



**Agenda Item 3: Second amendment to the Global Plan for CNS/ATM systems (Doc 9750)
and new ICAO related initiatives**

**ATM PERFORMANCE OBJECTIVES FOR THE NAM AND CAR REGIONS
RELATED TO ICAO GLOBAL PLAN INITIATIVES (GPI)**

(Presented by the Secretariat)

SUMMARY

This Working Paper presents a restructuring of the E/CAR ATM tasks based on performance objectives in accordance with the new ICAO global plan initiatives (GPI).

References:

- Second Amendment to the Global Air Navigation Plan for the CNS/ATM systems (Doc 9750).
- Report of the Fifth All Planning and Implementation Regional Group (ALLPIRG/5) Meeting (Montreal, Canada, 23-24 March, 2006).
- Summary of Discussions of the Regional North American/Caribbean (NAM/CAR) Air Traffic Management (ATM) Meeting (Santo Domingo, Dominican Republic, 19-21 April 2006).

1. Introduction

1.1 During the Regional North American/Caribbean (NAM/CAR) Air Traffic Management (ATM) Meeting, the Chief of the Air Traffic Management Section at ICAO Headquarters gave a comprehensive presentation on the Second Amendment to the *Global Air Navigation Plan for CNS/ATM Systems* (Doc 9750), which will be renamed the Global Air Navigation Plan (Global Plan). It was noted that the Global Plan Initiatives (GPIs) contained in the revised Global Plan were developed by the Air Navigation Commission on the basis of a roadmap which is aimed at bringing near and medium term benefits to the ATM community, taking advantage of currently available aircraft capabilities and ATC infrastructure and technology.

2 Analysis

2.1 The Fifth All Planning and Implementation Regional Group (ALLPIRG/5) meeting, in light of budget realities and the new ICAO business planning process, agreed that all future work of the

Planning and Implementation Regional Groups (PIRGs) should be justified and based on clearly established performance objectives in support of the ICAO Strategic Objectives. Furthermore, all terms of reference of PIRGs are being revised in order to ensure that resources are more appropriately directed and that all work, including that of the Secretariat, should support the business plan. The methods of reporting PIRG work to the Commission and Council are also being revised to ensure that progress can be measured against timelines and to ensure that performance objectives are met.

2.2 In this context, the ALLPIRG/5 meeting agreed to the following Conclusion 5/2:

That, recognizing that the evolution continues from a systems-based to a performance-based approach to planning and implementation of the air navigation infrastructure, the regional planning groups:

- a) note that the Global Plan is a significant component in the development of regional and national plans and that, together with the global ATM operational concept, it provides an effective architecture for achieving a harmonized and seamless Global ATM system;*
- b) identify GPIs that most closely align with the well established implementation plans of their respective regions;*
- c) select GPIs that would be most effective in achieving the objectives of the region while ensuring continuation of the work already accomplished;*
- d) implement GPIs that take into account the Initiatives across regions, to align work programmes and to develop national and regional plans that facilitate achieving a Global ATM system;*
- e) utilize the planning tools as the common planning and implementation mechanism, thereby ensuring proper coordination and global integration; and*
- f) review, at each PIRG meetings as a part of its regular agenda, the progress achieved and challenges identified in the implementation of GPIs using a common template.*

2.3 In follow-up to the above discussions, the Regional North American/Caribbean (NAM/CAR) Air Traffic Management (ATM) Meeting agreed to adopt a performance-based approach for ATM regional tasks and to take early steps to ensure that its work was fully supportive of the revised business planning processes of ICAO, the directives of the ICAO Council, and the ALLPIRG Conclusions. In accordance with these discussions it is suggested to the Meeting approve the following:

DRAFT

CONCLUSION 30/XX

IMPLEMENTATION OF WORK PROGRAMMES IN SUPPORT OF STRATEGIC PERFORMANCE OBJECTIVES

That, in support of the evolution from a systems-based to a performance-based approach to planning and implementation of the air navigation infrastructure, States/Territories/International Organizations of the E/CAR develop and implement work programmes, as depicted in **Appendix** to this Working Paper, in support of the following performance objectives:

- i) Optimization of the ATS route structure
- ii) Improve demand and capacity balancing
- iii) Enhance civil/military coordination and co-operation
- iv) Align upper airspace classification
- v) Implement RNP approaches

2.4 In view that the Strategic Objectives of ICAO are applicable to the regional and global ATM community, integrating work programmes and terms of reference of different intra-regional

Working Groups should be reviewed, taking into consideration the new Global Plan Initiatives (GPIs) and related ICAO on-line planning tools associated with planning and implementation work.

2.5 These planning and implementation works should be reorganized keeping in mind the priority interests of the CAR Region aimed at optimizing human resources, financial savings, as well as use of communication means between States such as the Internet, video conference, teleconferencing, e-mail, telephone and facsimile, which should be encouraged during the intervening period.

2.6 The Regional North American/Caribbean (NAM/CAR) Air Traffic Management (ATM) Meeting agreed that ICAO NACC Office reorganize NAM and CAR regional work programmes of future meetings, improving the collaborative decision-making (CDM) processes, and avoiding any unnecessary or duplication of work. Therefore it is suggested the Meeting adopted the following:

DRAFT

CONCLUSION 30/XX

**REORGANIZATION OF THE ATM TERMS OF REFERENCE
AND WORK PROGRAMMES OF THE WORKING GROUPS OF
THE NAM/CAR REGIONS**

That ICAO:

- a) review the integration in the ATM tasks of the different Working Groups of the NAM and CAR Regions regarding performance objectives, as indicated in the **Appendix** to this Working Paper, taking into account the new Global Plan Initiatives (GPI); and
- b) reorganize in an homogeneous manner the activities of the Working Groups of the NAM/CAR Regions regarding the annual work programme of the ICAO NACC Regional Office.

3. Suggested action

3.1 The E/CAR WG Meeting is invited to:

- a) note the information contained in this Working Paper;
- b) adopt the recommendation expressed in paragraph 2.3 and support Recommendation ATM/5 item b) in paragraph 2.6; and
- c) agree other actions as necessary.

APPENDIX

Performance Objectives

1) Optimize the ATS route structure in both terminal and en-route airspace

Benefits

The benefits of this performance objective are:

- 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

En-route airspace

In the near term:

(Target: mid 2008)

- analyze the en-route ATS route structure and implement all identifiable improvements;
- implement all remaining regional requirements (e.g. RNP 10 routes); and
- Finalize implementation of WGS-84.

In the medium term

(Target : 2011)

- develop a strategy and work programme 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;
- monitor implementation progress.

In terminal airspace

- develop a regional strategy and work programme for implementation of 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 2; and
- monitor implementation progress.

GPIs

The above performance objective is supported by 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) Improve demand and capacity balancing

Benefits

The benefits of this performance objective are:

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

Strategy

Near term (2008)

- 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;
- identify and analyse traffic flow problems and develop methods for improving efficiencies on gradual basis, as needed, through enhancements in current:
 - airspace organization and management (AOM) and airway structure (unidirectional routes),
 - communications and surveillance systems,
 - aerodrome capacity,
 - ATS capacity, and
 - ATS letters of agreement;
- define common elements of situational awareness between FMUs;
 - common traffic displays,
 - common weather displays (Internet),
 - communications (teleconferences, web), and
 - daily teleconference/messages advisories
- develop methods to establish demand/capacity forecasting
- develop a regional strategy and work programme for harmonized implementation of ATFM service ; and
- monitor implementation progress.

Strategy

Medium term (2010)

- develop a regional strategy for the implementation of flexible use of airspace (FUA)
- define common electronic information and minimum databases required for decision support and alerting systems for interoperable situational awareness between Centralized ATFM units
- develop regional procedures for efficient and optimum use of aerodrome and runway capacity
- develop a regional ATFM procedural manual to manage demand/capacity balancing;
- develop a regional strategy and framework for the implementation of Centralized ATFM unit.

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- develop operational agreements between Centralized ATFM units for interregional demand/capacity balancing; and,
- monitor implementation progress.

GPIs

The above is supported by 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.

3) Enhance civil/military coordination and co-operation

Benefits

The benefits of this performance objective are:

- make available military restricted airspace more hours of the day so that aircraft can fly on their preferred trajectories;
- increase airspace capacity;
- allow a more efficient ATS route structure;
- ensure safe and efficient action in the event of unlawful interference; and
- improve search and rescue services.

Strategy

(Target: 2008 and 2012)

- develop guidance material on civil/military coordination and co-operation to be used by States/Territories to develop national policies, procedures and rules;
- establish civil/military coordination bodies;
- arrange for permanent liaison and close cooperation between civil ATS units and appropriate air defense units;
- conduct a regional review of special use airspace;
- develop a regional strategy and work programme for implementation of flexible use of airspace in a phased approach beginning with more dynamic sharing of restricted airspace while working towards full integration of civil and military aviation activities by **2012**; and
- monitor implementation progress

GPIs

The above is supported by GPI/1: flexible use of airspace.

4) Align upper airspace classification

Benefits

The benefits of this performance objective are:

- 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;
- improvement of airspace interoperability and seamlessness; and
- ensure the provision of positive air traffic control services to all aircraft operations.

Strategy
(Target: 2008)

Develop a regional implementation strategy and work programme for the implementation of ICAO Annex 11 airspace Class A above FL 195.

GPIs

The above is supported by GPI/4: align upper airspace classification.

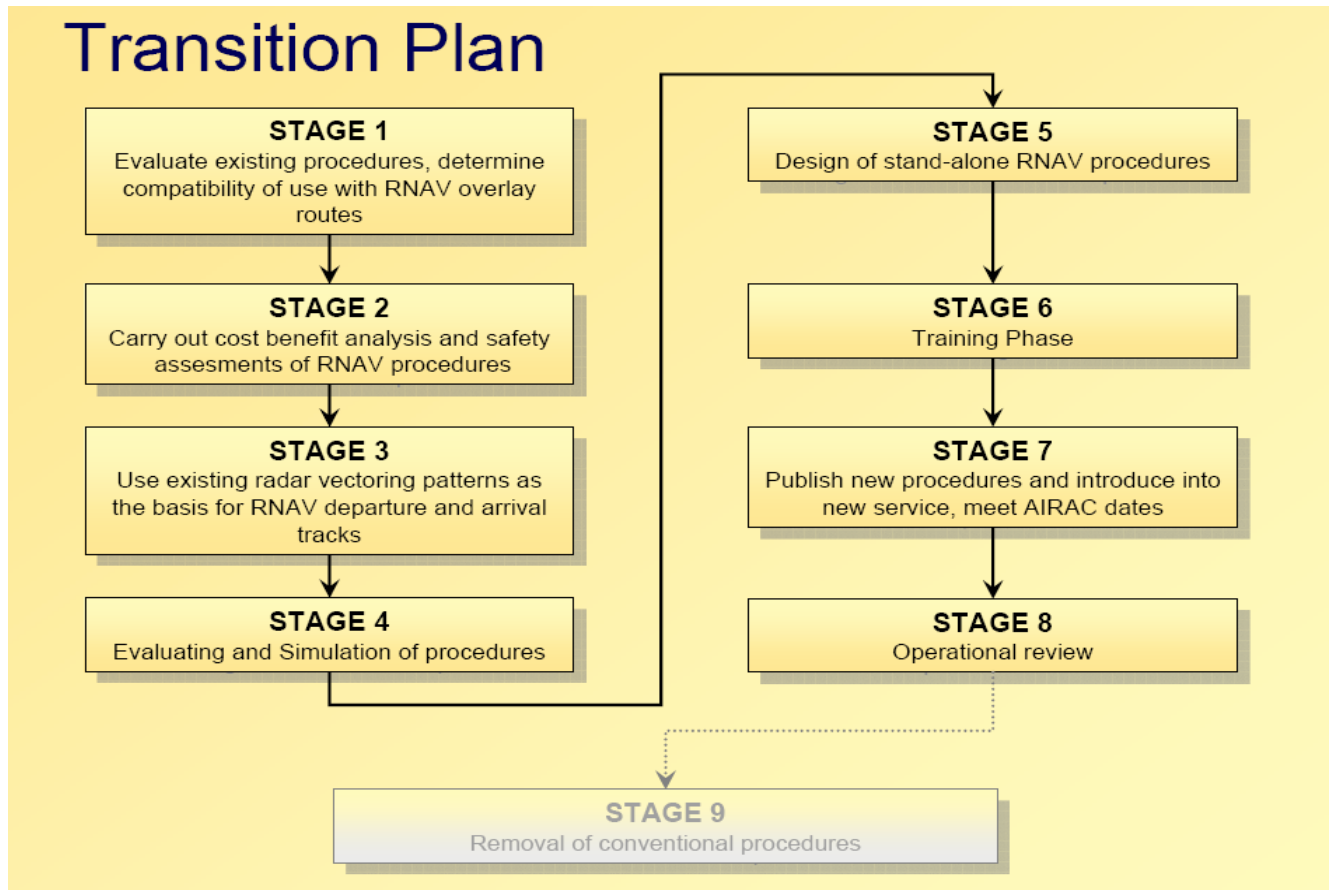
5) Implement RNP approaches

Benefits

The benefits of this performance objective are improvements in capacity, efficiency and safety at aerodromes.

Strategy
(Target: 2012)

- development of a regional strategy and work programme for implementation of RNP approaches at aerodromes where aircraft weighing 5700 kg or more are operated, on the basis of the transition plan below; and
- monitor implementation progress.



GPIs

The above performance objective is supported by 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.