



International Civil Aviation Organization

NORTH AMERICAN, CENTRAL AMERICAN AND CARIBBEAN OFFICE

Twenty-Eighth Eastern Caribbean Working Group Meeting (28 E/CAR WG)

Montserrat, 26 to 30 April 2004

28 E/CAR WG – WP/30

19/04/04

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

ATM/CNS FRENCH ANTILLES IMPLEMENTATION PLAN

(Presented by France)

SUMMARY

This WP present French Antilles ATM/CNS Implementation Plan

1. Introduction

1.1 Considering the need to move toward more modern systems and working methods and to offer a better service to users with more safety and an improved capacity, ICAO has invited every State to prepare a plan for transition to the new ATM/CNS system.

1.2 In that spirit E/CAR sub region has drawn a plan that should be updated every year. The aim of the present plan is to describe the planning for the new ATM/CNS systems in the French territories in E/CAR. It should be integrated in the new version of the Eastern Caribbean ATM/CNS Transition Plan.

2. Discussion

2.1 During the conception of the Eastern Caribbean ATM/CNS Transition Plan, France did not participate for various reasons.

2.2 However the necessity of having available a planning tool concerning the transition to ATM/CNS in the French Antilles was nevertheless felt.

2.3 Furthermore, at the 3rd meeting of the ATM/CNS Subgroup (Rio de Janeiro, 15-19 March 2004), Trinidad and Tobago presented Information Paper 6 where the updated Eastern Caribbean ATM/CNS Transition Plan was described, including various national E/CAR States Plans. It is a pity that various items and dates published in this IP looks far of the reality.

2.4 During the writing of this French Antilles Plan, the need to its integration in the respective Eastern Caribbean ATM/CNS Transition Plan and the CAR SAM Regional plan for the Implementation of the CNS/ATM Systems was considered.

2.5 This meeting will decide of the best way for its integration in the Eastern Caribbean ATM/CNS Transition Plan

3. Suggested Action

3.1 The meeting is invited

- a) to consider the information provide in this WP; and
- b) using the benefit of having together the experts of the E/CAR States, to decide of a new process in order to update the Eastern Caribbean ATM/CNS Transition Plan if he considers it as appropriate.

APPENDIX

FRENCH ANTILLES ATM/CNS IMPLEMENTATION ATM/CNS PLAN

1 Glossary

ACAS	Airborne Collision Avoidance System
ADS	Automatic Dependant Surveillance
AFS	Aeronautical Fixed Services
ATFM	Air Traffic Flow Management
AFTN	Aeronautical Fixed Telecommunication Network
AIDC	ATS Interfacility Data Communication
AMHS	Aeronautical Message Handling System
AMSS	Aeronautical Mobile Satellite Service
ATIS	Aerodrome terminal information Service
ATM	Air Traffic Management
ATN	Aeronautical Telecommunications Network
ATS	Air Traffic Services
CDTI	Cockpit Display Traffic Information
CFIT	Controlled Flight Into Terrain
CNS	Communication, Navigation, Surveillance
CPDL	Controller – Pilot Data Link
CPDLC	Controller – Pilot Data Link Communication
DME	Distance Measuring Equipment
FANS	Future Air Navigation System
E/CAR	Eastern Caribbean
FMCS	Flight Management Computer System
FMS	Flight Management System
GBAS	Ground Based Augmentation System
GNSS	Global Navigation Satellite System
GPS	Global Position System
GREPECAS	CAR/SAM Regional Planning and Implementation Group
HF	High Frequency
INS	Inertial Navigation System
IRS	Inertial Reference System

LAAS	Local Area Augmentation System
MSAW	Minimum Safe Altitude Warning
NDB	Non Directional Beacon
NOTAM	Notice To Air Men
PSR	Primary Surveillance Radar
RAIM	Remote Autonomous Integrity Monitoring
RCP	Required Communication Performance
RNAV	Random Navigation
RNP	Required Navigation Performance
RSP	Required Surveillance Performance
RVSM	Reduced Vertical Separation Minimum
SSR	Secondary Surveillance Radar
SARPS	Standard And Recommended Practices (Issued by ICAO)
VDF	VHF Direction Finder
VHF	Very High Frequency
VOR	Visual Omni Range
WGS(84)	World Geodetic System (Approved 84)

2 Current Situation and System Limitations

2.1 *Communication*

4.1.1 Pilot – Controller

System in use: VHF (voice and ATIS).

System limitations: VHF coverage gaps, frequency congestion, language difficulties.

4.1.2 Controller – Controller

System in use: AFTN and land-line.

System limitations: Inadequate availability and reliability.

2.2 *Navigation*

System in use: VOR/DME, NDB, INS/IRS, ILS/DME and barometric altimetry.

System limitations: Limited coverage, Reliability hindered by outages, Route structure tied to NavAids location, Limited accuracy.

2.3 *Surveillance*

System in use: SSR (mode C), VHF Direction Finding Station (VDF) and voice position report.

System limitations: SSR limited by line of site, VDF lack of accuracy, Position report is not optimal.

2.4 ***Air Traffic Management***

System in use: System in use complies with ICAO standards and recommended practices (SARPS).

System limitations: ATS procedures with neighboring airspace dissimilar in case, Language difficulties.

3 **Future ATM/CNS Systems**

3.1 ***General***

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

3.2 ***Communication***

3.2.1 Near Term (\Rightarrow 2005)

- Availability of VHF for ATIS and voice position reports
- Improved AFS for the E/CAR (C&W + Frame relay)

3.2.2 Medium term (2006 \Rightarrow 2010)

- Availability of VHF for ATIS and Voice Position Reports
- AIDC
- ATN
- AMHS
- AIDC
- AFTN/ATN Gateway
- ATN (ATS ES/Router)

3.2.3 Long Term (2011 \Rightarrow 2015 and beyond)

- Availability of VHF for ATIS and voice position reports
- AIDC
- ATN
- AFTN/ATN Gateway
- CPDLC
- AMSS data/voice

3.3 ***Navigation***

3.3.1 Near Term (\Rightarrow 2005)

- Use of NDB, VOR/DME, ILS, barometric altimetry
- WGS 84
- GNSS navigation
- FMS/FMCS procedures
- RVSM

3.3.2 Medium term (2006 \Rightarrow 2010)

- Use of NDB, VOR/DME, ILS, barometric altimetry
- WGS 84
- GNSS Navigation
- FMS/FMCS procedures
- SBAS

3.3.3 Long Term (2011 \Rightarrow 2015 and beyond)

- Use of NDB, VOR/DME, ILS, barometric altimetry
- WGS 84
- GNSS Navigation
- FMS/FMCS Procedures
- SBAS and GBAS

3.4 *Surveillance*3.4.1 Near Term (\Rightarrow 2005)

- Continued use of voice position reports and of SSR (mode A/C)
- Mandatory carriage of transponders (mode C)
- Mandatory use of ACAS
- Martinique Radar image remoting in St Lucia

3.4.2 Medium term (2006 \Rightarrow 2010)

- Continued use of voice position reports and of SSR (mode A/C)
- Mandatory Carriage of transponders (Mode C)
- Mandatory use of ACAS
- Linking of existing radars and remoting of common image
- SSR to SSR Mode S

3.4.3 Long Term (2011 \Rightarrow 2015 and beyond)

- Continued use of voice position reports and of SSR (mode A/C/S)
- Mandatory Carriage of Transponders (Mode C)
- Mandatory use of ACAS
- Linking of existing radars and remoting of common image
- ADS

3.5 *Air Traffic Management*3.5.1 Near Term (\Rightarrow 2005)

- Airspace management
 - Fixed RNAV ATS routes
 - Random RNAV Routes
 - Optimized sectorization
- Air traffic services
 - Radar Coordination
 - Minimum Safe Altitude Warning (MSAW)
 - RNAV SIDS and STARS

- Human factors
 - Dissemination of information on ATM/CNS concepts including Human aspects.

3.5.2 Medium term (2006 ⇒ 2010)

- Airspace Management
 - Fixed and random RNAV routes
 - Application of RNP Concepts
 - Optimized Sectorization
 - Sector Boundaries Transparent to users
- Air Traffic Services
 - Use of E/CAR Single radar image
 - Minimum Safe Altitude Warning (MSAW)
 - Conflict Alert
 - Conflict predictions
- Air Traffic Flow Management (ATFM)
 - Interregional Cooperative ATFM
- Human Factors
 - Dissemination of information on ATM/CNS concepts including Human aspects.

3.5.3 Long Term (2011 ⇒ 2015 and beyond)

- Airspace Management
 - Fixed and Random RNAV Routes
 - Application of RNP Concepts
 - Optimized Sectorization
 - Sector Boundaries Transparent to users
 - Windshear Detection
 - Application of Required Communication Performance (RCP)
 - Application of Required Surveillance Performance (RSP)
- Air Traffic Services
 - Use of E/CAR Single radar image
 - Minimum Safe Altitude Warning (MSAW)
 - Conflict alert and Predictions
 - Windshear Detection
 - RNAV SIDS AND STARS
 - Airborne Separation Assurance Systems (ASAS)
- Air Traffic Flow Management (ATFM)
 - Interregional Cooperative ATFM
 - Establishment of ATFM Data Bases
 - Application of Strategic ATFM
 - Application of Pre-Tactical ATFM
 - Application of Tactical AFTM
 - ATFM Data Link Service

- Human Factors
 - Dissemination of information on ATM/CNS concepts including Human aspects.