

COMMONWEALTH OF DOMINICA

ATM/CNS TRANSITION PLAN

1.0 INTRODUCTION

- 1.1 It is recognized that the present air navigation system serving the Eastern Caribbean States is flawed with problems and consequently is inadequate to take civil aviation into the 21st century. It is further recognized that the limitations of the present system are intrinsic to the system itself and the problems cannot be overcome unless states embark on a new communications, navigation and surveillance (CNS) system to support future enhancements in air traffic management (ATM). Implicit in this statement is the recognition that implementation of this concept would require regional co- ordination and planning. The proposed ATM/CNS transition plan seeks to give effect to that idea.
- 1.2 The Plan will focus on the current system limitations, the future ATM/CNS system components, applications and benefits, and the anticipated implementation timetable.

2.0 CURRENT SYSTEM LIMITATIONS

2.1 Communications

2.1.1 Controller-Pilot

- a. System in use: VHF voices.
- b. System limitations: VHF coverage gaps - Southern, south, eastern and western sections; VHF reliability; frequency congestion.

2.1.2 Controller-Controller

- a. System in use: AFTN, land line.
- b. System limitations: inadequate availability and reliability.

2.2 Navigation

2.2.1 System in use: N.D.B. for enroute navigation, homing and instrument approaches.

2.2.2 System limitations

- a. Aircraft that rely on N.D.B. for enroute navigation are obliged to use a relatively inefficient route structure tied to navaid location.
- b. Range is limited.

- c. Reliability is limited by outages.
- d. Signal can be erratic.
- e. Purchase price and maintenance cost can be prohibitive.

2.3 Surveillance

2.3.1 System in use: Voice position reports, visual

2.3.2 System Limitations

Range is limited by line of sight.

2.4 Air Traffic Management

2.4.1 System in use: ICAO Standards and Recommended Practices (S.A.R.P.S.) are used in conjunction with available equipment.

2.4.2 System limitations

- a. It is communication dependent
- b. It is prone to congestion

3.0 FUTURE ATM/CNS SYSTEM COMPONENTS, APPLICATION, BENEFITS

3.1 General

3.3.1 Following is a review of the components and applications that will comprise the ATM/CNS system as well as benefits provided.

3.2 Communications

3.2.1 (i) Short Term

Continued use of Voice Communication VHF.
Improved AFS.

(ii) Medium Term

Continued use of Voice Communication VHF.

(iii) Long Term

Continued use of Voice Communication VHF.
Implementation of VHF Data Link.
Implementation of ATN.

3.2.2. Benefits

- a. To better able to communicate flight activity and resolve conflicts/alerts.
- b. The system design will ensure fault free data link communication, as well as data security.
- c. To provide global and data -interconnectivity.

3.3 Navigation

3.3.1 (i) Short Term

Continued use of NDB.

GNSS development trials and demonstrations.

(ii) Medium Term

Continued use of NDB.

GNSS development trials and demonstrations

(iii) Long Term

Withdrawal of NDB.

Progressive implementation of GNSS

Continued use of Barometric altimetry

Implementation of GNSS altitude

3.3.2 Benefits

- a. GPS will enhance safety by improving the pilot's position awareness, reducing the pilot work load and enhancing navigational accuracy. It will assist greatly in reducing the potential for controlled flight into terrain, something which must be very significant in our situation.
- b. Instrument approach capability will be possible.

- c. Reduction in operating costs.

3.4 **Surveillance**

3.4.1 (i) Short Term

Continued use of voice reports.

(ii) Medium Term

Continued use of voice reports.

(iii) Long Term

Continued use of voice reports.

Progressive implementation of ADS

3.4.2 Benefits

Will be capable of providing surveillance and surface traffic monitoring.

3.5 **Air Traffic Management**

3.5.1 (i) Short Term

Windshear Detection
Evaluation of Current ATM Capacity
Dissemination of Information ATM/CNS Concepts
Instruction and Training
Dissemination of Human Aspects of ATM/CNS

(ii) Medium Term

Windshear Detection
Evaluation of Current ATM Capacity
Dissemination of Information ATM/CNS Concepts
Continued Instruction and Training
Dissemination of Human Aspects of ATM/CNS

(iii) Long Term

Windshear Detection
Evaluation of Current ATM Capacity
Dissemination of Information ATM/CNS Concepts
Continuation of Instruction and Training

Dissemination of Human Aspects of ATM/CNS
Air/Ground Data Link Applications

- 3.5.2 With the implementation of this system the role of the ATS providers will shift from active traffic control to traffic management, with intervention when necessary to avoid conflicts.

4.0 **ATM/CNS TRANSITION TIMETABLE**

4.1 Guiding Principles

This plan recognises several guiding principles

- a. It must be practical and progressive in its implementation.
- a. Each step of the transition will necessarily undergo a trial and demonstration phase, followed by a certification/ approval process.
- c. Early benefits must be achievable, measurable and in reasonable step with investment.
- d. It must synchronize with the Eastern Caribbean ATM/CNS plan.

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