



Agenda Item 2: General Air Navigation matters
2.3 CNS/ATM Systems

REVIEW OF STRATEGY FOR INTEGRATION OF THE ATM AUTOMATED SYSTEMS

(Presented by the Secretariat)

SUMMARY

Based on the strategy developed by GREPECAS, this working Paper analyzes the integration of ATM automated systems as approved by GREPECAS, and proposes restructuring certain tasks within the ATM performance objective, in accordance with the new ICAO global plan initiatives (GPI).

References:

- *Second Amendment to the Global air navigation plan for CNS/ATM systems (Doc 9750)*
- *Report of the Fifth Meeting of all Planning and Implementation Groups (ALLPIRG) (ALLPIRG/5) (Montreal, Canada, 23-24 March 2006)*
- *Report of the Twelve Meeting of GREPECAS (Santiago, Chile, 23-24 March 2006)*

1. Introduction

1.1 Through Conclusion 12/35, GREPECAS provided guidelines for a strategy to integrate ATM automated systems with the participation of the States, users and ATS providers of the CAR/SAM Regions. The purpose of this strategy is to allow all stakeholders to cooperate jointly in the integration of facilities and systems for ATM automation, following ICAO guidelines for regional and global interoperable ATM systems.

1.2 As a follow up to the Fifth Meeting of All Planning and Implementation Groups (ALLPIRG/5) Advisory Group, all future work should be justified and based on clearly established performance objectives so as to ensure resources will be channelled in the most appropriate manner and that the work, including that of the Secretariat, supports the ICAO business plan.

2. Analysis

2.1 The strategy approved by GREPECAS is a safe, gradual, evolutionary and interoperable vision that facilitates information exchange and collaborative decision-making for all components of the CNS/ATM system, concurrent with increases to the required operational safety levels. It takes into account the current and future data processing and network environment and the use of ground and space segments for an interactive ATS information process under the criteria of integrity, quality, efficiency, continuity and real time.

2.2 Considering air traffic operating in the different airspaces and international aerodromes, the CAR Region has been identified as a homogeneous area, with specific needs and characteristics. States/Territories/International Organizations should cooperate to establish an action plan for interfacing of ATM automated systems.

2.3 The analysis should cover the current service levels provided with current ATS automated systems, as well as requirements to satisfy future operational applications of the ATM community. The full action plan should consider:

- a) that each State/Territory of the Eastern Caribbean appoint an expert as point of contact to carry out works for the evolutionary interfacing of ATM automated systems;
- b) follow guidance material specified in the regional Interface Control Document (ICD) for data interfacing and common procedures to exchange messages between ATM automated systems;
- c) establish bilateral or multilateral agreements as appropriate, among States/Territories of adjacent airspaces for trials and operational implementation/integration of ATM automated systems;
- d) establish necessary measures for human resources planning and training;
- e) identify other potential benefits for the ATM community that may be obtained in the long-term;
- f) conduct a cost-benefit analysis; and,
- g) document the action plan providing best experiences to other States/Territories/International Organizations.

2.4 The ATM automation performance objective related to the new ICAO Global Plan Initiatives (GPI) appears in **Appendix** to this working paper.

3. Suggested action

3.1 The meeting is invited to:

- a) take note of the information contained in this working paper;
- b) review and update the strategy for ATM automation included in the Appendix to this Working Paper; and,
- c) consider other measures that it may deem necessary.

APPENDIX

Improve ATM situational awareness

Benefits

The benefits of this performance objective are:

- enhanced traffic surveillance;
- enhanced collaboration between flight crew and the ATM system;
- improved collaborative decision-making through sharing of electronic aeronautical data information;
- improved available electronic terrain and obstacle data in the cockpit;
- reduction of workload for both pilots and controllers;
- improved operational efficiency;
- enhanced airspace capacity;
- improved implementation on a cost-effective basis;
- reduction of the number of controlled flights into terrain; and
- improved safety management.

Near term (2006 - 2010) Strategy for ATC

- identify the automation level required according to the ATM service provided in airspace and international aerodromes, assessing
 - architecture design,
 - characteristics and attributes for interoperability,
 - data bases and software, and
 - technical requirements;
- implement improved flight plan data processing systems and electronic transmission tools
- implement radar data sharing programs where benefits can be obtained
- develop a situational awareness training programme for pilots and controllers
- implement ATM surveillance systems for situational traffic information and associated procedures
- implement ATS automated message exchanges, as required
 - FPL, CPL, CNL, DLA, etc.
- implement automated radar handovers, where able;
- implement ground and air electronic warnings, as needed
 - Conflict prediction
 - Terrain proximity
 - MSAW
 - DAIW
 - Surveillance system for surface movement
- implement data link surveillance technologies and applications: ADS, CPDLC, AIDC, as required

Strategy for ATFM

- implement ATS automated message exchanges as required (FPL, CPL, CNL, DLA)
- implement additional automation support tools to increase sharing of aeronautical information
 - ETMS or similar
 - MET information
 - AIS/NOTAM dissemination
 - Aerodrome/sector/facility constraints
- implement teleconferences with ATM stakeholders
- 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; GPI/17: implementation of data link applications; GPI/18: aeronautical Information; GPI/19: meteorological systems.