



Agenda Item 4: Specific Air Navigation Activities and Developments
4.4 Air Traffic Management (ATM)

ATM DEVELOPMENTS

(Presented by the Secretariat)

SUMMARY
This Working Paper presents ATM developments in the E/CAR.
References: • Report of de NACC/DCA/2 Meeting. • Report of the Fifth All Planning and Implementation Regional Group (ALLPIRG/5) Meeting (Montreal, Canada, 23-24 March, 2006).

1. Introduction

1.1 The CAR/SAM/3 RAN Meeting examined the Airspace Organization and Management of the CAR/SAM Regions and encouraged the use of a globalization concept for the establishment of FIRs, especially in relation to upper airspace delineations. The meeting agreed that the States should make cooperative efforts in order to upgrade the efficiency of airspace management and optimizing air routes and transfer points with the aimed of reducing the work load of pilots and controllers and facilitating a safe, orderly and expeditious air traffic flow, resulting at the same time in economic savings for airspace users. It was recognized that while adopting theses changes, the civil aviation administrations should also consider repercussions of new technology on their sovereignty and national security as well as on military operations, among other things.

1.2 The NACC/DCA/2 Meeting stated its support of the ATM Operational Concept (Doc 9854) particularly relating to operational safety and airspace organization and management aspects for inter-operable ATM systems in the NAM and CAR Regions, in accordance with the new Air Navigation Global Plan, and with this support updated the tasks of the different Working Groups through the following conclusions:

- **Conclusion 2/9** - *Coordinated Development and Implementation of the CNS/ATM Systems in the NAM/CAR Regions.*
- **Conclusion 2/11** - *Interface and Operational Integration of ATM Automation Systems of the NAM/CAR Regions.*

- **Conclusion 2/14** - *Implementation of Performance Based Navigation*
- **Conclusion 2/17** - *Support for the ATM Work in the NAM/CAR Regions*
- **Conclusion 2/19** - *Implementation of the ATFM System in the NAM/CAR Regions*
- **Conclusion 2/20** - *Implementation of a Safety Management System*

1.3 Additionally, GREPECAS/13 agreed on several conclusions in regards to airspace organization and management for inter-operable regional ATM systems.

2. Discussion

Airspace Organization and Management (AOM)

2.1 States/Territories have achieved great progress in implementing ATM in the E CAR; notwithstanding, in spite of the efforts attained there are still some inconsistencies to be solved regarding the airspace organization and strategic management, such as:

- discontinuities and differences in classification and transition altitudes between adjacent airspaces;
- requirements to fly departure and arrival procedures;
- operation of aircraft at inefficient altitudes, speeds, and in unfavorable winds;
- less than optimum use of scarce resources such as airspace and aerodrome capacity;
- limited collaborative decision making between Civil Aviation Authorities, ATM providers, aerodrome authorities and aircraft operators;
- limited facilities for real-time information exchange between ATM providers, aerodromes and aircraft operators; and,
- insufficient flexibility to permit optimum management of weather-related disruptions to airline operations.

2.2 The totality of airspace should be considered as an available resource for users, establishing a dynamic and flexible management wherein any restriction may be considered only on a temporary basis. In order to achieve this, one of the objectives of the ATM system is to encourage the flexible use of the global airspace through the optimization and equitable balance in the use of airspace between civil and military operators.

2.3 To the extent possible, airspace should be structured free from operational discontinuities, inconsistencies and differing rules and procedures. Likewise, alignment of airspace classifications can facilitate the implementation of ATFM service, introduction and better utilization of data link communications, an improved flight plan processing system, and advanced airspace management coordination tools and message exchange capabilities, leading to progressively more flexible and dynamic airspace management. Airspace classifications should be harmonized across adjacent FIRs as defined in Annex 11.

Implementation of RNAV Routes and Required navigation performance (RNP)

2.4 The future strategy for RNAV/RNP implementation between city pairs including performance-based navigation (PBN) for en-route, terminal and approach flight phases should take into account the new ICAO provisions for future RNAV and RNP implementation. Airports which have implemented GNSS procedures in CAR Region are:

AUA: Aruba	SDQ: Santo Domingo
NAS: Nassau	BGI: Barbados
STT: St. Thomas	GCM: Grand Cayman
STX: St. Croix	KIN: Kingston
SJU: San Juan	MBJ: Montego Bay
POS: Port of Spain	PLS: Providenciales
GDT: Grand Turk	PUJ: Punta Cana (Higüey)
FPO: Freeport	POP: Puerto Plata

Demand capacity balancing

2.5 In several NAM/CAR Flight Information Regions in recent years, air operations saturation periods have occurred; some airports have observed traffic increases up to 13%. It is foreseen that this problem will continue growing. Some States have taken the initiative of implementing ATFM measures.

2.6 Operators have expressed to GREPECAS their concern for the high cost of fuel and how this crisis affects airlines, as well as the fuel savings campaign initiated by IATA, through which ATS providers have been requested to adopt actions addressed to achieving the greatest possible efficiency in the use of fuel, which would mitigate, to an extent, the cost problem. GREPECAS has expressed its commitment to taking this situation into account in all its activities aimed at studying and developing new strategies and ATM implementations.

2.7 States, Territories and International Organizations should carry out efforts to increase airspace management efficiency, optimizing air routes and transfer points with the aim of reducing fuel consumption and emissions, decreasing the workload of pilots and controllers and facilitating the safe, orderly and timely flow of air traffic. When adopting these changes, the civil aviation administrations should also consider the impact of the new technology on their sovereignty and national security, and the military operations among other things.

2.8 The traffic growth in the ECAR represents new conquests and collaboration opportunities to achieve an interoperable regional ATM development. The ECAR States and Territories should review airport organization and airspace management in order to optimize efficiency and flexibility for the benefit of users and service providers. Other aspects to be resolved in the short-term are the following:

- enhance civil/military coordination and co-operation aiming to achieve dynamic and flexible use of airspace;
- the development of an ATFM procedural manual for its common application, including specifications to determine airport and ATS capacity;
- publication of available service and airport capacity information according to ICAO guidelines;
- publication of national procedures in the AIP;
- establish improvements regarding surveillance and automated systems for flight data processing as well as the development and co-ordination of ATFM messages;
- improve human resources planning and required training aspects;
- improve the ATS route network; and
- encourage operational agreements between ATS users and providers for ATFM implementation, especially in those areas where flow problems are already present.

2.9 In order to improve the efficiency of air operations in the short term, the Meeting should foster the up-dating or establishment of operational agreements between ATS units and examine other

agreements that might be necessary in the mid-term. Therefore, the following Draft Conclusion is suggested for the Meeting's consideration:

DRAFT**CONCLUSION 30/XX****ATFM OPERATIONAL AGREEMENTS**

That ECAR States/Territories that have not done so, encourage ATS providers to establish operational agreements among ATS units for demand capacity balancing in the ECAR by **30 November 2007**.

ICAO Global Air Navigation Plan (ANP) on-line database

2.10 ICAO has developed a Global Air Navigation Plan (GANP) database which will soon be available on-line through the ICAO Geographic Information Service/GIS portal with the performance-based approach to measuring success with implementation and the planning process to carry out regional integration and transition to a global ATM system. There are planning tools developed by ICAO whose characteristics include:

- Various formats: software applications, planning documentation, web-based reporting forms, project management tools;
- Common programme templates as the basis for establishing performance objectives and implementation time lines;
- Comprehensive schedule and programme planning activities; and
- Links to relevant guidance material and documentation in order to assist the planner throughout the planning process.

2.11 Also, GIS provides for interactive database links in a dynamic chart where the user selects what is to be displayed and functions, such as:

- Zoom in or out;
- Input coordinate lat long;
- Decide the area to be charted;
- Search, query the map for data;
- Perform spatial analysis; and
- Many output options (Extract function, Save as: pdf, text, tab, ai, svg, jpg, and special print functions).

2.12 The Fifth Meeting of All Planning and Implementation Regional Groups (ALLPIRG/5) supported the use of online global air navigation plan database tools for an interactive and dynamic planning. The Meeting should encourage adoption of the following:

DRAFT**CONCLUSION 30/XX****BEGIN TRIALS ON THE USE OF ICAO ELECTRONIC
GLOBAL AIR NAVIGATION PLANNING TOOLS**

That States/Territories/International Organizations of the ECAR:

- a) utilize the on-line electronic planning tools provided on the ICAO web page as the common planning and implementation mechanism, ensuring proper coordination of regional and global integration;
- b) review on a regular basis the progress achieved and challenges identified in the implementation process; and
- c) provide feedback to the Secretariat on their possible improvements.

3. Suggested actions

3.1 The E/CAR WG Meeting is invited to:

- a) note the information contained in this Working Paper;
- b) adopt Draft Conclusion depicted in paragraphs 2.9 and 2.12; and
- c) agree other appropriate actions as necessary.