	2009 - 2012	States, ICAO	Valid
	h) Develop a human resources and training planning strategy in line with ICAO SAR guidelines and the regional agreements reached.	2009 - 2012	States, ICAO	Valid
	i) Monitor implementation progress	2009 - 2012	ICAO	Valid
GPIs	GPI/6: air traffic flow management; and GPI/9: Situational awareness;			

ATS Routes Optimization Action Plan			
1 Airspace Concept	**Start**	**End**	**Remarks**
1.1 Establish and prioritize Strategic Objectives (Safety, Capacity, Environment, etc)			
1.2 Collect air traffic data to understand airspace traffic flows in a particular airspace.			
1.3 Analyse navigation capability of the fleet			
1.4 Analyse communication, ground navigation (VOR, DME) and surveillance for navigation specification and reversionary mode compliance.			
1.5 Optimise the airspace structure, by reorganising the network or implementing new routes based on the strategic objective of the airspace concept. Consider Airspace Modelling, ATC simulations (fast time and/or real time), Live Trials, etc.			
2 Develop Performance Measurement Plan			
2.1 Prepare Performance Measurement Plan, including gas emission, safety, efficiency, etc.			
2.2 Conduct Performance Measurement Plan			
3 Airspace safety assessment			
3.1 Determine which methodology shall be used to evaluate airspace safety and ATS routes spacing, depending on the navigation specification. Consider Airspace Modelling, ATC simulations (fast time and/or real time), Live Trials, etc.			
3.2 Prepare a data collection programme for airspace safety assessment			
3.3 Prepare preliminary airspace safety assessment			
3.4 Prepare final airspace safety assessment			
4 Establish collaboration decision making (CDM) process			
4.1 Coordinate planning and implementation needs with Air Navigation Service Providers, Regulators, Users, aircraft operators and military authorities			
4.2 Establish implementation date			

ATS Routes Optimization Action Plan			
4.3 Establish the documentation format of CAR/SAM RNAV/RNP Website			
4.4 Report planning and implementation progress to the corresponding Regional Office			
5 ATC Automated Systems			
5.1 Evaluate the PBN implementation in the ATC Automated Systems, considering the Amendment 1 to the PANS/ATM (FPLSG).			
5.2 Implement the necessary changes in the ATC Automated Systems			
6 Aircraft and operators approval			
6.1 Be aware of the national implementation programme and of the required navigation specifications			
6.2 Analyse aircraft approval requirements, aircrew and operator approval requirements for the navigation specifications to be implemented, as contained in the ICAO PBN Manual			
6.3 Publish the national regulations to implement the required ICAO navigation specifications			
6.4 Approval of aircraft and operators for each type of procedure and navigation specification			
6.5 Establish and keep updated a record of approved aircraft and operators			
6.6 Verify operations with a continuing monitoring programme			
7 Standards and Procedures			
7.1 Evaluate regulations for GNSS use, and if such were the case, proceed to its publication.			
7.2 Finalize implementation of WGS-84			
7.3 Develop and publish AIC notifying PBN implementation planning			
7.4 Publish AIP Supplement including applicable standards and procedures			
7.5 Review Procedural Manuals of the ATS units involved			
7.6 Update Letters of Agreement between ATS units			

ATS Routes Optimization Action Plan			
7.7 Develop amendment to the regional documentation, if necessary			
7.8 Provide procedures to accommodate non-approved RNAV/RNP aircraft, when applicable			
7.9 Identify transition areas and procedures, if necessary			
7.10 Conduct ATC simulations to identify the workload/operational factors, if necessary, and report the simulations activities to the ATM Committee			
8 Training			
8.1 Develop a training programme and documentation for operators (pilots, dispatchers and maintenance)			
8.2 Develop training programme and documentation for Air Traffic Controllers and AIS Operators			
8.3 Develop training programme to regulators (aviation safety inspectors)			
8.4 Conduct training programmes			
8.5 Hold seminars oriented to operators, indicating the plans and the operational and financial benefits expected			
9 Decision for implementation			
9.1 Evaluate operational documentation availability (ATS, OPS/AIR)			
9.2 Evaluate the percentage of approved aircraft and operations (mixed equipage concerns)			
9.3 Review safety assessment results			
10 System Performance Monitoring			
10.1 Develop post-implementation en-route operations monitoring programme			
10.2 Execute post-implementation en-route operations monitoring programme			
Pre operational implementation date			

ATS Routes Optimization Action Plan			
Definitive implementation date			

PBN TMA and Approach Action Plan			
1 Airspace Concept	**Start**	**End**	**Remarks**
1.1 Establish and prioritize Strategic Objectives (Safety, Capacity, Environment, etc)			
1.2 Collect air traffic data to understand airspace traffic flows in the TMA.			
1.3 Analyse aircraft fleet navigation capacity operating in the TMA			
1.4 Analyse communication, ground navigation (VOR, DME) and surveillance for navigation specification and reversionary mode compliance			
1.5 Optimise the airspace structure, by implementing new SID and STARS, based on the strategic objective of the airspace concept. Consider Airspace Modelling, ATC simulations (fast time and/or real time), Live Trials, etc.			
2. Develop Performance Measurement Plan			
2.1 Prepare Performance Measurement Plan, including gas emission, safety, efficiency, etc.			
2.2 Conduct Performance Measurement Plan			
3 Airspace safety assessment			
3.1 Determine which methodology shall be used to evaluate airspace safety and routes spacing, depending on the navigation specification. Consider Airspace Modelling, ATC simulations (fast time and/or real time), Live Trials, etc.			
3.2 Prepare a data collection programme for airspace safety assessment			
3.3 Prepare preliminary airspace safety assessment			
3.4 Prepare final airspace safety assessment			
4 Establish collaboration decision making (CDM) process			
4.1 Coordinate planning and implementation needs with Air Navigation Service Providers, Regulators, Users, aircraft operators and military authorities			
4.2 Establish implementation date			
4.3 Establish the documentation format of CAR/SAM RNAV/RNP Website			
4.4 Report planning and implementation progress to the corresponding Regional Office			

PBN TMA and Approach Action Plan			
5 ATC Automated Systems			
5.1 Evaluate the PBN implementation in the ATC Automated Systems, considering the Amendment 1 to the PANS/ATM (FPLSG).			
5.2 Implement the necessary changes in the ATC Automated Systems			
6 Aircraft and operator approval			
6.1 Be aware of the national implementation programme and of the required navigation specifications			
6.2 Analyse aircraft approval requirements, aircrew and operator approval requirements for the navigation specifications to be implemented, as contained in the ICAO PBN Manual			
6.3 Publish the national regulations to implement the required ICAO navigation specifications			
6.4 Approval of aircraft and operators for each type of procedure and navigation specification			
6.5 Establish and keep updated a record of approved aircraft and operators			
6.6 Verify operations with a continuing monitoring programme			
7 Standards and Procedures			
7.1 Evaluate regulations for GNSS use, and if such were the case, proceed to its publication.			
7.2 Develop and publish AIC notifying PBN implementation planning			
7.3 Publish AIP Supplement including applicable standards and procedures			
7.4 Review Procedural Manuals of the ATS units involved			
7.5 SID and/or STAR Ground Validation and Flight Inspection/Flight Validation			
7.6 Data Base Validation Requirements/Procedures			
7.5 Update Letters of Agreement between ATS units			
7.6 Provide procedures to accommodate non-approved RNAV/RNP aircraft, when applicable			

PBN TMA and Approach Action Plan			
7.7 Conduct ATC simulations to identify the workload/operational factors, if necessary.			
8 Training			
8.1 Develop a training programme and documentation for operators (pilots, dispatchers and maintenance)			
8.2 Develop training programme and documentation for Air Traffic Controllers and AIS Operators			
8.3 Develop training programme to regulators (aviation safety inspectors)			
8.4 Conduct training programmes			
8.5 Hold seminars oriented to operators, indicating the plans and the operational and financial benefits expected			
9 Decision for implementation			
9.1 Evaluate operational documentation availability (ATS, OPS/AIR)			
9.2 Evaluate the percentage of approved aircraft and operations (mixed equipage concerns)			
9.3 Review safety assessment results			
10 System Performance Monitoring			
10.1 Develop post-implementation TMA operations monitoring programme			
10.2 Execute post-implementation TMA operations monitoring programme			
Pre operational implementation date			
Definitive implementation date			

PBN RNP APP Action Plan			
1 Airspace Concept	**Start**	**End**	**Remarks**
1.1 Establish and prioritize Strategic Objectives (Safety, Capacity, Environment, etc)			
1.2 Analyse aircraft fleet navigation capacity operating in the Airport			
1.3 Analyse communication, ground navigation (VOR, DME) and surveillance for navigation specification and reversionary mode compliance			
1.4 Design Instrument Approach Procedure (RNP APCH/APV Baro-VNAV or RNP AR), based on the strategic objective of the airspace concept. Consider Airspace Modelling, ATC simulations (fast time and/or real time), Live Trials, etc.			
2 Develop Performance Measurement Plan			
2.1 Prepare Performance Measurement Plan, including gas emission, safety, efficiency, etc.			
2.2 Conduct Performance Measurement Plan			
3 Procedure safety assessment			
3.1 Determine which methodology shall be used to evaluate procedure safety, depending on the navigation specification. Consider Airspace Modelling, ATC simulations (fast time and/or real time), Live Trials, etc.			
3.2 Prepare a data collection programme for airspace safety assessment			
3.3 Prepare preliminary procedure (s) safety assessment			
3.4 Prepare final procedure (s) safety assessment			
4 Establish collaboration decision making (CDM) process			
4.1 Coordinate planning and implementation needs with Air Navigation Service Providers, Regulators, Users, aircraft operators and military authorities			
4.2 Establish implementation date			
4.3 Establish the documentation format of CAR/SAM RNAV/RNP Website			
4.4 Report planning and implementation progress to the corresponding Regional Office			

PBN RNP APP Action Plan			
5 ATC Automated Systems			
5.1 Evaluate the PBN implementation in the ATC Automated Systems, considering the Amendment 1 to the PANS/ATM (FPLSG).			
5.2 Implement the necessary changes in the ATC Automated Systems			
6 Aircraft and operator approval			
6.1 Be aware of the national implementation programme and of the required navigation specifications			
6.2 Analyse aircraft approval requirements, aircrew and operator approval requirements for the navigation specifications to be implemented, as contained in the ICAO PBN Manual			
6.3 Publish the national regulations to implement the required ICAO navigation specifications			
6.4 Approval of aircraft and operators for each type of procedure and navigation specification			
6.5 Establish and keep updated a record of approved aircraft and operators			
6.6 Verify operations with a continuing monitoring programme			
7 Standards and procedures			
7.1 Evaluate regulations for GNSS use, and if such were the case, proceed to its publication.			
7.2 Develop and publish AIC notifying PBN implementation planning			
7.3 Publish AIP Supplement including applicable standards and procedures			
7.4 Review Procedural Manuals of the ATS units involved			
7.5 Update Letters of Agreement between ATS units, if necessary			
7.6 Provide procedures to accommodate non-approved RNAV/RNP aircraft, when applicable			
7.7 Conduct ATC simulations to identify the workload/operational factors, if necessary.			

PBN RNP APP Action Plan			
8 Training			
8.1 Develop a training programme and documentation for operators (pilots, dispatchers and maintenance)			
8.2 Develop training programme and documentation for Air Traffic Controllers and AIS Operators			
8.3 Develop training programme to regulators (aviation safety inspectors)			
8.4 Conduct training programmes			
8.5 Hold seminars oriented to operators, indicating the plans and the operational and financial benefits expected			
9 Decision for implementation			
9.1 Evaluate operational documentation availability (ATS, OPS/AIR)			
9.2 Evaluate the percentage of approved aircraft and operations (mixed equipage concerns)			
9.3 Review safety assessment results			
10 System Performance Monitoring			
10.1 Develop post-implementation APP operations monitoring programme			
10.2 Execute post-implementation APP operations monitoring programme			
Pre operational implementation date			
Definitive implementation date			

2009-2014
FOLLOW-UP AND IMPLEMENTATION ACTION PLAN
AIR-GROUND AND GROUND-GROUND COMMUNICATIONS

No.	Performance Objective Task	Action Description	Responsible	Begin date	End date	Deliverables	Observations
1	2	3	4	5	6	7	8
1	11 a), 11 b)	Improve VHF and HF/AMS (R) coverages and mitigate deficiencies	States/ Territories and COCESNA coordinated by C/CAR/WG	July 2009	Dec 2009	•Deficiencies Identification and • Corresponding corrective action plan	References to CNS tables 2A and 2B
2	11 a), 11 b)	Improve AFTN communications and ATS direct communications and mitigate deficiencies	States/ Territories and COCESNA coordinated by C/CAR/WG	July 2009	Dec 2009	•Deficiencies Identification and • Corresponding corrective action plan	References to CNS tables 1A and 1C
3	1 b)	Evaluation of required communication infrastructure to satisfy the navigation requirements based on PBN.	States/ Territories and COCESNA coordinated by C/CAR/WG	July 2009	Dec 2010	Analysis of communication infrastructure	
4	7 l)	Adoption of an "equipment modernization/DATIS Service implementation plan for international airports" in compliance to the ATM requirements.	States/ Territories and COCESNA coordinated by C/CAR/WG	July 2009	Dec 2012	DATIS Modernization and Implementation Plan	
5	11 c)	Elaborate Air-ground datalink progressive execution Plan based on CAR/SAM Activities Plan and Datalink implementation programme (Appendix AW and AX of Agenda 3 of GREPECAS/13).	CNS/ATM/SG (ATN TF)	June2009.	Dec 2010	Initial Transition Plan for ATN Air-ground applications	References to CNS table 1Bc
6	11 c)	Elaborate ATN AIDC Implementation Plan	CNS/ATM/SG (ATN TF)	June2009.	Dec 2010	Initial Transition Plan for ATN ground-ground Applications (AIDC)	
7	11 c)	Update the ATN Routers Regional Plan	CNS/ATM/SG (ATN TF)	June2009.	June 2010	CNS Table 1Ba Updated proposal	References to CNS table 1Ba
8	11 d)	Preliminary review of ATN Routers Regional Plan	States/ Territories and COCESNA coordinated by C/CAR/WG	July 2009	Dec 2009	Comments to current version of CNS Table 1Ba	References to CNS table 1Ba
9	11 d)	Evaluation of AMHS CAAS addresses proposal	States/ Territories and COCESNA coordinated by C/CAR/WG	July 2009	Oct 2009	Comments to AMHS CAAS addresses proposal	CAR AMHS CAAS Addresses Proposal
10	11 d)	Technical evaluation of communications and interfaces for AIDC implementation over the AFTN.	States/ Territories and COCESNA coordinated by C/CAR/WG	July 2009	June 2010	Technical recommendations for AIDC implementation over the AFTN	
		Perform activities for the implementation of the ATN and its applications according to the CAR/SAM Regional strategy for the implementation of the ATN and its applications.					

No.	Performance Objective Task	Action Description	Responsible	Begin date	End date	Deliverables	Observations
1	2	3	4	5	6	7	8
		(Appendix BA of Agenda 3 of GREPECAS/13 Report).:					
11	11 d)	i. Perform AMHS operation trials	USA, Dominican Republic, COCESNA, Jamaica	Oct 2009	Jul 2010	Trial results	
12	11 e), 7c)	ii. Evaluation of regional networks to support ATN Applications	MEVA TMG	Jul 2009	May 2010	Trial results	
13	11 d)	iii. Update of Regional Plan for ATN ground-ground applications	States/ Territories and COCESNA coordinated by C/CAR/WG	Julio 2009	June 2010	Updates to Regional Plan for ATN ground-ground applications	References to CNS table 1Bb
14	11 e)	iv. Review of CAR/SAM Regional Program for the implementation of the air – ground data links	States/ Territories and COCESNA coordinated by C/CAR/WG	July 2009	Nov 2009	Comments to this Regional Program	Reference: CAR/SAM Regional Program for the implementation of the air – ground data links
15	11 e), 11 g)	v. A-G Applications trial Plans	States/ Territories and COCESNA coordinated by C/CAR/WG	July 2009	Nov 2010	Trial Plans for A-G Applications	
16	11 d), 11 e)	vi. Participate on training seminars and events	States/ Territories and international organizations	July 2009	Nov 2011	Participation on events	
17	11 a), 11 b)	MEVA II REDDIG Networks Interconnection	COCESNA, Jamaica, Netherland Antilles	July 2009	Oct 2009	MEVA II/ REDDIG Networks Interconnection	
18	11 a), 11 b)	MEVA II – REDDIG Integration	MEVA TMG	July 2009	2014	Study to accomplish integration	
19	11 c)	Procure the application of management and coordination of frequency assignments and the implementation of tools for this goal.	ICAO	Jul 2009	Dec 2010	Frequency Management and coordination tools	
20	11 c)	Implement management and coordination of frequencies with ICAO	States/ Territories and COCESNA coordinated by C/CAR/WG	Jul 2009	Dec 2009	Comments to ICAO reviewed frequency assignment lists	
21	11 c)	Comments to management frequency tools provided by ICAO	Dominican Republic, COCESNA, Jamaica,	Sep 2009	Dec 2009	Comments and evaluation of tools	
22	10 a)	Promote and coordinate diffusion of ICAO position for WRC-2012	ICAO	Jul 2009	Dec 2011	Promote ICAO position	
23	10 b), 10 e)	Participate and coordinate with their national spectrum regulation entities the support to ICAO position for the WRC-2012	States/ Territories and COCESNA coordinated by C/CAR/WG	Jul 2009	Dec 2011	Support ICAO position in WRC-2012 related meetings	

2009-2014
FOLLOW-UP AND IMPLEMENTATION ACTION PLAN
NAVIGATION SYSTEMS

No.	Performance Objective Task	Action Description	Responsible	Begin date	End date	Deliverables	Observations
1	2	3	4	5	6	7	8
1	1 b)	Evaluation of required navigation infrastructure to satisfy the PBN based navigation requirements, identifying improvements and deficiencies	States/ Territories and COCESNA coordinated by C/CAR/WG	July 2009	Dec 2010	1. Analysis of required navigation infrastructure for example: DME-DME coverages for selected ATS routes for RNAV 5 2. Identification of deficiencies 3. Corresponding corrective Action plan	Reference to CNS table 3
2	1 b), 2c), 3 b)	Development of a regional strategy for the implementation of navigation systems	CNS/ATM/SG	Sep 2009	Dec 2009	Regional Strategy for Navigation Systems	Navigation Infrastructure alternatives for PBN
3	1 b), 2c), 3 b)	Develop recommendations for training in GNSS elements	CNS/ATM/SG	Sep 2009	Dec 2009	recommendations for training in GNSS elements	Navigation Infrastructure alternatives for PBN
4	1 b), 2c), 3 b)	Plans on GNSS systems (SBAS y GBAS) and trial conduction.	States/ Territories and COCESNA coordinated by C/CAR/WG	July 2009	Dec 2014	GNSS trial plan	Navigation Infrastructure alternatives for PBN

2009-2011
FOLLOW-UP AND IMPLEMENTATION ACTION PLAN
SURVEILLANCE SYSTEMS

No.	Performance Objective Task	Action Description	Responsible	Begin date	End date	Deliverables	Observations
1	2	3	4	5	6	7	8
1	7 e)	Evaluation of radar coverage and identification of improvements to satisfy operative requirements.	States/ Territories and COCESNA coordinated by C/CAR/WG	July 2009	Dec 2009	•Identification of improvements and • Respective Action Plan	Reference to CNS table 4A
2	7 e)	Radar Data Sharing implementation	Cuba, Jamaica, Netherland Antilles, Haiti, Cayman Islands, USA	July 2009	Dec 2010	Agreements and implementation of radar data sharing	
3	1 b)	Evaluation of surveillance infrastructure to satisfy navigation requirements for PBN	States/ Territories and COCESNA coordinated by C/CAR/WG	July 2009	Dec 2010	Analysis of surveillance infrastructure	
4	7 k)	Implementation of 24 bits Address registry	States/ Territories and COCESNA coordinated by C/CAR/WG	July 2009	Dec 2010	24 bits Address registry	
5	11 g), 7 k)	ADS-B, ADS-C and MLAT trials	States/ Territories and COCESNA coordinated by C/CAR/WG	July 2009	Dec 2010	Trials on ADS-B, MLAT and ADS-C	
6	7e), 7 k)	*Development of a regional strategy for surveillance systems*	CNS/ATM/SG	July 2009	Oct 2009	Regional Strategy for Surveillance Systems	
7	7 k)	Mode S radar implementation and update to Regional Plan on Surveillance Systems	States/ Territories and COCESNA coordinated by C/CAR/WG	July 2009	Dec 2011	Information on Mode S Radar implementation and updates to Regional Plan	Reference to CNS table 4A

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**
Com-Nav	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 **PRESENT** 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
Surveillance	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	

- - - - - -

APPENDIX C

GREPECAS Conclusion 15/35

CONCLUSION 15/35 IMPLEMENTATION OF THE NEW ICAO FLIGHT PLAN MODEL

Considering that States should take measures to implement the new ICAO flight plan model pursuant to Amendment No. 1 to the 15th Edition of the PANS-ATM (Doc 4444), and in order to establish a regional strategy to facilitate global implementation of this amendment that:

a) based on the guidance material to be prepared by ICAO, CAR/SAM States/Territories and International Organizations take the necessary measures to prepare for the transition to the new flight plan model; and

b) the Subgroup establish a contributory body to develop a regional strategy for the transition to the new flight plan model in the CAR/SAM Regions and the provisions associated with ATS messages.

Conclusions 3/4 and 3/7 of the Third Meeting of North American, Central American and Caribbean Directors of Civil Aviation (NACC/DCA/3)

CONCLUSION NACC/DCA/3/4 IMPLEMENTATION OF THE NEW FLIGHT PLAN FORMAT

That, considering the importance of Amendment 1 to Doc 4444 applicable in 2012, States/Territories/International Organizations develop a harmonized transition and implementation plan to the new ICAO Flight Plan format and ATS related messages in their automated systems, and present the results of this implementation no later than the NACC/DCA/4 Meeting.

CONCLUSION NACC/DCA/3/7 USE OF THE CURRENT FLIGHT PLAN (CPL) AND REVIEW OF AUTOMATED SYSTEM(S) CAPACITIES

That, as part of ATM automation implementation, taking into account the regional strategy for integrating ATM automated systems and the Interface Control Document (ICD) approved by GREPECAS, States/Territories and International Organizations:

a) consider the use of the Current Flight Plan (CPL) for the exchange of updated flight plan data;

b) study and review the ATM automation capacities/functionalities of their corresponding area control centres to meet future implementation requirements;

c) inform results of actions in a) and b) to the ICAO NACC Office **not later than 31 September 2009**; and

d) conduct CPL tests between adjacent area control centres where benefits related to this implementation could result, informing results to the ICAO NACC Office **not later than February 2010.**

-END-