INTERNATIONAL CIVIL AVIATION ORGANIZATION
NORTH AMERICAN, CENTRAL AMERICAN AND CARIBBEAN OFFICE

SECOND NORTH AMERICAN, CENTRAL AMERICAN AND CARIBBEAN WORKING GROUP MEETING

(NACC/WG/2)

REPORT

OCHO RIOS, JAMAICA, 12 TO 16 MAY 2008

LIST OF CONTENTS

Contents	Page

HISTORICAL

ii.1   **Place and Date of the Meeting**

The Second North American, Central American and Caribbean Working Group Meeting (NACC/WG/2) was held at the Sunset Jamaica Grande Resort & Spa in Ocho Rios, Jamaica, from 12 to 16 May 2008.

ii.2   **Opening Ceremony**

Mr. Víctor Hernández, representing the ICAO NACC Regional Office, thanked the Civil Aviation Authority of Jamaica for the outstanding support and facilities provided for this Meeting, welcomed participants, and explained the scope of the Meeting agenda. He also highlighted the importance for all CAR and NAM Regions States/Territories/International Organizations to work together to achieve coordinated provision of air navigation services in a safe, efficient and effective manner. Lt. Col. Oscar Derby, Deputy Director General of Civil Aviation, Regulatory Affairs, of Jamaica, thanked the attendees for their participation in the name of Col. Torrance Lewis, Director General, and pointed out that the NACC Working Group needs to continue its efforts towards developing implementation of air navigation systems in North America, Central America and the Caribbean in line with the new international civil aviation requirements and formally opened the Meeting.

ii.3   **Organization of the Meeting**

In view of the absence of Mr. Norman Cassell (Montserrat), Chairman of the Eastern Caribbean Working Group on the first day, Mr. Patrick Stern (Jamaica) was elected to chair this Meeting, and Mr. Randolph Jones (Jamaica) chaired the meeting from Tuesday forward. Mr. Fidel Ara (Cuba) acted as Vice-Chairman. Mr. Víctor Hernández, Acting Deputy Regional Director, acted as Secretary of the Meeting and was assisted by Mr. Julio Siu, Regional Officer Communications, Navigation and Surveillance, both from the ICAO NACC Office.

ii.4   **Working Languages**

The working languages of the Meeting were Spanish and English. The documentation and Report of the Meeting were available to participants in both languages.

ii.5 **Agenda**

The Meeting adopted the following agenda:

Agenda Item 1   General Matters

    1.1   Valid Conclusions/Decisions of the Previous CAR WG/1 (renamed as the NACC/WG), C/CAR DCA, E/CAR WG, E/CAR DCA and CAP/DCA Meetings

    1.2   Review of the Status of Air Navigation Deficiencies

    1.3   Analysis of ICAO and GREPECAS Guidance on Global, Inter and Intra-Regional Air Navigation Activities

Agenda Item 2   ATM Developments

    2.1   Follow-up on the Implementation Strategies and Activities Related to the ATM Performance Objectives Approved by GREPECAS

    2.2   Follow-up on Regional Activities and Implementation Relating to Airspace Organization and Management (AOM)

    2.3   Follow-up on Activities Relating to Air Traffic Flow Management Implementation (ATFM)

    2.4   Follow-up on Implementation Programmes Related to Air Traffic Services (ATS) Safety Management

    2.5   Follow-up on the Progress Achieved in Search and Rescue

    2.6   Follow-up on ATS Contingency Plans.

Agenda Item 3   CNS Developments

    3.1   Follow-up on the Status of the E/CAR AFS and MEVA II Digital Networks and their Related Inter and Intra-Regional Interconnection/Integration

    3.2   Follow-up on the Action Pan for the Implementation of Voice and Data Air-Ground Communication

    3.3   Follow-up Activities for the Implementation of Ground-Ground Communications

    3.4   Follow up to GNSS Implementation and Action Plan

    3.5   Review of the Planning and Implementation of Surveillance Systems and Follow-up to their Respective Action Plan(s).

    3.6   Surveillance Data Exchange Activities

    3.7   Other Communications Matters

Agenda Item 4   **Establishment of Interfaces for ATM Automated Systems between Adjacent ATS Units**

Agenda Item 5   **AIS (AIM) Developments and Follow-up**

5.1   Follow-up to activities and regional implementation related to the objectives of Aeronautical Information Services AIS/MAP (AIM)

5.2   Implementation of e-TOD

Agenda Item 6   **AGA Developments and Follow-up**

6.1   Follow-up to activities and regional implementation related with Emergency Plans and Emergency Operations Centres

6.2   Follow-up to activities and implementation related to Airport Certification and Safety Management Systems (SMS)

6.3   Follow-up to activities on the analysis of runway end safety areas (RESAs) and runway strips.

Agenda Item 7   **Terms of Reference and Work Programme**

Agenda Item 8   **Other Air Navigation Matters**

ii.6   **Schedule and Work Mode**

The Meeting agreed to hold its daily sessions from 09:00 to 15:00 hours, with adequate breaks.

ii.7   **Attendance**

The Meeting was attended by 54 participants from 14 NACC States/Territories, 1 SAM Region State, 3 International Organizations and 1 service provider. The Meeting regretted the absence of other NACC States/Territories/International Organizations, as well as neighbouring States who were invited to the Meeting. The list of participants is shown on pages iii-1, iv-1 to iii-8.

ii.8   **Draft Conclusions and Decisions**

The NACC Working Group recorded its activities as Draft Conclusions as follows:

DRAFT CONCLUSIONS: Activities requiring endorsement by the Directors of Civil Aviation of Central America (CAP-DGACs), Central Caribbean (C/CAR DCAs), and Eastern Caribbean (E/CAR DCAs).

DECISIONS: Internal activities of the NACC Working Group

LIST OF DRAFT CONCLUSIONS FORMULATED BY THE NACC/WG/2 MEETING

NO.	TITLE	PAGE
2/1	Adoption of a NAM/CAR ATFM Operational Procedures Handbook	2-6
2/2	Development of National SAR Services Quality Assurance Programme	2-8
2/3	Implementation of Additional Coordination Procedures For Hurricanes And Volcanic Ash	2-8
2/4	Actions to Avoid Duplication of Flight Plans	4-2
2/5	Terms of Reference and Work Programme of the North American, Central American and Caribbean Working Group (NACC/WG) and NAM/CAR Implementation Plan	7-2

ii.9   **List of Working, Information and Discussion Papers**

		WORKING PAPERS		
Number	Agenda Item	Title	Date	Presented by
WP/01 Rev.	--	Review of the Meeting Agenda and Schedule	23/04/08	Secretariat
WP/02	1.1	Valid Conclusions of Previous CAR WG/1 (renamed as the NACC/WG), C/CAR DCA, E/CAR DCA, CAP/DCA, C/CAR WG and E/CAR/WG Meetings	26/02/08	Secretariat
WP/03	1.2	Specific Air Navigation Planning and Implementation Deficiencies in the Caribbean	27/03/08	Secretariat
WP/04 Rev.	1.3	Analysis of ICAO and GREPECAS Guidance on Global, Inter and Intra-Regional Air Navigation Activities	09/05/08	Secretariat
WP/05	2.1	Follow-up on the Implementation Strategies and Activities Related to the ATM Performance Objectives Approved by GREPECAS	07/05/08	Secretariat
WP/06	2.2	AOM Improvements	09/05/08	Secretariat
WP/07	2.3	Contingency Procedures Against Hurricanes and Volcanic Ash in the CAR/NAM Regions	02/05/08	Secretariat
WP/08	2.4	Outlook of the Required Activities for the Implementation of an ATS Safety Management system	09/05/08	Secretariat
WP/09	2.5	List of Questions for Search and Rescue (SAR) Quality Assurance Programme	02/05/08	Secretariat
WP/10	2.6	Regional Contingency Plans Catalogue	14/04/08	Secretariat
WP/11	3.1	MEVA II Network Performance and MEVA II/REDDIG Interconnection Activities	31/03/08	Secretariat
WP/12	3.1	Follow-up on the Development and Interconnection/Integration of E/CAR and MEVA II Digital Networks	31/03/08	Secretariat

		WORKING PAPERS		
Number	**Agenda Item**	**Title**	**Date**	**Presented by**
WP/13	3.2 & 3.3	Follow-up activities for the implementation of air-ground and ground-ground communications	31/03/08	Secretariat
WP/14	3.4	GNSS: Considerations and Follow-up on Implementation and Action Plan	31/03/08	Secretariat
WP/15	3.4	Progressive Deactivation of NDB Stations	31/03/08	Secretariat
WP/16	3.5	Follow-Up to the Surveillance Implementation Plan	22/04/08	Secretariat
WP/17	3.6	Surveillance Data Exchange and Sharing	22/04/08	Secretariat
WP/18	3.7	Results of the ITU World Radiocommunication Conference (2007) (WRC-07) and ICAO Initial Position for WRC-2011	31/03/08	Secretariat
WP/19	3.7	Radio Frequency Assignment Lists for the CAR Region	31/03/08	Secretariat
WP/20	3.2, 3.3 & 3.4	Amendment 83 to Annex 10 – Aeronautical Telecommunications	31/03/08	Secretariat
WP/21	4	Considerations for the Implementation of Actions for the ATM automated systems interfaces establishment	02/05/08	Secretariat
WP/22	5.1	Follow-Up AIS/MAP – AIM Activities	24/04/08	Secretariat
WP/23	5.2	Electronic Terrain and Obstacles Data (e-TOD)	29/04 /08	Secretariat
WP/24	6.1	Emergency Plans and Emergency Operations Centres	24/04/08	Secretariat
WP/25	3.3	Aeronautical Fix Telecommunications Network Service Upgrade between Federal Aviation Administration and Venezuela Civil Aviation Authority	08/04/08	United States
WP/26	6.2	Implementation and Certification of Aerodromes and SMS	24/04/08	Secretariat
WP/27	7	Host Rotation Programme for Hosting Future NACC Working Group Meetings	27/03/08	Secretariat
WP/28	7	Terms of Reference and Work Programme of the NACC WG	01/04/08	Secretariat
WP/29	6.3	Analysis of Runway End Safety Areas (RESAS) and Runway Strips	24/04/08	Secretariat
WP/30	2.3	AIR TRAFFIC FLOW MANAGEMENT IN THE NORTH AMERICAN AND CARIBBEAN REGIONS	08/04/08	United States
WP/31	4	Safety Concerns with Multiple/Duplicate International Flight Plans	08/04/08	United States

WORKING PAPERS

Number	Agenda Item	Title	Date	Presented by
WP/32	7	Destination Alternate Requirements	07/05/08	IATA

INFORMATION PAPERS

Number	Agenda Item	Title	Date	Presented by
IP/01	--	General Information	19/03/08	Secretariat
IP/02	--	List of Working and Information Papers	09/05/08	Secretariat
NI/03	3.6	Experiencia en la Compartición de Datos Radar (*Paper available in Spanish only- Appendices in English and Spanish)*	30/03/08	Spain
IP/04	3.3	Aeronautical Telecommunication Network (ATN) Internet Protocol Suite - FAA Plan to Comply with ICAO Documents	08/04/08	United States
IP/05	2.2	West Atlantic Route System (WATRS) Plus Route Structure Redesign and Separation Reduction - Significant Tasks and Events	08/04/08	United States
IP/06	4	En Route Automation Modernization (ERAM) Transition - International Civil Aviation Organization (ICAO) Flight Planning (FPL) for Automatic Application of Preferential Routing in United States (U.S.) Domestic Airspace	08/04/08	United States
IP/07	3.5	Automated Dependent Surveillance – Broadcast (ADS-B) Data Collection Efforts in the Caribbean/South American (CAR/SAM) Regions	22/04/08	United States
IP/08	3.6	Federal Aviation Administration's Experience with Radar Data Sharing	22/04/08	United States
IP/09	4	ATS Interfacility Data Communication (AIDC)	22/04/08	United States
IP/10	3.7	Proposal for Amendment to the ICAO CAR/SAM Air Navigation Plan (Doc 8733), Volume II – Facilities and Services Implementation Document (FASID) – CAR Region	31/03/08	Secretariat
IP/11 **Rev.**	3.6	ASTERIX Tutorial	09/05/08	Eurocontrol
NI/12	3.6	Desarrollos CNS, Actividades de Vigilancia Realizadas por COCESNA (Sistemas Radar y Estudio ADS en la FIR Centroamericana) *(Available in Spanish only)*	12/04/08	COCESNA
IP/13	7	ICAO Framework for Transition to an Electronic Air Navigation Plan (eANP)	24/04/08	Secretariat
IP/14	5.1	Avances de COCESNA en los Aspectos AIS/MAP (AIM) *(Available in Spanish only)*	30/04/08	COCESNA
IP/15	2.6	Follow-Up on ATS Contingency Plans by Trinidad and Tobago	06/05/08	Trinidad and Tobago
IP/16	2.3	E/CAR ATM Committee Report	06/05/08	Rapporteur ATM

INFORMATION PAPERS

Number	Agenda Item	Title	Date	Presented by
				Committee E/CAR WG
IP/17	3.5	Follow-Up on Surveillance Initiatives by Trinidad and Tobago	06/05/08	Trinidad and Tobago
NI/18	3.5	Actividades de vigilancia realizadas por Cuba *(Available in Spanish only)*	09/05/08	Cuba

DISCUSSION PAPER

Number	Agenda Item	Title	Date	Presented by
DP/01	7	Terms of Reference and Work Programme of the NACC WG	15/05/08	Ad hoc Group Rapporteur

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Agenda Item 1:   **General Matters**

1.1   **Valid Conclusions/Decisions of the Previous CAR WG/1 (renamed as the NACC/WG), C/CAR DCA, E/CAR WG, E/CAR DCA and CAP/DCA Meetings**

1.1.1   The Meeting reviewed the Conclusions and Decisions in order to update them and keep their number at a minimum consistent with progress achieved.

1.1.2   The result of the analysis of valid Conclusions/Decisions is detailed in **Appendices A** to **F** to this part of the report.

1.2   **Review of the Status of Air Navigation Deficiencies**

1.2.1   The Meeting took note that based on the uniform methodology for the identification, assessment and reporting of air navigation deficiencies formulated and updated by the ICAO Council, GREPECAS and its contributory bodies have determined and assessed the deficiencies in the air navigation fields within the CAR/SAM Regions classified as "A" (necessary for air navigation safety), "B" (necessary for the regularity and efficiency of air navigation) and "U" (with a direct impact on safety that require urgent corrective action).

1.2.2   The Meeting took note of the problems to access and update the information contained in the GANDD database posted on the ICAO website. The Secretariat informed that the GANDD is being upgraded to be more user-friendly and easy to use in accordance with GREPECAS recommendations. The Meeting concluded that States should use the GANDD and provide updated information to the ICAO NACC Office.

1.2.3   Likewise, the Secretariat recalled the methodology approved by the ICAO Council to maximize utilization of the GANDD and invited the States/Territories/International Organizations to contact the ICAO NACC Office focal point, Mr. Gabriel Meneses (gmeneses@mexico.icao.int), in order to obtain assistance, if required.

1.3   **Analysis of ICAO and GREPECAS Guidance on Global, Inter and Intra-Regional Air Navigation Activities**

Peformance Measurement

1.3.1   The Meeting noted the planning tools, air navigation planning electronic database, project management techniques, and software and new methodologies developed by ICAO to present air navigation system implementation reports. The objective of these initiatives is to harmonise work programmes, improve report presentation processes and ensure interoperability and transparency among the Regions, as well as ensure the development and measurement of performance objectives.

1.3.2   As follow-up to action plans proposed by the CAR/WG/1 Meeting for States/Territories to develop their national implementation plan, it was recognized that the latter represents a more effective vision for the implementation of infrastructure and air navigation services using resources more efficiently, which means that States/Territories and the Secretariat will focus efforts more on resolving the main challenges through results-based planning and budget.

1.3.3   Nevertheless, action plan performance measurement orientation is required when designing, planning, implementing and operating an air navigation system during the implementation process. The objective is to prevent costly data collection and analysis processes. Performance measurement should focus on proactive results from air navigation improvements and environmental benefits that result from work programmes.

1.3.4   The Meeting considered that stakeholders should share specific results with regards to performance measurement in one of the following areas: safety, quality of service (such as capacity, delay and flight efficiency), productivity and cost-effectiveness. Based on this information, the Meeting recommended that when developing implementation plans, performance measures be incorporated in order to quantify attained results.

1.3.5   In this regard, simple and relevant indicators should be used in order to measure performance. An example is RVSM implementation, which reduced fuel burn with economic benefits and also resulted in the reduction of CO_2 emissions on a regional and global basis.

APPENDIX A
STATUS OF OUTSTANDING CONCLUSIONS AND DECISIONS OF THE CAR/WG/1 MEETING

FIELD	CONCLUSION	ACTION FOR	COMMENTS AND FOLLOW-UP	STATUS
GEN	**DRAFT** **CONCLUSION 1/1 IMPLEMENTATION OF AIR NAVIGATION SYSTEMS IN THE CAR REGION** That: a) States/Territories/International Organizations develop an action plan as a follow-up to the results of GREPECAS/14, shown in Appendix C to this part of the report; b) the Working Groups of the CAR Region, assisted by ICAO, align its CAR Region planning and implementation work with the ICAO Strategic Objectives, the Global Air Navigation Plan and the Conclusions of GREPECAS; and, c) ICAO assist States/Territories/International Organizations in developing their action plans and examining the terms of reference of the CAR Region working groups.	States/Territories/ International Organizations ICAO	a) In progress by the States/Territories/International Organizations: Valid b) Superseded by Conclusion NACC/WG 2/5. c) The Terms of Reference (TOR) for the NACC/WG were formulated and it is expected that the TORs of the other Subregional Working Groups will be updated accordingly. Superseded by Conclusion NACC/WG/ 2/5.	a) Valid b) and c) Superseded
ATM	**DRAFT** **CONCLUSION 1/2 CREATION OF A CAR ATM TASK FORCE** (*) That, based on the existing terms of reference for the different sub-regional working groups (E/CAR, C/CAR, and Central America): a) the ICAO NACC Office organise a CAR ATM Task Force Meeting in early 2008, to develop an ATM Regional Action Plan for a seamless CAR ATM System, based on Appendix A to this part of the Report, to be presented in the next CAR/WG Meeting; and b) States/Territories/International Organizations, nominate their ATM experts to form the ATM Task Force Group of the Caribbean. (*) *Members: Cuba, Barbados, Dominican Republic, Haiti, Trinidad y Tabago, United States, IATA, IFATCA. Rapporteur: Fidel Ara (Cuba).*	ICAO States/Territories/ International Organizations	Topic and objectives taken into consideration in the structure of the Subregional Working Groups.	Completed
ATM	**DRAFT** **CONCLUSION 1/3 ENDORSEMENT OF WATRS PLUS PROJECT** That, a) States/Territories/International Organizations of the CAR Region endorse the WATRS PLUS Project implementation on *5 June 2008*; and b) ICAO take the necessary measures to distribute in the NAT and CAR Regions the proposals for amendment of Regional Supplementary Procedures (SUPPs, Doc 7030), for the implementation of 50 NM lateral separation and redesign of ATS routes in WATRS airspace, correspondingly.	States/Territories/ International Organizations ICAO	The Proposal for Amendment was circulated with no State objections. Its approval by ICAO Council is pending.	Completed

FIELD	CONCLUSION	ACTION FOR	COMMENTS AND FOLLOW-UP	STATUS
SAR	**DRAFT** **CONCLUSION 1/4 REVIEW OF THE MULTILATERAL SAR AGREEMENT MODEL** That: a) ICAO take appropriate action to organise, in ***early 2008***, a CAR SAR Meeting; and b) States, Territories and International Organizations appoint SAR experts to attend Regional CAR SAR Meetings to review the Multilateral SAR Agreement model for the CAR Region, as shown in the Appendix to this Report.	ICAO States/Territories/ International Organizations	The meeting was postponed and ICAO has coordinated a new date for the first semester of 2009.	Valid
CNS	**DRAFT** **CONCLUSION 1/5 PROPOSAL FOR AMENDMENT TO THE FASID TABLE CNS 2A** That the ICAO NACC Regional Office forward the corresponding proposal for amendment of the FASID Table CNS 2A – AMS and AMSS related to, a) the relevant requirements to the CAR Region States/Territories, as included in Appendix C to this part of the Report; and b) modify the format of the FASID Table CNS 2A combining all the communication requirements' columns to only one column titled "A/G data".	ICAO	a) Table CNS 2A has been updated and the Proposal for Amendment to the FASID was sent to States for review (Ref. EMX0274, 12 May 2008). b) The modification to the Table has been coordinated with ICAO Headquarters and it will be able to be analysed in the updated electronic ANP; see information paper on eANP.	Completed
CNS	**DRAFT** **CONCLUSION 1/6 PRELIMINARY REGIONAL APPROACH FOR THE IMPLEMENTATION OF THE INTERNET PROTOCOL FOR AMHS** That when States/Territories/International Organizations plan and implement their respective AMHS systems, they take into account, in the interim, the *"Preliminary Regional approach for the implementation of the Internet Protocol for AMHS,"* which is presented in Appendix G to this part of the Report, until the GREPECAS considerations on this topic are issued.	States/Territories/ International Organizations	The States have taken note of this regional approach.	Completed
CNS	**DRAFT** **CONCLUSION 1/7 ESTABLISHMENT AND IMPLEMENTATION OF AN ACTION PLAN FOR THE IMPLEMENTATION OF REQUIRED GROUND-GROUND AND AIR-GROUND VOICE AND DATA COMMUNICATIONS** That States/Territories/International Organizations: a) review, complete and implement their respective action plan for the implementation of ground-ground and air-ground voice and data communications, based on the format presented in Appendix H to this part of the Report; and b) forward the Plan mentioned in a) to the ICAO NACC Regional Office no later than **29 February 2008**.	States/Territories/ International Organizations	This Action Plan will be part of the Regional CAR/NAM Implementation Plan. Superseded by Conclusion NACC/WG 2/5 item b).	Superseded

FIELD	CONCLUSION	ACTION FOR	COMMENTS AND FOLLOW-UP	STATUS
CNS	**DRAFT CONCLUSION 1/8 DEACTIVATION OF NDB STATIONS IN THE EASTERN CARIBBEAN** That: a) States/Territories and airspace users should move towards implementing GNSS so that NDB stations can be gradually removed; b) the E/CAR sub-region use the same time line for deactivation of NDB stations based on GREPECAS Conclusion 14/56; and c) 2018 be considered the date for completion of NDB station deactivation by all E/CAR States/Territories.	States/Territories/ International Organizations	The scope of this conclusion was extended to the entire NAM/CAR Regions. Updates are expected from the States/Territories/International Organizations before GREPECAS/15 Meeting.	Valid
CNS	**DRAFT CONCLUSION 1/9 E/CAR POINT–OF–CONTACT FOR UPDATING FASID TABLE CNS 3** That: a) Eastern Caribbean States/Territories should provide a point-of-contact for the provision of information for updating FASID Table CNS 3 – Radionavigation Aids Table; b) the ICAO NACC Office send a letter to the E/CAR States/Territories requesting a point-of-contact to be in charge of national coordination to propose amendments to the FASID Table CNS 3 as needed; and c) E/CAR States/Territories send the ICAO NACC Office its proposals for amendment to the FASID Table CNS 3.	States/Territories/ International Organizations ICAO	a) ICAO has received reports from some States regarding their points-of-contact. b) ICAO sent a letter to all CAR Region States/Territories. – Completed c) ICAO has received some responses from States. Agenda Item 3 will follow-up on this action and a new Conclusion will be proposed to amend the FASID. Activities completed.	Completed
CNS TC	**DRAFT CONCLUSION 1/10 FOLLOW-UP ON GNSS ACTIVITIES – CYCLE 2007-2008** That the States/Territories/International Organizations: a) follow-up on the GNSS-related SARPs, GNSS related ICAO guidelines and policies, and GREPECAS conclusions; b) review and begin action to continue implementation of GNSS basic services; c) follow-up on regional studies, trials, activities and results of projects RLA/00/009 and RLA/03/902, which are related to the solution for the SBAS implementation and other GNSS augmentation systems.	States/Territories/ International Organizations	The Meeting took note of this follow-up.	Completed

FIELD	CONCLUSION	ACTION FOR	COMMENTS AND FOLLOW-UP	STATUS
CNS	**DRAFT** **CONCLUSION 1/11 ESTABLISHMENT AND IMPLEMENTATION OF AN ACTION PLAN FOR GNSS IMPLEMENTATION** That States/Territories/International Organizations, a) review, complete and implement their respective action plan for GNSS implementation based on the Plan shown in Appendix F to this part of the Report; and b) forward the plan mentioned in a) above to the ICAO NACC Regional Office in order to be received before **29 November 2008**.	States/Territories/ International Organizations	This Action Plan will be part of the Regional CAR/NAM Implementation Plan; superseded by Conclusion NACC/WG 2/5 item b).	Superseded
CNS	**DRAFT** **CONCLUSION 1/12 ADS-C TRIALS IN THE CAR REGION** That Trinidad and Tobago be urged to conduct ADS-C trials with the following tentative programme: i. trials in the Piarco FIR; ii. the data and other results be provided to the ICAO NACC Office to be analysed and coordinated through the GREPECAS CNS/SUR Task Force; and iii. an initial report on the analysis of the trials be presented before **31 July 2008**, in order to enable ICAO and the GREPECAS mechanism to present the results at the GREPECAS/15 Meeting tentatively scheduled for October 2008.	Trinidad and Tobago	A follow-up was conduct and note was taken of Trinidad and Tobago's plans in this respect.	Completed
CNS	**DRAFT** **CONCLUSION 1/13 APPLICATION OF MULTILATERATION SYSTEM AS A SURVEILLANCE OPTION** That: a) States/Territories/International Organizations consider multilateration as a viable option to provide immediate surveillance coverage in geographical areas where secondary radar cannot be effectively deployed and in order to provide an effective transition to ADS-B when all aircraft are correctly equipped; and b) Trinidad and Tobago be urged to conduct trials in multilateration along similar guidelines used for the ADS-C trials as a transition path to ADS-B in the medium term.	States/Territories/ International Organizations Trinidad and Tobago	a) A follow-up was conducted and note was taken that multilateration was contained in the new version of the GREPECAS Regional Unified Surveillance Systems Strategy. b) Note was taken of Trinidad and Tobago's plans in this respect.	Completed

FIELD	CONCLUSION	ACTION FOR	COMMENTS AND FOLLOW-UP	STATUS
CNS	**DRAFT** **CONCLUSION 1/14 ADS-B TRIALS** To urge: a) Cuba to continue its ADS-B trials in the Havana FIR; b) Trinidad and Tobago and the United States to establish and implement an ADS-B trials project in the Piarco FIR; c) States/Territories/International Organizations from the CAR region be invited to participate in the Project mentioned in b) above, expanding the trials in other airspaces and follow-up on the execution and results of the projects mentioned in a) and b), as well as other initiatives; and d) all States/Territories/International Organizations who conduct trials and other ADS-B related activities, inform the ICAO NACC Office before **31 July 2008**, on the status of implementation and results of their activities to facilitate analysis and coordination through the GREPECAS CNS/SUR Task Force.	Cuba Trinidad and Tobago States/Territories/ International Organizations	A follow-up was conducted and note was taken of the States/Territories/International Organization plans in this respect.	Completed
CNS	**DRAFT** **CONCLUSION 1/15 ESTABLISHMENT AND IMPLEMENTATION OF AN ACTION PLAN FOR SURVEILLANCE SYSTEMS IMPLEMENTATION** That States/Territories/International Organizations: a) review, complete the information and execute their corresponding action plan for implementation of surveillance systems, considering Appendix P to this part of the Report; and b) forward the plan mentioned in a) above to the ICAO NACC Regional Office for receipt before **29 February 2008**.	States/Territories/ International Organizations	This Action Plan will become part of the Regional NAM/CAR Implementation Plan; superseded by Conclusion NACC/WG 2/5 item b).	Superseded
CNS	**DRAFT** **CONCLUSION 1/16 FINALISING THE REGIONAL PREPARATION AND SUPPORT TO THE UPDATED ICAO POSITION FOR THE WRC-2007** States and International Organizations: a) are urged to take note of the updated ICAO position for the WRC-2007 presented in Appendix Q and incorporate it into the positions of their own administrations who will participate at the WRC-2007; b) who are CITEL Member States are urged to participate in the preparation of common inter-American positions for the WRC-2007, which is being developed by CITEL's Permanent Consultative Committee (CCP.II), supporting the updated ICAO position for the WRC-2007; and c) are urged to participate in the WRC-2007 in order to support the updated ICAO position in order to guarantee the availability and protection of the aeronautical radio frequency spectrum, which is essential to meet civil aviation demands in a safe, efficient and cost-effective manner.	States/ International Organizations	The results of the WRC-2007 and States' support for the ICAO position for the WRC-2007 were informed.	Completed

FIELD	CONCLUSION	ACTION FOR	COMMENTS AND FOLLOW-UP	STATUS
ATM	**DRAFT** **CONCLUSION 1/17 ESTABLISHMENT OF AN ACTION PLAN FOR INTERFACE IMPLEMENTATION TO ESTABLISH ATM AUTOMATED SYSTEMS AMONG ATS ADJACENT UNITS** That States/Territories/International Organizations: a) review, complete and execute their respective action plan for interface implementation to establish ATM automated systems between adjacent units utilising Appendix C to this part of the Report; and b) forward the plan mentioned in a) above to the ICAO NACC Regional Office by **29 February 2007**.	States/Territories/ International Organizations	This Action Plan will become part of the Regional NAM/CAR Implementation Plan; superseded by Conclusion NACC/WG 2/5 item b).	Superseded
AIM	**DRAFT** **CONCLUSION 1/18 IMPLEMENTATION OF AN AIS/MAP AIM ACTION PLAN AND PARTICIPATION OF OFFICERS IN THE SEMINAR ON TERRAIN AND OBSTACLES ELECTRONIC DATA (e-TOD) AND THE FOLLOW-UP MEETING** That States/Territories/International Organizations, a) follow-up and execute the AIS/MAP-AIM Action Plan presented in Appendix B to this part of the Report, and inform the ICAO NACC Regional Office on the results of implementation of their respective tasks by **27 September 2007**; b) consider the designation and participation of AIS/MAP officers in the Seminar on Terrain and Obstacles Electronic Data (e-TOD), and in the combined AIS follow-up Meeting in their training plans scheduled as a first alternative in the Dominican Republic the week of 22 October 2007; and c) the ICAO Regional Office consider as a second option to hold the combined Seminar/Meeting in Trinidad and Tobago in the second trimester of 2008, in view of the importance to provide support for the implementation of the ATM system.	States/Territories/ International Organizations	This Draft Conclusion was considered finalized with the SIP e-Tod Seminar held in Santo Domingo, Dominican Republic.	Completed

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STATUS OF OUTSTANDING CONCLUSIONS AND DECISIONS OF THE DIRECTORS OF CIVIL AVIATION OF THE CENTRAL CARIBBEAN MEETINGS

FIELD	CONCLUSION	ACTION FOR	COMMENTS AND FOLLOW-UP	STATUS
GEN	**CONCLUSION 8/1 UPDATE OF THE REQUIREMENTS ESTABLISHED IN THE FASID AND OPTIMIZATION OF THE APPLICATION OF SARPS THAT HAVE AN IMPACT ON AIR NAVIGATION DEFICIENCIES** That in order to update the air navigation requirements established in the FASID and the uniform application of SARPS that have an impact on air navigation deficiencies, a) the States/Territories submit their proposals for amendment to the FASID to the ICAO Regional Office, in accordance to the procedure established by the CAR/SAM ANP; b) the C/CAR Working Group contributes to the updating of the requirement Tables of the FASID; c) States/Territories also inform the ICAO NACC Regional Office about their differences and coordinate with this Office about their disagreements in the interpretation and application of SARPS; and d) the actions indicated in a), b) and c) above are finalized before **28 February 2007**.	C/CAR States/Territories and Working Groups	The FASID Tables have been updated and the Proposal for Amendment was sent to States for review (Ref. EMX0274, 12 May 2008).	Completed
ATM	**CONCLUSION 8/3 DEVELOPMENT AND IMPLEMENTATION OF ATFM CONCEPT** That C/CAR States/Territories who have not already done so, provide the necessary resources for the development and implementation of ATFM concepts and consider signing operational agreements for the interchange of flight plan data.	C/CAR States/Territories	Superseded by GREPECAS Conclusion 14/49.	Superseded
AVSEC	**CONCLUSION 8/4 ADOPTION OF AMENDMENT 1 TO ANNEX 17** That the States which have not done so, inform ICAO using the appropriate form: 1) any differences that will exist on 1 July 2006 between the national regulations or practices and the provisions of the Annex 17 to include Amendment 11 and thereafter of any further differences that may arise, in accordance with the obligation imposed by Article 38 of the ICAO Convention; and 2) the dates in which the States will have complied with the provisions of Annex 17, including its Amendment 11.	C/CAR States		Completed

FIELD	CONCLUSION	ACTION FOR	COMMENTS AND FOLLOW-UP	STATUS
AVSEC	**CONCLUSION 8/5 RECRUITMENT OF AVSEC PROFESSIONALS** That the States/Territories: a) review the ICAO prerequisites for the recruitment of the AVSEC professionals presented in the Appendix A to this part of the Report. and forward this information to AVSEC qualified individuals in their administrations; and b) encourage qualified individuals to apply with ICAO to assist States with the enhancement of their AVSEC Programmes	C/CAR States/Territories		Completed
AVSEC	**CONCLUSION 8/6 AVIATION SECURITY POINT OF CONTACT (PoC) NETWORK** That the States/Territories: a) review the criteria information for accessing the Point of Contact (PoC) Network and designate the appropriate authority to receive imminent threats to civil air transport operations through this Network; and b) before 30 June 2006 sign up with ICAO using the appropriate form for the PoC Network, presented in Appendix C to this part of the Report.	C/CAR States/Territories		Completed
GEN	**CONCLUSION 9/1 SOLUTION OF DEFICIENCIES AND LAST RESORT ACTION PREPARATION** That C/CAR States/Territories that have not yet done so, carry out urgent action to: a) designate a national coordinator to update the GREPECAS Air Navigation Deficiencies Database (GANDD); b) prepare as soon as possible their respective action plans for resolving deficiencies using the form presented in Appendix H to this part of the Report; c) submit their action plans mentioned in item a) above to the ICAO Regional Office; d) resolve "U" deficiencies before 31 December 2007, in accordance with GREPECAS Conclusion 13/92; and e) study and suggest mitigation or alternative solutions as last resort action.	C/CAR States/Territories		Valid
AGA	**CONCLUSION 9/2 FOLLOW-UP AND PRIORISED ATTENTION TO AGA/AOP ISSUES** That, taking into account the importance of AGA/AOP issues on safety, the numerous existing deficiencies in this field and their negative impact on the results of the USOAP audits, the C/CAR States/Territories: a) follow-up on the development of AGA/AOP issues presented in Appendix I to this part of the Report; b) prioritise the implementation of action plans for AGA/AOP deficiencies; and c) adopt the regulations and other relevant measures in order to improve AGA/AOP safety.	C/CAR States/Territories	The AGA/AOP/SG/6 Meeting will be held in San Jose, Costa Rica. Follow-up visits will be carried out to Caribbean States for the correction of deficiencies. A Seminar/Workshop on Emergency Plans and Emergency Operations Centres will be held from 29 September to 03 October 2008 in Tortola, British Virgin Islands. The Sixth International Conference on Bird Hazard will be held from 24-28 November 2008 in Brasilia, Brazil.	Valid

FIELD	CONCLUSION	ACTION FOR	COMMENTS AND FOLLOW-UP	STATUS
ATM	**CONCLUSION 9/3 REGIONAL HARMONISATION, COORDINATION AND UPDATING OF ATS CONTINGENCY PLANS – 2007 CYCLE** That C/CAR States/Territories that have not yet done so, in order to complete and facilitate the application of ATS contingency plans and the Regional ATS Contingency Plans Catalogue: a) include in their respective ATS contingency plans the regional contingency procedures for the coordination of hurricanes and volcanic ash; b) in accordance with GREPECAS Conclusion 14/50, provide the ICAO NACC Regional Office with updated information on their respective ATS contingency plan and PoC by 31 December 2007; and c) support and participate in the work of the Caribbean ATM Task Force in order to review and contribute to ATS contingency plans among ATS units and with airspace users.	C/CAR States/Territories		Completed
ATM	**CONCLUSION 9/4 SUPPORT FOR THE DEVELOPMENT OF THE CAR/SAM ATFM OPERATIONAL CONCEPT (ATFM CONOPS) – 2007-2008 CYCLE** That C/CAR States/Territories: a) support the CAR/SAM ATFM CONOPS formulated in GREPECAS Conclusion 14/49; and b) take into account the main lessons learned by other States and Regions in ATFM presented in Appendix K to this part of the Report.	C/CAR States/Territories		Completed
CNS	**CONCLUSION 9/5 SUPPORT FOR THE MEVA II AND REDDIG INTERCONNECTIVITY PROCESS – 2007 CYCLE** That States/Territories/International Organization of C/CAR members of the MEVA II VSAT network; a) fully support the continuation of the interconnectivity process of this network with the South American VSAT network (REDDIG) in accordance with the premises presented in Appendix N to this part of the Report; b) consider of high importance to adopt and sign the Memorandum of Understanding (MoU) for the MEVA II and REDDIG interconnectivity; and c) participate in the Fifth MEVA II/REDDIG Coordination Meeting scheduled to be held in the ICAO NACC Office, Mexico, 3 to 5 October 2007.	MEVA II VSAT Network Member Administrations	Regarding the accomplishments and results of the MEVA II / REDDIG Coordination Meetings, the Fifth MEVA II / REDDIG Coordination Meeting was carried out from 3 to 5 October 2007.	Completed

FIELD	CONCLUSION	ACTION FOR	COMMENTS AND FOLLOW-UP	STATUS
FS	**CONCLUSION 9/6 SUPPORT FOR THE IMPLEMENTATION OF USOAP AUDITS FOR THE 2007-2008 CYCLE** C/CAR States/Territories are urged to: a) continue supporting the implementation of USOAP in accordance with ICAO Strategic Objective A-3; b) take into consideration findings related to the global application of the Eight Critical Elements of the Comprehensive System Approach (CSA) presented in Appendixes A and B to this part of the Report; and c) take appropriate measures to correct deficiencies detected in these audits.	C/CAR States/Territories	The C/CAR States should develop corrective implementation plans to solve the deficiencies related to the eight critical elements in the CSA and correct them in a timely manner combining C/CAR resources into a working group to maximize implementation of corrective action plans in the area.	Completed
AVSEC	**CONCLUSION 9/7 SUPPORT FOR THE IMPLEMENTATION OF THE ICAO UNIVERSAL SECURITY AUDIT PROGRAMME (USAP) – 2007 AND 2008 CYCLES** That C/CAR States/Territories, in order to continue support of the implementation of the Universal Security Audit Programme (USAP) - 2007 and 2008 cycles: a) ensure the implementation of their corrective action plans for compliance with SARPs of Annex 17; b) participate in the various courses and workshops on quality control security organized by ICAO in the States and ASTCs of the CAR/SAM Regions; c) provide qualified human resources through Short Term Experts/Instructors (STE) and other contributions; d) provide ICAO with up-to-date information on their AVSEC and FAL points-of-contact (if they have not already done so); e) implement the recommended guidelines on the security controls for screening liquids, gels and aerosols; and f) provide ICAO with timely information on acts of unlawful interference that have occurred within their territories.	C/CAR States/Territories		Valid

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ESTADO DE LAS CONCLUSIONES VIGENTES DE LA 92ª REUNIÓN DE DIRECTORES GENERALES DE AVIACIÓN CIVIL DE CENTROAMÉRICA Y PANAMÁ

ÁREA	CONCLUSIÓN	ACCIÓN PARA	COMENTARIOS Y SEGUIMIENTO	ESTADO
AGA	**CONCLUSIÓN 92/2 REALIZACIÓN DE UN TALLER DE CERTIFICACIÓN DE AERÓDROMOS Y SMS EN INSTALACIONES ICCAE DE COCESNA.** Que la OACI en coordinación con COCESNA organice la realización de un Taller de Certificación de Aeródromos y SMS en las instalaciones del ICCAE de COCESNA y se coordine la programación de las fechas que se consideren más adecuadas**.**	OACI COCESNA	Se coordinará con COCESNA la realización del Taller para el Primer Semestre de 2009.	Válida
AIS	**CONCLUSIÓN 92/3 INFORME SOBRE EL ESTADO DE LOS PROYECTOS DE IMPLEMENTACIÓN AIS/MAP.** Que los Directores Generales de Aviación Civil de los Estados Centroamericanos y COCESNA, presenten un informe sobre el estado de los proyectos de implantación AIS/MAP, a la Oficina Regional NACC de la OACI, a más tardar el 30 de noviembre 2006.	Estados Centroamericanos y COCESNA	COCESNA apoya todos los proyectos AIS/MAP en Centroamérica.	Finalizada
AIM	**CONCLUSIÓN 92/4 TRANSICIÓN HACIA LA GESTIÓN DE INFORMACIÓN AERONÁUTICA (AIM – AERONAUTICAL INFORMATION MANAGEMENT**). Que los Directores Generales de Aviación Civil de los Estados Centroamericanos, a través de COCESNA: a) apoyen con los recursos necesarios el proceso de transición AIS/MAP hacia el nuevo concepto AIM, acorde con el Plan Mundial de Navegación Aérea; b) organizar cursos en materia AIM, orientados al actual personal AIS, en el ICCAE/COCESNA; y c) crear un grupo de trabajo, que desarrolle un programa para la transición AIM, e informe a la OACI sobre los avances durante ese proceso, en cada Reunión de Directores Generarles de Aviación Civil de Centroamérica y Panamá.	Estados Centroamericanos y COCESNA	Se dará seguimiento en el Grupo de Trabajo para la transición AIS/MAP AIM en Centroamérica.	Válida

ÁREA	CONCLUSIÓN	ACCIÓN PARA	COMENTARIOS Y SEGUIMIENTO	ESTADO
ATM	**CONCLUSIÓN 92/5 REORGANIZACIÓN DE LOS TÉRMINOS DE REFERENCIA Y PROGRAMAS DE TRABAJO ATM DE LOS GRUPOS DE TRABAJO DE LAS REGIONES NAM/CAR** Que la OACI: a) revise la integración dentro de los Tareas ATM de los diferentes Grupos de Trabajo de las Regiones NAM y CAR de objetivos de desempeño, como se indican en el **Apéndice C** a esta parte del informe, tomando en consideración las nuevas Iniciativas del Plan Mundial (GPI); y b) reorganice de manera homogénea las actividades de los Grupos de Trabajo de las Regiones NAM y CAR relacionadas con el programa de trabajo anual de la Oficina NACC de la OACI.	OACI	Reemplazada por la Conclusión GREPECAS 14/51.	Reemplazada
GEN	**CONCLUSIÓN 92/6 INICIAR LOS ENSAYOS PARA LA UTILIZACIÓN DE LAS HERRAMIENTAS EN LÍNEA DE LA OACI DEL PLAN MUNDIAL DE NAVEGACIÓN AÉREA** Que los Estados de Centroamérica y COCESNA: a) utilicen como el mecanismo de planeación e implementación común, las herramientas en línea del plan mundial de navegación aérea disponibles en la página web de la OACI, asegurándose de una coordinación de integración regional y mundial adecuada; b) examinen regularmente el progreso alcanzado y la identificación de metas durante el proceso de implementación; y c) retroalimenten a la Secretaría sobre sus posibles mejoras.	Estados Centroamericanos y COCESNA		Finalizado
ATM	**CONCLUSIÓN 92/7 PLAN DE ACCIÓN ATFM SEGÚN LOS OBJETIVOS ESTRATÉGICOS DE DESEMPEÑO DE LA OACI** Que en apoyo a la evolución desde un enfoque basado en sistemas hacia uno basado en el desempeño, los Estados Centroamericanos y COCESNA, elaboren un plan de acción conjunto para la implementación del servicio ATFM en la FIR Centroamericana, tomando en consideración las guías que se incluyen en el **Apéndice D** a esta parte del informe.	Estados Centroamericanos y COCESNA	Reemplazada por la Conclusión GREPECAS 14/51.	Reemplazada

ÁREA	CONCLUSIÓN	ACCIÓN PARA	COMENTARIOS Y SEGUIMIENTO	ESTADO
CNS	**CONCLUSIÓN 92/9 ELABORACIÓN DE PLAN DE DESACTIVACIÓN GRADUAL DE LAS ESTACIONES NDB** Que los Estados de Centroamérica, COCESNA y los usuarios del espacio aéreo, con vistas a la elaboración de un Plan de desactivación gradual de las estaciones NDB sin afectar la seguridad operacional: a) analicen el servicio que proporciona cada estación NDB, su función, la existencia de procedimiento con otras ayudas como VOR/DME, GNSS-RNAV, así como la capacidad/desarrollo de las aeronaves que operan en el espacio aéreo servido; b) informen a la Oficina regional NACC o SAM de la OACI sobre sus respectivos planes de desactivación de estaciones NDB, estableciendo la fecha de desactivación de las estaciones NDB, de manera que sean recibidas antes del **30 de noviembre de 2007**.	Estados Centroamericanos y COCESNA	Se recibió información de algunos Estados/Territorios/Organizaciones Internacionales y se espera recibir alguna otra actualización antes de la próxima reunión GREPECAS/15.	Finalizada
AVSEC	**CONCLUSIÓN 92/10 PUNTOS DE CONTACTO DEL ÁREA DE FACILITACIÓN** Que los Estados de Centroamérica y Panamá identifiquen a la OACI sus Puntos de Contactos de Facilitación con sus datos a más tardar el 31 de diciembre 2006, utilizando el formulario que aparece en el **Apéndice A** a esta parte del Informe.	Estados Centroamericanos y Panamá		Válida
AVSEC	**CONCLUSIÓN 92/11 FASE II DEL PROGRAMA DE CAPACITACIÓN DE OACI/TRANSPORT CANADA** Que los Estados de Centroamérica apoyen a la OACI en el desarrollo de los Talleres, Cursos y Seminarios de AVSEC para 2007-2009 con la participación de Especialistas AVSEC.	Estados Centroamericanos		Válida

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CONCLUSIONS OF THE VALID CONCLUSIONS OF THE MEETINGS OF DIRECTORS OF CIVIL AVIATION OF THE EASTERN CARIBBEAN

FIELD	CONCLUSION	ACTION FOR	COMMENTS AND FOLLOW-UP	STATUS
MET	**CONCLUSION 20/01 ENCOURAGE PARTICIPATION OF MET PERSONNEL IN ICAO MEETINGS** That ICAO take appropriate action to strongly urge States/Territories of the E/CAR of the critical need for meteorology experts to attend ICAO regional and subregional meetings.	ICAO	Superseded by Conclusion E/CAR/DCA 21/1.	Superseded
ATM	**CONCLUSION 20/02 COMMON PROCEDURE FOR RPL MANAGEMENT IN THE E/CAR** That E/CAR States/Territories/International Organizations accepting the use of RPLs for traffic departing from aerodromes under its jurisdiction: a) implement a common procedure in order to ensure the appropriate dissemination of the RPL data; b) publish relevant procedures in the E/CAR AIPs based on the following principles: i. users shall transmit their list of RPLs to each departing aerodrome; ii. each departing aerodrome AIS office that is accepting the use of RPLs for departing traffic, transmit daily flight plan data to all concerned ATC facilities according to ICAO standards; and, c) the 31st E/CAR/WG follow-up on the present procedure.	E/CAR States/ Territories/ International Organizations		Valid
AIS	**CONCLUSION 20/03 IMPLEMENTATION OF "INTELLIGENT" AIS TOOLS** That the implementation of automated "intelligent" tools be considered by States/Territories to facilitate the correct editing and addressing of AFTN messages in the E/CAR ATS facilities.	E/CAR States/ Territories		Completed
CNS	**CONCLUSION 20/04 PROVISION OF POWER ENERGY AND BACKUP GENERATORS TO EACH NAVIGATION AID** That States/Territories consider the provision of sufficient energy and backup generators for extended power outages, based upon the individual commercial demands of each navigation aid in the E/CAR.	E/CAR States/ Territories		Valid

FIELD	CONCLUSION	ACTION FOR	COMMENTS AND FOLLOW-UP	STATUS
AGA	**CONCLUSION 20/05 IMPLEMENTATION OF A COMPREHENSIVE STRATEGIC ACTION PLAN (CSAP) FOR RUNWAY END SAFETY AREAS (RESA) AND RUNWAY STRIPS** That States/Territories of the E/CAR develop CSAPs that: a) address all RESA/runway strip deficiencies reported in GANDD by: - categorizing the types of deficiencies recorded in GANDD - prioritizing the categories according to the ability for correction; b) submit a comprehensive strategic action plan (CSAP) for each deficient runway into the GANDD posted in ICAO NACC Office web page; and, c) recommend to the GREPECAS AGA/AOP/SG alternative means to achieve compliance with RESA SARPs.	E/CAR States/ Territories	Superseded by GREPECAS Conclusion 14/32.	Superseded
GEN	**CONCLUSION 20/06 SUPPORT BY THE E/CAR DCA MEETING OF THE ACTIONS REQUIRED BY THE ALLPIRG/5 MEETING** That States/Territories of the E/CAR Region give full support to their follow-up actions in accordance with the conclusions of the ALLPIRG/5 Meeting and start reviewing their national air navigation plans, in coordination with the NACC Regional Office.	E/CAR States/ Territories	Superseded by GREPECAS Conclusion 14/2.	Superseded
ATM	**CONCLUSION 20/07 SUPPORT TO WATRS PLUS PROJECT** That States/Territories/International Organizations of the E/CAR; a) take appropriate action to support implementation activities of the WATRS Plus project, included in Appendix L to this part of the Report; and, b) prepare to accommodate the number of operators acquiring RNP 10 approval, a requirement for operation in the proposed WATRS Plus project, including the provision of information to the operators and the coordination of approval status with the relevant State authorities.	E/CAR States/ Territories/ International Organizations		Completed
SAR	**CONCLUSION 20/08 EASTERN CARIBBEAN STATES CIVIL AVIATION ACCIDENT MASS CASUALTY INCIDENT RESPONSE PLAN (E/CAR CAAMCIRP)** That, a ECAR/WG review and finalize the draft Eastern Caribbean States Civil Aviation Accident Mass Casualty Incident Response Plan (E/CAR CAAMCIRP), included in the Appendix to this part of the Report; b The SAR Rapporteur carry out coordination with the United States to convene a meeting of the Eastern Caribbean SAR Committee in Trinidad and Tobago during 2007, so as to coordinate the completion of the E/CAR CAAMCIRP based on the existing draft, and provide any comments to the **31th ECAR/WG**; and c) ICAO remove MCI aspects from the agenda of future convened meetings of the ECAR.	ECAR/WG SAR Rapporteur ICAO	Superseded by E/CAR DCA Conclusion 21/4.	Superseded
AVSEC	**CONCLUSION 20/09 FACILITATION POINTS OF CONTACT** That each E/CAR State/Territory identify to the ICAO NACC Regional Office their National Facilitation Point-of-Contact in the format included in **Appendix A** to this part of the Report by **31 January 2007**.	E/CAR States/ Territories		Valid

FIELD	CONCLUSION	ACTION FOR	COMMENTS AND FOLLOW-UP	STATUS
AVSEC	**CONCLUSION 20/10 PHASE II ICAO/CANADA AWARENESS TRAINING PROGRAMME** That the E/CAR States/Territories support the Phase II ICAO/Canada Awareness Training Programme in hosting workshops, courses, and seminars and having their AVSEC specialists participate in these events.	E/CAR States/ Territories		Valid
AVSEC	**CONCLUSION 20/11 IMPLEMENTATION STATUS OF AVSEC/COMM CONCLUSIONS** That all E/CAR States/Territories complete the AVSEC survey included in **Appendix B** to this part of the Report to validate the implementation status of past GREPECAS AVSEC/COMM Conclusions related to the implementation of Annex 17 SARPs by **31 January 2007**.	E/CAR States/ Territories		Valid
MET TC	**CONCLUSION 21/1 IMPROVEMENTS IN EASTERN CARIBBEAN MET SERVICES** That ICAO: a) take appropriate actions to develop a regional Technical Cooperation Project to improve MET services of the States/Territories in the Eastern Caribbean covering the following issues**:** • Training programmes for MET personnel • OPMET information exchange in E/CAR States • Follow-up on the implementation of the recommendations formulated in the MET SIP for the CAR Region • Improvements in the operational coordination and the provision of MET services • Participation of MET personnel in ICAO meetings • Establish Agreements between Civil Aviation Administrations and MET Authorities of CAR States / Territories / International Organizations b) submit the regional Technical Cooperation Project to the NACC/DCA/3 Meeting for review and approval.	ICAO	ICAO NACC Office has prepared a regional project covering all the air navigation fields, including MET.	Valid
ATM	**CONCLUSION 21/2 COMMON TRANSITION ALTITUDE FOR THE E/CAR REGION** That the E/CAR ATM Committee: a) develop and send to the E/CAR States/Territories for comments, not later than **30 November 2008**, a proposal for a common transition altitude among the Piarco FIR; and b) present their recommendations to the Twenty-Second Meeting of Directors of Civil Aviation of the Eastern Caribbean (E/CAR/DCAS/22).	E/CAR ATM Committee		Valid

FIELD	CONCLUSION	ACTION FOR	COMMENTS AND FOLLOW-UP	STATUS
AIM	**CONCLUSION 21/3 REGIONAL TECHNICAL COOPERATION PROJECT FOR THE IMPLEMENTATION OF AERONAUTICAL INFORMATION MANAGEMENT (AIM)** That ICAO: a) take the necessary actions to develop a Regional Technical Cooperation Project for the implementation of Aeronautical Information Services (AIS), taking into account Aeronautical Information Management (AIM), the global ATM operational concept, the corresponding CNS technology support, the necessary AIS, AGA and MET services, as well as the training of personnel in the topics involved; and b) present the aforementioned project to the NACC/DCA/3 Meeting scheduled for 2008.	ICAO	The development of the Project is on going. Technical Cooperation is coordinating with all fields involved in order to develop the Regional Technical Cooperation Project.	Valid
SAR	**CONCLUSION 21/4 ACTIONS TO IMPROVE THE SAR SYSTEM IN THE E/CAR** That, a) ICAO NACC Office will provide the Eastern Caribbean States and Territories by 14 March 2008, a full description of each fundamental element listed on the State SAR Matrix; b) ICAO NACC Office send an official letter to CDERA and PAHO asking for documentation for the establishment of national mass casualty plans in order to be available to States at the next SAR Meeting scheduled for April 2008; c) United States will extend an invitation to the Trinidad and Tobago representative of the E/CAR SAR Committee to participate in the next Caribbean SAR Workshop tentatively scheduled for June 2008 in Miami, Florida, or Dominican Republic; d) the Rapporteur of the E/CAR SAR Committee coordinate with the members of the E/CAR SAR Committee, including the United States, the Netherlands Antilles and the United Kingdom, for their participation in the abovementioned Caribbean SAR Workshop; e) Eastern Caribbean States and Territories, use the State SAR Matrix and full description of the fundamental elements to gauge the capacity of individual State SAR systems; and f) present the status of the SAR System to the 22nd E/CAR DCA Meeting.	ICAO	.	a), b), c), d) and e): Completed f)Valid

FIELD	CONCLUSION	ACTION FOR	COMMENTS AND FOLLOW-UP	STATUS
FS	**CONCLUSION 21/5 EFFECTIVE SAFETY REPORTING CONTEXT** That States/Territories of the Eastern Caribbean, for an effective safety reporting environment in the prevention of aviation related accidents adopt the following definition: *"**An Effective Safety Reporting Context** is one in which front line operators or others are not punished for actions, omissions or decisions taken by them that are commensurate with their experience and training, but where gross negligence, willful violations and destructive acts are not tolerated."*	E/CAR States/ Territories	Protecting safety information is not intended to interfere with the proper administration of justice in States. The objective is to prevent the inappropriate use of information collected solely for the purpose of improving aviation safety.	Valid
AVSEC	**CONCLUSION 21/6 ENHANCEMENT OF THE INTERNATIONAL CIVIL AVIATION SECURITY** The E/CAR States/Territories are urged to: a) continue supporting USAP and ensuring the implementation of their corrective action plans regarding compliance with Annex 17 SARPs; b) provide qualified AVSEC Specialists in the form of Short-Term Experts to contribute to the AVSEC Action Plan through the ICAO Training Schedule for 2008; c) participate in the different courses and workshops on aviation security screener certification organized by ICAO at different States and ASTCs of the CAR/SAM Regions; d) provide ICAO with up-to-date information on their AVSEC and FAL points-of-contact (if they have not already done so); e) implement the recommended guidelines on security controls for screening liquids, gels and aerosols; and f) provide ICAO with timely information on acts of unlawful interference that have occurred within their territories.	E/CAR States/ Territories		Valid
GEN	**CONCLUSION 21/7 ORGANIZATION AND HOLDING OF E/CAR/WG MEETINGS** That, a) ICAO: i) develop a rotational list for the E/CAR Working Group Meetings; ii) develop a rotational list for the NACC Working Group Meetings; and, b) the E/CAR States: i) fund expenses for the participation of ICAO NACC Officers at the convened E/CAR/WG Meeting; and ii) support the participation of their specialists in the E/CAR/WG.	ICAO E/CAR States/ Territories		Valid

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FIELD	CONCLUSION	ACTION FOR	COMMENTS AND FOLLOW-UP	STATUS
AIS	**CONCLUSION 6/1 FINALIZATION OF THE HARMONIZATION PROCESS OF THE WGS-84 COORDINATES AT THE FIR BOUNDARIES** That the C/CAR States/Territories/International Organizations that have not yet done so: a) finalize the harmonization of boundary geographical coordinates in their respective FIRs, in coordination with the ICAO NACC Regional Office; and b) inform the ICAO NACC Regional Office: 1. on the officer appointed as the point of contact to carry out the task by **7 June 2006**; according with the ICAO data base information that for such purpose would be distributed by the ICAO NACC Regional Office, as applicable, and 2. on the agreements reached in this respect by **15 September 2006**.	C/CAR States/ Territories/ International Organizations	a) A point-of-contact was designated by Haiti who informed that coordination and harmonisation with neighbouring States had begun. b) The Meeting noted that Administrations, who have not yet done so, should inform the ICAO NACC Office on the actions taken.	Valid
ATM	**CONCLUSION 6/2 ESTABLISHMENT OF ATS SAFETY MANAGEMENT MEASURES** That the States and Territories of the Central Caribbean, in order to reduce ATC loop errors: a) ensure that LHDs are promptly forwarded to CARSAMMA and copied to the ICAO Regional Office; b) request to the ATS authorities to establish management measures to enhance monitoring of ATC operations through the application of ATS quality assurance mechanisms; c) establish the maximum permitted levels as an objective of LHDs incidents and/or occurrence; d) in compliance with Doc 9859, Safety Management System (SMS), establish for the identification of the main incident causes and for risk assessment; e) foster coordination bilateral visits among their ATS quality assurance experts in order to exchange experiences and data on ATC Loop Errors and the actions taken to mitigate against recurrence; f) as applicable, plan the early interconnectivity of their ATS automated system in accordance with GREPECAS regional guidelines; and g) request the assistance of the ICAO NACC Regional Office where bilateral actions taken to address these errors prove insufficient.	C/CAR States/ Territories	f) some States have taken action.	Valid

FIELD	CONCLUSION	ACTION FOR	COMMENTS AND FOLLOW-UP	STATUS
ATM	**CONCLUSION 6/3 ATFM PROCEDURES DEVELOPMENT** That, C/CAR States/Territories, based on their regional and subregional developments: a) develop an ATFM Manual to serve as a basis for the provision of ATFM service in the different FIRs of the Central Caribbean; and b) present the progress thereupon to the C/CAR WG/7.	C/CAR States/ Territories	Superseded by NACC/WG Draft Conclusion 2/1.	Superseded
ATM	**CONCLUSION 6/4 ATFM OPERATIONAL AGREEMENTS** That C/CAR States/Territories encourage ATS providers to establish operational agreements among ATS units for ATFM service provision in the C/CAR.	C/CAR States/ Territories	Superseded by GREPECAS Conclusion 14/48.	Superseded
CNS	**CONCLUSION 6/15 FIRST PHASE OF BILATERAL RADAR DATA SHARING** That, taking into account the technical feasibility studies and operational benefits carried out for the first phase of radar data sharing; Cuba, Cayman Islands and Jamaica, in coordination with COCESNA, consider initiating work and bilateral agreements in accordance with the guidelines of Appendix F for radar data exchange between the following centres: Kingston ACC/Cenamer ACC/Grand Cayman APP, Havana ACC/Kingston ACC and Cenamer ACC/Havana ACC.	Cuba, Cayman Islands and Jamaica, in coordination with COCESNA		Completed
CNS	**CONCLUSION 6/16 SEMINAR ON RADAR DATA SHARING** That the C/CAR States/Territories/International Organizations and ICAO take into account the proposed subjects presented in Appendix H to this part of the report for the development of seminars on radar data sharing.	C/CAR States/ Territories/ International Organizations	The Meeting analysed the details of this conclusion regarding radar data sharing.	Valid
MET	**CONCLUSION 6/17 APPOINTMENT OF MET EXPERTS IN THE C/CAR STATES/TERRITORIES** That, as applicable, the C/CAR Civil Aviation Administrations, in coordination with the aeronautical meteorological services, take the corresponding actions in order to: a) designate a MET officer to participate as a point of contact in behalf of the aeronautical meteorological service; b) send to the ICAO NACC Office by **1 June 2006** the name and electronic address of the appointed MET focal point; and c) provide to the MET point of contact the support of the required electronic means so that he/she may be contacted by the Rapporteur of the C/CAR MET Task Force and the Secretariat of the GREPECAS AERMET Subgroup, in order to carry out the necessary coordination concerning the respective work programmes.	C/CAR States/ Territories	Replies by CAR States to ICAO correspondence is minimum; only 2 or 3 States replied.	Valid

FIELD	CONCLUSION	ACTION FOR	COMMENTS AND FOLLOW-UP	STATUS
SAR	**CONCLUSION 6/18 ADOPTION OF EMERGENCY LOCATOR TRANSMITTERS (ELTs) AT 406 MHZ** That the C/CAR States/Territories/International Organizations, in the terms and periods defined by ICAO: c) ensure that necessary arrangements and the requirements be established for the register of all the ELTs at 406 MHz, and stipulate that these register data be available 24 hours a day for any RCC that might need them.	C/CAR States/ Territories/ International Organizations		Valid
SAR	**CONCLUSION 6/20 ESTABLISHMENT OF SEARCH AND RESCUE (SAR) AGREEMENTS BETWEEN THE CENTRAL CARIBBEAN RCCs** That, based on the draft agreement included in Appendix I to this part of the report: a) the States and Territories of the Central Caribbean have their SAR Coordinators review/develop the SAR Letters of Agreement between the corresponding RCCs; b) Civil Aviation Authorities of Cuba, Dominican Republic, Haiti and Jamaica establish a multilateral SAR agreement in the short term; and c) Civil Aviation Authorities of the States and Territories of the Central Caribbean endorse the SAR agreements achieved and present the progress status to the Eighth Meeting of Directors of Civil Aviation of the Central Caribbean (CCAR/DCA/8).	C/CAR States/ Territories Cuba, Dominican Republic, Haiti and Jamaica		Valid
FS	**CONCLUSION 6/21 HARMONIZATION OF THE AERONAUTICAL REGULATIONS IN THE CENTRAL CARIBBEAN** That, aimed at maintaining the harmonization of the aeronautical regulations required by the States and Territories, the Central Caribbean Civil Aviation Administrations promote adequate coordination and collaboration among its designated experts for the development and publication of aeronautical regulations.	C/CAR States/ Territories	As a result of the harmonization of aeronautical regulations, the institutional regional framework will be strengthened and the duplicity of resources and efforts will be reduced. The use of human resources will be possible and safety oversight based on a common regulation system will contribute to the development of safety in the region.	Valid
CNS/ ATM	**CONCLUSION 6/22 REQUEST OF INFORMATION ON HUMAN RESOURCES AND TRAINING** That, as part of the main elements for the CNS/ATM systems implementation, the C/CAR Civil Aviation Administrations: a) notify the ICAO NACC Office the name and email address of their respective Point of Contact; b) complete the forms contained in Appendices A, B, C and D to this part of the Report; and c) send the information detailed in items a) and b) above to the ICAO NACC Regional Office by **7 July 2006**.	C/CAR States/ Territories		Valid

FIELD	CONCLUSION	ACTION FOR	COMMENTS AND FOLLOW-UP	STATUS
GEN	**DECISION 6/23 PROVISION OF INFORMATION TO THE HUMAN RESOURCES AND TRAINING TASK FORCE BY THE C/CAR WG MEMBERS** That, with the purpose of carrying out tasks, the C/CAR Working Group Members directly provide information to the Human Resources and Training Task Force regarding the needs and policies of each aeronautical field/speciality.	C/CAR WG		Valid
GEN	**CONCLUSION 5/1 AIR NAVIGATION DEFICIENCIES** That the Civil Aviation Authorities of the States and Territories of the Central Caribbean: a) carefully review the Air Navigation Deficiencies identified in the Air Navigation Services and aerodromes under their jurisdiction; b) submit to the ICAO NACC Office the name of the person designated as Point of Contact (POC) for the access to the GREPECAS Air Navigation Deficiencies Database (GANDD) by **30 April 2005**; and c) correct the Air Navigation Deficiencies in their respective States and Territories considering the use of the database available at the ICAO NACC Office web page**.**	C/CAR States/ Territories	a) and c) superseded by GREPECAS Conclusion 14/59.	b) Completed a) and c) Superseded
AIS	**CONCLUSION 5/2 NEED FOR EFFECTIVE ACTIONS IN AIS/MAP ASPECTS** That the States/Territories, in order to facilitate the development of the CNS/ATM systems in accordance with the Global Air Navigation Plan and the Recommendations of the Eleventh Air Navigation Conference and, in order to accelerate and materialize the implementation of AIS/MAP elements: a) take necessary measures for implementing those AIS/MAP aspects required to develop the global ATM operational concept, taking into account that the collaborative decision-making (CDM) requires the availability of high quality aeronautical information sources; b) develop technical assistance bilateral agreements directly with those States that have already efficiently implemented such elements and have offered to provide assistance; and c) if it is deemed necessary, take into account the mediation of the NACC Regional Office to endorse the corresponding agreements.	C/CAR States/ Territories		Valid
ATM	**DECISION 5/5 IMPLEMENTATION PROGRAMMES OF SID AND STAR STANDARDIZED PROCEDURES IN THE CENTRAL CARIBBEAN** That the Central Caribbean Working Group develop an action plan for the development and publication of SID and STAR standardized procedures which are necessary to connect their origin and destination international airports with the RNAV Routes, that may be operationally required by the Central Caribbean airspace, in harmony with implementation of ATS routes in the CAR Region and present it to the forthcoming NACC/DCA/2 meeting.	C/CAR WG	Superseded by GREPECAS Conclusion 14/51.	Superseded

FIELD	CONCLUSION	ACTION FOR	COMMENTS AND FOLLOW-UP	STATUS
CNS	**DECISION 5/9 SOLUTION TO THE DEFICIENCY PRESENTED BY THE ATS SPEECH CIRCUIT BELIZE APP – MERIDA ACC** That the ICAO NACC Office request Belize and Mexico, supported by COCESNA to analyze, a) the feasibility of implementing as soon as practicable an ATS speech circuit Belize APP – Merida ACC through the digital networks of Mexico and Central America; and b) in case the alternative in item a) is not possible, the feasibility of implementing the referred circuit through other means.	ICAO NACC Office	The ICAO NACC Office will discuss this matter with Belize and Mexico. A meeting is still pending to review the ATS requirements related to the Belize APP / Merida ACC ATS speech circuit within the framework of the Cooperation Agreement between COCESNA and SENEAM.	Valid
CNS	**CONCLUSION 5/12 INITIAL ACTION TO UPDATE THE CAR REGION PLAN TO IMPLEMENT VHF, HF AND SATELLITE DATA LINKS** That, with the aim of updating the corresponding part of the VHF, HF and satellite data link requirements of the CNS 2A Table of the FASID: a) ICAO request IATA updated information on the projection in the time scale of aircraft capacity operating in the CAR Region; b) States, Territories and International Organizations participate in the programme of initial actions contained in Appendix F to this part of the Report; and c) the results of the actions in items a) and b) above be presented to the GREPECAS mechanism.	ICAO NACC Office C/CAR States/ Territories/ International Organizations	A new conclusion was drafted during the CAR/WG/1 (Conclusion 1/7).	Superseded
CNS	**DECISION 5/18 CONVENING OF AN EXTENDED RADAR DATA SHARING TASK FORCE MEETING** That the Radar Data Sharing Task Force convene a meeting of all the States/Territories/International Organizations interested in studying this issue in order to have adequate representation at the meeting for discussion and identification of ATS units where implementation of radar data sharing is feasible and beneficial.	Radar Data Sharing Task Force		Completed
CNS	**CONCLUSION 5/19 DATA INTEGRITY OF THE RADAR SYSTEM IN RADAR DATA EXCHANGE** That States/Territories/International Organizations implement an adequate system to ensure reliability of the service to the user and integrity of transmitted or received radar data.	C/CAR States/ Territories/ International Organizations		Completed
CNS	**CONCLUSION 5/21 COMMENCEMENT OF THE RADAR DATA EXCHANGE PROGRAMMES** That States/Territories/International Organizations who can benefit from radar data sharing start negotiations on a bilateral or multi-lateral basis to implement a radar data exchange programme, awaiting the further development of the system.	C/CAR States/ Territories/ International Organizations		Completed

FIELD	CONCLUSION	ACTION FOR	COMMENTS AND FOLLOW-UP	STATUS
ATM	**CONCLUSION 5/24 ATFM POINTS OF CONTACT IN THE CENTRAL CARIBBEAN** That the States and Territories of the Central Caribbean provide to the ICAO NACC Office by 30 April 2005 the name of the person that will act as a point of contact for the ATFM studies, with a view to an early ATM evolution in the Central Caribbean.	C/CAR States/ Territories	Only Cuba and Dominican Republic have provided the name of the PoC.	Valid
ATM	**CONCLUSION 4/3 DEVELOPMENT OF ATS QUALITY ASSURANCE PROGRAMMES AND ATS CONTINGENCY PLANS IN THE CENTRAL CARIBBEAN** That States/Territories send to the ICAO NACC Regional Office by 30 June 2004: a) the status of implementation of the ATS Quality Assurance Programmes; b) the measures towards the solution of ATS incidents; and c) ATS contingency plans.	C/CAR States/ Territories	a) and b) superseded by GREPECAS Conclusion 14/4. c) Superseded by GREPECAS Conclusion 14/50.	Superseded
SAR	**DECISION 4/16 DEVELOPMENT AND INTEGRATION OF THE SEARCH AND RESCUE PLANS IN THE CENTRAL CARIBBEAN** That the C/CAR/WG, supported by the C/CAR SAR Task Force in coordination with the ICAO NACC Regional Office: a) continue to follow-up the development and improvement of National SAR Plans; b) develop an action plan for the development of a C/CAR SAR Plan to be presented at the next C/CAR/WG/5 Meeting; and c) incorporate SAR tasks in its Work Programme.	C/CAR WG	The CAR/WG/1 Meeting developed a SAR multilateral Memorandum of Understanding, which was recommended by Draft Conclusion 1/4.	Valid
MET	**CONCLUSION 3/12 UPDATING OF FASID TABLES MET 2 AND MET 2A CONCERNING THE CENTRAL CARIBBEAN** That the Civil Aviation Authorities of the States/Territories of the Central Caribbean, in coordination with their respective MET authorities, a) review the corresponding parts of the FASID Tables MET 2 and MET 2A of the FASID CAR/SAM, in order to update their requirements; and b) present to the ICAO NACC Regional Office the proposals for amendment duly documented, making use of the form included in **Appendix A** to this part of the Report by **28 November 2003**.	C/CAR States/ Territories	The ICAO NACC Regional Office has not received other proposals for amendment. Cuba sent updated information.	Valid
AGA	**DECISION 2/18 FOLLOW UP TO THE IMPLEMENTATION OF AERODROME CERTIFICATION IN THE C/CAR STATES/TERRITORIES** That the C/CAR Working Group follows up on the compliance of the aerodrome certification requirement on behalf of States/Territories of the C/CAR States, for which a table was prepared shown in the Appendix A to this part of the Report.	C/CAR WG	Only 14 States replied to surveys on airport certification and SMS.	Valid

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CONCLUSIONS OF THE 30TH EASTERN CARIBBEAN WORKING GROUP MEETING

FIELD	CONCLUSION	ACTION FOR	COMMENTS AND FOLLOW-UP	STATUS
ATM	**CONCLUSION 30/01** **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 of the E/CAR develop and implement work programmes, as depicted in Agenda Item 6, Appendix B, to this report, 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	E/CAR States/ Territories	Superseded by GREPECAS Conclusion 14/51.	Superseded
AIS	**CONCLUSION 30/02** **ACTION PLAN TO IMPROVE AIS IN THE E/CAR** That the AIS Committee develop and present to the DCAs an action plan specifying agreed solutions to improve AIS in the E/CAR in accordance with information contained in **Appendix A** to this part of the report and keeping in mind the ATM requirements relating to the 2007 Cricket World Cup.	E/CAR AIS Committee		Completed
AIS	**CONCLUSION 30/04** **MEETING OF THE AIS COMMITTEE** That in order to advance the AIS activities of the E/CAR: a) the 2nd Meeting of the E/CAR AIS Committee be held in 2007 for the purpose of: ▪ defining the Integrated Automated AIS in the E/CAR; ▪ drafting the Implementation Plan of the Integrated Automated AIS in the E/CAR through Aeronautical Information Management using the AICM and AIXM models; ▪ resolving other E/CAR AIS deficiencies; and b) implementing the E/CAR AIS Quality Assurance Programme.	E/CAR AIS Committee	Superseded by CAR/WG Conclusion 1/18.	Superseded
AIS	**CONCLUSION 30/06** **HARMONIZATION OF THE WGS-84 BOUNDARY COORDINATES OF THE MAIQUETIA AND PIARCO FIRs** That Trinidad and Tobago and Venezuela: a) finalize the harmonization of bordering geographical coordinates of their respective FIRs by May 2007, and b) inform ICAO of the completion of this activity.	Trinidad and Tobago and Venezuela	ICAO NACC Office sent a State letter to support this Conclusion, no information has been received.	Valid

FIELD	CONCLUSION	ACTION FOR	COMMENTS AND FOLLOW-UP	STATUS
SAR	**CONCLUSION 30/07　　　　NATIONAL AND INTERNATIONAL SAR COOPERATION AGREEMENTS IN THE E/CAR** That States/Territories of the E/CAR Area that have not yet done so: a)　　present an up-to-date report of their bilateral and/or multilateral SAR cooperation agreements with other States/Territories/International Organizations which allow the use of mechanisms and resources to improve the SAR regional system; and b)　　submit to the ICAO NACC Regional Office by **30 August 2007** a report on the progress attained in this regard.	E/CAR States/ Territories	Superseded by CAR/WG Conclusion 1/4.	Superseded
MET	**CONCLUSION 30/08　　　　PARTICIPATION OF MET PERSONNEL IN ICAO MEETINGS** That, where applicable, Civil Aviation Administrations make the necessary coordinations with national meteorological services to: a)　　enable the participation of meteorology experts in ICAO meetings; b)　　assign a MET expert to be directly contacted by the AERMET Subgroup Secretariat and by the task forces' rapporteurs to carry out the required actions in their respective work programmes; and c)　　}send the contact information of the MET expert assigned to the ICAO NACC Office as soon as possible and, in any event, not later than **15 March 2007**.	E/CAR States/ Territories	The 21st E/CAR DCA Meeting recommended consolidation of MET issues into one conclusion. Superseded by E/CAR/DCA Conclusion 21/1.	Superseded
ATM	**CONCLUSION 30/9　　　PARTICIPATION IN THE NAT/CAR ATS ROUTES WORKING GROUP MEETINGS** That ICAO urge Cuba, Curacao, Dominican Republic, Haiti, Jamaica, Trinidad and Tobago, and Venezuela to participate in the NAT/CAR ATS Routes Working Group meetings for the implementation of the WATRS Plus project in CAR and NAT Regions.	ICAO	The Group was disbanded.	Completed

FIELD	CONCLUSION	ACTION FOR	COMMENTS AND FOLLOW-UP	STATUS
ATM	**CONCLUSION 30/14 REGIONAL ATM SAFETY MANAGEMENT SYSTEM** That the States/Territories of the E/CAR, a) take the necessary actions for the implementation of an ATM safety system which ensures air navigation service providers the implementation of a Safety Management System in accordance with the new ICAO Annex 11 guidelines; b) establish the acceptable levels and objectives with regard to safety, within the airspace and aerodromes of their jurisdiction; c) consider the use of ECCAIRS (European Coordination Centre for Aviation Incident Reporting Systems) as a means for classification of incident and accident taxonomies; d) take appropriate actions so as to provide funds for the promotion and enhancement of the ATM safety culture in their respective organizations in accordance with ICAO Doc 9859 guidelines; e) foster analysis and co-operation meetings among their related SMS/QAP specialists in order to share experiences for the effective implementation of ATM safety management programmes; and, f) participate in the activities carried out by ICAO in order to facilitate the implementation of a regional ATM safety management system.	E/CAR States/ Territories	Superseded by E/CAR DCA Conclusion 21/5.	Superseded
CNS	**CONCLUSION 30/15 ACTION PLAN TO IMPROVE CNS IN THE E/CAR** That the CNS Committee develop and present to the DCAs an action plan specifying agreed solutions to improve CNS in the E/CAR in accordance with information contained in **Appendix R** to this part of the report and keeping in mind the requirements of ATM and AIS fields relating to the 2007 Cricket World Cup.	E/CAR CNS Committee	Superseded by CAR/WG Conclusions 1/7, 1/11 and 1/15.	Superseded
AVSEC	**CONCLUSION 30/16 RECRUITMENT OF AVSEC PROFESSIONALS** That the States/Territories: a) review the ICAO prerequisites and forward this information to AVSEC qualified individuals in their administrations; and b) encourage qualified individuals to apply with ICAO to assist States with the enhancement of their AVSEC Programmes	E/CAR States/ Territories	Superseded by E/CAR/DCA Conclusion 21/6.	Superseded
AVSEC	**CONCLUSION 30/17 AVIATION SECURITY POINT OF CONTACT (POC) NETWORK** That the States/Territories: a) review the criteria information and designate the appropriate authority to receive imminent threats to civil air transport operations through this Network; and b) as soon as practical sign up with ICAO using the appropriate form for the Aviation Security Point of Contact (POC) Network.	E/CAR States/ Territories	Superseded by E/CAR/DCA Conclusion 21/6. Refer to State Letter 336 sent on 27 March 2008.	Superseded

FIELD	CONCLUSION	ACTION FOR	COMMENTS AND FOLLOW-UP	STATUS
ATM	**CONCLUSION 30/18 REORGANIZATION OF THE ATM TERMS OF REFERENCE AND WORK PROGRAMME OF THE E/CAR/WG** That ICAO: a) review and integrate the ATM tasks of the E/CAR Working Group considering the performance objectives, as indicated in the Appendix B to this part of this Report, taking into account the new Global Plan Initiatives (GPI); and b) reorganize in an homogeneous manner the future activities of the E/CAR Working Group in accordance with the future annual work programme of the ICAO NACC Regional Office.	ICAO	Superseded by CAR/WG Conclusions 1/1 and 1/ 2, GREPECAS Conclusion 14/51 and E/CAR DCA Conclusion 21/7.	Superseded

Agenda Item 2:   **ATM Developments**

> **2.1**   **Follow-up on the Implementation Strategies and Activities Related to the ATM Performance Objectives Approved by GREPECAS**

Perspectives on Seamless ATM System

2.1.1   The Meeting reviewed the ATM system planning requirements according to regional action plans for a seamless ATM system, taking into account the work carried out by the C/CAR WG, E/CAR WG and Central America.

2.1.2   The Meeting deemed convenient that when implementing technological solutions, standards supporting infrastructure implementation should also be included in order to synchronize new technology and traffic flows. It was recognized that airspace capacity is still the primary concern for the aviation community as there is increasing demand on capacity and performance of airspace management as traffic growth increases.

2.1.3   The Meeting considered that when developing performance objectives, metrics, and indicators the context of an overall ATM system should be included to achieve expectations of the ATM community. The performance based approach can be used to better meet those expectations, as well as to improve the business performance of airlines, service providers, etc. To achieve this, expectations were identified with regard to performance of flight operations, airspace/airport usage and air navigation services in areas such as:

- safety
- security
- environmental impact
- cost effectiveness
- capacity
- flight efficiency
- flexibility
- predictability
- access and equity
- participation and collaboration
- interoperability

2.1.4   This evolution and enhancement of the ATM system is directly related to the ATM community's ability to clearly define its performance expectations, set a relevant performance framework, set achievable targets, and implement cost-effective change based on system capabilities at any particular time along the planning horizon.

2.1.5   The Meeting recognized that achievement of performance of expectations is made possible by:

- services and procedures
- human resources
- physical infrastructure
- systems and technology
- regulation and standardization

2.1.6   Doc 9882 - *Manual on Air Traffic Management System Requirements* reflects the current reality and identifies requirements where a significant change to operating practices will be required. The set of foregoing requirements should be compared with other sources of requirement documentation across the spectrum of operations envisioned in Doc 9854. These requirements should be used by working groups as well as States when developing implementation strategies and plans at regional and national levels.

2.1.7   It should be considered that ATM system performance will not progress solely as the direct result of the requirements. Rather, the system should be performance driven and levels of performance will differ in response to the demands of differing operating environments, particularly a State, group of States, or regions. Each requirement statement should be associated with the ATM components defined in Doc 9854. These requirements may be reproduced directly or used in specific component areas to qualify as specific requirements of a particular component.

ATS Communication Capability

2.1.8   Aircraft capabilities have significantly increased over the last 10-15 years. New aircraft are capable of extremely accurate navigation during all phases of flight, and many of them are equipped with satellite based communication. Rapid traffic growth in the NAM and CAR Regions has resulted in a relatively young airline fleet, most equipped with some or all of these enhanced capabilities.

2.1.9   The Meeting was of the view that States/Territories/International Organizations should consider the development of ATS communication requirements in line with aircraft COM capabilities and identify other traffic flows for similar requirements in conjunction with ATM capabilities.

Airport Capacity Enhancement Initiatives

2.1.10   The Meeting deemed appropriate to foster an initiative to analyze airport capacity as one of the major elements that adversely affects the ATM system and airline operators. Airports not only provide transportation needs, but also play a vital role in boosting trade and development of the local area and thereby economic development of the regions.

2.1.11   Note was taken that many airports are focal points of air traffic growth; traffic congestion and resulting delays have adversely affected efficient aircraft operations. Infrastructure in many airports needs to be upgraded in order to meet growing demand with the aim of achieving enhanced handling capacity and reducing frequency congestion.

2.1.12   Some initial steps to increase airport capacity are to minimize runway occupancy times and recommend improvements to airport infrastructure and departure procedures. Moreover, close parallel runways and crossing runways at CAR airports, as well as ATC training requirements for these operations, should be developed.

2.2   Follow-up on Regional Activities and Implementation Relating to Airspace Organization and Management (AOM)

2.2.1   The Meeting recognized that CAR Region airspace has a very strategic geographical location at the confluence of ATS routes connecting major destinations and serves as a vital link to smooth traffic flow between major airspaces in NAM and CAR Regions.

2.2.2   The complexities of Caribbean airspace are unique in their nature. Based on topography, various types of aircraft starting from helicopters to large jet aircraft are being operated at several airports. Restricted airspace for military flights and the aircraft type mix with differing capabilities occupy the airspace, and their conflicting demands need to be accommodated.

2.2.3   Civil commercial, military, general aviation, space research flights, hobby and adventure flying, training flights, and helicopter flights have experienced continuous growth thereby increasing airspace congestion day by day. Available technological innovations provide simpler and more flexible solutions not only for transportation needs, but also for national security and economic development.

2.2.4   Moreover, low cost carriers offer attractive flying schemes that have boosted traffic in the recent past with more and more air operations. These carriers have not only become potential competitors for the established scheduled airlines, but also pose a potential challenge for the ATM system as the airspace/airports get more and more congested, leading to delays and holding that result in high fuel burn.

2.2.5   It was also recognized that the evolution of ATM tools and procedures has been at a much slower rate in comparison to current day aircraft equipment. In addition, there are many radar and VHF facilities installed that do not always cover a complete area, which reduces their effectiveness in reducing spacing between aircraft in accordance with ICAO standards.

2.2.6   During the period 1994-2004, airline passengers of the Latin American and Caribbean Regions grew at an average annual rate of 3.3% compared to the annual global growth rate of 5.1%. It is expected that air traffic growth will continue to increase at the same rate as economic growth.

2.2.7   Recently, traffic has grown at an average rate of 3.3% with the advent of new routes and airlines commencing operations as Caribbean destinations have become more popular for international tourism and commercial interests. Total operations of the main CAR Region airports from 2002 to 2005, reflected a positive trend of 1.92% whereas the global trend is 6%. Main traffic growth at CAR Region airports is as follows:

Cuba	6.41%
Dominican Republic	5.74%
Belize	4.77%
El Salvador	3.06%
México	2.57%
U.S. (P.R.) (V.I.)	2.51%
Guatemala	2.51%
Costa Rica	2.42%

Improvements to Airspace and Organization Management (AOM)

2.2.8   For these reasons, excellent initiatives have been implemented to improve the ATM system such as the WATRS Plus Project, ATM automation and improvements to the network route system to and from the NAM, CAR and SAM Regions. With RVSM implementation, NAM and CAR Regions are aligned to cruising levels for IFR/VFR flights in accordance with Appendix 3 to ICAO Annex 2.

2.2.9   The Meeting recognized that additional challenges are on the horizon for a seamless ATM system in the CAR and NAM Regions. Agreements between air navigation service providers are expected to be established between the CAR and NAM Regions in order to allow gradual operational development of the ATM system and ensure an optimum air traffic flow among or through certain areas during periods where the demand exceeds or is foreseen to exceed available capacity.

2.2.10   As air traffic increases, airspace and air traffic management have become a challenging task due to the complexity of user requirements. Airspace requirements are not only restricted to areas, but also need the common use of airspace where mixed types of aircraft with various operational objectives are in operation.

2.2.11   It was informed that new aircraft are capable of extremely accurate navigation during all phases of flight, and many are equipped with satellite based communication. Aircraft operational growth in the CAR Region has resulted in a relatively young airline fleet, most equipped with some or all enhanced capabilities. Many of these aircraft are certified to RNP10 and capable of meeting operational approvals for RNP4.

2.2.12   Based on traffic flows with similar requirements, the Meeting identified necessary actions to improve airspace management and organization considering the recommendations of the CAR/SAM/3 RAN Meeting and required aircraft capabilities in conjunction with ATM capabilities in order to improve safety and effectiveness. Among these future actions are the introduction of enhancements to ATS routes in the CAR Region FIRs, implementation of RNP in the Gulf of Mexico, harmonization of transition altitudes in the Eastern Caribbean, harmonization of airspace classification between adjacent airspaces, and civil-military coordination for flexible use of airspace implementation.

2.2.13   United States provided updated information on the status of significant tasks and events related to implementation of WATRS Plus Route Structure Redesign and Separation Reduction on 5 June 2008. The Meeting noted relevant analysis on two scenarios related to cost benefits and CO2 emissions.

2.2.14   Scenario 1 was completed and assumed that all flights authorized RNP10 or 4 will project a 15 year fuel savings of U.S.$741 million and an annual CO2 fuel emission reduction of 161,800 metric tons. Scenario 2, which is in progress, will examine the effects of 10% of flights conducted by non-RNP10 aircraft.

2.2.15   United States provided information on operational procedures to be applied in WATRS airspace. Moreover, the Meeting was informed that a CD of lessons learned will be distributed soon regarding the implementation of this project. Final information for WATRS Plus implementation on 5 June 2008, will be posted on FAA webpage:

http://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/enroute/oceanic/

2.2.16   The Meeting congratulated United States for this implementation initiative and recommended that States/Territories/International Organizations take corresponding actions for the implementation of the WATRS Plus Project. The proposal for amendment with the new WATRS airspace route network is included in **Appendix A** to this part of the report.

2.2.17   As a result of this implementation, the Meeting was informed of the updated letter of agreement between Dominican Republic and United States. Moreover, the Meeting was informed of additional changes to the Caribbean route network, such as the expansion of new routes within the Piarco FIR.

2.2.18   Mexico informed of its activities with United States to develop a PBN implementation plan in the Gulf of Mexico and invited other States, IATA and COCESNA to join these activities in order to expand the benefits of this implementation to other areas of the Caribbean. The Meeting noted that this implementation will be carried out with the model used by United States in WATRS airspace.

2.2.19   Colombia, Haiti, Jamaica and Netherlands Antilles analyzed, in the short term, other options for improving airspace structure and ATS route network; as well as other related FIRs under their jurisdiction. At the proper time, they will present their implementation initiatives to the Working Group as applicable.

2.2.20   Due to the importance of these changes to the CAR Region airspace structure, the Meeting deemed it appropriate that States/Territories/International Organizations begin taking relevant actions, as appropriate, for implementation of RNP10 route redesign and structure in WATRS airspace. Therefore, the NAM/CAR States/Territories/International Organizations were urged to take appropriate actions to support the implementation of WATRS Plus that will become effective on **5 June 2008.**

2.3   Follow-up on Activities Relating to Air Traffic Flow Management Implementation (ATFM)

2.3.1   The Meeting noted ATFM work and coordination accomplished to date between Piarco ACC, Mexico Flow Control Centre (CCFMEX), NAV CANADA National Operations Centre (NOC), and the Federal Aviation Administration Air Traffic Control System Command Center (FAA ATCSCC). **Appendix B** to this part of the report includes lessons learned. The United States made a presentation on the ATFM letter of agreement signed between the United States and Mexico, the participation of Colombia in these activities and operational benefits obtained by Mexico, Trinidad and Tobago and the United States in the Piarco FIR.

2.3.2   The Meeting identified the necessary elements to include in a regional handbook for the implementation of an ATFM system, such as a regional model for determining:

> 1)   operational procedures;
> 2)   aerodrome acceptance rate (AAR); and
> 3)   enroute sector capacity.

2.3.3   The Meeting also recommended the development of a proposal for amendment to Doc 7030 and a regional database including:

> 1)   en-route capacity;
> 2)   apron/parking capacity at aerodromes;
> 3)   AAR (aerodrome acceptance rate);
> 4)   city pair route alternatives for customer use; and
> 5)   identification of regional facilities to serve as host of the daily 1315 UTC Caribbean ATFM telcon.

2.3.4   Considering that a handbook is required for regional application of ATFM operational procedures, the Meeting recommended combining the previously adopted foregoing procedures in a single regional document and formulated the following:

**DRAFT
CONCLUSION 2/1   ADOPTION OF A NAM/CAR ATFM OPERATIONAL PROCEDURES HANDBOOK**

> That CAR and NAM States/Territories/International Organizations, when implementing ATFM service, use the NAM/CAR ATFM Operations Plan included in **Appendix C** to this part of the report.

2.3.5   The E/CAR ATM Committee reported several lessons learned from the undertaking of the ATFM initiatives implemented during the 2007 International Cricket Council Cricket World Cup Tournament (ICC CWC West Indies 2007, April 2007).

2.3.6   The Meeting noted that most States and Territories of the Eastern Caribbean do not comply with staffing requirements for the provision of adequate ATS services. In particular, a sufficient number of air traffic management personnel with expertise to handle the various technical and administrative tasks of the evolving ATM system. The Meeting concurred that this inadequacy in training, knowledge and understanding of ATM matters should be a cause of concern on the part of all air navigation services providers in the E/CAR.

2.4   Follow-up on Implementation Programmes Related to Air Traffic Services (ATS) Safety Management

Activities for the Implementation of an ATS Safety Management System

2.4.1   The Meeting took note of the ICAO SMS training programme, which has detected the necessity to implement other programs such as runway safety (incursions), bird hazard prevention, language proficiency, Normal Operations Safety Surveys (NOSS), and safety performance monitoring and measurement to verify that the defined level of safety is met and to continue improvements of the safety system.

2.4.2   Other challenges identified in the CAR Region are the use of the electronic Accident and Incident Reporting System (ECCAIRS) to ensure an element of quality assurance for safety data collection, analysis and exchange of safety information, and training and education programmes for personnel assigned by States to conduct safety oversight duties.

2.4.3   The Meeting concluded that States should participate in activities organized by the NACC Office for harmonized implementation of SMS with ATS Quality Assurance Programmes developed by the States/Territories/International Organizations of the CAR Region.

2.5   Follow-up on the Progress Achieved in Search and Rescue

SAR Quality Assurance Assessment

2.5.1   According to the Twenty First Meeting of Directors of Civil Aviation of the Eastern Caribbean, the Secretariat presented a SAR Assessment Matrix previously distributed to States/Territories/International Organizations of the Caribbean Region in early 2004, in order to develop a Quality Assurance SAR Manual.

2.5.2   The Meeting considered that this matrix would be a useful tool for CAR States/Territories to gauge the capacity of individual State/Territories SAR systems and to sustain governmental support for SAR services development. Participants recognized that SAR service providers should be encouraged to establish safety management programmes, taking into account the questionnaire to establish a SAR Quality Assurance Programme information found in **Appendix D** to this part of the report, in order to allow States/Territories to assess the SAR services provided in their jurisdiction. Therefore, the Meeting adopted the following:

DRAFT
CONCLUSION 2/2   DEVELOPMENT OF NATIONAL SAR SERVICES QUALITY ASSURANCE PROGRAMME

> That NAM/CAR States/Territories/International Organizations develop a SAR Quality Assurance Handbook, taking into consideration the questionnaire shown in Appendix D to this part of the report, in order to establish a National SAR Services Quality Assurance Programme by **30 August 2009**.

2.6   Follow-up on ATS Contingency Plans

2.6.1   As a follow-up to the recommendations of the Air Navigation Commission, the Meeting analyzed coordination measures for hurricanes and volcanic ash, which are included in **Appendix E** to this part of the report, to support aircraft conducting humanitarian aid air operations in the event of natural disasters.

2.6.2   The Meeting considered it necessary to have these procedures disseminated among pilots and controllers for homogeneous application in the CAR Region. The Meeting also considered it necessary that these procedures be included as an attachment to contingency plans, and that they should be provided to ATFM units, ATS units and other units/agencies, as applicable, within the coordination agreements. Therefore, it adopted the following draft conclusion:

DRAFT
CONCLUSION 2/3   IMPLEMENTATION OF ADDITIONAL COORDINATION PROCEDURES FOR HURRICANES AND VOLCANIC ASH

> That NAM/CAR States/Territories/International Organizations attach the additional coordination procedures for hurricanes and volcanic ash included in Appendix E to this part of the report to their respective ATS contingency plans, and disseminate these procedures among pilots and controllers to achieve homogeneous application during these natural disasters.

2.6.3   The Meeting recalled that the purpose of the ATS contingency plans is to ensure the safety and continuity of international civil aviation operations, and that in accordance with the Chicago Convention, airspace closures on the high seas should be avoided. It was acknowledged that these contingency plans are an excellent tool to inform all involved parties during contingency events.

2.6.4.　　　　With this purpose, States/Territories/International Organizations should guarantee that contingency plans are flexible and coordinated with all involved parties in order to apply proper contingency measures and that they be prepared in accordance with the format approved by GREPECAS.

2.6.5　　　　In addition, in order to comply with GREPECAS Conclusion 14/50, the Meeting requested States/Territories/International Organizations to coordinate their contingency plans together with the ICAO NACC Office in order to have the ATS Contingency Plans Catalogue duly updated and harmonised between adjacent FIRs.

2.6.6　　　　Likewise, the Meeting recognized that the Caribbean Region is prone to other natural disasters such as seaquakes and earthquakes. Therefore, it requested the Secretariat begin studies, in accordance with ICAO guidelines, to improve regional warning systems that include a NAM/CAR points-of-contact (PoC) list in order to improve State/Territory response times.

APPENDIX A

PROPOSAL FOR AMENDMENT OF
REGIONAL SUPPLEMENTARY PROCEDURES
CAR/NAT REGION (Doc 7030/5) - WATRS PLUS PROJECT

(Serial No. NACC-S 08/1 – CAR/NAT - ATM)

a) **Regional Supplementary Procedures**

   Regional Supplementary Procedures, Doc 7030/5, CAR and NAT, Part 1, Rules of the Air, Air Traffic Services and Search and Rescue.

b) **Proposed by:**   The United States of America, with the support of NAT SPG, CAR/WG, C/CAR DCA, E/CAR DCA Meetings.

c) **Proposed amendment:**

   1.   **Amend** the SUPPs applicable in the **CAR Region** as shown below;

   Insert new text as follows:

CHAPTER 2. FLIGHT PLANS

2.1.2 Area Navigation (RNAV) specifications

2.1.2.1 The letter R shall be inserted in Item 10 (Equipment) of the flight plan to indicate the aircraft meets the RNAV type prescribed, has been appropriately approved and can comply with all conditions of that approval. Additionally, the letter Z shall be inserted in Item 10 and NAV/RNP10 or NAV/RNP4, as appropriate, inserted in Item 18.

2.1.3 Required navigation performance (RNP) specifications

2.1.3.1 The letter R shall be inserted in Item 10 (Equipment) of the flight plan to indicate the aircraft meets the RNP type prescribed, has been appropriately approved and can comply with all conditions of that approval. Additionally, the letter Z shall be inserted in Item 10 and NAV/RNP10 or NAV/RNP4, as appropriate, inserted in Item 18.

CHAPTER 4. NAVIGATION

4.1   PERFORMANCE-BASED NAVIGATION (PBN)

4.1.1   AREA NAVIGATION (RNAV) SPECIFICATIONS

4.1.1.1 RNAV 10 (RNP 10)

Note. – RNAV 10 retains the RNP 10 designation, as specified in the PBN Manual (Doc 9613), 1.2.3.5.

Area of Applicability

4.1.1.1.1 A lateral separation minimum of 93 km (50 NM) may be applied between flights operating on oceanic routes or areas:

   a) Within the control area of the San Juan FIR, the Atlantic portion of the Miami Oceanic control area or the West Atlantic Route System (WATRS);

   b) Outside WATRS within the control area of the New York Oceanic FIR except, minimum lateral separation between aircraft transitioning from airspace in the New York Oceanic FIR/CTA to MNPS airspace shall be 110 km (60 NM);

Note.- The WATRS area is defined beginning at a point 2700N 7700W direct to 2000N 6700W direct to 1800N 6200W direct to 1800N 6000W direct to 3830N 6000W direct to 3830N 6915W, thence counterclockwise along the New York Oceanic control area/FIR boundary to the Miami Oceanic control area/FIR boundary, thence southbound along the Miami Oceanic control area/FIR boundary to the point of beginning.

Note.- The NAT MNPS are set forth in NAT SUPPS, 4.3. NAT MNPS airspace is identified in NAT SUPPS, 4.3.1.1.

Means of Compliance

4.1.1.1.2 For application of 4.1.1.1.1, operators and civil aviation authorities must follow the provisions listed below.

4.1.1.1.3 The aircraft and Operator must be authorized RNP 10 or RNP 4 by the State of the Operator or the State of Registry, as appropriate. RNP 10 is the minimum navigation specification for the application of 93 km (50 NM) lateral separation.

4.1.1.1.4 States shall ensure, when granting authorization for RNP 10 or RNP 4, that Operators establish programmes to mitigate the occurrence of large lateral track errors due to equipment malfunction or operational error.

Note.- The ICAO Performance Based Navigation (PBN) Manual Volume I – Concept and Implementation Guidance (Doc 9613) provides guidance on aircraft, operations and maintenance programmes for the initial achievement and continued compliance with the authorized navigation specification.

CHAPTER 6. AIR TRAFFIC SERVICES

6.2 SEPARATION

6.2.1 Lateral

6.2.1.1 Minimum lateral separation shall be:

   a) 93 km (50 NM) between aircraft authorized RNP 10 or RNP 4 meeting the provisions in 4.1.1.1.

   b) 60 NM between aircraft which meet the North Atlantic minimum navigation performance specifications (MNPS) which, while operating in the control area of San Juan FIR, are in transit to or from the NAT MNPS airspace;

c) 90 NM between aircraft not authorized RNP 10 or RNP 4 operating between the United States, Canada or Bermuda and points in the CAR Region in the control areas of San Juan and New York Oceanic FIRs and the Atlantic portion of the Miami Oceanic control area;

d) 100 NM west of 60°W (only in Oceanic areas) between aircraft not covered in a) b) or c) above, and between aircraft in the control area of Piarco FIR west of 55°W;

e) 120 NM between aircraft operating east of 60°W in the New York Oceanic FIR, and between aircraft in the control area of Piarco FIR east of 55°W;

except that lower minima as detailed in 5.4.1.1.2 of the PANS ATM may be applied, or further reduced in accordance with 5.11, where the conditions specified in the relevant PANS ATM provisions are met (see 5.4).

CHAPTER 7. SAFETY MONITORING

7.2 AIRSPACE MONITORING

7.2.2 RNAV

7.2.2.1 A target level of safety (TLS) of 5×10^{-9} fatal accidents per flight hour per dimension shall be established for route systems operating a 93 km (50 NM) lateral separation minimum. The safety level of such airspace shall be determined by an appropriate safety assessment.

> Note.- Detailed guidance material on conducting safety assessments is contained in the Manual on Airspace Planning Methodology for the Determination of Separation Minima (Doc 9689) and the Safety Management Manual (Doc 9859).

7.2.2.2 Adequate monitoring of flight operations shall be conducted to provide data to assist in the assessment of the achieved lateral navigation performance of the aircraft population in relation to the lateral separation minimum. These data shall include statements of the core lateral navigation performance, the proportion greater than one-half the lateral separation minimum and the proportion in the vicinity of the adjacent route centreline as these measures have been shown to have a direct link to the risk of collision. A safety assessment shall be carried out periodically, based on the data collected, to confirm that the safety level continues to be met. Data shall include operational errors due to all causes.

> Note.- Monitoring will be conducted in accordance with the appropriate guidance material issued by ICAO. Detailed guidance is contained in the Manual on Airspace Planning Methodology for the Determination of Separation Minima (Doc 9689) and the Safety Management Manual (Doc 9859).

End of new text

2.   **Amend** the SUPPs in the **NAT Region** as shown below:

Insert new text as follows:

CHAPTER 2. FLIGHT PLANS

2.1.2 Area Navigation (RNAV) specifications

2.1.2.1 The letter R shall be inserted in Item 10 (Equipment) of the flight plan to indicate the aircraft meets the RNAV type prescribed, has been appropriately approved and can comply with all conditions of that approval. Additionally, the letter Z shall be inserted in Item 10 and NAV/RNP10 or NAV/RNP4, as appropriate, inserted in Item 18.

2.1.3 Required navigation performance (RNP) specifications

2.1.3.1 The letter R shall be inserted in Item 10 (Equipment) of the flight plan to indicate the aircraft meets the RNP type prescribed, has been appropriately approved and can comply with all conditions of that approval. Additionally, the letter Z shall be inserted in Item 10 and NAV/RNP10 or NAV/RNP4, as appropriate, inserted in Item 18.

CHAPTER 4. NAVIGATION

4.1   PERFORMANCE-BASED NAVIGATION (PBN)

4.1.1   AREA NAVIGATION (RNAV) SPECIFICATIONS

4.1.1.1 RNAV 10 (RNP 10)

Note. – RNAV 10 retains the RNP 10 designation, as specified in the PBN Manual (Doc 9613), 1.2.3.5.

Area of Applicability

4.1.1.1.1 A lateral separation minimum of 93 km (50 NM) may be applied between flights operating within the control area of the New York Oceanic FIR.

Means of Compliance

4.1.1.1.2 For application of 4.1.1.1.1, operators and civil aviation authorities must follow the provisions listed below.

4.1.1.1.3 The aircraft and Operator must be authorized RNP 10 or RNP 4 by the State of the Operator or the State of Registry, as appropriate. RNP 10 is the minimum navigation specification for the application of 93 km (50 NM) lateral separation.

4.1.1.1.4 States shall ensure, when granting authorization for RNP 10 or RNP 4, that Operators establish programmes to mitigate the occurrence of large lateral track errors due to equipment malfunction or operational error.

Note.- The ICAO Performance Based Navigation (PBN) Manual Volume I – Concept and Implementation Guidance (Doc 9613) *provides guidance on aircraft, operations and maintenance programmes for the initial achievement and continued compliance with the authorized navigation specification.*

CHAPTER 6. AIR TRAFFIC SERVICES

6.2 SEPARATION

6.2.1 Lateral

6.2.1.1   Minimum lateral separation shall be:

a)   93 km (50 NM) between aircraft meeting the provisions in 4.1.1.1 except, minimum lateral separation between aircraft transitioning from MNPS airspace in the New York Oceanic FIR/CTA to other MNPS airspace shall be 110 km (60 NM);

Note.- NAT MNPS airspace is defined in 4.1.1.5.1.1.1.

a)b)   110 km (60 NM) between aircraft which meet the minimum navigation performance specifications (MNPS) provided that a portion of the route of the aircraft is within, above, or below MNPS airspace;

b)c)   167 km (90 NM) between aircraft operating outside the MNPS airspace and at least one aircraft does not meet the MNPS;

        1)   between the Iberian Peninsula and the Azores Islands; and

        2)   between Iceland and points in Scandinavia and in the United Kingdom;

c)d)   167 km (90 NM) between aircraft not authorized RNP 10 or RNP 4 operating outside MNPS airspace where no portion of the route of the aircraft is within, above, or below the MNPS airspace:

        1)   between the United States or Canada and Bermuda; and

        2)   West of 55°W between the United States, Canada or Bermuda and points in the CAR Region; or

d)e)   223 km (120 NM) between other aircraft;

except that lower minima in 5.4.1.2 of the PANS-ATM may be applied, or further reduced in accordance with 5.11 of the PANS-ATM, when the conditions specified in the relevant PANS-ATM provisions are met (see 6.2.5).

9.1.2 6.2.1.2 In the practical application of 6.2.1.1 a), a) b), b) c), c) d), and d) e), tracks may be spaced with reference to their difference in latitude using one degree instead of 110 km (60 NM); one and one-half degrees instead of 167 km (90 NM); and two degrees instead of 223 km (120 NM), provided that in any interval of ten degrees of longitude, the change in latitude of at least one of the tracks does not exceed:….

CHAPTER 7. SAFETY MONITORING

7.2 AIRSPACE MONITORING

7.2.2 RNAV

7.2.2.1 RNAV 10 (RNP 10)

7.2.2.1.1   A target level of safety (TLS) of 5 x 10^{-9} fatal accidents per flight hour per dimension shall be established for route systems operating a 93 km (50 NM) lateral separation minimum. The safety level of such airspace shall be determined by an appropriate safety assessment.

Note.- Detailed guidance material on conducting safety assessments is contained in the Manual on Airspace Planning Methodology for the Determination of Separation Minima (Doc 9689) *and the* Safety Management Manual (Doc 9859).

7.2.2.1.2   Adequate monitoring of flight operations shall be conducted to provide data to assist in the assessment of the achieved lateral navigation performance of the aircraft population in relation to the lateral separation minimum.   These data shall include statements of the core lateral navigation performance, the proportion greater than one-half the lateral separation minimum and the proportion in the vicinity of the adjacent route centreline as these measures have been shown to have a direct link to the risk of collision. A safety assessment shall be carried out periodically, based on the data collected, to confirm that the safety level continues to be met. Data shall include operational errors due to all causes.

Note.— Monitoring will be conducted in accordance with the appropriate guidance material issued by ICAO. Detailed guidance is contained in the Manual on Airspace Planning Methodology for the Determination of Separation Minima (Doc 9689) *and the* Safety Management Manual (Doc 9859).

7.2.2.2   MNPS

7.2.2.2.1   Adequate monitoring of flight operations in the NAT Region shall be conducted to assist in the assessment of continuing compliance of aircraft with the lateral navigation capabilities specified in 4.1.1.1.4.

Note.— Monitoring will be conducted in accordance with the appropriate guidance material issued by ICAO

End of new text

d)   Originator's reasons for amendment:

1)   On 5 June 2008, the United States, in coordination with States, ATS providers and with international organizations in the Caribbean and North Atlantic, is planning to implement a redesigned route structure in conjunction with a reduction of lateral separation within the control area of the San Juan FIR, the Atlantic portion of the Miami Oceanic control area and the West Atlantic Route System (WATRS).

2)   93 km (50 NM) lateral separation is planned to be applied between aircraft authorized Required Navigation Performance 10 (RNP 10) or RNP 4 by the State of Registry or State of Operator, as appropriate, operating on oceanic routes or areas.

Note: Guidance and direction for RNP authorization is provided in ICAO Annex 6, Parts I and II, paragraph 7.2 (Navigation equipment). Guidance on the application of 93km (50NM) lateral separation between aircraft authorized RNP 10 or RNP 4, is provided in ICAO Annex 11, Attachment B.

3)   Reduction of lateral separation from 167 km (90 NM) to 93 km (50 NM) will enable an increase of approximately 40% in the number of routes and associated flight levels. Increased availability of routes and flight levels will enable more aircraft to operate on time and fuel efficient routes and flight levels thereby reducing fuel burn and engine emissions. In addition, en route capacity and Air Traffic Management (ATM) flexibility will be enhanced.

4)   Analysis of aircraft types operating in the oceanic areas affected by this initiative indicates that approximately 90% of the flights conducted in the airspace are now flown by aircraft meeting RNP 10 or RNP 4 standards without modification.

5)   Aircraft that are not authorized RNP 10 or RNP 4 (non-RNP 10 aircraft) will be allowed to continue to file any route at any flight level in areas listed above. They will be cleared to operate on their preferred routes and flight level as traffic permits and will be separated from other aircraft by the existing 167 km (90 NM) standard. The FAA enhanced air traffic control automation system, Ocean21, which will aid the controller in applying the applicable separation standard between aircraft authorized RNP 10 or RNP 4, and non-RNP 10 aircraft.

6)   93 km (50 NM) lateral separation has been applied between operators/aircraft authorized RNP 10 or RNP 4 since 1998 in Pacific oceanic areas. It is also currently applied in the European-South American Corridor; on routes between Santiago, Chile and Lima, Peru; on routes connecting Australia, Asia, the Middle East and Europe south of the Himalayas and trans-Africa routes. Project planners currently apply the experience gained in these other areas and in the WATRS operational plans development.

e)   Intended date of implementation:

5 June 2008

f)   Proposal circulated to the following States/Territories and International Organizations:

Algeria	Cameroon	Dominican Republic
Argentina	Canada	Ecuador
Angola	Cape Verde	Egypt
Antigua and Barbuda	Cayman Islands	El Salvador
Aruba	Central African Republic	Ethiopia
Australia	Chile	Finland
Austria	China	France
Bahamas	Colombia	French Antilles
Bangladesh	Congo	Gabon
Barbados	Costa Rica	Gambia
Belize	Cote d´Ivoire	Germany
Belgium	Cuba	Ghana
Bermuda	Czech Republic	Granada
Bolivia	Democratic People´s	Greece
Brazil	Republic of Korea	Guatemala
British Virgin Islands	Democratic Republic of the	Guinea Bissau
Brunei Darussalam	Congo	Guyana
Bulgaria	Denmark	Haiti
Cambodia	Dominica	Hungary

Iceland
India
Indonesia
Ireland
Israel
Italy
Jamaica
Japan
Jordan
Kazakhstan
Kenya
Lebanon
Luxembourg
Madagascar
Malaysia
Mexico
Monaco
Mongolia
Montserrat
Morocco
Mozambique
Namibia
Nepal
Netherlands
Netherlands Antillles
New Zealand
Niger
Nigeria
Norway
Pakistan
Panama
Paraguay
Peru
Philippines
Poland
Portugal
Republic of Korea
Romania
Russian Federation
Saint Kitts and Nevis
Saint Lucia
Saint Vincent and the
Grenadines
Saudi Arabia
Senegal
Sierra Leone
Singapore
Somalia
South Africa
Spain

Suriname
Sweden
Switzerland
Tajikistan
Thailand
Trinidad and Tobago
Tunisia
Turkey
Turks and Caicos Islands
Uganda
Ukraine
United Arab Emirates
United Kingdom
United Republic of Tanzania
United States*
Uruguay
Uzbekistan
Venezuela
Viet Nam
ACI/LAC*
ASECNA*
COCESNA*
ECCAA*
EUROCONTROL*
IACA*
IAOPA*
IATA*
IBAC*
IFALPA*
IFATCA*

* For information purposes
only

g) **Secretariat comments:**

1)   The United States, working together with the North Atlantic Systems Planning Group (NAT SPG), CAR/WG, C/CAR DCA, E/CAR DCA and the States/Territories of the Caribbean Region, has undertaken the task of redesigning the West Atlantic Route System (WATRS), based on the implementation of RNAV 10 (denoted as Required Navigation Performance 10 (RNP 10)) specifications for use of 50 NM lateral separation.

2)   Implementation of RNAV 10 (RNP 10) in the U.S. controlled portions of CAR (excluding Gulf of Mexico) and NAT airspace will allow 50 NM lateral separation to be applied. This is a pre-requisite for the redesign of the WATRS and will allow operators to receive benefits from a 40% increase in the number of routes as well as more direct route trajectories.

3)   Monitoring arrangements for pre and post RNP 10 implementation have been established through the North American Approvals Registry and Monitoring Organization (NAARMO).

APPENDIX B

ATFM DEVELOPMENT WORK AND LESSONS LEARNED

This Appendix follows the same content format as the ATFM/TF/3 CAR/SAM ATFM CONOPS which includes sections on:

1. **Objectives of a Centralized ATFM Command Center;**
2. **Principles in Which ATFM Will Be Based;**
3. **Functions of a Centralized ATFM Command Center;**
4. **Equipment and Personnel Requirements for Flow Management Unit/Flow Management Position (FMU/FMP) and the Centralized ATFM;** and
5. **Operational Procedures**.

Each section of the Appendix contains information on the key elements of lessons learned in the NAM/CAR regions and draws on the experience of the coordination between Piarco ACC, CCFMEX, NOC, and ATCSCC.

1. Objectives of a Centralized ATFM Command Center

1.1   From the perspective of ATFM developments in the NAM region:
The <u>purpose</u> of the ATFM system is to enhance air traffic safety by balancing demand with capacity and ensuring efficient utilization of the ATC system.
The <u>objective</u> of a centralized ATFM Command Center is to produce a safe, orderly, and expeditious flow of air traffic while making every effort to minimize delays. This is fostered through continual analysis, coordination, communication, and dynamic use of traffic management initiatives and programs.

2. Principles in Which ATFM Will Be Based

2.1   From the perspective of ATFM developments in the NAM/CAR regions:

One of the primary foundations of ATFM in the NAM/CAR regions is the CDM process.

CDM definition

CDM is sponsored by the Air Transport Association and is an operational philosophy – along with associated technologies -- that enable the Air Traffic Service Providers and aviation industry to respond collaboratively to real-time operational constraints in the National Airspace System.

CDM structure

CDM Stakeholder Group
Oversees the general direction and mission of CDM

Provides prioritization and tasking on possible technology and communication tools for attaining system efficiencies

Establishes work groups as needed

    CDM work groups
      Completes specific tasks
      Provides recommendations for technology, communication tools, etc.

  ATFM system stakeholders include:
    Enroute Centers, Terminal Approach Controls, Control Towers
    Customers
      Air Carriers
      Air Taxi
      General Aviation
      Military
    Airport Authorities
    NOTE: This list is not all inclusive

ATFM uses automated tools that provide common air traffic and weather situational awareness to all system stakeholders.

ATFM facilities are accountable to the system stakeholders.
    The ATFM system in the FAA is under constant review for quality management purposes with a goal of continuous improvement. The quality assurance function includes an analysis of sector demand, sector flows, sector loading points, normal initiatives necessary to prevent sector saturation, alternatives to prevent sector saturation and relieve congestion points.

3. Functions of a Centralized ATFM Command Center

3.1 From the perspective of ATFM developments in the NAM/CAR regions:
By directives (FAA Order 7210.3 for example), the ATFM national Command Centers are given the authority to monitor, direct, and manage the daily flows of air traffic through their national airspace.

The ATFM national Command Centers work in conjunction with system stakeholders to:

    Monitor and analyze weather patterns for system impact.
    Implement national traffic management programs.
    Determine when national airspace capacity is, or will likely be, reduced to the extent that implementation of national traffic management initiatives will be required.

    Implement national traffic management initiatives, when necessary, to ensure an orderly flow of traffic throughout the national airspace.
    Monitor traffic management initiatives issued throughout the system for effectiveness and take action to modify or cancel traffic management initiatives, when appropriate.
    Serve as the final approving authority for all inter-facility traffic management initiatives

All field traffic management units (TMUs) report to and assist the national Command Centers with ensuring system safety, efficiency, and effectiveness.

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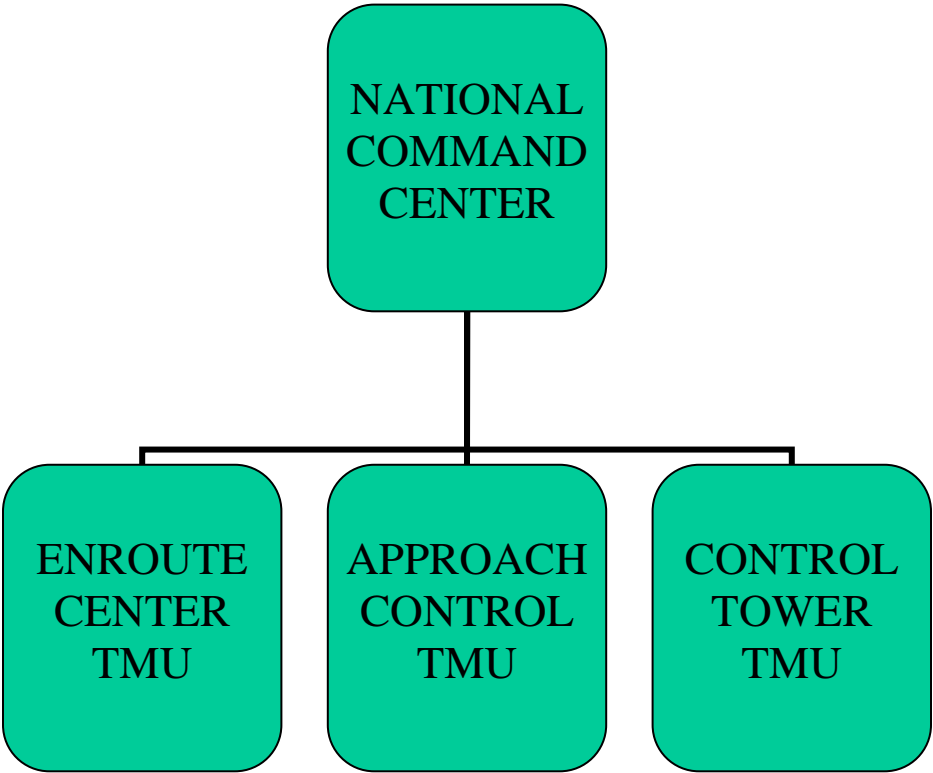
In day-to-day operations, and in most circumstances:

Enroute Center TMUs coordinate through the national Command Center to implement traffic management initiatives that impact adjoining enroute centers.
Approach Control TMUs coordinate traffic management initiatives through the overlying Enroute Center.
Control Tower TMUs coordinate traffic management initiatives through the overlying Approach Control TMU.

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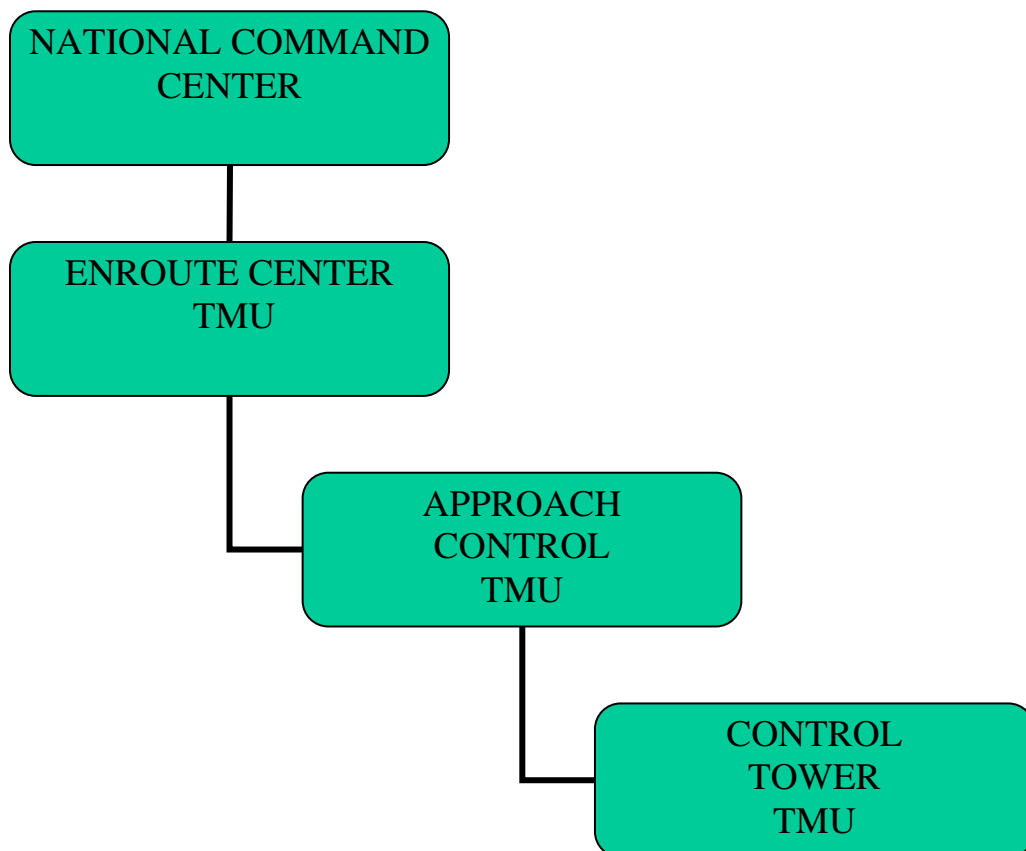
The national Command Center, however, has the authority to coordinate directly with the TMUs at Enroute centers, Approach Controls, and Control Towers.

Based on a bilateral agreement with NAVCANADA, the NOC serves as the sole point of contact with the ATCSCC for the coordination of cross-border ATFM initiatives between Canada and the United States.

Based on a bilateral agreement with SENEAM, the CCFMEX serves as the sole point of contact with the ATCSCC for the coordination of cross-border ATFM initiatives between Mexico and the United States.

4. Equipment and Personnel Requirements for FMU/FMP and the Centralized ATFM

4.1   From the perspective of ATFM developments in the NAM/CAR regions, the equipment and personnel requirements include:

National ATFM Command Center (**CCFMEX)**

> Equipment: Enhanced Traffic Management System (ETMS), Flight Schedule Monitor (FSM), conference phone system, access to the internet.

> Operational personnel: ATFM Supervisor -- responsible for oversight of the entire ATFM operation. Staffed day and evening shifts.

Enroute Center Traffic Management Unit (**PIARCO ACC, NAV CANADA and FAA**)

> Equipment: ETMS, operational phone system, access to the internet, access to live radar data.

> Operational personnel: ATFM Supervisor -- responsible for the oversight of the traffic management unit operations and interface with the national Command Center. Traffic Management Coordinator -- interfaces with the operational control room and with delegated approach control TMUs.

Approach Control and Control Tower TMUs (**NAV CANADA and FAA**)

> Equipment: ETMS, FSM, operational phone system, access to the internet, access to live radar data.

> Operational personnel: ATFM Supervisor -- responsible for the oversight of the traffic management unit operations and interface with the national Command Center. Traffic Management Coordinator -- interfaces with the operational control room and with delegated control tower TMUs.

5. Operational procedures

5.1   Although the NAM/CAR regions air traffic service providers have varying levels of ATFM implementation, the following provides an example of operational procedures in use:
All facility TMUs:

> Assist the national Command Center, as directed, to ensure air traffic system efficiency and effectiveness without compromising safety.
> Develop directives that address standard operating procedures regarding internal and inter-facility traffic management procedures.
> Ensure the TMU is operated during the hours of peak traffic periods and the associated time to complete the logging and reporting requirements.
> Coordinate and communicate traffic management initiatives with adjacent TMUs through the national Command Center.
> Enter a full description of all traffic management initiatives and actions in the TMU log.
> Ensure air traffic delays are reported in accordance with national directives.
> Report all known equipment outages that could have an impact on the national system.

Enroute Center TMUs

      Actively utilize the Traffic Situation Display and the monitor and alert function of ETMS to adjust enroute sector traffic flows on a proactive basis.

      In conjunction with Terminal TMUs, develop arrival strategies and deliver arrival aircraft to achieve the aerodrome acceptance rate (AAR).

      Designate a traffic management representative to serve as an interface with the facility Weather Service Unit.

      Establish an analysis and quality assurance function.

Approach Control and Control Tower TMUs

      Balance the arrival flow and tower enroute flow by coordinating with the Enroute Center TMU and any adjoining Approach Control TMUs to ensure that demand does not exceed capacity.

      Establish the AAR and coordinate with the Enroute Center TMU and any adjoining Approach Control TMUs to meet the rate.

      Manage departure fix balancing to ensure sector efficiency entering the next facility's airspace.

      Implement gate hold procedures as required to manage airport surface congestion.

      Analyze and review traffic management procedures to ensure effectiveness and adherence to national programs.

APPENDIX C

REGIONAL ATFM OPERATIONS PLAN (ATFM OPS Plan)

PURPOSE

Establish, through CDM process, structure, and responsibilities for developing, managing and implementing a daily regional operations plan for air traffic flow management (ATFM) operations in CAR/SAM regions.

CONTENT

1.   The ATFM OPS Plan will be developed in collaboration between State air traffic flow managers, weather forecasters, and customer representatives. Other participants may be included in the process as necessary including military representatives, aerodrome representatives, and technical representatives.

a)   The ATFM OPS Plan will normally be developed:
   i.   for one day at a time; and
   ii.   for the twelve (24) hour period following the Planning Telephone Conference (Planning TELCON).
   iii.   utilizing agreed weather tools/products.

2.   The ATFM OPS Plan will specify:

a)   Aerodrome constraints. Where delays are expected to reach 15 minutes or greater.
b)   En route constraints. Where expanded miles-in-trail, expanded minutes-in-trail, en route deviations, or tactical rerouting that may be required.

3.   Responsibilities.

a)   Each State's FMU / Air Traffic Flow Management Unit.
   i.   Participate via a daily Planning TELCON in the formulation and development of the ATFM OPS Plan.
   ii. Provide input on:
      1.   <u>Aerodrome constraints</u>. For example, include aerodrome acceptance rate (AAR) information when arrival delays are anticipated at a particular aerodrome.
      2.   <u>En route constraints</u>. For example, include the impact of thunderstorm and hurricane activity and route closures.
      3.   <u>Equipment outages.</u> For example, include radar and sector frequency outages that have an operational impact.
      4.   <u>Other issues</u> that may have an impact on operations. Examples include: staffing, special events, volcanic activity.
      5.   Anticipated traffic management initiatives that will be used to manage regional traffic.
   iii. Coordinate with and provide direction to their State ATS facilities on implementation of the ATFM OPS Plan.

b) FMU / Air Traffic Flow Management Unit.
    i. Maintain the Planning TELCON bridge.
    ii. Maintain a web page for publicizing the ATFM OPS Plan to aviation system customers.
    iii. Lead the Planning TELCON and facilitate the development of the ATFM OPS Plan.
    iv. Record the list of participants on the Planning TELCON.
    v. Post the ATFM OPS Plan on the web page and issue the plan as a numbered advisory.
    vi. Coordinate with and provide direction to ATS facilities on implementation of the ATFM OPS Plan.

4.   Planning TELCON preparation checklist.

    i. Review the weather conditions (thunderstorms, hurricane activity, etc.)
    ii. Obtain input from ACCs/FMUs
        1. Constraints
        2. Anticipated traffic volume
        3. Anticipated traffic management initiatives
        4. Staffing capacity
        5. Equipment outages
        6. Other
    iii. Obtain input from Aerodromes
        1. Aerodrome acceptance rate (AAR)
        2. Constraints
        3. Anticipated traffic volume
        4. Anticipated traffic management initiatives
        5. Staffing capacity
        6. Equipment outages
        7. Other
    iv. Miscellaneous
        1. Special events
        2. Military activities
        3. Volcanic activity

COMMON AIR TRAFFIC FLOW MANAGEMENT TERMINOLOGY

1.   Background

1.1   Centralized traffic management facilities are best able to communicate their national system's ability to accept traffic from adjacent international air traffic service (ATS) providers. As coordination and collaboration efforts increase between the States and Territories, effective communications are essential. A key element in removing language barriers is establishing common terms and phrases. Terminology and phraseology differences in air traffic flow management (ATFM) could be a potential source of confusion during communications among international Traffic Management Units.

1.2   The terminology will be an essential element in developing definitive, clear, and concise communication between international ATFM units. Likewise, the phraseology will be a technical pattern of communication to exchange standardized and harmonized messages between international ATFM units. This work should be combined with an ICAO effort to standardize ATFM terms.

1.3   This information paper is based largely on the "Phraseology for the Exchange of ATFM Messages Handbook" dated February 2003, by the Multi-Agency Air Traffic Services Procedures Coordination Group (MAPCOG) ATFM Task Force, which is a joint effort between EUROCONTROL, NAV CANADA and the FAA. It also draws on the work accomplished between the ATCSCC and the Japan Civil Aviation Bureau Air Traffic Management Center (ATMC).

2   Discussion

2.1   ATFM is a service complementary to air traffic control. The objective of ATFM is to ensure an optimum flow of air traffic to or through areas and aerodromes where traffic demand at times exceeds the available capacity of the ATC system. This optimum flow will be achieved by maintaining, in continuous cooperation with related ATC units and airspace users, a balance between the traffic demand and the ability to accommodate that demand.

2.2   The operation of ATFM services, while respecting the intentions of the airspace users to the maximum extent possible, will ensure:

> a.   Full exploitation of available ATC capacity
> b.   Maximum flexibility in handling traffic flows
> c.   Expeditious and orderly traffic flows

2.3   The operation of ATFM services includes the application of ATFM measures that are designed to achieve the optimum flow of traffic. These measures include but are not limited to:

> a.   Allocating and updating departure slots
> b.   Allocating and updating arrival slots
> c.   Rerouting of traffic
> d.   Alternate flight profiles
> e.   Minutes-in-trail assignments
> f.   Miles-in-trail assignments
> g.   Airborne holding
> h.   Ground stops

2.4   In the FAA, the ATCSCC is the approving authority for ATFM measures within the United States national airspace system.

2.5   ATFM is performed by the ATCSCC in six phases on a daily basis:

        a.   Exploration
        b.   Justification
        c.   Implementation
        d.   Validation
        e.   Critique
        f.   Review

2.6   The Exploration phase of ATFM consists of examining demand in relation to capacity. This is accomplished via evaluation of Enhanced Traffic Management System (ETMS) data and through periodic telephone conferences (TELCONs) that are designed to consider planned and anticipated events. The Justification phase consists of determining the rationale for implementing an ATFM measure. The Implementation phase consists of the notification and application of the ATFM measure. The Validation phase consists of monitoring the implemented ATFM measure to validate the rationale for its implementation. The Critique phase examines if the implemented ATFM measure achieved the desired outcome. The Review phase documents the day's events and includes the retention of data.

Terminology and Phraseology as Used in the Exchange of ATFM Messages

2.7   Terminology and phraseology for air traffic control are both standardized and documented to ensure that communications between air traffic controllers and pilots are brief, complete, accurate and understood. Terminology and phraseology for the exchange of ATFM messages, however, have been neither standardized nor documented.

2.8   Historically, air traffic controllers were the initial operators of the ATFM system. For example, a departure controller would contact a tower controller and say "stop departures." A tower controller would also have contacted an approach controller to say "hold arrivals." These two common ATC phrases are neither standardized nor documented. Although there are elements of standardization for communications between air traffic controllers, there has always also been a plain language element of ATC communications.

2.9   The evolution of ATFM has brought about more robust and complex systems, but the use of plain language is still evident and is current practice. Additionally, the transparency of current ATFM systems and the inclusion of non-ATC users also contribute to the use of plain language.

2.10   As ATFM becomes more global in nature, regional providers of ATFM service such as the *Centro de Control de Flujo de Mexico (CCFMEX)* and the ATCSCC may need to consider which plain language words and phrases are best suited for the exchange of ATFM messages. This is especially important when linking adjacent ATFM systems or introducing ATFM in areas where it presently does not exist.

2.11   The Interim Guideline for ATFM Communication was prepared by the Common ATFM Task Force which was established during the 22nd Meeting of the Informal Pacific Air Traffic Control Coordination Group (IPACG). This Task Force was established to address bilateral issues in the North and Central Pacific oceanic areas. The document contains terminology and phraseology for the exchange of ATFM messages between the Japan Civil Aviation Bureau Air Traffic Management Center (ATMC) and the ATCSCC. The work is based on the MAPCOG Phraseology for the Exchange of ATFM Messages Handbook. The terminology and phraseology are not intended to be a requirement for ATFM communications, but may be used as a guideline for the exchange of ATFM messages. It also contains those ATFM related abbreviations used by the ATCSCC and ATMC that are not defined in the ICAO Doc. 8400 (PANS-ABC).

Interim Guideline for ATFM Communication

Version 1.0

October 2006

FOREWORD

Centralized traffic management facilities are best able to communicate their national system's ability to accept traffic from adjacent international air traffic service (ATS) providers. As coordination and collaboration efforts intensify between the countries, effective communications are essential. A key element in removing language barriers is establishing common terms and phrases. Terminology and phraseology differences in air traffic flow management (ATFM) could be a potential source of confusion during communications among the Japan Civil Aviation Bureau (JCAB) Air Traffic Management Center (ATMC) and the Federal Aviation Administration (FAA) David J. Hurley Air Traffic Control System Command Center (ATCSCC).

IPACG/21 discussions resulted in a recommendation to develop the common terms of reference for ATFM communications. IPACG/22 supported the formation of a Task Force to address this issue. The operation of the Task Force was outlined at IPACG/23. The ATCSCC and ATMC established a process to examine the ATFM common terminology and phraseology at IPACG/24. This document was submitted by the Task Force at IPACG/25. The bilateral effort herein should be combined with an ICAO effort to standardize ATFM terms in the future.

The terminology will be an essential element in developing definitive, clear, and concise communication between international ATFM units. Likewise, the phraseology will be a technical pattern of communication to exchange standardized and harmonized messages between international ATFM units. These terminology and phraseology are not intended to be a requirement for ATFM communications, but may be used as a guideline for the exchange of ATFM messages.

This guideline is largely based on the "Phraseology for the Exchange of ATFM Messages Handbook" dated February 2003, by the Multi-Agency Air Traffic Services Procedures Coordination Group (MAPCOG) ATFM Task Force, which is a joint effort between EUROCONTROL, NAV CANADA and the FAA.

TABLE OF CONTENTS

1. General

2. ATFM Message Components

3. ATFM Message Types

4. Abbreviations

Appendix: Table of Abbreviations

1.   General

1.1   The primary goal of these guidelines is to develop terminology and phraseology for the exchange of ATFM messages between units providing ATFM services. The terminology and phraseology contained herein are intended to both reflect the current use of plain language and provide a basis for standardization and harmonization.

1.2   Although there are various plain language words and phrases in use today by ATFM service providers, these words and phrases can be organized into a modular and structured method of delivery to ensure communication harmonization and reduce the incidence of misunderstanding between units providing ATFM service.

1.3   These guidelines include the concept of modular and structured ATFM messages and defines an ATFM message's components as *who, what, where, when* and *why*. These five components are described as follows:

    1).   Who: The ATFM service unit being contacted followed by the ATFM service unit that is initiating the contact.
    2).   What: The ATFM objective to be achieved.
    3).   Where: The location of the ATFM objective to be achieved.
    4).   When: The time and/or duration of the ATFM objective to be achieved.
    5).   Why: The reason for the ATFM objective.

1.4   There should be no module regarding "how" the ATFM restrictions should be achieved by the counterpart ATFM service provider. It is the counterpart's responsibility how they fulfill the requested ATFM restrictions within their airspace. However, the center being asked for the ATFM restrictions may collaborate with the originating center on the type and method of ATFM measure application.

1.5   Below are the examples of possible ATFM messages:

- ATCSCC, this is ATMC…We need 100 miles interval regardless of altitude on R220, R580 and all the PACOTS tracks for traffic landing at Narita airport estimated FIR boundary from 0100 UTC until 0500 UTC due to severe weather.
- ATMC, this is ATCSCC…Information maybe developed into ATFM… Los Angeles has started flow control for all aircraft landing at Los Angeles airport due to earthquake. They are requesting ground stops for arrivals until further notice.

2.   ATFM Message Components

2.1   The use of a modular and structured ATFM message provides for consistent ATFM message design and delivery. Each of the ATFM message's five components can contain plain language elements that when combined provide a complete ATFM message. The harmonization achieved lies in the delivery of an ATFM message that has all of the required components in a structured format while making allowances for different plain language elements. This is of particular benefit for ATFM service providers that use different ATFM terminology or for ATFM service providers that do not use English for their intra-ATFM coordination.

As the modular and structured ATFM message may contain several different elements of plain language, this section will examine each of the five components and detail some of the possible plain language words and phrases that are in use today.

2.2   **WHO**:   The *who* component identifies the ATFM service unit being contacted followed by the ATFM service unit that is initiating the contact. Examples of the who component:
- ATMC, this is ATCSCC…
- ATCSCC, this is ATMC…

2.3   **WHAT**:   The *what* component identifies the ATFM objective to be achieved. Objectives include but are not limited to:

I/WE NEED…
- (X) MILES/MINUTES INTERVAL AT THE SAME ALTITUDE…
- (X) MILES/MINUTES INTERVAL REGARDLESS OF ALTITUDE…
- A RATE OF (X) AIRCRAFT PER HOUR…
- (X) MILES-IN-TRAIL AT (specified altitude(s))…
- (X) MINUTES-IN-TRAIL AT (specified altitude(s))…
- TO BLOCK (specified altitude(s))
- TO LIMIT THE ACCEPTABLE ALTITUDE TO (specified altitude(s))
- TO SUSPEND THE FIR ENTRY…

2.4   **WHERE**:   The *where* component represents the location of the ATFM objective to be achieved. It is often preceded by modifying clause, indicating what aircraft or traffic the restriction will apply to. The modifying clause and the location combination are used to construct there where component.

Examples of there where clause:

- …OVER NIPPI…
- …NARITA AIRPORT…
- …ANCHORAGE APPROACH…
- …ON A337…
- …WESTBOUND ON PACOTS TRACK C…
- …EAST FLOW ON A590…
- …INBOUND ON G344…
- …ON PACOTS TRACK 2 LANDING AT SAN FRANCISCO AIRPORT…
- …ON PACOTS TRACK E BELOW FLIGHT LEVEL (X)…
- …ABOVE FLIGHT LEVEL (X)…
- …INBOUND TO TOKYO ACC…
- …INBOUND TO OCEANIC SECTOR 5…
- ... (compass direction) OF (a significant point/airway/location)…

Examples of the modifying clause:
- …FOR TURBOJET TRAFFIC…
- …FOR ALL AIRCRAFT…
- …FOR TRAFFIC GREATER THAN (X) KNOTS…
- …FOR HEAVY AIRCRAFT…
- …FOR TRAFFIC LANDING…
- …FOR AIRCRAFT DEPARTING…
- …FOR TRAFFIC OVERFLYING…
- …FOR AIRCRAFT PASSING…

2.5   **WHEN**: The *when* component represents the time and/or duration of the ATFM objective to be achieved:

- …FROM 0300 UTC UNTIL 0600 UTC…
- …FROM NOW UNTIL 0600 UTC…
- …FROM 2300 UTC UNTIL FURTHER NOTICE…
- …UNTIL FURTHER NOTICE…
- …FOR THE NEXT (X) HOURS…

2.6   **WHY**: The *why* component represents the reason for the ATFM objective:

DUE TO/FOR…

- RUNWAY CLOSURE
- (SEVERE) WEATHER
- COMMUNICATION SYSTEM OUTAGE
- RADAR FAILURE
- (significant event)
- (natural disturbance such as FIRE or VOLCANIC ASH)
- STATE ACTIVITY
- MILITARY ACTIVITY
- EQUIPMENT OUTAGE
- EMERGENCY
- ADJACENT ATFM MEASURES

3.   ATFM Message Types

3.1   **Information to be shared prior to invoking the ATFM restrictions**: The information-sharing should be facilitated not only during the actual flow control but also (and more importantly) well prior to invoking the ATFM restrictions when the possibility of flow control arises. The following phrases will make clear the distinction between the ATFM messages and the information provided for situation awareness:

- INFORMATION MAY BE DEVELOPED INTO ATFM
- CAPACITY RELATED INFORMATION

3.2   Examples of messages sent prior to invoking ATFM restrictions follow:

- ATCSCC, this is ATMC…**Information may be developed into ATFM**… Narita airport has closed one of the runways and started snow removal.
- ATCSCC, this is ATMC…**Capacity related information**…Narita airport has entered the storm zone of the typhoon.

3.3   **ATFM Initiative Message**: ATFM initiatives communicate air traffic restrictions from one nation to another. They follow the five component structure described earlier:

  1).   Who: The ATFM service unit being contacted followed by the ATFM service unit that is initiating the contact.
  2).   What: The ATFM objective to be achieved.
  3).   Where: The location of the ATFM objective to be achieved.

4).   When: The time and/or duration of the ATFM objective to be achieved.

5).   Why: The reason for the ATFM objective.

3.4   Examples of ATFM initiatives follow:

- ATMC, this is ATCSCC…**I need a 30 minute interval at the same altitude** *for all aircraft landing at Chicago airport* from 0800 UTC until further notice due to state activities.
- ATCSCC, this is ATMC…**We need to block FL350 and below** *for aircraft overflying Japanese domestic airspace* for the next 12 hours due to emergency.

3.5   **Coordination of aircraft exempted from ATFM initiatives**: The following phrases will be used for the coordination of aircraft which are deemed necessary to exempt from the ATFM restrictions:

- REQUEST EXEMPTION FROM ATFM
- COORDINATION OF ATFM EXEMPTION

3.6   The following types of aircraft may be exempted from the flow control restrictions:

- Aircraft in a state of emergency
- Aircraft engaged in search and rescue missions
- Aircraft operating for humanitarian reasons
- Aircraft carrying the head of state or distinguished visitors of state
- Aircraft carrying a patient who needs urgent treatment

3.7   Examples of messages requesting ATFM exemption follow:

- ATMC, this is ATCSCC…**Request exemption from ATFM**…UAL123 is carrying a patient who needs urgent treatment.
  UAL123…Exemption is approved.
- ATCSCC, this is ATMC…**Coordination of ATFM exemption**… JA501A is operating for search and rescue missions.

3.8   **Information for the next coordination**: If it is possible and appropriate, the expected time of next coordination will be forwarded with the ATFM messages:

- I WILL CALL YOU AT 0400 UTC FOR FURTHER COORDINATION
- WE WILL CALL YOU AGAIN IN 30 MINUTES

3.9   An example of a message with information for the next coordination follows:

- ATMC, this is ATCSCC…I need a 30 minute interval regardless of altitude for all aircraft on PACOTS track 8 from 1000 UTC until further notice due to military activity. I will call you again in 60 minutes.

3.10   **Amendment**: The amendment of an ATFM message should be structured as the initial message and include similar elements but with additional modifiers. These modifiers may include:

- CHANGE
- AMEND
- REDUCE
- INCREASE
- DECREASE

3.11   Amendment messages should also identify which message is being amended, as several restrictions could be in place at one time. Examples of ATFM amendment messages follow:

- ATCSCC, this is ATMC…We have **changed** the restriction on traffic flying PACOTS tracks C, E and F for Narita airport. We now need 20 minutes intervals at the same altitude on PACOTS tracks C, E and F for traffic landing at Narita airport from now until 0900 UTC.
- ATMC, this is ATCSCC…We have **increased** the inbound rate from 5 aircraft per hour to 10 aircraft per hour for traffic beyond Oakland FIR until further notice.

3.12   **Cancellation**: The cancellation of an ATFM message should be structured as the initial message and include similar elements but contain a canceling word or phrase. It is normally not necessary to state the *why* or reason for the cancellation. A canceling word or phrase may include:

- CANCEL
- RESUME
- RESUME NORMAL
- RELEASE

3.13   Cancellation messages should also identify which message is being cancelled, as several restrictions could be in place at one time. An example of an ATFM cancellation message follows:

- ATCSCC, this is ATMC…We have **canceled** the restriction on traffic beyond the Fukuoka FIR at this time. **Resume normal** traffic flow.

4.   Abbreviations

4.1   The abbreviations used by the ATCSCC and ATMC that are not defined in the ICAO Doc. 8400 (PANS-ABC), are shown in the **Appendix**. The shaded abbreviations are considered to be the common terms between the two centers.

4.2   The non-common abbreviations are deemed inappropriate for the inter-facility ATFM communication between ATCSCC and ATMC.

Table of Abbreviations

The abbreviations listed here are those used by ATCSCC and ATMC respectively that are not defined in the ICAO Doc. 8400 (PANS-ABC). The shaded abbreviations are considered to be the common terms between the two centers. The asterisk shows verbatim difference in the original collocation but the abbreviation still indicates the common object.

		ATCSCC	ATMC
AAR		Airport Acceptance Rate	
ACID		Aircraft Identification	
ADL		Aggregate Demand List	
ADR		Airport Departure Rate	
ADZY		Advisory	
AIM		Aeronautical Information Manual	
ALTRV		Altitude Reservation	Altitude Reservation
ANP		Air Navigation Plan	
AOA		Office of the Administrator	
AOC		Airline Operations Center	
AP		Air Patrol	
APREQ		Approval Request	Approval Request
APVL		Approval	Approval
ARINC		Aeronautical Radio Incorporated	
ARO		Airport Reservation Office	
ARTCC		Air Route Traffic Control Center	Air Route Traffic Control Center
ARU		Airspace Reservation Unit (Canada)	
ASM			Airspace Management
AT		Air Traffic	
ATCSCC		Air Traffic Control System Command Center	Air Traffic Control System Command Center
ATMC		Air Traffic Management Center	Air Traffic Management Center
ATMetC			Air Traffic Meteorological Center
ATO		Air Traffic Operations Program	
AUTODIN		Automatic Digital Network	
CARF		Central Altitude Reservation Function	
CCFP		Collaborative Collective Forecast Product	
CCWSU		Command Center Weather Service Unit	
CDM		Collaborative Decision Making	Collaborative Decision Making
CDR		Coded Departure Route(s)	Conditional Route
CDR		Continuous Data Recording	
CDT		Controlled Departure Time	

		ATCSCC	ATMC
CFR	Code of Federal Regulations (formerly FAR)		
CIWS	Corridor Integrated Weather System		
COMSEC	Communications Security System		
CR	Collaborative Routing		
CT	Select Flights Ground Delay Program		
CTA	Controlled Time of Arrival		
CTAS-TMA	Center TRACON Automation System Traffic Management Advisor		
CVRS	Computerized Voice Reservation System		
CWA	Central Weather Advisory		
CWSU	Center Weather Service Unit		
DARC	Direct Access Radar Channel		
DCCWU	ATCSCC Weather Unit		
DOTS	Dynamic Ocean Track System	Dynamic Ocean Track System	
DP	Departure Procedure		
DSP	Departure Sequencing Program		
EDCT	Expected Departure Clearance Time	Expected Departure Clearance Time	
EFAS	Enroute Flight Advisory Service		
EFTO	Encrypt For Transmission Only		
EOF	Emergency Operations Facility		
EOR	Emergency Operations Room		
EPS	Engineered Performance Standards		
ESCAT	Emergency Security Control of Air Traffic		
ETE	Estimated Time Enroute	Estimated Time Enroute	
ETMS	Enhanced Traffic Management System		
EUCARF	European Central Altitude Reservation Facility		
FA	General Ground Delay Program		
FAA	Federal Aviation Administration	Federal Aviation Administration	
FADT	Fuel Advisory Delay Time		
FCA	Flow Constrained Area		
FDMS		Flight Data Management System	
FDPS		Flight Data Processing Section	
FEA	Flow Evaluation Area		
FP	Flight Plan		
FPL	Full Performance Level		
GA	General Aviation		
GAAP	General Aviation Airport Program		
GDP	Ground Delay Program		

		ATCSCC	ATMC
GS	Ground Stop		
HARS	High Altitude Route System		
HDTA	High Density Traffic Airport		
IFCN	Interfacility Communication Network		
IFPFP	Individual Flight Plan From this Point	Individual Flight Plan From this Point	
IFSS	International Flight Service Station		
INATS	Interruption of Air Traffic Service		
JCAB	Japan Civil Aviation Bureau	Japan Civil Aviation Bureau	
LAA	Local Airport Advisory		
LADP	Local Airport Deicing Plan		
LOA	Letter of Agreement	Letter of Agreement	
MAP	Monitor Alert Parameter		
MARSA	Military Assumes Responsibility for Separation of Aircraft	Military Assumes Responsibility for Separation of Aircraft	
MEL	Minimum Equipment List		
MINIT	Minutes in Trail		
MIT	Miles in Trail		
MOS	Military Operations Specialist		
MTSAT	Multi-functional Transport Satellite	Multi-functional Transport Satellite	
MVFR	Marginal Visual Flight Rules		
NADIN	National Airspace Data Interchange Network		
NAS	National Airspace System		
NAVAID*	Navigational Aid	Navigation Aid	
NFDC	National Flight Data Center		
NMCC	National Maintenance Coordination Center		
NOAA	National Oceanic and Atmospheric Administration		
NOM	National Operations Manager		
NOPAC	North Pacific	North Pacific	
NOS	National Oceanographic Service		
NRP	National Route Program		
NTMO	National Traffic Management Officer		
NWS	National Weather Service		
OAG	Official Airline Guide		
ODP		Oceanic Air Traffic Control Data Processing System	
OPSNET	Operations Network		
OTG		Oceanic Track Generator	
OTR		Oceanic Transition Route	

	ATCSCC	ATMC
PACMARF*	Pacific Military Altitude Reservation Facility	Pacific Military Altitude Reservation Function
PACOTS	Pacific Organized Track System	Pacific Organized Track System
PMTC	Pacific Missile Test Center	
PO	Plan of Operation	
Pref Route	Preferential Route	
PT	Planning Team	
RA	Route Advisory	
RAA	Remote Airport Advisory	
ROT	Runway Occupancy Time	
SAA	Special Activity Airspace	
SOP	Standard Operating Procedure	
STMP	Special Traffic Management Program	
SUA	Special Use Airspace	
SVRW	Severe Weather	
SWAP	Severe Weather Avoidance Program	
TEC	Tower-Enroute Control	
TELCON	Telephone Conference	
TFM	Traffic Flow Management	
TIS	Traffic Information System	
TMC	Traffic Management Coordinator	Traffic Management Coordinator
TMCIC	Traffic Management Coordinator in Charge	
TMI	Traffic Management Initiative	
TMU	Traffic Management Unit	Traffic Management Unit
TSTM	Thunderstorm	
WSO	Weather Service Office	

APPENDIX D

**SEARCH AND RESCUE QUALITY ASSURANCE PROGRAMME
LIST OF QUESTIONS**

The following key indicators must be used to evaluate the level of implementation of SARPs:

A – Not implemented
B – Initial implementation
C – Meets Annex 12 requirements (or other relevant ICAO / IMO provisions) in some areas
D – Meets Annex 12 requirements (or other relevant ICAO / IMO provisions) in most areas
E – Fully meets Annex 12 requirements (or other relevant ICAO / IMO provisions).

Such aspects must be responded with simple 'Yes / No'.

The response **'not evaluated'** does not necessarily imply the existence of a shortcoming, and **'not applicable'** might cover important shortcomings. Additionally comments can be included, as required.

Code	Reference	Aspect to be evaluated	Implementation	Comment
ORGANISATION				
Legislative Acts governing national SAR activities				
Org.act.1	Annex 12 Chap 2 Doc 8733 Doc 9731 Vol I Chap 1 and 5	Are there legislative acts governing SAR activities?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Org.act.2	Annex 12 Chap 2 Doc 8733 Doc 9731 Vol I Chap 1 and 5	If there are legislative acts governing SAR activities, are they up-to-date?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Org.act.3	Annex 12 Chap 2 Doc 8733 Doc 9731 Vol I Chap 1 and 5	Do the above acts organise SAR services in such a way that tasks and responsibilities are precisely and efficiently distributed?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	

Code	Reference	Aspect to be evaluated	Implementation	Comment
		SAR Plan – Administrative SAR Units		
Org.1	Annex 12 Chap 2 para 2.2 Doc 9731 Vol I Chap 2 para 2.3.15	Are SRR and FIR boundaries coincident?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Org.2	Annex 12 Chap 2 para 2.3 Doc 9731 vol I Chap 2 Para 2.3	Is the State equipped with a RCC?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Org.3	Annex 12 Chap 2 para 2.3 Doc 9731 vol I Chap 2 Para 2.4	Is the State equipped with one or several RSC?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Org.4	Annex 12 Chap 3 para 3.2 Doc 8733	Has a SAR point of contact (SPOC) been designated?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Org.5	Annex 12 Chap 2 para 2.4	Are there radio/coastal stations?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Org.6	Annex 12 Chap 2 para 2.4	If the answer is positive, are radio/coastal stations known and listed?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	

Code	Reference	Aspect to be evaluated	Implementation	Comment
National SAR Plan				
Org.pla.1	Doc 9731 Vol I Chap 5 para 5.2	Is there a national SAR plan?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Org.pla.2	Doc 9731 Vol I Chap 5 para 5.2	If the answer is positive, is it up-to-date?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Organizational Authorities in charge of SAR Services				
Org.aut.1	Doc 9731 Vol I Chap 1er para 1.5 Doc 9731 Vol II Chap 1er para 1.2	Has the State designated an Authority to be in charge of SAR services coordination?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Org.aut.2	Annex 12 Chap 2 Doc 8733 Doc 9731 Vol I Chap 1er para 1.5 Doc 9731 Vol II Chap 1er para 1.2	Does the above Authority have the legal means to discharge its responsibilities?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
SAR Committee / Civilian – military coordination				
Org.coo.1	Doc 9731 Vol I Chap 5 para 5.2 and 5.3 Doc 9731 Vol I Chap 6 para 6.3	Has a national SAR Committee been established?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Org.coo.2	Doc 9731 Vol I Chap 5 para 5.2 and 5.3 Doc 9731 Vol I Chap 6 para 6.3	Does the SAR national Committee hold regular meetings?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	

Code	Reference	Aspect to be evaluated	Implementation	Comment
Org.coo.3	Doc 9731 Vol I Chap 5 para 5.2 and 5.3 Doc 9731 Vol I Chap 6 para 6.3	Does it include representatives of civilian and military Authorities?	❏ Yes ❏ No ❏ Not applicable ❏ Not evaluated	
Notification of difference(s) to ICAO Annex 12				
Org.not.1	Doc 7300 (Convention de Chicago) Article 38	Has the State notified any difference to ICAO Annex 12?	❏ Yes ❏ No ❏ Not applicable ❏ Not evaluated	
SAR data published in AIP				
Org.aip.1	Annex 12 Chap 3 para 3.3 Doc 8733 Doc 9731 Vol I Chap 4 para 4.5	Does the State AIP include SAR data?	❏ A ❏ B ❏ C ❏ D ❏ E ❏ Not applicable ❏ Not evaluated	
Aviation / maritime SAR coordination				
Org.mar.1	Doc 9731	Are there maritime SAR services in the State?	❏ Yes ❏ No ❏ Not applicable ❏ Not evaluated	
Org.mar.2	Annex 12 Chap 3 para 3.2 Doc 8733	Has a coordination mechanism been established between the aviation and maritime SAR services?	❏ A ❏ B ❏ C ❏ D ❏ E ❏ Not applicable ❏ Not evaluated	
International SAR agreements and Conventions				
International SAR related Conventions				
Acc.conv.1	Not applicable	Has the State ratified the Convention on International Civil Aviation?	❏ Yes ❏ No ❏ Not applicable ❏ Not evaluated	
Acc.conv.2	Not applicable	Has the State ratified the Safety of Life at Sea (SOLAS) Convention?	❏ Yes ❏ No ❏ Not applicable ❏ Not evaluated	
Acc.conv.3	Not applicable	Has the State ratified the International Convention on Maritime Search and Rescue?	❏ Yes ❏ No ❏ Not applicable ❏ Not evaluated	

Code	Reference	Aspect to be evaluated	Implementation	Comment
International SAR agreements				
Acc.acc.1	Annex 12 Chap 3 para 3.1 Resolution A33-14 Appendix O Doc 8733 Doc 9731 Vol I Chap 1er para 1.6 and 1.7 Doc 9731 Vol I Chap 5 para 5.1 Doc 9731 Vol I Chap 6 para 6.3.6	Has the State signed SAR agreements with neighbouring States?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Operational procedures				
Aerodrome Emergency plan				
Ops.airp.1	Annex 14 para 9.1 Doc 9731 Vol II Chap 7 para 7.7	Are international aerodromes equipped with appropriate emergency plans?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Ops.airp.2	Annex 14 para 9.1 Doc 9731 Vol II Chap 7 para 7.7	Are domestic aerodromes equipped with appropriate emergency plans?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Ops.airp.3	Doc 9731 Vol II Chap 7 para 7.7	Is there appropriate coordination between SAR and aerodrome services?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
National Emergency plan				
Ops.org.1	Not applicable	Has the State enforced regional or national emergency plans?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	

Code	Reference	Aspect to be evaluated	Implementation	Comment
National SAR Manual				
Ops.man.1	Doc 9731 Chap 5 para 5.2.11 to 5.2.18	Has the Authority responsible for SAR services developed a national SAR manual?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
RCC operations plans				
Ops.cond.1	Annex 12 Chap 4 para 4.2 Doc 9731 Vol I Chap 5 para 5.2 Doc 9731 Vol II Chap 1er para 1.5	Has a RCC operations plans been developed and updated?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Procedures / Alerting phase				
Ops.aller.1	Annex 12 Chap 5 para 5.2 Doc 9731 Vol II Chap 3 para 3.3 Doc 9731 Vol II Appendix E	Have special procedures dedicated to alerting phases been implemented?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Funding				
Fin.mec.1	Doc 9731 Vol I Chap 5 para 5.4	Has the State implemented a SAR activities funding mechanism?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Fin.mec.2	Doc 9731 Vol I Chap 5 para 5.4	Does this mechanism ensure adequate funding of SAR services complying with international standards?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	

Code	Reference	Aspect to be evaluated	Implementation	Comment
Equipments				
Compliance with the Air Navigation Plan				
Equ.afi.1	Doc 8733	Are available equipments in line with the available equipment list of the CAR/SAM Air navigation plan?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Navigation means of the SAR units				
Equ.nav.1		Are SAR Units equipped with on-board radio direction-finding stations?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Survival equipments				
Equ.surv.1	Annex 12 Chap 2 para 2.6 Doc 9731 Vol I chap 2 para 2.5 Doc 9731 Vol II chap 6 para 6.4 and 6.5 Doc 9731 Vol II appendix G	Are SAR Units equipped with functional survival equipments?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
RCC / RSC equipments				
Equ.rcc.1	Doc 9731 Vol I Chap 2 para 2.3 Doc 9731 Vol I Chap 5 para 5.2 Doc 9731 Vol II Chap 1er para 1.7	Are RCC / RSC equipped with SAR technical documentation (IAMSAR Manual and other technical documentation)?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Equ.rcc.2	Doc 9731 Vol I Chap 2 para 2.7 Doc 9731 Vol II Chap 1 para 1.11	Are RCC / RSC equipped with computers and SAR dedicated software?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	

Code	Reference	Aspect to be evaluated	Implementation	Comment
		Communications		
Equ.com.1	Annex 12 Chap 2 para 2.4 Doc 9731 Vol I Chap 4 Doc 9731 Vol II Chap 2	Is the RCC equipped with adequate communication means with air traffic services?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Equ.com.2	Annex 12 Chap 2 para 2.4 Doc 9731 Vol I Chap 4 Doc 9731 Vol II Chap 2	Is the RCC equipped with adequate communication means with RSC?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Equ.com.3	Annex 12 Chap 2 para 2.4 Doc 9731 Vol I Chap 4 Doc 9731 Vol II Chap 2	Is the RCC equipped with adequate communication means with position fixing and radio direction-finding stations?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Equ.com.4	Annex 12 Chap 2 para 2.4 Doc 9731 Vol I Chap 4 Doc 9731 Vol II Chap 2	Is the RCC equipped with adequate communication means with radio/coastal stations?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Equ.com.5	Annex 12 Chap 2 para 2.4 Doc 9731 Vol I Chap 4 Doc 9731 Vol II Chap 2	Is the RCC equipped with adequate communication means with Cospas-Sarsat mission control centres?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Equ.com.6	Annex 12 Chap 2 para 2.4 Doc 9731 Vol I Chap 4 Doc 9731 Vol II Chap 2	Is the RCC equipped with adequate communication means with Rescue teams operations centres?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	

Code	Reference	Aspect to be evaluated	Implementation	Comment
Equ.com.7	Annex 12 Chap 2 para 2.4 Doc 9731 Vol I Chap 4 Doc 9731 Vol II Chap 2	Is the RCC equipped with adequate communication means with adjacent RCCs?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Equ.com.8	Annex 12 Chap 2 para 2.4 Doc 9731 Vol I Chap 4 Doc 9731 Vol II Chap 2	Is the RCC equipped with adequate communication means with MET or MET Watch office?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Equ.com.9	Annex 12 Chap 2 para 2.4 Doc 9731 Vol I Chap 4 Doc 9731 Vol II Chap 2	Is the RCC equipped with MF communication means with SAR Units when employed on SAR operations?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Equ.com.10	Annex 12 Chap 2 para 2.4 Doc 9731 Vol I Chap 4 Doc 9731 Vol II Chap 2	Is the RCC equipped with HF communication means with SAR Units when employed on SAR operations?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Equ.com.11	Annex 12 Chap 2 para 2.4 Doc 9731 Vol I Chap 4 Doc 9731 Vol II Chap 2	Is the RCC equipped with VHF communication means with SAR Units when employed on SAR operations?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
COSPAS / SARSAT				
Equ.cosp.1	Doc 8733 Doc 9731 Vol II Chap 2 para 2.15	Is the State managing and updating a database of Cospas-sarsat users registered on its territory?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	

Code	Reference	Aspect to be evaluated	Implementation	Comment
Equ.cosp.2	Annex 6, Parts I, II and III; Annex 10, Vol III, Part II, Chapter 5; Annex 10, Vol V, Chapter 2, para 2.1	Has the State adopted a regulation making the carriage of 406 MHz beacons compulsory?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Removal of wreckage				
Equ.epav.1	Annex 12 Chap 4 para 4.5	Is the State equipped with removal of wreckage facilities?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Human Resources				
SAR personnel				
Rh.per.1	Doc 9731 Vol I Chap 5 para 2.3.11 and 5.4.9 to 5.4.16	Is SAR personnel sufficient and properly trained in the State?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Training				
Current training plan(s)				
Rh.for.1	Doc 9731 Vol II Chap 1er para 1.8	Is a training plan currently applied to coordinating SAR mission staff?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Rh.for.2	Doc 9731 Vol II Chap 5	Is a training plan currently applied to pilots involved in SAR missions?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	

Code	Reference	Aspect to be evaluated	Implementation	Comment
Rh.for.3	Doc 9731 Vol II Chap 1er para 1.8	Is a training plan currently applied to staff involved in rescue missions?	❏ A ❏ B ❏ C ❏ D ❏ E ❏ Not applicable ❏ Not evaluated	
Scheduled training plans				
Rh.for.4	Doc 9731 Vol I Chap 6 Doc 9731 Vol II Chap 1er para 1.8	Has a training plan been scheduled for coordinating SAR mission staff?	❏ A ❏ B ❏ C ❏ D ❏ E ❏ Not applicable ❏ Not evaluated	
Rh.for.5	Doc 9731 Vol I Chap 6 Doc 9731 Vol II Chap 1er para 1.8	Has a training plan been scheduled for pilots involved in SAR missions?	❏ A ❏ B ❏ C ❏ D ❏ E ❏ Not applicable ❏ Not evaluated	
Rh.for.6	Doc 9731 Vol I Chap 6 Doc 9731 Vol II Chap 1er para 1.8	Has a training plan been scheduled for staff involved in rescue missions?	❏ A ❏ B ❏ C ❏ D ❏ E ❏ Not applicable ❏ Not evaluated	
Qualification / certification procedure				
Rh.for.7	Doc 9731 Vol I Chap 6 Doc 9731 Vol II Chap 1er para 1.8	Has a standard Qualification / certification procedure for SAR staff been implemented?	❏ A ❏ B ❏ C ❏ D ❏ E ❏ Not applicable ❏ Not evaluated	
Training venue(s)				
Rh.for.8	Doc 9731 Vol I Chap 6 Doc 9731 Vol II Chap 1er para 1.8	Have training venues been certified?	❏ A ❏ B ❏ C ❏ D ❏ E ❏ Not applicable ❏ Not evaluated	

Code	Reference	Aspect to be evaluated	Implementation	Comment
English language proficiency				
Rh.ang.1	Doc 9731 Vol II Chap 1er para 1.8	Are RCC and RSC staff proficient in the use of the English language?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
QUALITY CONTROL / EXERCISES				
Quality control procedure				
Qua.proc.1	Annex 12 Chap 5 para 5.11 Doc 9731 Vol I Chap 5 Doc 9731 Vol I Chap 6 Doc 9731 Vol II Chap 8 para 8.6	Has the State established a quality control mechanism for its SAR services?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Exercises				
Qua.ex.1	Annex 12 Chap 4 para 4.4 Doc 8733 Doc 9731 Vol I Chap 3 para 3.3 Doc 9731 Vol II Chap 1er para 1.8	Does the State organize SAR exercises on a regular basis?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
Qua.ex.2	Doc 8733 Doc 9731 Vol I Chap 3 para 3.3 Doc 9731 Vol II Chap 1er para 1.8	If the answer is yes, are the SAR exercises conducted in conformity with ICAO recommendations?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	
SAR actions				
Qua.pha.1	Annex 12 Chap 5 para 5.11 Doc 9731 Vol II Chap 1er para 1.7 Doc 9731 Vol I Chap 5 and 6	Are reports established and critical analysis conducted about passed SAR actions?	❑ A ❑ B ❑ C ❑ D ❑ E ❑ Not applicable ❑ Not evaluated	

APPENDIX E

**REGIONAL CARIBBEAN CONTINGENCY PROCEDURES
FOR HURRICANES**

TABLE OF CONTENTS

**CAR Region
Contingency Procedures for Hurricanes**
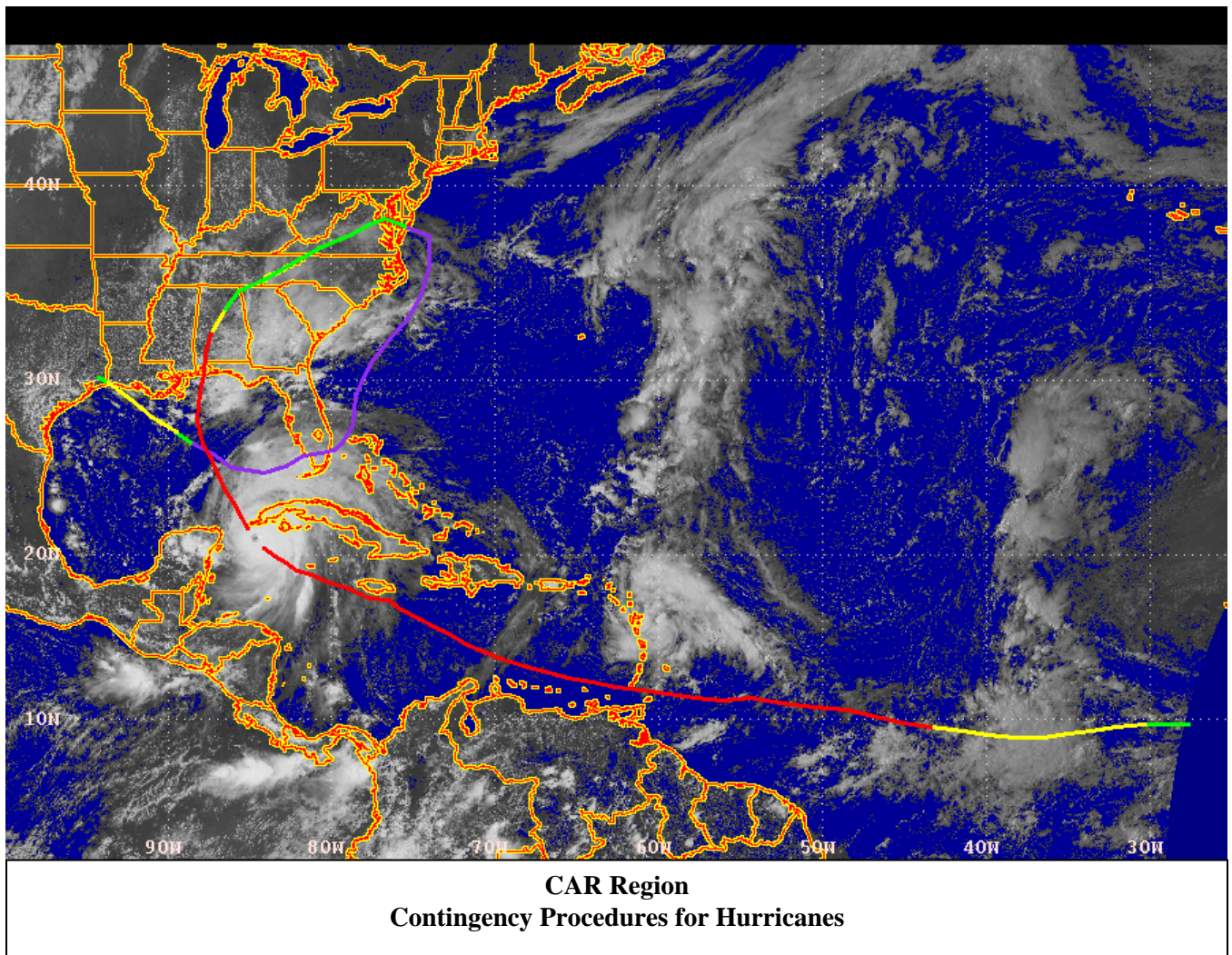
BACKGROUND

The CAR region is regularly impacted by hurricane activity. As a result, contingency procedures addressing hurricane activity in the flight information regions (FIRs) were developed. These procedures establish a standardized guideline for the alerting of aircraft when hurricanes and hurricane forces are possible and identify procedures to be followed by the area control centres (ACCs) when planning routings around these event areas.

Considering that safety considerations dictate avoidance of hurricane force areas, timely reports and responses to reports of hurricane event areas are essential.

Hurricane direction, speed and intensity are constantly changing. Therefore, all parties concerned are committed to ensure the safety of aircraft in flight by promulgating information as a matter of urgency including prompt reporting and dissemination of available information on the extent and severity of the hurricane area.

For every hurricane event being reported in areas which could affect ATS routes used by civil aviation, all ATS units receiving information of a hurricane event should carry out alerting actions, as appropriate.

It should be noted that this document should be part of an air traffic services (ATS) contingency plan. This document does not prescribe actions by any entity other than the ATS units concerned. Where actions by the Meteorological Weather Offices (MWOs) are described, those are for clarification only.

1. STRATEGIC PHASE

This phase is characterized by initial information on the extent and severity of the hurricane event. With all information available, the actions of this alerting phase should be carried out within 36 hours from the receipt of information of the event. The alerting phase actions should be carried out for every event. The purpose of this phase is to ensure the safety of aircraft in flight and to promulgate information as a matter of urgency.

During the Strategic Phase aircraft operations may be tactically rerouted to avoid areas with hurricane force events. Adjacent ACCs should, upon reception of information from the MWO, issue an advisory through the air traffic flow management unit. The ATFM units will determine how the initial communications will take place on the basis of bilateral agreements.

ORIGINATING ACC ACTIONS (in Flight Information Region (FIRs) concerned)

With the occurrence of a significant hurricane event reported in areas which could affect ATS routes used by civil aviation, an ACC, on receiving information of an event, should carry out the following:

1. Identify an initial impact area with the size and location of the area designed so as to allow the assessment of impacts to routes that will be impaired by the effects of this event The purpose of this initial impact zone is to identify navigational routes and assets that will be render unusable to better mitigate the impacts of the event on air traffic.

2. Advise the appropriate Air Traffic Flow Management Unit (ATFMU). That ATFMU will then issue an air traffic flow management (ATFM) advisory and, as necessary, will also notify other ACCs or Air Traffic Flow Management units.

3. Tactically re-clear flights which would penetrate the area onto available routes requested by the pilot. It should also negotiate any re-routings necessary for flights already coordinated but still within adjacent flight information regions (FIRs). It is also expected that adjacent ACCs will be asked to reroute flights not yet coordinated to keep them clear of the impact area.

4. Issue a NOTAM. This must provide as precise information as is available regarding the activity of the hurricane. The name (where applicable), reference number and position of the hurricane should be included along with routes or portions of routes which could be affected and, as necessary, routes temporarily closed to air traffic. It is imperative that this information is disseminated as soon as possible. Some of the required information may not be available and alternative routes may yet have to be established.

In order to assist the staff in expediting the process of composing the NOTAM, a series of templates should be available for the activity. Should the eruption occur elsewhere, one of the templates can be used after being suitably modified.

An example NOTAM is shown below:

(A0001/02 NOTAMNQ) BIRD/QWWXX/IV/NBO/W/000/999/6359N01942W120
A) BIRD
B) 0705281230
C) 0705291230 EST
E) Due to weather impacts associated with Hurricane RITA the following routes are closed xxx xxx xxx xxx xxx xxx
F) GND G) FL999)

In addition to sending the NOTAM (and any subsequent NOTAM) to the normal distribution list, it will be sent to the relevant meteorological agencies after adding the WMO header "NWIL31 BIRK ddhhmm" (where ddhhmm represents a date/time group).

ADJACENT ACC / ATFM UNITS ACTIONS

Aircraft will be tactically rerouted to avoid the impacted area and associated closed routes and disruptions to traffic should not be excessive. Adjacent ACCs should take the following action to assist:

1. When advised, re-clear flights which will be affected by the impact area but are still under your control.

2. Unless otherwise instructed, continue normal operations except:

a) if one or more routes are closed by the impact are, stop clearing aircraft on these routes and take steps to reroute onto open routes.

b) initiate a running plot of the impacted area.

Upon reception of information on hurricane activity from the WMO, air traffic flow management units will issue an advisory or a NOTAM as appropriate. The adjacent ACCs, ATFM units will determine how the initial communications will take place on the basis of bilateral agreements.

ATFM UNIT ACTIONS

Depending on the impact of the event, during any Phase, the appropriate ATFM unit may take initiative to organize teleconferences to exchange latest information on the developments with the VAACs, Air Navigation Service Providers (ANSPs) concerned and aircraft operators.

2. PRE-TACTICAL PHASE

This phase will last until such time as proactive standing procedures can be adopted. The actions detailed in this phase are designed to allow early intervention in the flight path of aircraft already airborne and the promulgation of a routing scheme taking account of the situation.

It is impossible to be prescriptive for every eventuality, thus the actions consider the 'worst case' scenario of a busy traffic flow affected by the hurricane.

ORIGINATING ACC ACTIONS (within its own FIR)

This phase begins once aircraft under the control of the ACC have been tactically rerouted around the impact area. Aircraft for which the ACC have received an estimate from adjacent ACCs at the start of the Alerting Phase will be rerouted by those agencies and an initial NOTAM will have been issued. During this phase the ACC should:

> 1. Maintain close liaison with its associated MWO. The MWO should issue a SIGMET message on the forecast movement of the hurricane at least every 3 hours, valid for 6 hours, with an outlook appended providing information on the trajectory for up to 12 hours beyond the validity period. In the interest of expediency this outlook may be omitted from the initial SIGMET.

> 2. Based on these forecasts and in cooperation with the appropriate ATFM unit and adjacent ACCs, air traffic flow management measures should be devised and updated to ensure that routings are proactively managed to remain available as long as practical to assist normal air traffic requests and eventually and as needed facilitate in evacuation, disaster relief efforts and search and rescue operations.

> 3. Issue a NOTAM. By this stage it will be possible to define the affected area based on a prediction from the MWO. It is important that the content of the NOTAM is coordinated and agreed with adjacent ACCs.

> Consideration should be given to including the following text in item E of the NOTAM:

> *"ATFM MEASURES LIABLE TO CHANGE SUBJECT TO THE TRACK AND IMPACT OF HURRICANE XXXXXX. MAINTAIN WATCH FOR NOTAM/SIGMET FOR THE AREA"*

> 4. Should the track of the hurricane significantly change during this phase and the airspace no longer impacted, a NOTAM cancelling the last active NOTAM shall be issued stating the cause for cancellation. Otherwise, begin planning for the Proactive Phase in conjunction with ATFM Units and the affected ACCs.

ADJACENT ACC ACTIONS

During the Phase 2 the adjacent ACCs should take the following action:

1. Maintain close liaison with the appropriate ATFM unit and the originating ACC to design, implement and keep up to date ATFM measures which will ensure routes are managed allowing options and support to all users

2. In the event that tactical measures additional to those issued by the appropriate ATFM unit are required, the air traffic control (ATC) watch supervisors should, in cooperation with the originating ACC, impose such measures. Details are included in the ATFM measures section of this document.

3. Maintain a running plot of the affected area.

4. Begin planning for the Proactive Phase in conjunction with the appropriate ATFM unit and ACCs concerned.

3   TACTICAL PHASE

Standing procedures should be in place to route traffic around the impacted area. During this phase, numerous combinations of airspace may be impacted with routes and options limited. It may be impossible to prescribe all measures to be taken for any particular situation, nor is it possible to detail the actions to be taken by any particular ACC.

The following guidance actions may be used during this phase:

1. ACCs affected by the movement of the hurricane should continue to issue NOTAMs at appropriate intervals. ACCs concerned and the appropriate ATFM unit should continue to publish details on measures taken.

2. Should the impacted area move wholly outside the originating ACC's airspace to affect adjacent or other FIRs only, the ACCs in charge of that airspace should take over responsibility for the promulgation of NOTAMs.

3. Depending on the impact of the event, the appropriate ATFM unit may take initiative to organise teleconferences to exchange the latest information on the developments with the ANSPs concerned and aircraft operators.

4. During this phase discussions on contingency planning and responsibilities may deal with possible catastrophic loss of ATC services, facilitating evacuation flights, coordinating disaster relief traffic and search and rescue operations. The need to involve users is acknowledged by the impact that TFM initiatives will have on the user's abilities to provide services to impacted areas and protect aircraft fleets.

5. When the impact has passed, a NOTAM cancelling the active NOTAM shall be promulgated.

4. ATFM PROCEDURES

Upon reception of information on Hurricane activity from the WMO, the ATFM unit will coordinate issue advice or NOTAM as appropriate.

In close coordination with ACCs concerned, the appropriate ATFM unit may apply ATFM initiatives to prioritize services and mitigate impacts by relieving congestion on overloaded routes ensuring the orderly flow of traffic with an equitable distribution of delays. The measures should be reviewed and updated in agreement with respective ACCs on receipt of any forecast from the WMO or VAAC.

When ATFM initiatives are applied, the appropriate ATFM unit should coordinate issue of AIM or NOTAM as appropriate, explaining in plain language why the measures have been implemented. Operators should also be advised to maintain watch for NOTAMs and SIGMETs for the area.

Depending on the impact of the hurricane, the appropriate ATFM unit may take initiative to organize routine teleconferences to exchange the latest information on the developments with the ANSPs concerned and aircraft operators.

5. AIR TRAFFIC CONTROL PROCEDURES FOR ACCS

If hurricane impacts are reported or forecast in the FIR for which the ACC is responsible, the following procedures are followed:

> 1. Relay all available information immediately to pilots whose aircraft could be affected to ensure that they are aware of the impact area ;

> 2. Suggest appropriate reroutings and advise users of airspace closures ;

The final responsibility for inflight decisions rests with the pilot in command.

6. GENERAL GUIDANCE FOR THE DEVELOPMENT OF ATS HURRICANE CONTINGENCY PLANS

In an emergency plan certain steps need to be taken to provide a coordinated and controlled response for dealing with an event of this nature. Responsibilities should be clearly defined for the manager in charge, supervisors and air traffic controllers. The plan should also identify the officials who need to be contacted, the type of messages that are to be created, and how to conduct business.

Controllers need to be trained and be made aware that aircraft which encounter violent weather conditions can suffer a complete loss of power along with loss of structural integrity in the airframe.

Particular issues are as follows:

> 1) Impacted areas may extend for hundreds of miles horizontally and reach several miles vertically, therefore pilots may not be able to fly around or climb above the area.

> 2) Conditions at airports will deteriorate as hurricane forces build. Pilots and controllers should be aware of the escalating impacts to basic services and navigational systems as forces approach. The loss of support services may render ATC systems unusable long before and long after weather impacts reach these areas.

The ACC in conjunction with the appropriate ATFM unit serves as the critical communication link between the pilot, dispatcher and meteorologist. During contingency episodes within the FIR, the ACC has two major communication roles. First and of greatest importance is its ability to communicate directly with aircraft en route which will encounter hurricane forces. Based on the information provided in the SIGMET and advisory message, and working with MWO meteorologists, the air traffic controllers should be able to provide the pilot with current information and the projected trajectory of the area. Through the use of radio communication, ACCs have the capability to coordinate with the pilot alternative routes.

Similarly, through the issuance of a NOTAM, the ACC can disseminate information on the status and activity of hurricane activity. NOTAM and SIGMETs, together with special air reports (AIREPs) are critical to dispatchers for flight planning purposes.

Airlines need as much advance notification as possible for strategic planning of flights and the safety of the flying public. Dispatchers need to be in communication with pilots en route so that a coordinated decision can be made between the pilot, the dispatcher and air traffic control regarding alternative routes that are available. It cannot be presumed, however, that an aircraft will be provided with the most desirable route. Other considerations have to be taken into account such as existing traffic levels on other routes and the amount of fuel reserve available for flights which may have to be diverted to other routes to allow for the affected aircraft to divert.

The NOTAM for hurricane activity provides information on its activity along with other information of operational significance. They are issued by the ACC through the respective international NOTAM office based on the information received from any one of the observing sources and/or advisory information provided by the associated VAAC. In addition to providing the strength of a hurricane, the NOTAM also provides information on the location, extent and movement of it along with the air routes and flight levels affected. The NOTAM can also be used to close the airspace affected by the hurricane forces. Complete guidance on the issuance of the NOTAM is provided in Annex 15 — *Aeronautical Information Services*.

It is essential that the procedures which the ACC personnel should follow during this hurricane event described in the foregoing paragraphs are translated into the local staff instructions (adjusted as necessary to take account of local circumstances). It is also essential that these procedures/instructions form part of the basic training for all air traffic services personnel whose jobs would require them to take action in accordance with the procedures.

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REGIONAL CARIBBEAN CONTINGENCY PROCEDURES
FOR VOLCANIC ASH

TABLE OF CONTENTS
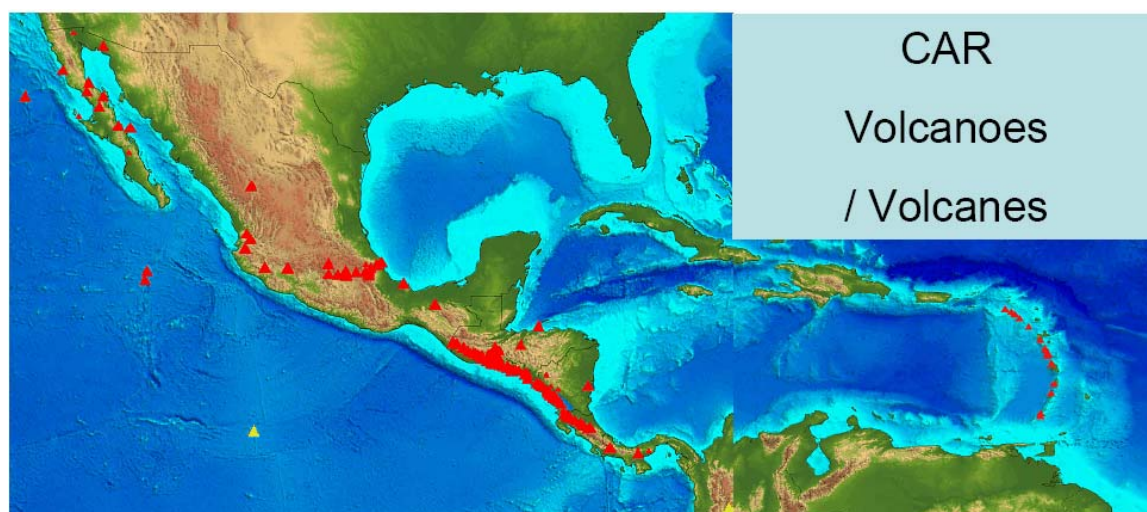
This procedures are based in the Manual on Volcanic Ash, Radioactive Material and Toxic Chemical Clouds - Doc 9691.

BACKGROUND

The CAR region encompasses several areas with a potential for volcanic activity. As a result, contingency procedures addressing volcanic eruptions in the NAM and CAR flight information regions were developed. These procedures establish a standardized guideline for the alerting of aircraft when volcanic eruptions are possible or have occurred and identifies procedures to be followed by the area control centres (ACCs) when planning routings around the ash cloud.

Considering that a commercial aircraft can travel about 150 km (80 NM) in 10 minutes and that volcanic ash can rise to flight levels commonly used by turbine-engine aircraft in half that time, a timely response to reports of volcanic ash is essential.

It can take as long as one hour to define a flight operations danger area around volcanic activity. Therefore, all parties concerned are committed to ensure the safety of aircraft in flight by promulgating information as a matter of urgency including prompt reporting and dissemination of available information on the extent and severity of the volcanic event.

For every volcanic event of: significant pre-eruption volcanic activity, a volcanic eruption occurring, or a volcanic ash cloud being reported in areas which could affect ATS routes used by civil aviation all ATS units receiving information of an occurrence should carry out alerting actions as appropriate.

The ATFM units and the WMO posted in Miami and/or VAAC posted in Washington D. C. will determine how the initial communications will take place on the basis of bilateral agreements.

It should be noted that this document is an air traffic services (ATS) contingency plan. This document does not prescribe actions by any entity other than the ATS units concerned. Where actions by the Meteorological Whether Offices (MWOs) and VAACs are described, it is for clarification only.

1. STRATEGIC PHASE

This phase is characterized by the limited availability of information on the extent and severity of the volcanic event. Regardless of the extent of information available, the actions of this alerting phase should be carried out within 30 minutes but no more than one hour from the onset of every event. Regardless of the extent of information available, the alerting phase actions should be carried out for every event.The purpose of this phase is to ensure the safety of aircraft in flight and to promulgate information as a matter of urgency.

During the Strategic Phase aircraft operations will be tactically rerouted to avoid the danger zone. As this phase will only last for a short period, any ash cloud would be contained within a limited area and disruption to traffic should not be excessive. Adjacent ACCs should, upon reception of information on volcanic activity from the VAAC, issue an appropriate advisory through the air traffic flow management unit. The ATFM units and the VAACs will determine how the initial communications will take place on the basis of bilateral agreements.

ORIGINATING ACC ACTIONS (in Flight Information Region concerned)

Upon receiving information of: a significant pre-eruption volcanic activity, a volcanic eruption occurring or a volcanic ash cloud being reported in areas which could affect ATS routes used by civil aviation, an ACC should carry out the following:

> 1. Define an initial danger area of a circle with a radius of 222 km (120 NM). If the eruption has not commenced or if no information on upper winds is available, the circle should be centered on the estimated location of the volcanic activity. If an eruption has started and predicted upper wind information is available, the circle should be centered 60 NM downwind from the volcano. The size and location of the danger area are intended to ensure that air traffic remains clear of any contaminated area by at least 111 km (60 NM). The purpose of this initial danger zone is to ensure safety in the absence of any prediction from a competent authority of the extent of contamination.

> 2. Advise the MWO and the VAAC by telephone. The VAAC will then inform the appropriate Air Traffic Flow Management Unit (ATFMU). That ATFMU will then issue an air traffic flow management (ATFM) advisory and, as necessary, will also notify other ACCs or Air Traffic Flow Management units which will issue appropriate NOTAMs.

3. Alert flights already within the danger zone and, upon request, provide them vectors to expedite evacuation out of the area. Also, aircraft that are close to the danger zone should be vectored clear of the area. Tactically re-clear flights which would penetrate the zone to routes that will keep them clear. The ACC should immediately notify other affected centres of the event and the dimensions of the danger zone. It should also negotiate any re-routings necessary for flights already coordinated but still within adjacent flight information regions (FIRs). It is also expected that adjacent ACCs will be asked to reroute to keep them clear of the danger zone.

4. Issue a NOTAM. This must provide as much precise information as is available regarding the activity of the volcano. The name (where applicable), reference number and position of the volcano should be included along with the date and time of the start of the eruption (if appropriate), levels and routes or portions of routes which could be affected and, as necessary, routes temporarily closed to air traffic. It is imperative that this information is disseminated as soon as possible. Some of the required information may not be available and alternative routes may yet have to be established.

In order to assist the staff in expediting the process of composing the NOTAM, a series of templates should be available for the activity. Should the eruption occur elsewhere, one of the templates can be used after being suitably modified.

An example NOTAM announcing pre-eruption activity in Montserrat is shown below:

(A0001/02 NOTAMNQ) BIRD/QWWXX/IV/NBO/W/000/999/6359N01942W120
A) BIRD
B) 0705281230
C) 0705291230 EST
E) INCREASED VOLCANIC ACTIVITY, POSSIBLY IMMINENT ERUPTION, REPORTED FOR VOLCANO MONTSERRAT 1702-07 AT 6359N01942W. AIRCRAFT ARE ADVISED TO REMAIN AT LEAST 120NM CLEAR OF VOLCANO AND MAINTAIN WATCH FOR NOTAM/SIGMET FOR AREA.
F) GND G) FL999)

In addition to sending the NOTAM (and any subsequent NOTAM) to the normal distribution list, it will be sent to the relevant meteorological agencies after adding the WMO header "NWIL31 BIRK ddhhmm" (where ddhhmm represents a date/time group).

ADJACENT ACC / ATFM UNITS ACTIONS

Aircraft will be tactically rerouted to avoid the danger area contained and disruptions to traffic should not be excessive. Adjacent ACCs should take the following action to assist:

1. When advised, re-clear flights which will be affected by the danger zone but are still under your control.

2. Unless otherwise instructed, continue normal operations except:

a) if one or more routes are affected by the danger zone, stop clearing aircraft on these routes and take steps to reroute onto routes clear of the area; and

b) initiate a running plot of the affected area.

Upon reception of information on hurricane or volcanic activity from the WMO or VAAC the air traffic flow management units will issue an advice or a NOTAM as appropriate. The adjacent ACCs, ATFM units and the VAACs will determine how the initial communications will take place on the basis of bilateral agreements.

ATFM UNIT ACTIONS

Depending on the impact of the event, during the Strategic Phase and all subsequent phases, the appropriate ATFM unit may take initiative to organize teleconferences to exchange latest information on the developments with the VAACs, Air Navigation Service Providers (ANSPs) concerned and aircraft operators.

2. PRE-TACTICAL PHASE

This phase will last until such time as proactive standing procedures can be adopted. The actions detailed in this phase are designed to allow early intervention in the flight path of aircraft already airborne and the promulgation of a routing scheme taking account of the situation.

During this phase it is possible that the ash cloud will have spread, affecting several FIRs.

It is impossible to be prescriptive for every eventuality, thus the actions consider the 'worst case' scenario of a busy traffic flow affected by the ash cloud.

ORIGINATING ACC ACTIONS (within its own FIR)

This phase begins once aircraft under the control of the ACC have been tactically rerouted around the danger area. Aircraft for which the ACC have received an estimate from adjacent ACCs at the start of the Alerting Phase will be rerouted by those agencies and an initial NOTAM will have been issued. During this phase the ACC should:

> 1. Maintain close liaison with its associated MWO and the appropriate VAAC. The MWO should issue a SIGMET message on the forecast movement of the ash cloud at least every 3 hours, valid for 6 hours, with an outlook appended providing information on the trajectory of the cloud for up to 12 hours beyond the validity period. In the interest of expediency this outlook may be omitted from the initial SIGMET.

> 2. Based on these forecasts and in cooperation with the appropriate ATFM unit and adjacent ACCs, air traffic flow management measures should be devised and updated when necessary to ensure that aircraft are cleared from the perimeter of the forecast furthest extent of the ash cloud.

> 3. Issue a NOTAM. By this stage it will be possible to define the affected area based on a prediction from the MWO/VAAC. It is important that the content of the NOTAM is coordinated and agreed with adjacent ACCs.

> Consideration should be given to including the following text in item E of the NOTAM:

"ATFM MEASURES LIABLE TO CHANGE SUBJECT TO THE PROGRESS OF THE ASH CLOUD. MAINTAIN WATCH FOR NOTAM/SIGMET FOR THE AREA"

4. Should the volcano revert to its dormant state during this phase and the airspace no longer is contaminated by volcanic ash, a NOTAM cancelling the last active NOTAM shall be issued stating the cause for cancellation. Otherwise, begin planning for the Proactive Phase in conjunction with ATFMU and the affected ACCs.

ADJACENT ACC ACTIONS

During Phase 2 the adjacent ACCs should take the following action:

1. Maintain close liaison with the appropriate ATFM unit and the originating ACC to design, implement and keep up to date ATFM measures which will ensure aircraft are cleared from the perimeter of the forecast furthest extent danger area

2. In the event that tactical measures additional to those issued by the appropriate ATFM unit are required, the air traffic control (ATC) watch supervisors, in cooperation with the originating ACC, should impose such measures. Details are included in the ATFM measures section of this document.

3. Maintain a running plot of the affected area.

4. Begin planning for the Proactive Phase in conjunction with the appropriate ATFM unit and ACCs concerned.

3   TACTICAL PHASE

In the Tactical Phase standing procedures should be adopted to route traffic clear of the danger area. NOTE: It is impossible to detail all measures that might be taken for any and every particular situation. Personnel should exercise their best judgment if they encounter situations that are not covered by guidance in this phase.

The following guidance actions may be used during this phase:

1. ACCs affected by the movement of the ash cloud should continue to issue NOTAMs at appropriate intervals. ACCs concerned and the appropriate ATFM unit should continue to publish details on measures taken.

2. Should the ash cloud move wholly outside the originating ACC's airspace to affect adjacent or other FIRs only, the ACCs in charge of that airspace should take over responsibility for the promulgation of NOTAMs.

3. Depending on the impact of the event, the appropriate ATFM unit may take initiative to organize teleconferences to exchange latest information on the developments with the ANSPs concerned and aircraft operators.

4. During this phase it may be possible to assess the vertical extent of the event. While operators cannot be prevented from flight planning routes predicted to be above the danger area, such routes should not be proposed by ATC. Operators should be aware of the risk of engine failure

resulting in the inability to maintain an altitude above a volcanic ash cloud, especially where ETOPS aircraft are involved.

5. When the airspace is no longer contaminated by volcanic ash, a NOTAM cancelling the active NOTAM shall be issued.

4. ATFM PROCEDURES

Upon reception of information on volcanic activity from the WMO or VAAC, the ATFM unit will coordinate and issue an advisory and/or NOTAM as appropriate.

In close coordination with ACCs concerned the appropriate ATFM unit may apply ATFM initiatives to ensure that aircraft are cleared from the perimeter of the forecast furthest extent of the ash cloud. The measures should be reviewed and updated in agreement with respective ACCs on receipt of any forecast from the WMO or VAAC.

When ATFM initiatives are applied, the appropriate ATFM unit should issue an advisory or NOTAM as appropriate, explaining in plain language why the measures have been implemented. Operators should also be advised to maintain watch for NOTAMs and SIGMETs for the area.

Depending on the impact of the volcanic ash, the appropriate ATFM unit may take initiative to organize teleconferences to exchange the latest information on the developments with the ANSPs and aircraft operators concerned.

5. AIR TRAFFIC CONTROL PROCEDURES FOR ACCS

If a volcanic ash cloud is reported or forecast in the FIR for which the ACC is responsible, the following procedures are followed:

1. Relay all available information immediately to pilots whose aircraft could be affected to ensure that they are aware of the ash cloud's position and the flight levels affected;

2. Suggest appropriate rerouting to avoid areas of known or forecasted ash clouds;

3. Remind pilots that volcanic ash clouds are not detected by airborne or air traffic radar systems. The pilot should assume that radar will not give them advanced warning of the location of the ash cloud;

4. If the ACC has been advised by an aircraft that it has entered a volcanic ash cloud and indicates that a distress situation exists:

a) Consider the aircraft to be in an emergency situation;

b) Do not initiate any climb clearances to turbine-powered aircraft until the aircraft has exited the ash cloud; and

c) Do not attempt to provide escape vectors without pilot concurrence.

Experience has shown that the recommended escape manoeuvre for an aircraft which has encountered an ash cloud is to reverse its course and begin a descent (if terrain permits). However, the final responsibility for this decision rests with the pilot.

6. GENERAL GUIDANCE FOR THE DEVELOPMENT OF ATS CONTINGENCY PLANS FOR VOLCANIC ASH CLOUDS

In an emergency plan relating to volcanic ash clouds, certain steps need to be taken to provide a coordinated and controlled response for dealing with an event of this nature. Responsibilities should be clearly defined for the manager in charge, supervisors and air traffic controllers. The plan should also identify the officials needed to be contacted, the type of messages that are to be created, and how to conduct business.

Controllers need to be trained and be made aware that aircraft which encounter a volcanic ash cloud can suffer a complete loss of power and that extreme caution needs to be taken to avoid entering an ash cloud. Since there is no means to detect the density of the ash cloud and size distribution of the particles and their subsequent impact on engine performance and the integrity of the aircraft, controllers need to be aware of the serious consequences for an aircraft that may encounter an ash cloud. Particular issues are as follows:

> 1) Volcanic ash clouds may extend for hundreds of miles horizontally and reach the stratosphere vertically, therefore pilots should not attempt to fly through or climb out of the cloud;

> 2) Volcanic ash may block the pitot-static system of an aircraft, resulting in unreliable airspeed indications; and

> 3) Braking conditions at airports where volcanic ash has recently been deposited on the runway will affect the braking ability of the aircraft. This is more pronounced on runways contaminated with wet ash. Pilots and controllers should be aware of the consequences of volcanic ash being ingested into the engines during landing and taxiing. For departure it is recommended that pilots avoid operating in visible airborne ash; instead they should allow sufficient time for the particles to settle before initiating a take-off roll, in order to avoid ingestion of ash particles into the engine. In addition, the movement area to be used should be carefully swept before any engine is started.

The ACC in conjunction with the appropriate ATFM unit serves as the critical communication link between the pilot, dispatcher and meteorologists during a volcanic eruption. During episodes of volcanic ash clouds within the FIR, the ACC has two major communication roles. First, and of greatest importance, is its ability to communicate directly with aircraft en route which may encounter the ash cloud. Based on the information provided in the volcanic ash SIGMET and volcanic ash advisory message and working with MWO meteorologists, the air traffic controllers should be able to provide the pilot with flight levels that are affected by the ash cloud and the projected trajectory and drift of the cloud. Through the use of radio communication, ACCs have the capability to coordinate with the pilot alternative routes which would keep the aircraft away from the volcanic ash cloud.

Similarly, through the issuance of a NOTAM for volcanic activity (or an ASHTAM) the ACC can disseminate information on the status and activity of a volcano even for pre-eruption increases in volcanic activity. NOTAM, (ASHTAM) and SIGMETs, together with special air reports (AIREPs), are critical to dispatchers for flight planning purposes.

Airlines need as much advance notification as possible on the status of a volcano for strategic planning of flights and the safety of the flying public. Dispatchers need to be in communication with pilots en route so that a coordinated decision can be made between the pilot, the dispatcher and air traffic control regarding alternative routes that are available. It cannot be presumed, however, that an aircraft which is projected to encounter an ash cloud will be provided with the most desirable route to avoid the cloud. Other considerations have to be taken into account such as existing traffic levels on other routes and the amount of fuel reserve available for flights which may have to be diverted to other routes to allow for the affected aircraft to divert.

The NOTAM for volcanic activity (and the ASHTAM) provides information on the status of activity of a volcano when a change in its activity is, or is expected to be, of operational significance. They are issued by the ACC through the respective international NOTAM office based on the information received from any one of the observing sources and/or advisory information provided by the associated VAAC. In addition to providing the status of activity of a volcano, the NOTAM (or ASHTAM) also provides information on the location, extent and movement of the ash cloud and the air routes and flight levels affected. The NOTAM can also be used to close the airspace affected by the volcanic ash cloud. Complete guidance on the issuance of the NOTAM (and ASHTAM) is provided in Annex 15 — *Aeronautical Information Services*.

Included in Annex 15 is a volcano level of activity colour code chart. The colour code chart alert may be used to provide information on the status of the volcano, with "red" being the most severe, i.e. volcanic eruption in progress with an ash column/cloud reported above flight level 250, and "green" at the other extreme being volcanic activity considered to have ceased and volcano reverted to its normal pre-eruption state. It is very important that NOTAM for volcanic ash (and ASHTAM) be cancelled as soon as the volcano has reverted to its normal pre-eruption status, no further eruptions are expected by vulcanologists and no ash cloud is detectable or reported from the FIR concerned.

It is essential that the procedures which the ACC personnel should follow during a volcanic eruption/ash cloud event described in the foregoing paragraphs are translated into the local staff instructions (adjusted as necessary to take account of local circumstances). It is also essential that these procedures/instructions form part of the basic training for all air traffic services personnel whose jobs would require them to take action in accordance with the procedures. Background information to assist the ACC or Flight Information Centre (FIC) in maintaining an awareness of the status of activity of volcanoes in their FIR(s) is provided in the monthly Scientific Event Alert Network Bulletin published by the U.S. Smithsonian Institution and sent free of charge to ACCs/FICs requesting it.

Agenda Item 3:   CNS Developments

> **3.1   Follow-up on the Status of the Eastern Caribbean (E/CAR) Aeronautical Fixed Service (AFS) and MEVA II Digital Networks and their Related Inter and Intra-Regional Interconnection/Integration**

3.1.1   The Meeting recalled that implementation by States, Territories and International Organizations of digital communication networks at regional and sub-regional levels has been progressive through cooperation agreements aimed at improving quality and availability of voice communication circuits and AFS as well as facilitating the introduction of ATN and its applications in an evolutionary manner. Likewise, improvement and optimization of these networks have been handled in a coordinated approach bearing in mind new operational requirements and air traffic growth in the region.

3.1.2   The use of digital networks, both in the implementation of new networks and updating of existing ones, must consider the use of technology available in the industry, offering greater efficiency and providing the desired services with the required performance and interoperability to keep adequate safety levels at minimum cost, as expressed in GPI-22 of the Global Air Navigation Plan – *Communication Network Infrastructure*.

Development and Interconnection of the MEVA II VSAT Network

3.1.3   The Meeting was informed that after the first year of the MEVA Network upgrade, the results achieved were found highly satisfactory in accordance with the last Meeting of the MEVA II Technical Management Team (MEVA TMG/19). In addition, the Meeting took note that the MEVA TMG/19 identified aspects to improve MEVA II Network performance; training has been provided to the users, a contingency plan has been developed and future services were discussed.

3.1.4   The Meeting was informed that during the MEVA II / REDDIG Coordination Meeting (MR/6), the Action Plan for the Implementation of MEVA II and REDDIG Interconnection was updated setting February 2009 as a deadline, which is included in **Appendix A** to this part of the report. Progress was also made with the aspects to be considered in the forthcoming integration phase of both networks.

Development and Interconnection of the E/CAR Digital Network

3.1.5   The Meeting took note that the current E/CAR network is in the process of being reviewed and analyzed for improvements by its members, as informed at the CAR/WG/1 Meeting, the 21st Meeting of Directors of Civil Aviation of the E/CAR (21st E/CAR DCA) and the Technical Meeting carried out between the Civil Aviation Authority of Trinidad and Tobago and the United States Federal Aviation Administration (San Juan, Puerto Rico, 12-13 March 2008).

3.2 **Follow-up on the Action Plan for the Implementation of Voice and Data Air-Ground Communication**

3.3 **Follow-up Activities for the Implementation of Ground-Ground Communications**

Regional Implementation Plans for Air-ground Datalinks and Air-ground Communications

3.2.1 The Meeting was reminded that regional plans for ground-ground and air-ground communications are described in different plans within the CAR/SAM Air Navigation Plan Doc 8733, Vol. II – FASID. The Meeting took note that in the proposal for amendment to the FASID (IP/10) sent to States, several of these plans were updated, such as the *Aeronautical Mobile Service and AMSS* (Table CNS 2A), the *AFTN Plan* (Table CNS 1A), the ATS Direct Speech Circuits Plan (Table CNS 1C), and the *CAR/SAM Regional Plan of Ground-Ground Applications* (Table CNS 1Bb).

3.2.2 Based on the update of the Aeronautical Mobile Service Plan and AMSS, and in accordance with the agreements made by the CAR/WG/1, the Meeting anticipated that the air-ground data links would be implemented after 2015.

3.2.3 The Meeting was informed by the Rapporteur of the ATN Task Force of the GREPECAS ATM/CNS Subgroup CNS Committee about the forthcoming meeting in June, prior to the ATM/CNS Subgroup, where several aspects regarding the AMHS implementation will be addressed, including the transition from IPv4 to IPv6 and the updating of the *CAR/SAM regional Plan of ATN routers* (Table CNS 1Ba). In addition, the Meeting was informed that the CAR/SAM Regional Plan of air-ground applications (Table CNS 1Bc) would be completed at a later date.

3.2.4 The United States provided information regarding the upgrade proposal for AFTN interface with Venezuela, and that an agreement is in the process of being arranged between both parties.

3.2.5 As part of the regional planning for the AMHS system implementation in the region, the Meeting reviewed and took note of the ICAO registry for the addresses and management domain identifiers that will be used in the air traffic services message handling system (ATSMHS), which are based on the guidelines and instructions sent by the Secretary General State Letter Ref. SP 54/1-03/39, dated 30 May 2003. The current information contained in this record, relevant to the NAM/CAR Region Administrations, is presented in Appendix C to WP/13 of this Meeting.

Considerations and References for the Action Plan Required to Implement Voice and Data Ground-Air and Ground-Ground Communications

3.2.6 The Meeting took note of the considerations and references for the Action Plan required to implement voice and data ground-air and ground-ground communications, this information is attached in **Appendix B** to this part of the report.

SARPs Development Status and ICAO Guidance Material

3.2.7 The Secretariat informed the Meeting regarding the SARPs development status and ICAO guidance material related to voice and data ground-air and ground-ground communications, the details are included in **Appendix C** to this part of the report.

AMHS National Implementation Plans

3.2.8   The Meeting updated the relevant parts of the CAR Region AMHS Implementation Plans Table recorded in the CAR/WG/1 Meeting and attached in **Appendix D** to this part of the report. Jamaica informed that their AMHS system will be implemented in August 2008.

National Action Plans for the Follow-up and Implementation of Air-Ground and Ground-Ground Communications

3.2.9   The Meeting agreed that within the proposed NAM/CAR Regional Implementation Plan prepared by this Meeting, the action plan format for the implementation of voice communications and ground-ground and air-ground data would be considered in accordance with the format recommended by the CAR/WG/1 Meeting.

3.4   Follow up to GNSS Implementation and Action Plan

Regional Plan and Regional Directives for the Implementation of Air Navigation Systems

3.4.1   The Meeting took note that the regional plan for navigation systems contained in Table CNS 3 of Doc 8733, Volume II (FASID) includes GNSS, GBAS and SBAS augmentation requirements. Likewise, based on CAR/WG/1 Conclusion 1/9, ICAO requested States, though letter Ref. EMX0102 dated 31 January 2008, to designate a point-of-contact to update Table CNS3 and provide comments and amendments.

3.4.2   Addressing GREPECAS Conclusion 14/56 – *Progressive Deactivation of NDB Stations*, the Secretariat presented, for review by the Meeting, an inventory of existing NDB equipment within the Region (Appendix to WP/15); information was obtained from:

- List No. 1 – List of Facilities operating on Frequencies in the LF/MF Band (190-1750 KHz);
- available information of Table CNS 3 of the ANP, VOL II (FASID), Doc 8733; and
- information published by States in their AIPs and other aeronautical publications.

3.4.3   Therefore, the Meeting took note that the ICAO NACC Regional Office expects to obtain information and comments related to the inventory of existing NDB equipment for the progressive deactivation of NDB stations no later than **20 June 2008**. Dominican Republic, Haiti, Jamaica and Netherlands Antilles provided some comments on inventory.

Considerations and References for the GNSS Implementation Action Plan

3.4.4   The Meeting took note of the considerations and references for the GNSS Implementation Action Plan and this information is attached in **Appendix E** to this part of the report.

Follow-up on Amendments to the New SARPs and ICAO Guidelines on GNSS

3.4.5   The Secretariat provided information regarding several amendments to the SARPs and ICAO guidelines on GNSS; the details of this information are contained in **Appendix F** to this part of the report.

3.4.6   The Meeting was also informed that within the results of the ITU-2007 World Radiocommunication Conference (WRC-2007) regarding the ICAO position, progress was achieved with ensuring the radioelectric spectrum for use in ILS and VOR frequencies and the GNSS elements operational band.

Follow-up on Studies, Trials and Results of Regional GNSS Projects, RLA/00/009 and RLA/03/902

3.4.7   The Meeting followed-up on the activities and results of regional GNSS projects - RLA/00/009 and RLA/03/902. The details of this issue are contained in **Appendix G** to this part of the report.

National Action Plan for GNSS Implementation

3.4.8   The Meeting agreed that within the NAM/CAR Regional Implementation Plan prepared by this Meeting, the format for the GNSS Implementation Action Plan would be considered in accordance with the format recommended by the CAR/WG/1 Meeting.

3.5   Review of the Planning and Implementation of Surveillance Systems and Follow-up to their Respective Action Plan(s).

Surveillance Systems Regional Implementation Plan

3.5.1   The Meeting took note of the update to the Regional Surveillance Plan contained in Table CNS 4A – *Surveillance Systems* of the FASID (Doc 8733), detailed in IP/10, as well as the CAR/SAM Regional Strategy for ADS-C and ADS-B Systems Implementation in the Short, Medium and Long-Term; the Preliminary Elements for a Regional Strategy for Surveillance Systems; and the work that has to be performed by the Surveillance Task Force of the CNS Committee for a unified regional strategy on the implementation of surveillance systems.

3.5.2   The Surveillance Task Force Rapporteur informed the Meeting about the progress accomplished with the unified regional strategy for implementation of surveillance systems and the list of activities that States/Territories/International Organizations have to consider for the implementation of ADS-B trials.

3.5.3   United States informed the Meeting of the benefits from future use of ADS-B, and that they can assist CAR/SAM States by providing both technical expertise and a contract vehicle for procuring turn-key surveillance services. Interested CAR/SAM States should contact the FAA Office of International Aviation, Western Hemisphere Division, via letter, fax, or e-mail to express interest in participating in the data collection effort. Additionally, interested CAR/SAM States should identify point-of-contact information to begin necessary discussions to enter into a bilateral agreement with the FAA.

3.5.4   Based on the study performed by Trinidad and Tobago, and considering that they are in the midst of an ATM/CNS Modernization Project, which initially involves the sharing of radar data from the French Antilles and Barbados and the processing of data from the following sources/sensors PSR/SSR/MSSR/ADS-B/ADS-C/TIS-B and MLAT, it is envisaged:

i.   that surveillance within the Piarco FIR will be best served through the use of radar;

ii.   MLAT, based on successful trials, appears to be the better option taking into consideration the traffic density, projected growth trends and fleet equipage within the Piarco FIR at this time. Surveillance within the Piarco FIR should migrate to ADS-B via MLAT and ADS-B trials should not be conducted before 2015 within the FIR; and

iii.   implementation of ADS-C should be carried out in 2010/11, when the ATM system is fully up and running.

3.5.5   Cuba informed the Meeting that they concluded the ADS-B data collection phase at the end of 2007, and are working on the development of their surveillance systems in order to have a capable radar system that guarantees control of their airspace based on radar data until the year 2018, while simultaneously preparing the infrastructure needed for the assimilation of new surveillance systems based on ADS-B.

3.5.6   COCESNA informed the Meeting of their ADS-B data collection activities, as well as the current capabilities in the CENAMER Control Centre for ADS-C and CPDLC functionalities.

3.5.7   The Meeting was informed that GREPECAS would provide information and guidance to States in order to standardize the 24 bit address assignment registry for the identification of aircraft with Mode S transponder.

Considerations and References for the Surveillance Systems Implementation Action Plan

3.5.8   The Meeting took note of the considerations and references for the Surveillance Systems Implementation Action Plan, which is attached in **Appendix H** to this part of the report.

ICAO SARPs and Guidance Material Development Status

3.5.9   The Secretariat informed the Meeting regarding the ICAO SARPs and guidance material status; this information is included in **Appendix I** to this part of the report.

National Action Plans for Follow-up and Implementation of Surveillance Systems

3.5.10　　　　The Meeting agreed that within the proposed NAM/CAR Regional Implementation Plan, the format for implementation of surveillance system action plans would be the format recommended by the CAR/WG/1 Meeting.

Surveillance Data Exchange and Sharing

3.6.1　　　　The Meeting noted the coverage of current radar systems operating in the region illustrated in Appendices A, B and C to WP/17.　The Meeting was informed of radar data sharing activities being carried out by States/Territories/International Organizations:

- Mexico and COCESNA have signed a technical co-operation agreement for radar data exchange, especially the Belize and Cancun radar systems.　Likewise, information was received on radar data sharing coordination carried out between Cayman Islands and COCESNA as part of the existing co-operation agreement between both administrations.
- Data sharing between Bahamas, Bermuda, Canada and United States.
- Radar data exchange in Central America among the States and COCESNA: Niktun (Guatemala) radar, Managua and Bluefields (Nicaragua) radar, Monte Crudo (Honduras) radar and Mata de Caña (Costa Rica) radar, as well as radar data sharing for operational use (radar data from Monte Crudo at the Toncontin Airport in Honduras and radar data from Mata de Caña at the Juan Santa Maria airport in Costa Rica).
- Radar data sharing between COCESNA and Cayman Islands, as well as between COCESNA (Puerto Cabezas radar) and Panama.
- The beginning of a project for the exchange of radar data between Cuba, Jamaica and COCESNA.
- Coordination for radar data exchange between Trinidad and Tobago and French Antilles and Barbados.
- The modernization of the radar system installed in San Jose, Costa Rica.

Considerations for Surveillance Data Sharing and Exchange

3.6.2　　　　The Meeting noted the considerations for exchange and sharing of surveillance data; information is included in **Appendix J** to this part of the report.

3.6.3　　　　The Meeting considered the following information useful for achieving and facilitating radar data exchange:

- Spain's experience on radar data sharing with its neighbouring countries through the Joint AEFMP Plan, including considerations and relevant aspects to be taken into account regarding these activities, and a generic sample letter of agreement (IP/03).

- the considerations and experience of the United States regarding radar data sharing, including cost effective benefits for involved States and the establishment of bilateral agreements, which take time to develop and negotiate but clearly define each State's responsibilities. Likewise, information was provided on additional effort required during integration testing and certification; States were encouraged to work together to overcome obstacles.

- the current evolution status of the ASTERIX protocol administered by EUROCONTROL, including categories for handling radar data and ADS-B and multilateration data.

3.6.4   Based on radar coverage and the information provided during the Meeting, the participants identified several radar data sharing arrangements that could be carried out including Dominican Republic with Haiti, Colombia/Venezuela with Netherlands Antilles, among others.

3.6.5   Likewise, the Meeting noted the existence of communication means and capabilities for this radar data exchange through the regional digital networks.

Systems Automation

3.6.6   Currently, several CAR Region States/Territories/International Organizations have achieved significant progress with ATM automation, including considerable processing capacity and several available automated functionalities, which together with surveillance data sharing would result in operational safety and efficiency benefits, airspace optimization and mutual backup between adjacent ATS units, significantly improving airspace management harmonization.

ADS-B Data Sharing

3.6.7   The Meeting was informed that other regions have experience with both radar data and ADS-B data surveillance data sharing as is the case of Australia and Singapore, who have developed a letter of agreement sample (Appendix D to WP/17); the Meeting will take into consideration this information for ADS-B related activities.

3.7   Other Communications Matters

Results of the ITU World Radiocommunication Conference (2007) (WRC-07) and ICAO Initial Position for WRC-2011

3.7.1   Under this agenda item, the Meeting took note of the satisfactory results accomplished at the WRC-2007 regarding the ICAO position. The description of these results is included in WP/18 of this Meeting. Likewise, the Meeting was informed that ICAO, through its Aeronautical Communications Panel (ACP), is working on the preparation of aspects and considerations for the forthcoming WRC-2011 Meeting, urging States/Territories/International Organizations to support and take action once the position for WRC-2011 is informed.

Radio Frequency Assignment Lists for the CAR Region

3.7.2   The Meeting took note that efficient management of the aeronautical radio-frequency spectrum is essential to guarantee control and protection of the spectrum and to adequately meet the demand created by the development of ATM/CNS systems resulting from the growth of civil aviation and its increased safety, regularity and efficiency. In this regard, there is a need to improve the coordination and implementation of regional and national procedures in order for the national telecommunications authorities to assign the most suitable frequencies for communications and air navigation stations, along with other adequate measures.

3.7.3   In this sense, the Secretariat informed about the update of the following radio frequency lists, *List Nº 1 – List of Facilities Operating on Frequencies in the LF/MF Band (190-1750 kHz); List Nº 2 – Record of VHF Frequency Assignments to Caribbean VOR and ILS Radio Navigation Aids;* and *List Nº 3 – Record of VHF Frequency Assignments in the Band 117.975-137.000 MHz.* The lists are available for reference on the ICAO NACC Office website (http://www.icao.int/nacc/) under the *Radio Frequency Assignment Lists* link. The Meeting agreed to notify the NACC Regional Office of any discrepancies and update or confirm the information contained in the lists before **20 June 2008**.

Proposal for Amendment to the ICAO CAR/SAM Air Navigation Plan (Doc 8733), Volume II - Facilities and Services Implementation Document (FASID) – CAR Region

3.7.4   The Secretariat provided the Meeting with the scope and considerations of the Proposal for Amendment to the ICAO CAR/SAM Air Navigation Plan (Doc 8733), Vol. II.

APPENDIX A

UPDATED ACTION PLAN FOR IMPLEMENTATION OF MEVA II AND REDDIG INTERCONNECTIONS
PLAN DE ACCIÓN ACTUALIZADO PARA LA IMPLANTACIÓN DE LAS INTERCONEXIONES MEVA II Y REDDIG

Date/Fecha: April/Abril 2008

Item No.	Action / Acción	Responsible / Responsable	Completion Date / Fecha de Finalización	Status- Encountered Difficulties / Estado-Dificultades encontradas
1	2	3	4	5
1	RFP Completion/Finalización del RFP	COCESNA	30-Apr-07	Completed / Finalizado
2	Required connections: / Conexiones requeridas: Aruba COCESNA Ecuador Colombia Peru Venezuela Brazil / Brasil Panama United States / Estados Unidos Jamaica Curaçao / Curazao	MEVA II Service Provider and REDDIG Administration / Proveedor Servicio MEVA II y Administración REDDIG	30-Apr-07 / 30-Abr-07	Completed / Finalizado
3	Identification of Current Equipment / Identificación de Equipo Actual	MEVA II Service Provider and REDDIG Administration / Proveedor Servicio MEVA II y Administración REDDIG	28 Sep-07	Completed / Finalizado
4	Completion of SLA / Finalización de SLA	MEVA II Service Provider and REDDIG Administrator / Proveedor Servicio MEVA II y Administración REDDIG	30 Nov07	Valid/Valido Is part of the Service Contract/Es parte del Contrato de Servicio
5	Review of RFP / Revisión de RFP	MEVA II and REDDIG Members / Miembros MEVA II y REDDIG	29 June -07/ 29 Junio 07	The RFP was reviewed and approved by all MEVA II / REDDIG Member Administrations. / El RFP fue revisado y aprobado por todas las Administraciones miembros de las redes MEVA II y REDDIG.
6	Proposals response / Respuesta de propuestas	MEVA II Service Provider and REDDIG Administration / Proveedor Servicio MEVA II y Administración REDDIG	26 Sep.-07	The response for the RFP from the MEVA II Service Provider and REDDIG Administration was presented at the MR/5 Meeting/ Las respuestas al RFP por parte del Proveedor de Servicio MEVA II y la Administración de la REDDIG se presentó en la Reunión MR/5.

Item No.	Action / Acción		Responsible / Responsable	Completion Date / Fecha de Finalización	Status- Encountered Difficulties / Estado-Dificultades encontradas
1	2		3	4	5
7	Proposals review / Revisión de propuestas		Coordination meeting / Reunión de coordinación	5 Oct.-07	The proposal was reviewed in the MR/5 Meeting. / La propuesta se revisó en la Reunión MR/5
8	Focal Point nomination / Nombramiento Punto Focal	Send a letter to MEVA II / REDDIG Member Administrations / Envio carta a las Administraciones miembros de las redes MEVA II y REDDIG.	ICAO Regional Offices / Oficinas Regionales OACI	15 Oct. 07	The ICAO Regional Offices sent to the States/Organization involved in the MEVAII REDDIG interconnection a letter in order to nominate focal points. Las oficinas regionales de la OACI enviaron una carta invitando los Estados/Organización involucrados en la interconexión la nominación de puntos focales.
		Focal point designation/ Designación punto focal	MEVA II and REDDIG Members involved / Miembros de MEVA II y REDDIG involucrados	30-Oct-07	All the States/Organization members of MEVA II and REDDIG network involved in the interconnection nominated focal points. Todos los Estados/Organización miembros de la REDDIG y MEVA II involucrados en la interconexión nominaron puntos focales
9	Implementation of revised MoU / Aplicación del MoU revisado		MEVA II / REDDIG Member Administrations / Administraciones miembros de las redes MEVA II y REDDIG	30-Oct-07	The ICAO Regional Offices sent to the States/Organization of MEVA II and REDDIG network in order to sign the revised MoU.
10	Review and acceptance of equipment costs for the MEVA II / REDDIG interconnection by the REDDIG Member Administrations / Revisión y aceptación por parte de las Administraciones Miembros de la REDDIG sobre costo de equipamiento para la interconexión MEVA II / REDDIG		All the REDDIG Member States / Todos Estados miembros de REDDIG	30 Oct-07	No comments were received No se recibieron comentarios al respecto
11	Review and acceptance of equipment costs for the MEVA II / REDDIG interconnection by the MEVA II Member Administrations involved / Revisión y aceptación por parte de las Administraciones Miembros de la MEVA II involucradas sobre costo de equipamiento para la interconexión MEVA II / REDDIG		Aruba, Curaçao, Jamaica, Panama, USA (Miami and Puerto Rico) and COCESNA / Aruba, Curaçao, Jamaica Panamá, USA (Miami y Puerto Rico) y COCESNA	30 Oct -07	No comments were received No se recibieron comentarios al respecto

TBD = To be determined

Item No.	Action / Acción	Responsible / Responsable	Completion Date / Fecha de Finalización	Status- Encountered Difficulties / Estado-Dificultades encontradas
1	2	3	4	5
12	Review and acceptance of proposed recurrent costs for the MEVA II / REDDIG interconnection/ Revisión y aprobación costos recurrentes propuestos para la interconexión MEVA II REDDIG	MEVA II/ REDDIG Member Administrations involved / Administraciones Miembros de la MEVA II y REDDIG involucradas	30 Oct- 07	No comments were received No se recibieron comentarios al respecto
13	Revised MoU Signature / Firma del MoU Revisado	MEVA II and REDDIG Members / Miembros MEVA II y REDDIG	30 Nov 07	The following States sent the MoU reviewed signed/Los siguientes Estados enviaron el MoU revisado firmado: Argentina, Brasil, Chile, Cuba, COCESNA, Estados Unidos, Guyana, Peru y/and Uruguay
14	Review, approval and signing of contracts or contract amendments to carry out the MEVA II / REDDIG interconnection presented by the MEVA II Service Provider / Revisión, aprobación y firma de los contratos o enmienda de los mismos para llevar a cabo la interconexión MEVA II/REDDIG presentada a través del Proveedor de Servicio de la MEVA II	MEVA II Member Administrations involved and REDDIG Administration / Administraciones Miembros de la MEVA II involucradas y Administración REDDIG	June 2008/ Junio 2008	The REDDIG members assigned REDDIG Administration the revision and signature of AGS contract. The ICAO Technical Cooperation after reviewed the AGS contract considered the necessity to separate the no recurrent and recurrent costs. The decision took long time from December 2007 to April 2008. For the adquisition of the equipment a bid is necessary and so ICAO Technical Cooperation will proceed with this process. For the services cost AGS is to modify the contract in order to include only the service costs. Los miembros de la REDDIG asignaron a la Administración de la REDDIG la revisión y firma del contrato. La Cooperación Técnica de la OACI después de revisar el contrato de AGS consideró la necesidad de separar los costos recurrentes de los no recurrentes. La decisión fue tomada después de un largo periodo de diciembre de 2007 a abril de 2008. Para la adquisición del equipo se procederá a un proceso de licitación pública y por lo cual Cooperación Técnica de la OACI procederá según este proceso. Para los costos de los servicios se consideró que AGS modificara el contrato de forma tal que incluyera solamente los costos de los servicios..

Item No.	Action / Acción	Responsible / Responsable	Completion Date / Fecha de Finalización	Status- Encountered Difficulties / Estado-Dificultades encontradas
1	2	3	4	5
15	To ensure that all MEVA II and REDDIG nodes work with IS-IR Satellite, using Band C transponder with US/Latin America hemispheric beam and Co-Linear Vertical polarization / Asegurar que todos los nodos de la MEVA II y REDDIG operen en el satélite IS-1R, empleando transpondedores de banda C con haz hemisférico US/Latin America y polarización co-lineal vertical.	MEVA II Service Provider and REDDIG Administration/ Proveedor Servicio MEVA II/Administración REDDIG	June 08/ Junio 08	No change of polarity was executed. AGS is will proceed upon the signature of the contract for this interconnection. No se ha efectuado todavía el cambio de polaridad. AGS procederá cuando se firme el contracto para esta interconexión.
16	Equipment and spare parts acquisition for MEVA II/REDDIG interconnection/ Adquisición de equipamiento y repuestos para la interconexión MEVA II / REDDIG.	REDDIG Administration and MEVA II involved Member Administrations / Administración de la REDDIG y Administraciones Miembros de la MEVA II involucradas	End of July 08/Fin de julio 08	The ICAO Technical Cooperation informed that the bid process for the acquisition of equipments through a bid process will take a duration of approximately two months. La Cooperación Técnica de la OACI informó que el proceso de licitación para la adquisición de los equipos durara dos meses aproximadamente.
17	Site survey for Bogota, Caracas and COCESNA, / Inspección sitio para Bogota, Caracas and COCESNA,	MEVA II Service Provider and REDDIG Administration / Proveedor MEVA II y Administración REDDIG	End of July 08/Fin de Julio 08	Site survey is considered as part of the services to be provided. El estudio de sitio se considera parte de los servicios a ser provistos.
18	Site preparation for equipment installation for MEVA II / REDDIG interconnection / Preparación de los sitios para albergar equipamiento para la interconexión MEVA II / REDDIG	Colombia, Venezuela and/y COCESNA	Aug08/Ago08	
19	Delivery of purchased equipment at the required sites. / Entrega de equipamiento adquirido en los sitios requeridos	MEVA II Service Provider and REDDIG Administration / Proveedor de Servicio MEVA II y Administración REDDIG	Sep08	
20	Equipment installation / Instalación equipamiento	MEVA II Service Provider and REDDIG Administration / Proveedor de Servicio MEVA II y Administración REDDIG	Oct08	
21	Satellite line-up, configuration of site equipment and NCC for the interconnection/ Line-up satelital, configuración equipamiento en sitio y NCC para interconexión	MEVA II Service Provider and REDDIG Administration / Proveedor de Servicio MEVA II y Administración REDDIG	Oct08	

TBD = To be determined

Item No.	Action / Acción	Responsible / Responsable	Completion Date / Fecha de Finalización	Status- Encountered Difficulties / Estado-Dificultades encontradas
1	2	3	4	5
22	End-to-end trials for voice and data circuits / Pruebas de extremos a extremos para los circuitos de voz y datos	MEVAII Service Provider and REDDIG Administration / Proveedor de Servicio MEVA II y Administración REDDIG	Nov 08	
23	System Performance Evaluation / Evaluación de la performance del sistema	MEVA II Service Provider and REDDIG Administration / Proveedor de Servicio MEVA II y Administración REDDIG	Dec08/Dic08	
24	Service acceptance / Aceptación de los servicios /	MEVA II / REDDIG Member Administrations / Administraciones miembros de las redes MEVA II y REDDIG	Jan09/Ene09	
25	MEVA II / REDDIG Interconnection Implementation / Implantación de la interconexión MEVA II / REDDIG	MEVA II / REDDIG Member Administrations, MEVA II Service Provider and REDDIG Administrator / Administraciones miembros de las redes MEVA II y REDDIG, Proveedor Servicio MEVA II y Administración REDDIG	Feb09	

APPENDIX B

**CONSIDERATIONS AND REFERENCES FOR THE ACTION PLAN REQUIRED TO
IMPLEMENT VOICE AND DATA GROUND-AIR AND GROUND-GROUND
COMMUNICATIONS**

1.   GREPECAS Conclusion 12/32 – *ADS-B Implementation in the CAR/SAM Regions* urged to improve routing lists of the AFTN network in the CAR/SAM Regions.

2.   GREPECAS Conclusion 13/71 – *Update and Implementation of the VHF, HF and Satellite Voice Communication of the AMS and AMSS Plan*, urged Aeronautical Administrations to support the implementation of improvement and mitigation plans for the VHF and HF/SMA coverage and implement satellite voice communications.

3.   GREPECAS Conclusion 13/72 – *Regional Strategy for Updating Evolutionary Implementation of the Air-Ground Data Links Plan*, adopted the regional strategy for the updating and implementation of the air-ground data links, formed by an activities plan and an implementation programme.

4.   GREPECAS Conclusion 13/79 – *Development of National Plans to Prioritize the AMHS and AIDC Implementation and Contribute to ATM Automation*, urged Aeronautical Administrations to develop these national plans.

5.   Global Plan Initiative (Doc 9750) GPI-17 – *Implementation of Data Link Applications*, promotes the use of data link applications. To this regard, the GREPECAS/14 Meeting took note that the regional strategy adopted in Conclusion 13/72 is harmonised with this initiative.

6.   Plan Initiative (Doc 9750) GPI-22 – *Communication Network Infrastructure*, offers the strategy for the evolution of the infrastructure of mobile and fixed aeronautical communications, that can be applied to voice and data communications, to adapt new functions and provide proper capacity and service quality to comply with ATM requirements.

7.   Reference documentation for the AMHS system, the ATN network and the ATSMHS is contained in:

- Annex 10, Vol. III, Chapter 3, General description of the AMHS system and the ATSMHS service;
- Doc 9705 – Manual of Technical Provisions for the Aeronautical Telecommunication Network (ATN);
- Doc 9739 – Comprehensive Aeronautical Telecommunication Network (ATN) Manual;
- Doc 9880 – Manual on Detailed Technical Specifications of the ATN/OSI (to be published); and
- Doc 9896 – Manual for the ATN using IPS standards and protocols.

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APPENDIX C

SARPS DEVELOPMENT STATUS AND ICAO GUIDANCE MATERIAL

1.　　　　Amendment 83 to Annex 10 – *Aeronautical Telecommunications*, Vol. III, Parts I and III, applicable on 20 November 2008, introduces the Internet Protocol Suite (IPS) technology in the aeronautical telecommunications network (ATN) and the new dispositions for the displaced carrier in 8,33 kHz environment of a double sideband amplitude modulation (DSB-AM) of very high frequency (VHF).

2.　　　　The ICAO Aeronautical Communications Panel (ACP) reviews and updates SARPs and other guidance material for the implementation of improvements and future communications systems through its different working groups.

3.　　　　The Internet Protocol Suite Working Group (ACP/WG/I) is the team responsible for the development of Doc 9896 – Manual for the ATN using IPS standards and protocols. The **Attachment** to this Appendix presents a presentation with the progress in the development of this document.

4.　　　　The Sixth Meeting of the ACP/WG/I, held in Montreal from 17 to 20 March 2008, worked on version No. 13f of Doc 9896, which included and updated several sections of the document, including information for the transition from IPv4 to IPv6. Within the considerations dealt by this meeting the following stand out:

- coordination with IANA for the IPv6 addressing space and autonomous numbering systems:
- updating of the IP Dialog Service for its inclusion in the support section for the application of Doc 9896;
- considerations for the guidance material on mobility and safety;
- ATN IPS (CoS) type of service definition to be applied when entering the network and to be integrated in Part I of the Manual;
- considerations for the guidance material on OLDI/FMTP implementation to habilitate AIDC services, to be included in Part III;
- the consideration of the Mobile IPv6 as a convergence level for mobile nodes;
- the inclusion of guidance material to document the flexibility of service providers (PMIP, Level 23), the global mobility options different to MIP, the evolution of mobile nodes through IETF Mobile IPv6 extensions, among other issues; and
- the adoption of Mobile IPv6 for air-ground mobility.

As part of the future work of the Group, the following material will be developed for Doc 9896: ATN/IPS requirements for VoIP and Mobility; ATN/IPS Requirements in detailed Technical Specifications; ATN/IPS Guidance Material, ATN/IPS Addressing Plan, ATN/IPS Safety Material; ATN/IPS adaptations for ATN applications.

5.　　　　To obtain more details on this progress, it is recommended to visit the ACP website: http://www.icao.int/anb/panels/acp/.

6.   The GREPECAS/14 Meeting took note that the goal is the use of Internet Protocol Version 6 (IPv6) as a network protocol for AMHS applications. However, as a result of a recent analysis made by the Third Meeting of the ATN Task Force of the CNS Committee, held in Miami, United States, from 21 to 23 March 2007, a preliminary approach for the IP Implementation in the CAR/SAM Regions was prepared.

— — — — — — — — — — —

ICAO ATN/IPS Standardization (Internet Protocol Suite)

Current Status

Loftur Jónasson
Secretary Aeronautical Communications Panel (ACP)
ICAO ANB/CNS

4/2/2008   1

Outline

➢ **Current Work program**

➢ **Present and planned documents**

➢ **ICAO ATN/IPS Doc 9896**

➢ **Impact on current and future AMHS implementations**

4/2/2008   2
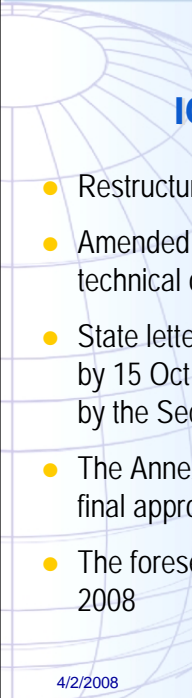
Current Work Program
ICAO Changes …

- From 36th Session ICAO Assembly;

  - "Change towards developing performance based SARPs"

  - "give more strength to outside Standards-making organizations and utilizing their work within the ICAO framework, thus avoiding duplication of work"

  - "to reduce the overall activity of panels and to refocus the Secretariat more on implementation of Standards and less on Standards-making"

- From ICAO Secretariat

  - Review of the work program by the ANC of all Panels. Beginning this year, work will need to demonstrate a direct linkage to a result area in the approved budget.

  - New work activities will need to be proposed using the Air Navigation program issue form and process agreed by the Air Navigation Commission (ANC)

4/2/2008   3
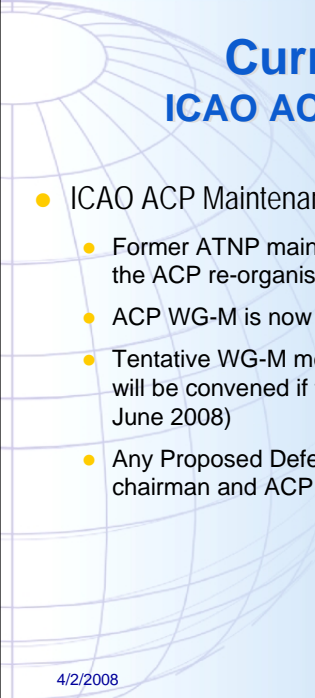
Current Work Program
ICAO Annex 10, Volume III, Part 1

- Restructured to become more high-level

- Amended version accepted last May at ACP/1; it introduces two technical options for ATN deployment: "ATN/OSI" and "ATN/IPS"

- State letter from ICAO invited comments on the proposed amendments by 15 Oct 2007. Responses to the comments have been consolidated by the Secretariat and have been agreed to by the ANC

- The Annex 10 amendment proposal will be submitted to the Council for final approval in March 2008

- The foreseen applicability date of the amended Annex 10 is November 2008

4/2/2008   4
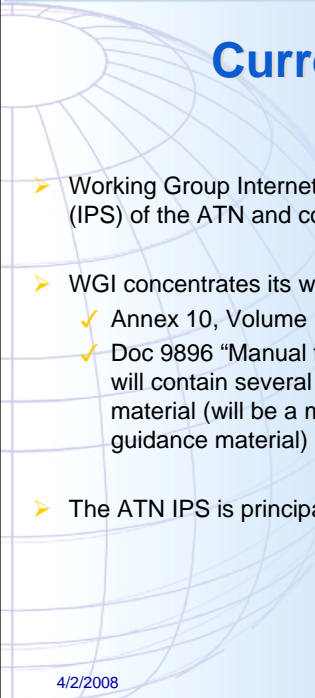
Current Work Program
ICAO ACP WG Maintenance (WG-M)

- ICAO ACP Maintenance Procedures
  - Former ATNP maintenance procedures are no longer applicable since the ACP re-organisation
  - ACP WG-M is now responsible for maintenance
  - Tentative WG-M meetings are scheduled once a year and the meeting will be convened if there are issue to address (next tentative date is June 2008)
  - Any Proposed Defect Reports (PDRs) are to be forwarded to WG-M chairman and ACP Secretary

4/2/2008

5

Current Work Program
WG-I Scope

- Working Group Internet (WG-I) is tasked to define the Internet Protocol Suite (IPS) of the ATN and conclude by November 2008

- WGI concentrates its work on the following document set:
  - ✓ Annex 10, Volume III, Part 1
  - ✓ Doc 9896 "Manual for the ATN using IPS standards and protocols" which will contain several parts covering technical provisions and guidance material (will be a merge of current drafts of ATN/IPS manual and guidance material)

- The ATN IPS is principally driven by de-facto IP industry standards

4/2/2008

6

Present and Planned Documents
Status of current ICAO ATN/OSI Documents
Doc 9705, Doc 9880 & Doc 9739

- Document 9705 (ATN/OSI Manual): instead of releasing Edition 4, Document 9880 is being prepared
  - Part I Air-ground applications (CM/PM-CPDLC) => *has been approved, pending publication*
  - Part II Ground-ground applications
    - Part IIA (AIDC) => *has been approved, pending publication*
    - Part IIB (ATSMHS) => *has been approved, pending publication*
    - Part III (ULCS) => *not yet approved, work in progress*
- Further migration of Doc 9705 Edition 3 content to Doc 9880 has been suspended temporarily due to lack of ICAO resources
- Doc 9739 (ATN/OSI Guidance Material): Unlikely that Edition 2 (available on old ATNP website) will ever be published

4/2/2008   7

Present and planned documents
Coexistence of the ATN/OSI and ATN/IPS

- ICAO Reference Documents
  - ✓ Annex 10 SARPS will introduce ATN/IPS in parallel to ATN/OSI
  - ✓ Doc 9705 Edition 3 (+ PDRs) is still applicable but will eventually be superseded by Doc 9880 Part IIB
  - ✓ Doc 9896 (ATN/IPS) will have provisions for ATSMHS over TCP/IP while specifying an IPv6 network service

- External Reference Documents
  - ✓ Mature Standards referenced rather than developing our own
  - ✓ RFCs developed by the Internet Society (ISOC) Internet Engineering Task Force (IETF) are referenced in the new Annex 10 amendment and Doc 9896 as appropriate.
  - ✓ EUROCAE and RTCA documents may also be referenced.

4/2/2008   8

ICAO ATN/IPS Doc 9896
"Networking"

➢ Under development in WG-I, ground networking elements are relatively stable, based on IPv6 and BGP routing

➢ Compatible with on-going IP implementations

➢ Includes:

  ➢ Networking protocols

  ✓ Provisions for mobility management

  ✓ Provisions for security (IPSec, SSL/TLS, ATN Security)

  ✓ VoIP material (references)

4/2/2008   9

ICAO ATN/IPS Doc 9896
"Applications"

● Similar to the ATN/OSI Manual Document 9705/9880, the ATN/IPS Manual Document 9896 will contain application-related provisions, especially to accommodate already existing applications:

  ● ATSMHS: RFC2126/RFC1006 (1st step), other IP native alternatives will be considered e.g. SMTP (potential 2nd step)

  ● AIDC/OSI: Too complex to migrate; no existing implementations. OLDI/FMTP is being considered as one alternative. Other alternatives may be used as well.

  ● A/G applications: Re-direction of Dialogue Service invocations to a TCP interface is being considered

  ● CM: Will involve changes, assess alternatives in IP environment

  ● ULCS: Support within the ATN/IPS may not be required

● New applications developed at a later stage to utilize the ATN/IPS, may be accommodated individually, in Doc 9896, or in other Documents which reference the ATN/IPS SARPs

4/2/2008   10

ICAO ATN/IPS Doc 9896
"Guidance Material"

- ATN/IPS Input – Guidance Material
  - Connection oriented and connectionless transmission
  - Transport layer addressing
  - Multicast services for surveillance
  - AS numbering and addressing schemes
  - IPv4/IPv6 migrations and translation
  - Inter-domain routing
  - Quality of Service (QoS) management
  - …

4/2/2008   11

Impact on current and future AMHS implementations

A dual stack implementation is envisaged to support both ATN/OSI and ATN/IPS when necessary

AMHS Application (Message Transfer Agent)	
Presentation Layer	
Session Layer	
TP4	TP0
	RFC2126
	TCP
CLNP	IPv6

AMHS over
ATN/OSI

AMHS over
ATN/IPS

4/2/2008   12

Impact on current and future AMHS implementations

AMHS implementations over IPv4 and IPv6 are interoperable

AMHS over IPv6
(using RFC1006)
consisting of

=

AMHS over IPv6
(using RFC2126)

AMHS over IPv4   &   NAT-PT

| AMHS Application (Message Transfer Agent) |
| Presentation Layer |
| Session Layer |
| TP0 |
| RFC1006 |
| TCP |
| IPv4 |

| NAT-PT (or SIIT or BIS) |
| IPv4 | IPv6 |

| AMHS Application (Message Transfer Agent) |
| Presentation Layer |
| Session Layer |
| TP0 |
| RFC2126 |
| TCP |
| IPv6 |

4/2/2008   13

Impact on current and future AMHS implementations

➢ Industry support for the IPS is guaranteed for the foreseeable future

➢ Support for the ISO/OSI stack is dwindling, and costs are increasing. The Telecom Industry has largely dropped the X.25/X.400 based services in favour of TCP/IP

4/2/2008   14

Impact on current and future AMHS implementations

- The ACP WG-I is developing ICAO material which will enable implementation of the ATN, solely based on the IPS. The WG-I recommends that to the extent possible, implementation of ATN/IPS material should be promoted

- The ICAO NAM, CAR/SAM and NAT/EUR regions have opted for implementing the AMHS, using the IPS

- In the AFI region there are plans for dual stack solutions

- It has been suggested that the MID region may even delay implementation of the AMHS and go directly to SMTP over IPS, a possible alternative to the AMHS

- Ongoing discussions within ICAO on whether to adopt a native IPS "industry standard" type solution as an alternative to AMHS, for instance using SMTP

15

Impact on current and future AMHS implementations

- The figure below is from an information paper presented by China to the APANPIRG ATNICG/1, in May 2006

- Trends already indicate that the end state will most likely be SMTP over IPS
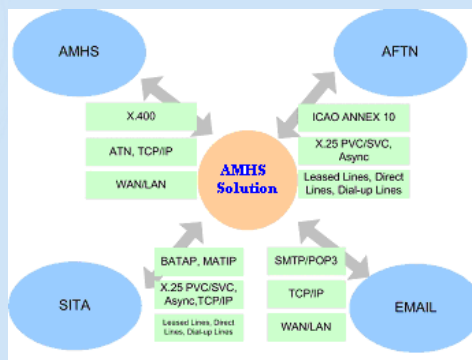
4/2/2008

16

APPENDIX D

AMHS IMPLEMENTATION PLANS IN THE CAR REGION

AMHS Implementation Plans in the CAR Region	
Date	**Administration**
Implemented	COCESNA and Central American States
2007	Atlanta (United States) and Puerto Rico
2008	Dominican Republic and Jamaica
2009	Cuba, Haiti, Trinidad and Tobago and others

— — — — — — — — — — — —

APPENDIX E

CONSIDERATIONS AND REFERENCES OF THE ACTION PLAN FOR GNSS IMPLEMENTATION

1.   The Eleventh Air Navigation Conference (AN-Conf/11), *Recommendation 6/1 - Transition to satellite-based air navigation* urged ICAO to continue developing, as necessary, provisions that would support seamless GNSS guidance for all phases of flight and that air navigation service providers, in agreement with airspace users, quickly adopt measures to achieve, , worldwide navigation capability to at least APV performance; and that States and airspace users take note of the available and upcoming SBAS navigation services providing for APV operations and take necessary steps towards installation and certification of SBAS capable avionics.

2.   GREPECAS Conclusion 13/84 – *Studies for a CAR/SAM Regional SBAS Solution,* urged States/Territories/International Organizations to continue introducing GNSS in an evolutionary and coordinated manner according to the ICAO global plan; conduct studies for a regional SBAS solution consistent with the requirements and characteristics of the CAR/SAM Regions and apply other augmentation, taking into account that added benefits should help justify the cost of reaching the ultimate goal of migrating to GNSS and dismantling ground-based aids.

3.   GREPECAS Conclusion 13/85 – *Foster the Use of GNSS in Diverse Sectors of the States* urged States/Territories/International Organizations to foster the use of GNSS in various sectors of their respective States and disseminate the results of the studies for solution of SBAS augmentation.

4.   GREPECAS Decision 14/55 mentioned that SBAS solutions proposed for the CAR/SAM Regions should be capable of achieving at least APV I capability.

5.   GREPECAS Conclusion 14/56 – *Progressive Deactivation of NDB Stations* urged States, Territories, International Organizations and airspace users to analyze the service provided by each NDB station, its function, and procedural relevance to other aids such as VOR/DME, GNSS-RNAV, as well as aircraft capability/development operating in serviced airspace aimed at developing a plan for the progressive deactivation of NDB stations without affecting safety. CAR/WG/01 Conclusion 1/8 shows this same action.

6.   Through state letter electronic distribution, Ref. EC 2/84-EB/07/14 dated 11 May 2007, ICAO published provisional policy guidelines on cost assignments for GNSS.

7.   The ICAO Global Air Navigation Plan (Doc 9750) initiative (GPI-21) – *Navigation Systems* establish strategy to enable the introduction and evolution of performance-based navigation supported by a robust navigation infrastructure providing accurate, reliable and seamless global positioning capability.

8.   At present, some guidance material for planning and gradual implementation of GNSS is available, a summary of this documentation is presented in the **Attachment** to this Appendix.

9.   CAR/WG Conclusion 1/10 – *Follow-up on GNSS Activities – Cycle 2007-2008,* urged States/Territories/International Organizations to review and begin action to continue implementation of GNSS basic services.

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ATTACHMENT TO APPENDIX E

GUIDELINES AND SUPPORT DOCUMENTS FOR THE PROGRESSIVE IMPLEMENTATION OF THE GNSS SYSTEM

1.　　　For the introduction of new GNSS navigation services, a State should evaluate navigation systems against four essential criteria: accuracy, integrity (including time-to-alert), continuity of service and availability of service. Chapter 4 of the Global Navigation Satellite System (GNSS) Manual, Doc 9849, clearly explains the provision of services with GNSS, including the performance characteristics and operational potential of GNSS augmentation systems. Chapter 5 of the mentioned Manual provides guidance on aspects related to GNSS implementation.

2.　　　PANS-OPS, Doc 8168, Volumes I and II criteria for GNSS terminal, non-precision approach and departure operations have been developed in line with avionics performance obtained with a basic GNSS receiver.

3.　　　In accordance with paragraph 3.7.2 of Annex 10, Volume I, GNSS shall use various combinations of the following elements installed on the ground, satellites and/or on board aircraft:

　　　a)　　Global Positioning System (GPS) that provides Standard Positioning Service (SPS);
　　　b)　　Global Navigation Satellite System (GLONASS) that provides the Channel of Standard Accuracy (CSA) navigation signal;
　　　c)　　aircraft-based augmentation system (ABAS);
　　　d)　　satellite-based augmentation system (SBAS);
　　　e)　　ground-based augmentation system (GBAS);
　　　f)　　ground-based regional augmentation system (GRAS); and
　　　g)　　aircraft GNSS receiver.

4.　　　Additionally, among other provisions, the Table 3.7.2.4-1 of Annex 10, Volume I, establishes the signal-in space performance requirements for the following typical operations:

　　　a)　　En-route (oceanic/continental low density)
　　　b)　　En-route (continental)
　　　c)　　En-route, Terminal
　　　d)　　Initial approach, Intermediate approach, Non-precision approach (NPA), Departure
　　　e)　　Approach operations with vertical guidance (APV-I)
　　　f)　　Approach operations with vertical guidance (APV-II)
　　　g)　　Category I precision approach

5.   The *Global Navigation Satellite System (GNSS) Manual* also provides information on the implementation aspects of GNSS in order to assist States with the introduction of GNSS operations. The Manual is therefore aimed at air navigation service providers responsible for fielding and operating GNSS elements, and at regulatory agencies responsible for approving the use of GNSS for flight operations. Additionally, it provides GNSS information to aircraft operators and manufacturers. The Manual is to be used in conjunction with the relevant provisions in Annex 10, Volume I.

6.   The *Manual on Testing of Radio Navigation Aids* Doc 8071, Volume II — *Testing of Satellite-based Radio Navigation Systems* contains guidance on testing of satellite-based radio navigation systems including in-flight inspections of the augmentation systems.

7.   Annexes 11 and 15 now contain provisions related to the GNSS.

— — — — — — — — — — — —

APPENDIX F

FOLLOW-UP ON AMENDMENTS TO THE NEW SARPS AND ICAO GUIDELINES ON GNSS

1.   Amendment 83 to Annex 10, Vol. I and Vol. III, Part I and III in its air navigation portion) introduce an update to some GNSS implementation aspects and shows evolution of current GNSS systems and equipments. Likewise, the amendment aligns the terminology of the required navigation performance (RNP) and air navigation (RNAV) with the performance-based navigation concept (PBN). This amendment will be applicable in November 2008.

2.   Likewise, a proposal for amendment to Annexes 4, 11 and 15, PANS-ABC, PANS-ATM and PANS-OPS on instrument flight procedures, published through State Letter, Ref. SP 65/4-08/05, dated 29 February 2008, is under review by States. This proposal considers issues related to GNSS:

> a)   The amendment proposal to Annex 4 gives guidance for adding publication of bearings and tracks as true values on RNAV charts and expands on the existing definition of minimum en-route altitude in order to provide benefits for users of GNSS sensors.
>
> b)   The amendment proposal to Annex 15 and the PANS-ABC expand on the existing definition of minimum en-route altitude in order to provide benefits for users of GNSS sensors.
>
> c)   The amendment proposal to PANS-OPS, Volumes I and II, addresses the following:
>
> > •   aligns the procedure design criteria for RNAV applications in PANS-OPS, Volume II with the PBN concept as detailed in the *Performance-based Navigation Manual* (Doc 9613);
> >
> > •   expands the guidance on coding requirements for SBAS and GBAS final approach segment (FAS) data block and extends the existing precision approach criteria for simultaneous approaches to parallel or near parallel runways and for procedures with glide paths above 3.5° for approach procedures with vertical guidance (APV) SBAS;
>
> *The proposed amendments to the PANS-ABC and PANS-OPS are envisaged for applicability on 20 November 2008. The proposed amendments to Annexes 4, 11, 15 and the PANS-ATM are envisaged for applicability on 19 November 2009.*

3.   Within the GREPECAS ATM/CNS Subgroup work, during the CNS/GNSS Task Force Meeting in June 2008, GNSS short, medium and long term requirements to support PBN implementation in the CAR/SAM Regions will be analyzed.

4.   The ICAO Navigation System Panel (NSP) endeavours to review and update SARPs and other guidance material for air navigation system(s) implementation and future navigation systems through its different Working Groups. At present, the Panel is processing the following issues:

a)   developments of present systems (GPS, GLONASS, GBAS and SBAS). Most of the updates are contained in Amendment 83; however, some minor changes are been evaluated;

b)   introduction of new signs for the GPS System (GPS L5) and the GLONASS System (GLONASS L3);

c)   introduction of the Galileo System;

d)   extension of SBAS use to 200 feet DH (Provisions for "LPV200"). Foreseen for Amendment No. 85; and

e)   introduction of GBAS Cat II/III landing capability.

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APPENDIX G

**FOLLOW-UP ON STUDIES, TRIALS AND RESULTS OF REGIONAL GNSS PROJECTS,
RLA/00/009 AND RLA/03/902**

1.	Project RLA/00/009 – GNSS Augmentation Trials concluded in 2006 with the publication of its final results and respective seminar, where analysis of data collected during its three year period, an analysis of the navigation requirements in the CAR/SAM Regions and options for GNSS system implementation were made known.

2.	Project RLA/03/902 – Transition to GNSS in the CAR/SAM Regions – SACCSA has completed the execution of the second phase whose main objective was "*study, develop and planning of technical, financial, operational and institutional aspects of possible alternatives for implementing a pre-operational SBAS system for the CAR/SAM Regions,"* and provide an approach and perspective on decision-making criteria for GREPECAS and States, Territories and International Organizations of the CAR/SAM Regions regarding GNSS implementation, and more precisely SBAS augmentation in the CAR/SAM Regions.

3.	Project RLA/93/902 is in the process of executing the Third Phase, whose objectives are analysis of GNSS transition, preparation of GNSS implementation in the short term, and the study and recommendation of the definition for a pre-operational SBAS system for the CAR/SAM Regions . The **Attachment** to this Appendix presents a summary of the Third Phase of the Project. The web page for project RLA/03/902 is: www.rlasaccsa.com.

4.	Under GREPECAS Conclusion 13/84, States, Territories and International Organizations are invited to participate in Project RLA/03/902.

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ATTACHMENT TO APPENDIX G

Due to budgetary limitations, this Attachment is available in Spanish only.

TERCERA FASE DEL PROYECTO RLA/03/902

De acuerdo a los resultados obtenidos en la Fase II del SACCSA, se precisa ejecutar una tercera fase (Fase III) que de continuidad a los trabajos iniciados y los complete, al objeto de establecer la viabilidad definitiva del Proyecto, tanto a nivel técnico como financiero. Esta nueva Fase deberá cubrir todos aquellos estudios y análisis que no han podido ser cubiertos en la Fase II, bien por motivos presupuestarios, bien como consecuencia de los análisis realizados y que abren las puertas a nuevos estudios que contribuyan a llegar a resultados consolidados y garantizados.

También, la FASE III de SACCSA tiene el propósito de establecer una demostración de SACCSA que permita corroborar que los supuestos y modelos definidos / desarrollados en la FASE II son válidos, permitiendo tomar a los Estados/Organizaciones de las regiones CAR/SAM la decisión final sobre la idoneidad o no de implementar el sistema, así como la forma de hacerlo. En esta decisión, intervendrían todos los Estados/Organizaciones, siendo necesario llegar a disponer de un mínimo de quórum, dado el alcance regional del estudio y la necesidad de que se llegue a concertar acuerdos entre Estados adyacentes.

Esta Fase, estudiará la viabilidad de que las regiones CAR/SAM dispongan de un sistema SBAS, que permita cubrir sus necesidades y las de sus usuarios. Dicho sistema se definirá de acuerdo a las especiales características de ambas regiones, adaptando su configuración a la distribución del espacio aéreo. Asimismo, se establecerán las bases para la gestión y operación del mismo, definiendo los órganos internacionales a ser creados para llevar a acabo dichas acciones. Por otra parte, y dado el coste que implica implantar un SBAS, se realizará un análisis exhaustivo de los recursos financieros necesarios y el modo de obtenerlos, a través de las diferentes fuentes y modalidades de crédito disponibles.

Este proyecto constatará la viabilidad de que las Regiones CAR/SAM dispongan de un sistema SBAS que permita cubrir sus necesidades y las de sus usuarios teniendo en cuenta la evolución del GNSS. Dicho sistema se definirá de acuerdo a las características propias de ambas regiones, basado en la estrategia y pautas regionales adoptados por la reunión GREPECAS/12 (Apéndice W al Informe sobre la cuestión 3 del orden del día), adaptando su configuración a la distribución del espacio aéreo y densidad del tránsito aéreo. Asimismo, se establecerán las bases para la gestión y operación del mismo, proponiendo los órganos internacionales que podrían ser creados para llevar a acabo dichas acciones. Por otra parte, y dado el coste que implica proponer la implantación de un sistema preoperacional SBAS, se realizará un análisis exhaustivo de los recursos financieros necesarios y el modo de obtenerlo, a través de las diferentes fuentes y modalidades de crédito disponibles.

Los trabajos necesarios se realizarán sobre la base de las cuestiones siguientes:

1. Transición al GNSS
2. Implantación del uso del GNSS a corto plazo
3. Red de monitorización para analizar el comportamiento ionosférico y funcionamiento de los modelos elaborados para las Regiones CAR/SAM
4. Finalización de los estudios de la fase actual, concretando las cuestiones sobre las comunicaciones, ionosfera, topología de red terrena y otras
5. Definición de actividades de soporte a la validación / certificación
6. Estudio de coste/beneficio

7. Ejecución de cursos y seminarios
8. Estudio de los emplazamientos de las instalaciones críticas: Centros de control (3), infraestructura de apoyo (1), estaciones de acceso a los GEOS (4 - 6)
9. Primeros entrenamientos sobre el sistema. Formación a alto nivel
10. Asistencia a los Estados / Organizaciones/ Instituciones para poder abordar el sistema y contactar con las entidades crediticias correspondientes
11. Analizar otras opciones complementarias en zonas de prestaciones pobres o limitadas
12. Actividades de apoyo a la futura implantación del GNSS en las Regiones CAR/SAM

Objetivos de la Fase III del Proyecto RLA/03/902

Estudiar y recomendar la definición de un sistema preoperacional SBAS para las Regiones CAR/SAM que permita a estas disponer de una señal operacional basada en el mismo. En dicha definición, se realizarán estudios de índole técnico, financiero, de gestión y de recursos humanos.

Al final de este estudio, el GREPECAS y los Estados, Territorios y las organizaciones internacionales dispondrán de los conocimientos, las herramientas, y las orientaciones necesarias sobre la implantación de un sistema preoperacional SBAS coordinado en las Regiones CAR/SAM.

Los objetivos se presentan en la tabla siguiente:

Objetivos de la Fase III del Proyecto RLA/03/902	
Resultados	**Actividades**
Volumen 1: Transición al GNSS	**A.1** Contribuir al establecimiento de la transición al GNSS y ampliar la utilización de los elementos y las capacidades actuales del GNSS mediante las tareas siguientes: ✈ Contribuciones sobre la utilización de las capacidades actuales del GNSS en RNAV / RNP/ NPA, mediante el empleo de GPS y ABAS ✈ Análisis de implantación y uso del SBAS ✈ Análisis de implantación y uso del GBAS ✈ Análisis de implantación de la navegación basada en performance (PBN)
Volumen 2: Implantación del uso del GNSS a corto plazo	**A.2** Implementación de los elementos del GNSS disponibles: ✈ Utilización del GPS/ABAS ✈ Diseño de procedimientos RNAV/RNP/NPA basados en el GNSS ✈ Formación en el diseño de procedimientos basados en la utilización del GNSS

Objetivos de la Fase III del Proyecto RLA/03/902	
Resultados	**Actividades**
Volumen 3: Red de monitorización para analizar el comportamiento ionosférico y funcionamiento de los modelos elaborados para las Regiones CAR/SAM	**A.3** Monitoreo y análisis del comportamiento ionosferico: ✈ Validación de los modelos para garantizar que si sería factible la implantación del SBAS aumentación ✈ despliegue de una red de receptores GPS bifrecuencia (L1 – L2) y que realicen medidas a 1 sg. ✈ reutilizar las estaciones de referencia del Proyecto RLA/03/009 ✈ adquisición de los receptores tipo OM4 ✈ publicación de los datos recibidos por los receptores en Internet (FTP o envío en tiempo real) ✈ procesamiento de los datos mediante un modelo UCP y publicación del mensaje en la red ✈ las correcciones resultantes podrán ser usadas por los Estados/Organizaciones, universidades, empresas y otras entidades que así lo deseen para realizar análisis de las prestaciones, desarrollar aplicaciones con vistas a cuando se disponga el SBAS, e incluso para realizar demostraciones en aplicaciones no críticas (seguridad, transporte por carreteras, control de flotas, etc).
Volumen 4: Finalización de los estudios y, concretando las cuestiones sobre las comunicaciones, ionosfera, topología de red terrena y otras	**A.4** Se ejecutarán las tareas siguientes: ✈ Análisis técnico de la solución SBAS ✈ Análisis detallado de las redes de comunicaciones disponibles en las regiones CAR/SAM en base a los datos que se proporcionen desde el punto 11. ✈ Optimización de la topología de las ERS. ✈ Completar los estudios ionosféricos. ✈ Mantenimiento del mapa interactivo. ✈ Licencias de uso de herramientas tipo "Service Volume".
Volumen 5: Definición de las actividades de soporte a la validación / certificación	**B.5** Ejecución actividades necesarias para el proceso de validación / certificación siguientes: ✈ Supervisión técnica con respecto a estándares y normativa, incluyendo documentación ✈ Verificación de los sistemas técnicos con respecto a los estándares y normativa, incluyendo documentación ✈ Definición de un modelo de desarrollo y seguimiento del Proyecto
Volumen 6: Estudio de coste/beneficio	**B.6** Realización de las actividades siguientes para el estudio de coste/beneficio: análisis coste/beneficio ✈ presentación a los Estados/Organizaciones, entidades financieras y otras ✈ identificación de las entidades financieras que puedan proporcionar los créditos para apoyar las necesidades financieras para el desarrollo del sistema ✈ determinación de las condiciones crediticias
Volumen 7: Ejecución de cursos y seminarios	**B.7** Con el propósito de capacitar al personal relacionado con la ejecución de las actividades del proyecto RLA/02/902, se prevé la realización de los cursos y seminarios siguientes: ✈ Curso de capacitación de los equipos de toma de datos ✈ Seminario sobre información detallada y el establecimiento de posibles correcciones en el desarrollo de las diferentes actividades; el cual deberá realizar a mediados del término de la ejecución de la Fase III ✈ Seminario final de la Fase III donde se presentarán los resultados de esta fase

Objetivos de la Fase III del Proyecto RLA/03/902	
Resultados	**Actividades**
Volumen 8: Estudio de los emplazamientos de las instalaciones críticas: Centros de control (3), infraestructura de apoyo (1), estaciones de acceso a los GEOS (4 - 6)	**C.8** Para seleccionar la ubicación de los emplazamientos se estudiarán los diversos aspectos, entre otros: ✈ Capacidad y relaciones internacionales del Estado que lo acoja ✈ Soporte tecnológico local y preparación del personal que lo opere ✈ Infraestructura soporte (calidad de nodos de comunicaciones, conexiones internacionales por vía aérea, facilidad de aduanas para el envío de repuestos, etc.) ✈ Aporte del edificio que lo aloje, teniendo en cuenta los estrictos criterios de seguridad y accesos restringidos que se tendrán que imponer ✈ Otros
Volumen 9: Primeros entrenamientos sobre el sistema. Formación a alto nivel	**C.9** Se realizará las actividades siguientes de formación de personal: ✈ entrenamiento sobre apoyo en el proceso de despliegue, instalación y mantenimiento de los diferentes elementos ✈ formación progresiva sobre los CPCS y SAS (este entrenamiento recaerá sobre los Estados que alojarán dichos elementos)
Volumen 10: Asistencia a los Estados / Organizaciones/ Instituciones para poder abordar el sistema y contactar con las entidades crediticias correspondientes	**C.10** Se realizarán estudios para organizar una adecuada estructura institucional a nivel regional que permita garantizar eficazmente la ejecución, implantación y operación del sistema. Se tendrán en cuenta, entre otros, los aspectos siguientes: a) Definición de la estructura de gestión del Proyecto b) Definición del operador, gestor/propietario del Sistema
Volumen 11: Analizar otras opciones complementarias en zonas de prestaciones pobres o limitadas	**C.11** Dado que se han encontrado algunas áreas con prestaciones limitadas, debido por un lado a los problemas ionosféricos producidos por la carencia de estaciones que delimiten un IGP (algún área de la amazonía), o por problemas geográficos, al no disponer de tierra donde colocar una estación de referencia (zona de Tierra del Fuego), se estudiarán alternativas operacionales a dichas zonas al objeto de poder cubrir sus necesidades operativas actuales y futuras. Para ello, habrá que recurrir al estudio de otras posibilidades GNSS (tales como el GBAS), o el mantenimiento de radioayudas convencionales.
Volumen 12: Actividades de apoyo a la futura implantación del GNSS en las Regiones CAR/SAM	**C.12** Se desarrollarán las actividades de apoyo siguientes: ✈ Análisis de emplazamientos ✈ Análisis de las prestaciones y características de las redes de comunicaciones ✈ Informe y estudios sobre la idoneidad del SBAS ✈ Intermodalidad. Requisitos de otros usuarios ✈ "Safety Case" ✈ Análisis del impacto de las responsabilidades jurídicas inherentes a la utilización del sistema ✈ Promoción y difusión ✈ Validación operacional y certificación ✈ Estándares y normativa aplicable ✈ Análisis de GEOS disponibles en las Regiones CAR/SAM. Identificar y contactar a las entidades responsables de dichos satélites

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APPENDIX H

**CONSIDERATIONS AND REFERENCES FOR THE IMPLEMENTATION OF
SURVEILLANCE SYSTEMS ACTION PLAN**

1.   The following is a summary of the status of SARPs ICAO guidelines as a reference for the implementation of surveillance systems:

- o   SARPs concerning SSR are described in Annex 10, Vol. IV., guidance material: Doc 9684 - *Manual of the Secondary Surveillance Radar (SSR) Systems*, Doc 9688 - *Manual on Mode S Specific Services*
- o   ATN SARPs (Doc 9705 and Doc 9739) as well as Doc 9694 - *Manual of Air Traffic Services Data Link Applications* provide guidelines for the use of ADS-C
- o   Regarding the application of ADS-B, Annex 10, Vol. IV includes the standards to be followed, as well as the following guidance material depending on the transmission means used:

    - o   VDL Mode 4: Doc 9816
    - o   UAT: SARPs part of amendment 82 to Annex 10, Doc 9861 - *Manual on UAT*
    - o   *Extended Squitter* (1090 ES):

        - ▪   Version 0 Amendment 77 to Annex 10

        - ▪   Version 1 Amendment 82 to Annex 10

            - •   Doc 9871 - *Mode S and* (under update process)

    - o   Doc 8071 - *Manual on Testing of RadioNavaid*, Vol III, Doc 9863 "ACAS Manual"
    - o   Circular 311 – *Assessment of ADS-B to support Air Traffic Services and guidelines for implementation*, 1st edition.

2.   The CAR/SAM Regions have defined a surveillance systems implementation strategy as detailed in paragraph 1 to this paper, based on the Regional plan (Table CNS 4A) and bearing in mind the *Global Air Navigation Plan for CNS/ATM Systems* (Doc 9750), in its Global Plan Initiative GPI-09 – *Situational Awareness,* recommending the application of data-based surveillance (ADS-C, ADS-B and Mode S SSR).

3.   Based on GREPECAS Conclusion 13/87, States/Territories/International Organizations, were urged that, in collaboration with airspace users, an ADS-B trials programme be established and implemented, using the available services and technology in order to improve the knowledge on ADS-B and to assess the benefits for Air Traffic Management in the CAR/SAM Regions. In this regard, the NACC/WG/01 Meeting formulated Conclusion 1/14 - *ADS-B Trials*, urging 1) Cuba to continue its ADS-B trials, 2) Trinidad and Tobago and the United States to establish and implement an ADS-B trials project in the Piarco FIR, c) the other States to participate in the ADS-B trials Project and d) inform their results to the ICAO NACC.

4. During the CAR/WG/1 Meeting, information was provided on initiatives taken by several States on ADS-C trials and studies on multilateration, and Conclusions 1/12 - *ADS-C Trials in the CAR Region* and 1/13 - *Application of Multilateration System as a Surveillance Option* were formulated.

5. At the GREPECAS/14 Meeting, IATA informed that member airlines were supporting ADS-B implementation. Likewise, IATA informed during the CAR/WG/1 Meeting on the results of a survey on this matter wherein data was provided on available ADS and Mode S capacities in the fleet of various airlines operating in the CAR Region.

6. In order to follow-up on the implementation of surveillance systems within the strategy and regional guidelines, CAR/WG/1 Conclusion 1/15 urged States/Territories/International Organizations to review, finalize and implement their national action plans.

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APPENDIX I

ICAO SARPs AND GUIDANCE MATERIAL DEVELOPMENT STATUS

1.　　　　Amendment 5 to Doc 4444 - PANS-ATM is valid as at 22 November 2007, which changes promote improvement to safety and efficiency, facilitating the application of available technology concerning a variety of ATS datalink applications, including ADS-B and ADS-C. This amendment also includes operational procedures and phraseology for the use of ADS-B.

2.　　　　Amendment 82 to Annex 10, in force since November 2007, introduces the following relevant Surveillance aspects:

　　　　　o　　　Update to texts on SSR in mode S and extended squitter and Airborne collision avoidance system (ACAS);
　　　　　o　　　SARPs for the universal access transceptor (UAT); and
　　　　　o　　　Update to SARPs and technical specifications supporting the new version of extended squitter (Version 1 based on DO 260A)

3.　　　　ICAO Aeronautical Surveillance Panel (ASP), formerly named Surveillance Conflict Resolution Systems Panel (SCRSP) intends to review and update SARPs and relevant guidance material for the implementation of improvement and the future communication systems through its different working groups. The next meeting of this Group (November 2008) will consider the following subjects:

　　　　　a)　　　draft high-level SARPs for multilateration systems

　　　　　b)　　　new provisions on required surveillance performance (RSP) and the application of airborne surveillance (regarding the use of ADS-B reports on board aircraft);

　　　　　c)　　　report on RF pollution study relating to 1030/1090 MHz in light of increased traffic and new systems (e.g. MLAT);

　　　　　d)　　　consolidation of guidance material on surveillance in a new aeronautical surveillance manual; and

　　　　　e)　　　update to existing ICAO provisions on surveillance and collision avoidance systems in light of operational experience.

4.　　　　For further information visit the panel website at: http://www.icao.int/anb/panels/scrsp.

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APPENDIX J

OPERATIONAL CONSIDERATIONS

1.   Part VII "Automatic Dependent Surveillance Broadcast," Chapter 4 of the *Manual of Air Traffic Services Data Link Applications* (Doc 9694) describes the considerations and procedures in a radar surveillance environment, in ADS-B and mixed surveillance, as well as ADS-B use and requirements for ATS surveillance in en route, terminal and airport environments:

a)   The increased accuracy, the update rate and additional parameters available with ADS-B should result in the following benefits:
   o   improved services in airspace not having radar coverage;
   o   improved airspace utilization;
   o   improved conflict prediction and detection;
   o   improved airport surface movement, guidance, and control;
   o   improved runway incursion prevention; and
   o   improved automated conformance monitoring.

   Some benefits can be realized even before full aircraft equipage.

b)   An operating environment with ADS-B will enhance ATC surveillance in the following ways:
   o   in a mixed ADS-B/radar surveillance environment, ADS-B data will complement or supplement radar data; and
   o   ADS-B will extend surveillance services into nonradar airspace, such as low-altitude airspace, remote airspace and coastal waters.

   At such time that an airspace is fully populated with aircraft equipped with ADS-B, ATS providers may evaluate the necessity of replacing or maintaining other ground-based surveillance equipment. First results could be obtained based on the trials strategy that have commenced in the CAR Region.

Systems Update

2.   Several CAR Region States/Territories/International Organizations have a high level progress in the ATM automation subject, they have a considerable processing capacity and have several automated functionalities, which, together with the surveillance data sharing would allow to accomplish the operational benefits regarding safety and efficiency, improved airspace utilization and mutual backup between adjacent ATS units, significantly improving airspace harmonisation.

3.   GREPECAS Conclusion 12/31 – *Regional Strategy for the Integration of ATM Automated Systems*, urged States, Territories and International Organizations to define an action plan for the integration of ATM automated systems using guidelines contained in the conclusion, in which radar data sharing is an important activity to accomplish the integration of automated systems.

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Agenda Item 4: **Establishment of Interfaces for ATM Automated Systems between Adjacent ATS Units**

Considerations for the Implementation of Actions for the ATM Automated Systems Interfaces Establishment

4.1   The Meeting was reminded that GREPECAS Conclusion 12/31 offers the *Regional Strategy for the Integration of ATM Automated Systems,* and that GREPECAS Conclusion 14/43 – *Agreements for ATM Automated Systems Interface*, encouraged States/Territories/International Organizations to take into account technical feasibility studies and operational benefits, and coordinate the establishment of bilateral and multilateral agreements for the interface of automated systems between adjacent units and use guidance material specified as the *Interface Control Document (ICD) for Data Communications between ATS Units.*

4.2   The Meeting took note of the considerations and guidelines contained in Doc 4444 on procedures related to coordination to be carried out by air traffic service units, between control positions within such units, between such units and associated aeronautical telecommunication stations, and the types of messages and their contents to be used for operational communications between ATS unit computer systems. This type of data transfer, referred to as ATS interfacility data communications (AIDC), is the basis for migration of data communications to the aeronautical telecommunication network (ATN). The current flight plan (CPL) is referred to within the coordination messages.

4.3   Likewise, the Meeting considered the capabilities of current digital networks and the number of control centres and ATS units in the Region that have been modernized allowing for greater data processing capacity with the implementation of flight data processing systems (FDPS), radar processing (RDP), support systems, message display systems, message switching, and prevention and enhanced safety tools (MSAW, DAIW, MTCA, etc.). The availability of surveillance data from radar and non radar data sources could be useful in improving service accuracy, availability and safety in the Region.

National Action Plan for the Implementation of ATM Automated Systems Interfaces between ATS adjacent units – Improvement and Development of the ATM Situational Awareness

4.4   Considering the previous considerations and taking into account the regional strategy, the Meeting concluded that several States/Territories/International Organizations in the CAR Region can achieve ATM Automation in Phase I and II with adjacent ATS units, and urged that those necessary activities to accomplish this be reflected in the corresponding action plan and in accordance with the format approved by the CAR/WG/1 Meeting. The Meeting agreed that this action plan format shall be considered within the NAM/CAR Implementation Plan.

4.5   The United States informed the Meeting about the problems caused by multiple/duplicate flight plans for ATS service providers. The Meeting agreed that this problem is global and that the active participation of all parties involved as well as increased ATM automation will reduce this problem.

4.6   The Secretariat provided information related to a new proposal for amendment to the ICAO flight plan provisions contained in the *Procedures for Air Navigation Services - Air Traffic Management* (PANS-ATM, Doc 4444). The proposal was sent on 25 May 2007, by the Secretary General to Contracting States and appropriate International Organizations through State Letter AN 13/2.5-07/35. Expectations are that the proposal will be in force November 2010.

4.7   The amendment provides new information on the ICAO model flight plan format and associated operational practices to meet future aircraft needs with advanced capabilities and the evolving requirements of automated air traffic management systems, while taking into account compatibility with existing systems, human factors, training, cost and transition aspects.

4.8   The proposal for amendment also addresses recent developments in air traffic management matters, for example, reduced vertical separation minimum (RVSM) and performance based navigation (PBN), while at the same time maintaining a high degree of commonality with the existing flight plan format. It will be an interim step towards a completely revamped future system that would satisfy the information management requirements that are prerequisite to the realization of the Global ATM Operational Concept.

4.9   The Meeting acknowledged that in many cases, the current organizational structure of ANS in several States neither allows specialized personnel to carry out the functions in dispatch positions and flight control nor supervise safety oversight of operators and service providers. For this reason, it was considered that human resource planning and training is needed for dispatch officers to properly perform their functions.

4.10   The Meeting was of the opinion that States should amend regulation requirements so that pilots fill in their flight plans in a suitable manner and present them at the aerodromes prior to their departure.

4.11   After productive discussions, the Meeting identified possible solutions through the following:

**DRAFT
CONCLUSION 2/4   ACTIONS TO AVOID DUPLICATION OF FLIGHT PLANS**

            That:

            a)   NAM/CAR States, Territories and International Organizations take appropriate
                    actions in the short term to:

                    i)   publish the proper address in the AIP for destination of filed flight plans;

ii)   urge operators to avoid duplication of CPL and/or RPL messages, noting that only one should be in force for a specific flight plan;

iii)   establish timelines for coordination of filed flight plans and updating related changes;

iv)   follow-up national provisions for FPL acceptance in accordance with ICAO Doc 4444 for flights operating from one FIR to another adjacent FIR;

v)   initiate interface coordination between ATS automated systems in accordance with the *Interface Control Document for Data Communications between ATS Units (ICD)* approved by GREPECAS;

vi)   ensure that dispatch offices have a sufficient number of qualified specialists for proper coordination and flight plans follow-up; and

vii)   take appropriate measures to ensure that the flight plan be sent officially.

b)   operators carry out proper coordination of filed flight plans to ensure that only one is in force.

4.12   The United States informed the Meeting on the assignment of preferential routes based on flight plan information in preparation for the implementation of the En Route Automation Modernization (ERAM) system, as well as implementation benefits of AIDC application.

Agenda Item 5:   **AIS (AIM) Developments and Follow-up**

5.1   Follow-Up to Activities and Regional Implementation Related to the Objectives of Aeronautical Information Services AIS/MAP (AIM)

AIS/MAP (AIM) Tasks

5.1.1   The Meeting reviewed the main outstanding tasks from the GREPECAS AIS/MAP/SG/10 Work Programme, which are listed in the **Appendix** to this part of the report. The Meeting was urged to inform the ICAO NACC Office on the progress of these tasks no later than **26 September 2008**.

5.1.2   Regarding Task 1, Trinidad and Tobago informed the Meeting that they have been waiting for a response from Venezuela for several weeks now in order to continue with coordination. ICAO took note of this situation and will perform the necessary actions to reactivate the coordination.

5.1.3   Barbados reminded the Meeting that during the CAR/WG/1 Meeting, there was a proposal for an AIS/MAP meeting to follow-up on AIS/MAP aspects, especially the adoption of action plans to resolve several outstanding deficiencies. This meeting has now been rescheduled to be held in Trinidad and Tobago in the second quarter of 2009.

5.1.4   In addition, COCESNA informed the Meeting on progress related to AIM aspects and development including:

- RNAV / RNP Procedures, Central American AIP
- COCESNA AIS Quality Certification
- Central American AIS Automation
- e-TOD Seminar
- AIS/MAP Training
- Planning of future AIM training

5.1.5   The Meeting highlighted the positive aspects and benefits of joint coordination and participation among users and managers to design procedures for the development and implementation of RNAV/RNP procedures.

Progress with the Implementation of GREPECAS Conclusions and the AIM/SG/11 Meeting

5.1.6   The Meeting was requested to follow-up and implement GREPECAS AIM Conclusions, as well as to encourage the participation of States/Territories/International Organizations at the next AIM/SG Meeting (AIM/SG/11) that will be held in Bogotá, Colombia, from 16-20 June 2008.

Updating of AIS FASID Tables

5.1.7   The Meeting was requested to review the AIS FASID Tables of the CAR/SAM Air Navigation Plan and to provide any updated information to the ICAO NACC Office as well as update the status of deficiencies and their action plans to resolve them in the GANDD.

5.2   Implementation of e-TOD

Electronic Terrain and Obstacles Data (e-TOD)

5.2.1   The Meeting took note of the need to provide appropriate follow-up to the requirements of ICAO Annex 15, Chapter 10, concerning State provision of electronic terrain and obstacle data within the deadline established in GREPECAS Conclusion 14/40.   The Secretariat informed that ICAO is developing a technical co-operation project to develop AIS and MET fields, in accordance with GREPECAS conclusions and Directors General Meetings in the CAR Region. This project is expected to be presented at the NACC/DCA/3 Meeting in September 2008, in Dominican Republic.

5.2.2   The Meeting unanimously considered that an integrated technical co-operation project for the entire CAR Region was highly important in order to assist States with the development and implementation of state-of-the-art air navigation systems for the aerodrome and safety fields in line with the needs of global aviation. The Meeting identified that the project should include:

a)   an analysis to determine CNS/ATM elements required by each involved State/Territory/International Organization;
b)   a study to improve the air navigation services fee collection process; and
c)   the implementation of specific action plans in line with ANP requirements and resolving deficiencies.

5.2.3   Furthermore, considering that there are significant needs in the CAR Region, the Meeting requested that the Secretariat include human resources, training and cost-benefit analysis planning aspects in the technical co-operation project. Likewise, the Meeting considered that participation in the project should be extended to all CAR Region States/Territories as participating members of the project as opposed to individual States/Territories.

APPENDIX
AIS/MAP (AIM) TASKS

According to the defined Work Programme, outstanding tasks that remain pending are listed hereunder and including the status of compliance:

Task No. 1: resolve, under the ICAO NACC Office coordination, the discrepancies of the WGS-84 coordinates of common border fixes in the adjacent FIRs, published in the AIPs of Caribbean States/Territories and their adjacent regions.
The common fixes of reference in the FIRs are in coordination process between PIARCO (Trinidad and Tobago) and Venezuela through the NACC and SAM Regional Offices. It is requested to notify NACC Office on the developments in the agreements of the WGS84 coordinates publication.
Task No.2: carry out the coordination, assistance and follow-up implementation of a standard AIS/MAP Quality Assurance System in the Caribbean States/Territories.
A conclusion for the adoption of Part 4 of the *Guidance Manual for the Implementation of a Quality Management System for AIS/MAP in the CAR/SAM Region* was approved by GREPECAS/14 Meeting. It is requested to notify NACC Regional Office the implementation level of the Quality Management System.
Task No. 3: impel, with the assistance of the ICAO NACC Office, training actions related with the correct application and compliance with the quality requirements of the aeronautical data established in the ICAO Annex 15, in support of the obstacle/terrain electronic data e-Tod mentioned in Doc. 9881 – Guidelines for Electronic Terrain, Obstacle and Aerodrome Mapping Information (available in ICAO NET only in English).
The "e-TOD Seminar" was successfully held in Dominican Republic in November 2007.
Task No. 4: recommend the necessary actions to assist States/Territories with implementing the AIS Automation Plan and the digital data interchange.
COCESNA is planning a CAR/SAM Seminar on Aeronautical Information Exchange Model (AIXM) for September 2008, possibly in Tegucigalpa, Honduras (English/Spanish). It is requested to notify NACC Regional Office on the participation of this important Seminar.
Task No. 5: review actions and carry out the follow-up the implementation deficiencies of the AIS/MAP requirements established in the CAR/SAM Air Navigation Plan.
The deficiencies table tracks the AIS/MAP implementation requirements established in the ANP. This table, in most of the cases, is not updated. It is requested to notify NACC Regional Office on the action plans for the AIS/MAP Deficiencies solution.
Task No. 6: prepare the application of human factors applied to AIS/MAP, in accordance with AIS/MAP/SG/10 meeting results and with the TF QM works.
GREPECAS/14 Meeting reviewed the Application of the human factors principles in the Aeronautical Information Management (AIM), considering that the AIM Subgroup set out the need to elaborate a Manual containing the guidelines on human factors and a Plan for their implementation. Task completed by the QM TF. It is requested to notify NACC Regional Office the application of the human factors guidelines in AIM.

Agenda Item 6:   **AGA Developments and Follow-up**

6.1   Follow-up to Activities and Regional Implementation Related to Emergency Plans and Emergency Operations Centres

Emergency Plans and Emergency Operations Centres

6.1.1   The Meeting was informed that based on GREPECAS Conclusion 14/29, adopted for the CAR Region, ICAO is coordinating a Seminar/Workshop on Emergency Plans and Emergency Operations Centres (EOCs) for English speaking States/Territories through a Special Implementation Project (SIP) scheduled for the last quarter of 2008. In this regard, Netherlands Antilles and Saint Vincent and the Grenadines offered to host the event.

6.1.2   The objectives of the event will be to provide NACC States/Territories with improved understanding of the requirement to provide aerodrome Aircraft Rescue and Fire Fighting (ARFF) services; assist with the development of ICAO compliant emergency plans and emergency operations centres; and improve understanding of implementation issues related to airport emergency planning in order to enhance coordination and cooperation among the involved agencies, thus improving safety, efficiency and continuity of operations.

6.2   Follow-up to Activities and Implementation Related to Airport Certification and Safety Management Systems (SMS)

Implementation and Certification of Aerodromes and SMS

6.2.1   Based on GREPECAS Conclusion 14/31, the Secretariat informed the Meeting of the minimal reply to surveys on aerodrome certification and safety management systems, and the importance of replying to the surveys for proper analysis by the GREPECAS AGA/AOP/SG. In this regard, the Meeting urged States/Territories that have not yet done so to complete and submit the information requested in Appendices B and D to WP/26 to the ICAO NACC Regional Office by **30 August 2008**.

6.3   Follow-up to Activities on the Analysis of Runway End Safety Areas (RESAs) and Runway Strips

Analysis of Runway End Safety Area (RESA) and Runway Strip Deficiencies

6.3.1   Based on GREPECAS Conclusion 14/61, the Meeting noted the lack of response to the surveys sent to States/Territories on the analysis of runway end safety areas (RESA), and runway strips deficiencies and the importance of responses for proper analysis by the task forces of the AGA/AOP/SG. In this regard, the Meeting urged States/Territories that have not yet replied to the survey to send their information to the ICAO NACC Regional Office.

Agenda Item 7:   **Terms of Reference and Work Programme**

7.1   According to the guidelines of the different meetings of Directors General of Civil Aviation, the Meeting concluded that it was necessary to harmonize air navigation services infrastructure implementation work plans of the NAM and CAR Regions.

7.2   The Meeting noted that although some States have already started the work of developing national plans, such as United States' NEXTGEN, they have been developed with different implementation formats. Therefore, it is necessary to harmonize plans, which would have to contain tasks that in the short and mid-term will facilitate the implementation of an interoperable air navigation services system between the NAM and CAR Regions. The long term tasks will be gradually incorporated according to ICAO Doc 9750 - *Global Air Navigation Plan for CNS/ATM Systems*, as implementation results are achieved.

7.3   In view of the foregoing, the Meeting reviewed the NACC/WG terms of reference. It was concluded that tasks and action plans agreed to by the CAR/WG/1 should be incorporated into a single format designated as the NAM/CAR Implementation Plan that will serve as a guide for the North American, Central American and Caribbean working groups. It was also concluded that these groups should continue their own implementation tasks in line with the particular needs of the involved FIRs. The Meeting requested that the Secretariat present this work for approval by the NACC/DCA/3 Meeting.

7.4   The NACC/WG Terms of Reference and Work Programme and the NAM/CAR Implementation Plan, respectively, included in **Appendices A** and **B** to this part of the report, will facilitate the analysis and implementation of the different NAM/CAR Regions States/Territories national implementation plans and will also allow for dynamic and periodical follow-up on the results achieved, as well as resource allocation. Therefore, the Meeting formulated the following:

**DRAFT
CONCLUSION 2/5**   **TERMS OF REFERENCE AND WORK PROGRAMME OF THE NORTH AMERICAN, CENTRAL AMERICAN AND CARIBBEAN WORKING GROUP (NACC/WG) AND NAM/CAR IMPLEMENTATION PLAN**

          That:

          a)   the Central Caribbean (C/CAR WG), Eastern Caribbean (E/CAR WG), Central American Air Navigation Experts (CA/ANE/WG) and Canada, Mexico and United States (CAN/MEX/USA) Working Groups, when developing and reviewing their work programmes, take into account the NACC/WG Terms of Reference and Work Programme and NAM/CAR Implementation Plan, respectively, included in Appendices A and B to this part of the report;

b)   NAM/CAR States/Territories develop their national action plans based on the NAM/CAR Implementation Plan to achieve harmonized interregional implementation; and

c)   ICAO take appropriate measures to monitor the implementation of the NAM/CAR Implementation Plan and submit NACC/WG progress reports to the NACC/DCA Meetings.

7.5   Furthermore, the Meeting agreed unanimously that Panama and Venezuela should be members of the NACC/WG and requested the Secretariat to take appropriate action in this regard.

APPENDIX A

TERMS OF REFERENCE OF THE
NORTH AMERICAN, CENTRAL AMERICAN AND CARIBBEAN WORKING GROUP
(NACC/WG)

1.   Terms of Reference

a)   promote development of the CAR/SAM and NAM Air Navigation Plans and other relevant regional documentation, in compliance with ICAO SARPs, as required;

b)   facilitate the implementation of air navigation systems and services as identified in the CAR/SAM and NAM Air Navigation Plans;

c)   address emerging aviation issues focusing on continued improvements to operational efficiency through enhanced coordination, harmonised procedures, interoperability of networks and implementation of new technologies;

d)   promote implementation initiatives and associated technologies to improve safety, increase operational and economic efficiency and/or capacity of regional Air Navigation Services (ANS);

e)   harmonise implementation of performance objectives related to ANS with regard to the GPIs of Doc 9750;

f)   enhance airspace organisation and management (AOM) structure through the improvement of ATS/RNAV routes and/or tracks with entry/exit points on Flight Information Region (FIR) boundaries;

g)   develop air traffic flow management (ATFM) procedures designed to improve efficiency and economy, increase capacity, and overcome existing limitations;

h)   share information on implementation initiatives for enhancing compatibility of air traffic operations;

i)   support the implementation initiatives associated with ICAO's strategic objectives; and

j)   recommend to the NAM/CAR Directors General initiatives to the NAM/CAR Regional Implementation Plan and any necessary steps for implementation.

2.   Work Programme

a)   review and recommend deadlines for implementation of facilities, services and procedures to improve ANS in the CAR/NAM Regions;

b)   develop guidelines and make recommendations for States/Territories/International Organizations to implement their ANS national plans;

c)   make recommendations to prepare proposal for amendments to the Doc 7030 and Doc 8733 to satisfy ANS expectations and requirements;

d)   monitor the implementation of air navigation facilities and services to ensure interregional harmonization, taking due account of performance measurements, environmental benefits and operational issues;

e)   provide recommendations to improve human resources planning and development in line with ICAO guidelines;

f)   promote close cooperation between States, Territories and International Organizations and users to optimize the use of available expertise and resources;

g)   conduct activities in the most efficient manner with a minimum of formality and documentation, using electronic tools and telephone conferences to ensure complete exchange of information, when required;

h)   associate in a logical manner the implementation of initiatives with the seven components of Doc 9854, (AOM, DCB, AO, TS, CM, AUO ATMSDM) as appropriate;

i)   avoid duplication of work; and

j)   quantify cost/benefit analysis in terms of performance measures, deadlines, responsible body for implementation and results as well as human factors performance;

3.   **Membership**

All ICAO Contracting States, Territories and International Organizations which are accredited to the ICAO NACC Regional Office and Colombia shall be members of the NACC/WG. Other States adjacent to the CAR and NAM Regions may be invited to participate in the NACC WG.

4.   **Working Methods**

a)   the Chairperson of the NACC/WG will be a representative from the host State/Territory/International Organization for the duration of the Meeting;

b)   at the beginning of each Meeting, a Vice-Chairperson will be elected for the duration of the Meeting; and

c)   the Members of the NACC/WG will conduct coordination of works as follows:

- via written correspondence, i.e. e-mail, fax, etc.
- via phone and teleconference calls;

d)   meetings will be convened every three years or when necessary;

5. **Meeting Sites**

a) the ICAO NACC Regional Office will convene the NACC/WG Meeting at least six months before holding it;

b) the NACC/WG will meet in accordance with the following rotational scheme: Central America, North America, Eastern Caribbean (E/CAR) and Central Caribbean (C/CAR); and

c) any member States/Territory/International Organizations may, at any time, offer to host a NACC/WG meeting.

APPENDIX B

NAM/CAR IMPLEMENTATION PLAN

SEAMLESS ATM SYSTEM

REGIONAL PLANNING PROCESS

The regional planning process should be conducted in accordance with the global plan initiatives (GPIs) of the Global Plan (Doc 9750) and the ICAO vision for an integrated ATM system, harmonized and interoperable, as established in the Global ATM Operational Concept (Doc 9854).

The objective is to achieve the maximum level of inter-operability and harmonization among sub-systems for a seamless and interoperable regional ATM system for all users during all phases of flight, complying with agreed levels of safety, providing optimum economic operations, to be environmentally sustainable and to fulfil national aviation security requirements.

The planning should be developed based on clearly defined performance objectives. The planning horizon should be focused on the strategies of development, activities or main tasks for two periods – that of less than 5 years (short-term) and 6 to 10 years (medium-term). Some already identified tasks to be analyzed beyond this period may be included if they conform to ICAO ATM requirements.

ATM PERFORMANCE OBJECTIVES

The performance objectives for regional ATM work programmes should be developed using a performance approach so as to reflect the necessary activities needed to support regional ATM system implementation.

During its life cycle, the performance objectives may change in a dynamic manner depending on the ATM system's evolution; therefore, these should be coordinated with and available to all interested parties within the ATM Community in order to achieve timely communication throughout the implementation process. The establishment of collaborative decision making processes (CDM) ensures that all stakeholders are involved in and concur with the requirements, tasks and timelines.

The following sections describe aspects pertaining to the performance objectives and required changes, and how these changes foster harmonized improvements throughout the regional ATM system.

Benefits

The ATM implementation strategies should provide a group of common benefits for all stakeholders and be achieved through the operational and technical activities planned in each performance objective. These benefits should be in accordance with the ICAO strategic objectives.

Identification of work

Each task should be identified firstly by the activity associated with components of the ATM system when describing the tasks. According to the Doc 9854, the designators for ATM components are as follows:

- **AOM** — Airspace organization and management
- **DCB** — Demand and capacity balancing
- **AO** — Aerodrome operations
- **TS** — Traffic synchronization
- **CM** — Conflict management
- **AUO** — Airspace user operations
- **ATM SDM** — ATM service delivery management

Each designator looks to link ATM system component pertains to tasks and activities related to phases of air operations, ATC en-route, terminal and airport, capacity management, airspace management including its flexible use and aeronautical information management.

The infrastructure includes the ground technical systems and capacity required to support operations such as communications, navigation and surveillance, data processing, inter-operability of systems, information management system and spectrum management, including both civil and military systems. The following diagram shows the ATM components in relation to the phases of flight:
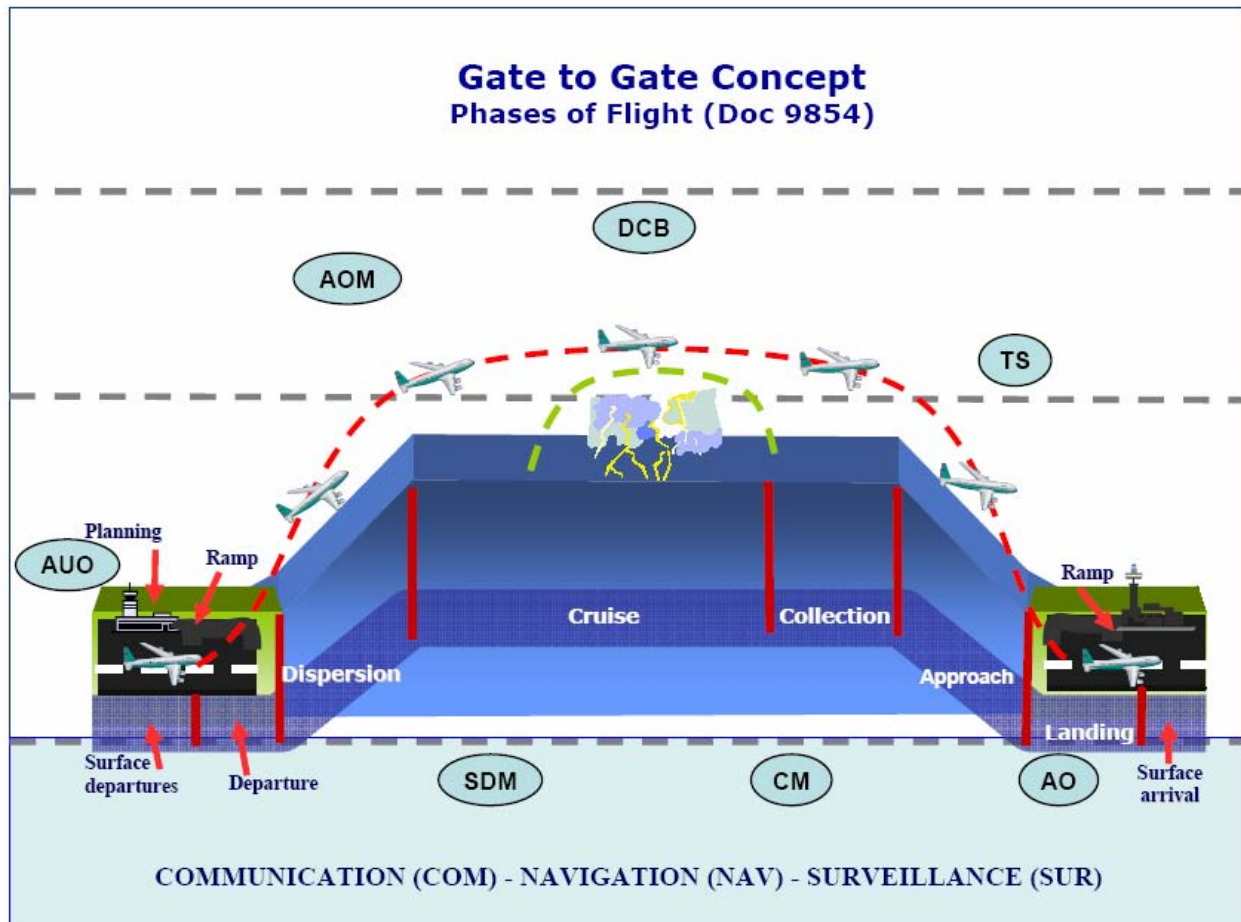
ATM evolution requires a clearly defined progressive strategy including tasks and activities which best represent the national and regional planning processes in accordance with the global planning framework. The goal is to achieve harmonized regional implementation evolving toward a seamless global ATM system.

This means the need to develop short and medium term work programmes, focusing on the necessary changes to the system in which a clear work commitment will be carried out by the parties involved.

The regional work programmes should define additional tasks and activities, maintaining a direct relation with ATM system components such as airspace organization, civil-military coordination, human factors, aeronautical regulations, operational safety management systems and environmental protection, among others.

The framework for regional activities should also include the coordination of activities with military authorities who play an important role in helping to ensure that the best use is made of the available airspace resources by all airspace users while still safeguarding national security.

The following principles should be considered when developing work programmes:

- The work should be organized using project management techniques and performance-based objectives in alignment with the Global Plan and the strategic objectives of ICAO. The work programmes should be in accordance with the progress, characteristics and regional implementation needs.

- All activities involved in accomplishing the performance objectives should be designed following strategies, concepts, action plans and roadmaps which can be shared among States to align the regional work with the fundamental objective of achieving interoperability and seamlessness to the highest level.

- The planning of all activities should include optimizing human resources, as well as encouraging dynamic use of electronic communication between States such as the Internet, videoconferences, teleconferences, e-mail, telephone and facsimile. It should be ensured that all resources will be efficiently used, avoiding any duplication or unnecessary work.

- The new work process and methods should ensure that performance objectives can be measured against timelines and the regional progress achieved can be easily reported to the Air Navigation Commission and to the ICAO Council.

    Status

The status is mainly focused on monitoring the progress of the implementation activity as it progresses toward a specific completion date. The status of the activity is defined as follows:

■**Valid**	the feasibility and benefits of an activity has been confirmed, work has been initiated but the activity itself has not been finalized.
■**Completed**	implementation of the activity has been finalized by the involved parties.
■**Tentative**	the feasibility and benefits of an activity investigated or to be developed.

A tentative status indicates a potential activity; normally this activity will not be included in the regional planning documents unless it is an ICAO defined requirement.

Relationship between Performance Objectives and Global Plan Initiatives

The 23 GPIs provide a global strategic framework and are designed to contribute to achieving the regional performance objectives and to support the logical progression of regional implementation work programmes.

Each performance objective should be referenced to the pertinent GPIs. The goal is to ensure that the work process will be integrated into the global planning framework

NATIONAL ACTION PLANS

States should develop their own national action plans reflecting the specific activities or tasks along with the expected benefits to be obtained and the date by which each should be completed according to the national needs and based on the regionally-agreed performance objectives.

The activities should include the necessary detailed actions to successfully achieve the national performance objectives, relating these activities with the short and medium term regionally-agreed performance objectives.

National plans should identify the individuals or teamwork responsible for achieving the objectives as well as a means for monitoring and eventually reporting progress on the actions to ICAO. The responsibilities and time-tables should be clearly defined so that the involved parties are aware of their commitments throughout the planning process.

Additionally, national action plans should include adequate means to provide information on implementation progress achieved such as through a periodic reporting process. This facilitates senior management levels' efforts to prioritize the actions and resources required. The same information provided to ICAO will allow feedback and assistance to be provided specific for each Region as they work to achieve a Global ATM system.

ATM PERFORMANCE OBJECTIVES FOR CAR/SAM REGIONS

OPTIMIZE THE ATS ROUTE STRUCTURE IN BOTH TERMINAL AND EN-ROUTE AIRSPACE	

Benefits	
Environment Efficiency	• 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 *Short term (2010)* *Medium term (2011 - 20015)*			
TASK	**DESCRIPTION**	**START-END**	**STATUS**
AOM	***En-route airspace*** • 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 • monitor implementation progress • 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; ***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	2005-2008 2008-2011	
References	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.		

IMPLEMENT RNP APPROACHES		
Benefits		
Efficiency **Safety**	• Improvements in capacity and efficiency at aerodromes. • Improvements in safety at aerodromes.		
Strategy **(2008-2015)**		
TASK	**DESCRIPTION**	**START-END**	**STATUS**
AOM	• 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 as follows: **Stage 1** – Evaluate existing procedures, determine compatibility of use with RNAV overlay routes **Stage 2** – Carry out cost benefit analysis and safety assessments of RNAV procedures **Stage 3** – Use existing radar vectoring patterns as the basis for RNAV departure and arrival tracks **Stage 4** – Evaluation and simulation of procedures **Stage 5** – Design stand-alone RNAV procedures **Stage 6** – Training phase **Stage 7** – Publish new procedures and introduce into new service, meet AIRAC dates **Stage 8** – Operational review **Stage 9** – Removal of conventional procedures • monitor implementation progress		
References	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.		

ENHANCE CIVIL/MILITARY COORDINATION AND CO-OPERATION			
Benefits			
Efficiency	• increase airspace capacity;		
Continuity	• allow a more efficient ATS route structure • ensure safe and efficient action in the event of unlawful interference; • make available military restricted airspace more hours of the day so that aircraft can fly on their preferred trajectories; and • improve search and rescue services.		
Strategy *(2008-2012)*			
TASK	**DESCRIPTION**	**START-END**	**STATUS**
AOM	• 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		
References	GPI/1: flexible use of airspace.		

ALIGN UPPER AIRSPACE CLASSIFICATION			
Benefits			
Efficiency **Continuity**	• 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)***			
TASK	**DESCRIPTION**	**START-END**	**STATUS**

AOM	• Develop a regional implementation strategy and work programme for the implementation of ICAO Annex 11 airspace Class A above FL 195.
	 • identify key stakeholders, ATCOs, pilots, and relevant international organisations for coordination and cooperation on changes for new airspace organization, using a CDM process;
	 • develop new national airspace organization in accordance with ICAO provisions, as needed;
	 • Coordinate changes for regional and national documents;
	     o Doc 8733, CAR/SAM ANP;
	     o AIP; and,
	     o ATS letters of agreement
	 • carry out improvements in ground systems to support new airspace organization configurations, as necessary;
	 • publish national regulatory material for implementation of new rules and procedures to reflect airspace organizational changes;
	 • train ATCOs and pilots in new procedures, including all civil and military airspace users, as required;
	 • monitor implementation progress.		

References	GPI/4: align upper airspace classification.		

IMPROVE DEMAND AND CAPACITY BALANCING		
Benefits		
Environment **Efficiency** **Safety**	• 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 for service in ATC sectors and aerodromes; • improved operational efficiency; • enhanced airport capacity; • enhanced airspace capacity; and • improved safety management.		

Strategy *Near term (2008)*		
TASK	**DESCRIPTION**	**START-END**	**STATUS**

DCB	• 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 a gradual basis, as needed, through enhancements in current:
	    o airspace organization and management (AOM) and ATS route structure (unidirectional routes) and SID and STARS,
	    o communication, navigation and surveillance systems,
	    o aerodrome capacity,
	    o ATS capacity,
	    o training for pilots and Controllers; and
	    o ATS letters of agreement;
	 • define common elements of situational awareness between FMUs;
	    o common traffic displays,
	    o common weather displays (Internet),
	    o communications (teleconferences, web), and
	    o daily teleconference/messages methodology advisories;
	 • develop methods to establish demand/capacity forecasting;
	 • develop a regional strategy and work programme for harmonized implementation of ATFM service; and,		

Note: the table columns START-END and STATUS are shown but contain no entries for the DCB row.

Medium term (2010)		

• develop a regional strategy for the implementation of flexible use of airspace (FUA);
   o assess use of airspace management processes;
   o improve current national airspace management to adjust dynamic changes in tactical stage to traffic flows;
   o introduce improvements in ground support systems and associated procedures for the extension of FUA with dynamic airspace management processes;
   o implement dynamic ATC sectorization in order to provide the best balance between demand and capacity to respond in real-time to changing situations in traffic flows, and to accommodate in short-term the preferred routes of users;
• 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 a Centralized ATFM unit;
• develop operational agreements between Centralized ATFM units for interregional demand/capacity balancing; and,
• monitor implementation progress.		

References	GPI/1: flexible use of airspace; GPI/6: air traffic flow management; 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.	

IMPROVE ATM SITUATIONAL AWARENESS		
Benefits		
Efficiency	• enhanced traffic surveillance; • enhanced collaboration between flight crew and the ATM system; • improved collaborative decision-making through sharing electronic aeronautical data information; • reduced of workload for both pilots and controllers; • improved operational efficiency; • enhanced airspace capacity; • improved implementation on a cost-effective basis;	
Safety	• improved available electronic terrain and obstacle data in the cockpit; • reduced of the number of controlled flight into terrain related accidents; and • improved safety management.	
Strategy *Near term (2010)*		
TASK	**DESCRIPTION**	**START-END**	**STATUS**

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

	Medium term (2015)		

	• implement additional/advanced automation support tools to increase sharing of aeronautical information
	    o ETMS or similar
	    o MET information
	    o AIS/NOTAM dissemination
	    o Surveillance tools to identify airspace sector constraints
	    o A-SMGC in specific aerodromes, as required
	• implement teleconferences with ATM stakeholders
	• monitor implementation progress		

References	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.		

ACTION PLAN FOR ATFM IMPLEMENTATION - CAR REGION

State/Organization: _____   Date: _____

No.	Strategic Objective/ AN-Conf/11 Global Plan/ GPI Regional Plan / FASID GREPECAS No. Con/Dec/Pa	Target Activity	Status	To be developed by	Deliverable	Target date	Remarks
1	2	3	4	5	6	7	8
2008							
1	C, D GPI-6 14/48	Develop a regional strategy and work programme for harmonized implementation of ATFM service.	Completed	E/T/OI	Work programme	2007	
2	D GPI-6	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.	Completed	E/T/OI	CDM process	2007	CDM guidelines in WP/07.
3	D GPI-7 13/2	Identify and analyse traffic flow problems and develop enhancements in current:	Completed	E/T/OI	Improvements to operational capacity	GRPCS/13	GREPECAS has defined main traffic flows and homogeneous CAR/SAM areas.
	GPI-7 14/48	airspace organization and management (AOM) and ATS routes structure (unidirectional routes) and SID and STARS;	Valid	E/T/OI	Airspace improvements		Guidelines are presented in WP/06.
	GPI-6	publication of the correspondent regulation;	Valid	OACI	Amendment to Doc 7030.	2008	Publish standards in AIPs.
	GPI-16 14/48	ATM automation;	Completed	E/T/OI	Action plan of E/T/OI	2007	Additional guidelines are presented in WP/15 from the ones approved by GREPECAS.
	GPI-21-22	communication, navigation and surveillance systems;	Valid	E/T/OI	Define requirements	TBD	
	GPI-14	aerodrome capacity;	Completed	E/T/OI	Aerodrome Acceptance Rate (AAR)	2007	Guidelines in CAR/SAM ATFM CONOPS. Require to publish capacity.
	GPI-6	ATS capacity;	Valid	E/T/OI	ATS capacity	2008	Guidelines in the CAR/SAM ATFM CONOPS. Require to determine and publish the capacity.
	GPI-6 13/67	training for pilots and Controllers; and	Valid	E/T/OI	Training Programme	2008	Guidelines are presented in WP/07.
	GPI-6 14/48	ATS letters of agreement.	Valid	E/T/OI	ATS agreements	2008	E/CAR completed.
4	D GPI-9 14/48	Define common elements of situational awareness between FMUs;	Valid	E/T/OI	Enhance situational awareness	2008	Action plan of E/T/OI.
	GPI-9	common traffic displays;	Valid	E/T/OI	Define tools	2008	Analyze ETMS or similar applications.

No.	Strategic Objective/ AN-Conf/11 Global Plan/ GPI Regional Plan / FASID GREPECAS No. Con/Dec/Pa	Target Activity	Status	To be developed by	Deliverable	Target date	Remarks
1	2	3	4	5	6	7	8
	GPI-9	common weather displays (Internet);	Valid	E/T/OI	Define tools	2008	
	GPI-9	communications (teleconferences, web); and,	Valid	E/T/OI	Define tools	2008	Weekly teleconferences carried out in Piarco FIR between January-April 2007.
	D GPI-6	Define daily teleconference/messages methodology advisories.	Completed	E/T/OI	Teleconferences methodology	2007	Guidelines in WP-07. Requires an agreement.
5	D GPI-6	Develop methods to establish demand/capacity forecasting.	Valid	E/T/OI	Traffic forecast methodology	2008	Electronic tools are being analysed.
		2010					
6	D GPI-1	Develop a regional strategy for the implementation of flexible use of airspace (FUA); -assess use of airspace management processes; -improve current national airspace management to adjust dynamic changes in tactical stage to traffic flows; -introduce improvements in ground support systems and associated procedures for the extension of FUA with dynamic airspace management processes; and,	Valid	E/T/OI	FUA implementation	2010	Requires analysing RAN CAR/SAM/3 recommendations.
	D GPI-6	Implement dynamic ATC sectorization in order to provide the best balance between demand and capacity to respond in real-time to changing situations in traffic flows, and to accommodate in short-term the preferred routes of users.	Valid	E/T/OI	Dynamic Sectorization	2010	
7	GPI-16	Define common electronic information and minimum databases required for decision support and alerting systems for interoperable situational awareness between Centralized ATFM units.	Valid	E/T/OI		2010	Analyze ETMS or similar applications.
8	D GPI-6	Develop regional procedures for efficient and optimum use of aerodrome and runway capacity.	Valid	E/T/OI	Improve aerodrome capacity	2010	Requires development of methodology to optimize runway occupancy.
9	D GPI-6	Develop a regional ATFM procedural manual to manage demand/capacity balancing.	Valid	E/T/OI	Regional ATFM Procedures	2010	Requires development of regional manual in accordance with SUPPs.
10	D GPI-6 13/64	Develop a regional strategy and framework for the implementation of a Centralized ATFM unit.	Completed	E/T/OI	Centralized ATFM strategy	GRPCS/13	Regional guidelines in CAR/SAM ATFM CONOPS.
11	D GPI-6	Develop operational agreements between Centralized ATFM units for interregional demand/capacity balancing.	Valid	E/T/OI	Agreements between Central ATFM units.	2010	

ACTION PLAN FOR THE FOLLOW-UP AND IMPLEMENTATION OF AIR-GROUND AND GROUND-GROUND COMMUNICATIONS

State/Organization: _____   Date: _____

No.	Strategic Objective/ AN-Conf/11 Global Plan/ GPI Regional Plan / FASID GREPECAS No. Con/Dec/Pa	Target Activity	Status	To be developed by	Deliverable	Target date	Remarks
1	2	3	4	5	6	7	8
1	A, D GPI-17 13/71 a)	Improve or mitigate the VHF and HF/SMA (R) coverage		States and International Organizations.	Compliance with the required coverage	2007	
2	A, D GPI-17 13/71 b)	Implement required satellite voice communications		States and International Organizations.	Implement the required voice communications	2009	
3	A, D GPI-17 13/71 b)	Review and proposal for amendment corresponding to the FASID Table CNS 2A, according to the results of action 13/71 a).		States and International Organizations.	Proposal for amendment	2007	
4	A, D GPI-17 13/71 c)	Inform the ICAO NACC Regional Office regarding the progress on actions a) and b) of Con. 13/71		States and International Organizations.	Information sent	2008	
5	A, D GPI-17 13/72 a)	Prepare an execution Plan of the progressive air-ground data links, based on the Plan of activities and the Implementation Programme presented in Appendixes AW and AX to Agenda Item 3 of the GREPECAS/13 Report.		States and International Organizations.	Prepared Plan	2009	
6	A, D GPI-17 13/72 b)	Review and proposal for amendment corresponding to the FASID Table CNS 2A, according to the results of action 13/72 a).		States and International Organizations.	Proposal for amendment	2008	
7	A, D GPI-17 13/72 c)	Inform the ICAO NACC Regional Office regarding the progress on actions a) and b) of Con. 13/72		States and International Organizations.	Information sent	2008	
8	A, D GPI-17 13/74	Forward the proposal for amendment to the ATN Regional Plan format.		ICAO	Proposal for amendment forwarded	2008	
9	A, D GPI-17 13/75 a)	Analyse requirements and prepare plans to implement ATN ground-ground applications, such as AMHS and AIDC.		States and International Organizations.	Prepared Plan	2008	
10	A, D GPI-17 13/75 a)	Inform the ICAO NACC Regional Office regarding the results of action a) of Con. 13/75.		States and International Organizations.	Information sent	2008	
11	A, D GPI-17 13/78	Carry out activities for the deployment of the ATN and its applications according to the deadlines and strategies presented in Appendix BA to Agenda Item 3 of the GREPECAS/13 Report.		States and International Organizations.	Deployment of the ATN according to planned dates.	2009	
12	A, D GPI-17 13/79	Develop national plans for the implementation of the AMHS and the AIDC, contributing to the development of the ATM automation.		States and International Organizations.	Prepared Plan	2009	

No.	Strategic Objective/ AN-Conf/11 Global Plan/ GPI Regional Plan / FASID GREPECAS No. Con/Dec/Pa	Target Activity	Status	To be developed by	Deliverable	Target date	Remarks
1	2	3	4	5	6	7	8
13	A, D GPI-17 14/53	Forward the proposal for amendment of the FASID Table CNS 2A that was reviewed by the GREPECAS/14.		ICAO	Proposal for amendment forwarded	2007	
14	A, D GPI-17 GRP14 pa. 3.6.3.17	Forward the Table format proposal for the ATN air-ground applications regional plan, presented in Appendix AD to the Report on Agenda Item 3 of the GREPECAS/14 Report.		ICAO	Proposal for amendment forwarded	2008	

ACTION PLAN FOR THE GNSS IMPLEMENTATION FOLLOW-UP - CAR REGION

State/Organization: _____   Date: _____

No.	Strategic Objective/ AN-Conf/11 Global Plan/ GPI Regional Plan / FASID GREPECAS No. Con/Dec/Pa	Target Activity	Status	To be developed by	Deliverable	Target date	Remarks
1	2	3	4	5	6	7	8
1	A, D Rec 6/1 b) GPI-21	**_Recommendations of the AN-Conf/11 for the transition to satellite-based air navigation_** Adopt measures to achieve, as soon as possible, worldwide navigation capability to at least APV I performance.		States and air navigation services Providers	Adopted measures	2009	
2	A, D Rec 6/1 c) GPI-21	Take note of the available and upcoming SBAS navigation services providing for APV operations.		States and air navigation services Providers	Take note	2007	
3	A, D Rec 6/1 c) GPI-21	Take the necessary steps towards installation and certification of SBAS capable avionics.		States and airspace users	Installed and certified avionics	2009	
4	A, D GPI-21 12/45 a)	**_New guidelines and regional strategy for the GNSS transition_** Take into account the "Regional Guidelines for the transition to the GNSS" and the "Regional strategy for the introduction and application of non visual aids to approach, landing and departure_"		States and International Organizations	Guidelines and Strategy applied	2009	
5	A, D GPI-21 Table CNS 3 13/84 a)	**_Studies for a CAR/SAM Regional SBAS solution_** Continue introducing the GNSS in an evolutionary and coordinated manner, according to the ICAO Global Plan.		States and International Organizations	Introduce GNSS	2009	
6	A, D GPI-21 Table CNS 3 13/84 a)	Conducting the studies for a CAR/SAM regional SBAS solution; and applying other augmentations, also taking into account that added benefits should help to justify the cost of reaching the ultimate goal of migrating to the GNSS once ground-based aids are dismantled.		States and International Organizations	Studies carried out	2008	
7	A, D GPI-21 13/84 d)	Interested parties in participating in the Project RLA/03/902 should consider the revised rates to join this project.		States and International Organizations	Participation in the Project	2007	
8	A, D GPI-21 13/85	Foster the use of GNSS in diverse sectors of their respective States and disseminate the results of the studies on the solution of SBAS augmentation.		States and International Organizations		2009	
9	A, D GPI-21 GRP14 3.6.3.20 to 28	Follow-up to the studies and results of the regional projects RLA/00/009 and RLA/03/902 on the SBAS augmentation solution in the CAR/SAM Regions.		States and International Organizations	Consider the results of the studies	2008	

No.	Strategic Objective/ AN-Conf/11 Global Plan/ GPI Regional Plan / FASID GREPECAS No. Con/Dec/Pa	Target Activity	Status	To be developed by	Deliverable	Target date	Remarks
1	2	3	4	5	6	7	8
10	A, D GPI-21 14/55	Take note that the SBAS solutions proposed for the CAR/SAM Regions should be oriented to achieve at least APV I capability.		States and International Organizations	Proposed SBAS solution to at least APV I performance	2008	
11	A, D GPI-21	**_Follow-up to the SARPs and ICAO guidelines and policies on GNSS_** Reply State Letter Ref.: AN 7/1.3.91-07/31 dated 11 May 2007.				24-08-07	
12	A, D GPI-21 GRP13 pa. 3.6.3.61	Follow-up and implement GNSS in accordance to the SARPs and ICAO guidelines.		States and International Organizations	Take note and issue comments	2009	
14	A, D GPI-21 Table CNS 3 14/56 a)	**_Progressive deactivation of conventional radio aids_** Analyse the service provided by each NDB station and the existence of procedures with other aids such as VOR/DME and GNSS-RNAV, as well as the aircraft capacity/development that operate in the serviced airspace.		States, International Organizations and airspace users	Conduced analysis	2008	
15	A, D GPI-21 Table CNS 3 14/56 b)	Based on the results of the action in 14/56 a) and on the Table format presented in Appendix AF to the Report on Agenda Item 3 of the GREPECAS/14 Meeting, prepare a progressive deactivation plan of NDB stations.		States and International Organizations	Develop and implement the Plan to deactivate NDB stations.	30-Nov-07	
16	A, D GPI-21 Table CNS 3 14/57	**_Update of the Regional Navigation Systems Plan_** Taking into account the results of actions in 15/46 and the GNSS development, to review and propose amendments to the FASID Table CNS 3.		States, International Organizations and GREPECAS	Amendment to the FASID Table CNS 3		
17	A, D GPI-21 GRP14 pa. 3.6.3.25	**_GNSS training activities_** Participate in the GNSS Advanced Course that will be held in the ICAO NACC Regional Office in Mexico City from 24 to 28 September 2007.		States and International Organizations	Participate in the GNSS Course	24-Sep-07	

ACTION PLAN FOR THE FOLLOW-UP AND IMPLEMENTATION OF SURVEILLANCE SYSTEMS - CAR REGION

State/Organization: _____   Date: _____

No.	Strategic Objective/ AN-Conf/11 Global Plan/ GPI Regional Plan / FASID GREPECAS No. Con/Dec/Pa	Target Activity	Status	To be developed by	Deliverable	Target date	Remarks
1	2	3	4	5	6	7	8
1	A, D GPI-09 GRP14 pa 3.6.3.43	***Global Plan Strategy GPI-09 - Situational Awareness*** Take note of GPI-09 - Situational awareness as a global strategy for data-based surveillance implementation. (Appendix A)		States and International Organizations	Knowledge of GPI-09 from the Global air navigation Plan	2007	
2	A, D GPI-09	***ICAO SARPs and guidelines on Surveillance Systems*** Take into account and follow-up the Surveillance Systems SARPs and ICAO guidelines		States and International Organizations	Knowledge and application of the Surveillance SARPs	2008	
3	A, D GPI-09 GRP14 pa 3.6.3.44	***Preliminary Regional Strategy for the deployment of ADS-B and ADS-C*** Take into account the "Preliminary Regional Strategy for the Deployment of ADS-C and ADS-B" and follow-up GREPECAS guidelines regarding the consolidation of this strategy into a Surveillance Systems Regional Unified Strategy." (Appendix B)		States and International Organizations	Preliminary regional strategy used to plan and deploy ADS. Follow-up to the evolution	2009	
4	A, D GPI-09 13/87	***Initiatives for the implementation of ADS-B, ADS-C as well as other Surveillance Systems*** Assess the convenience to establish and implement ADS-B trials, as well as other surveillance systems.		States and International Organizations	ADS-B Trials	2008	
5	A, D GPI-09 Table CNS 4A GRP14 pa 3.6.3.44	Continue the adoption of initiatives for the ADS-B, ADS-C and other surveillance systems planning and implementation, according to operational requirements. (Appendix C)		States and International Organizations	Established initiatives	2008	
6	A, D GPI-09 Table CNS 4A GRP14 pa 3.6.3.51	***Update of the Surveillance Systems Regional Plan*** Considering the results of the previous actions and the development of the Surveillance Systems, to review and propose amendments to Table CNS 4A - Surveillance Systems of the FASID.		States and International Organizations	Amendment to Table CNS4A, FASID	2009	
7	A, D GPI-09 11/47 12/48 12/49 13/88	***Radar data exchange*** Establish and implement bilateral/multilateral agreements for radar data exchange.		States and International Organizations	Radar data exchange established	2008	

ACTION PLAN FOR THE IMPROVEMENT AND DEVELOPMENT OF ATM SITUATIONAL AWARENESS - CAR REGION

State/Organization: _____   Date: _____

No.	Strategic Objective/ AN-Conf/11 Global Plan/ GPI Regional Plan / FASID GREPECAS No. Con/Dec/Pa	Target Activity	Status	To be developed by	Deliverable	Target date	Remarks
1	2	3	4	5	6	7	8
		Near term (2010)					
1	D GPI-9 14/43 a)	Identify the feasibility to establish the bilateral/multilateral agreements for ATM automated systems.	Valid	E/T/OI	Agreements for ATS automated systems		
2	D GPI-9 14/44	Identify the automation level required according to the ATM service provided in airspace and international aerodromes, assessing:	Valid	E/T/OI	Requirements for ATM surveillance		
		- operational architecture design, - characteristics and attributes for interoperability, - data bases and software, and - technical requirements					
3	D GPI-7 Tables CNS1A CNS1C 12/37	Improve ATS voice and data interfacility communication.	Valid	E/T/OI	Implementation of FASID Table 1-A, and identify other ATS comms. requirements		
4	D GPI-9 13/79	Implement flight plan data processing system and electronic transmission tools.	Valid	OACI	Improve ATM surveillance		
5	D GPI-9 Table CNS 4A 14/48	Implement radar data sharing programs where benefits can be obtained.	Valid	E/T/OI	Improve ATM surveillance		
6	D GPI-9 14/44	Develop situational awareness training programmes for pilots and controllers.	Valid	E/T/OI	ATM situational awareness training programmes		
7	D GPI-9 Table CNS 4A 14/44	Implement ATM surveillance systems for situational traffic information and associated procedures.	Valid	E/T/OI	Improve ATM capacity		
8	D GPI-9 12/31	Implement ATS automated message exchanges, as required - FPL, CPL, CNL, DLA, etc.	Valid	E/T/OI	AIDC		
9	D GPI-9 12/31	Implement automated radar handovers, where able.	Valid	E/T/OI	Improve ATM capacity		

No.	Strategic Objective/ AN-Conf/11 Global Plan/ GPI Regional Plan / FASID GREPECAS No. Con/Dec/Pa	Target Activity	Status	To be developed by	Deliverable	Target date	Remarks
1	2	3	4	5	6	7	8
10	A, D GPI-16 12/31	Implement ground and air electronic warnings, as needed -Conflict prediction -Terrain proximity -MSAW -DAIW -Surveillance system for surface movement	Valid	E/T/OI	Improve ATM safety management		
11	D GPI-17 Tables CNS4A, CNS1B 13/72	Implement data link surveillance technologies and ATN applications: ADS, CPDLC, AIDC, as required.	Valid	E/T/OI	Improve ATM surveillance		
		Medium term (2015)					
12	D GPI- 18/19 12/31 14/44	Implement additional/advanced automation support tools to increase sharing of aeronautical information -ETMS or similar -MET information -AIS/NOTAM dissemination -Surveillance tools to identify airspace sector constraints. -A-SMGC in specific aerodromes, as required.	Valid	E/T/OI	Improve ATM surveillance		
13	D GPI-6 14/44	Implement teleconferences with ATM stakeholders.	Valid	E/T/OI	Improve CDM Process		

ACTION PLAN FOR AIM IMPLEMENTATION - CAR REGION

State/Organization: _____   Date: _____

No.	Strategic Objective/ AN-Conf/11 Global Plan/ GPI Regional Plan / FASID GREPECAS No. Con/Dec/Pa	Target Activity	Status	To be developed by	Deliverable	Target date	Remarks
1	2	3	4	5	6	7	8
			2008				
1	Safety and efficiency	To solve, under ICAO NACC Office coordination, the differences of the WGS-84 coordinates of the adjacent FIR bordering points published in the AIP of CAR States/Territories and its neighbouring regions.	Lack of information in the NACC Regional Office	E/T/OI	To notify the NACC Office of the developments, agreements and publication of WGS-84 coordinates.	2008	
2	Safety	To contribute to the coordination and follow-up of the WGS-84 total implementation in the CAR States/Territories. Especially with the obstacle survey according to ICAO Doc. 9674, and the harmonization of coordinates of the adjacent FIR for CAR Region.	Valid	E/T/OI	To notify the NACC Office of the developments, agreements and publication of WGS-84 coordinates in the respective AIP.	2008	
3	Safety	To carry out the coordination, assistance and follow-up implementation of standard Quality Assurance System AIM (AIS/MAP) in the CAR States/Terrritories.	Valid	E/T/OI	To notify the NACC Office of the developments, agreements and publication of WGS-84 coordinates in the respective AIP.	2008	In the GREPECAS/14 Meeting Report it was determined that this a priority task for the AIM Services (AIS/MAP). The GREPECAS/14 Meeting approved a Conclusion for the adoption of Part 4 - Guidance Manual for the Implementation of a Quality Management Systems in AIS/MAP Services of CAR/SAM Regions.

No.	Strategic Objective/ AN-Conf/11 Global Plan/ GPI Regional Plan / FASID GREPECAS No. Con/Dec/Pa	Target Activity	Status	To be developed by	Deliverable	Target date	Remarks
1	2	3	4	5	6	7	8
4	Safety	To promote with the assistance of ICAO NACC Office training actions related with the correct application and effective compliance of quality requirements of aeronautical data established in ICAO Annexes 4, 14 and 15 supporting the determination of Electronic Terrain Obstacle Data e-Tod, mentioned in Doc 9881 – Guidelines for Electronic Terrain, Obstacle and Aerodrome Mapping Information.	Completed	E/T/OI	e-Tod Seminar	2007	ICAO Council approved a Special Implementation Project (SIP) for the training with a Seminar on New Standards derived from Amendments of Annexes 4 and 15 on the CNS/ATM Systems development in the e-Tod CAR/SAM Regions, where it was reviewed the importance of carrying out the training in the comprehension and interpretation of quality requirement tables of aeronautical and electronic obstacles and terrain. The Seminar e-TOD was carried out in November 2007 in Dominican Republic.
5	Safety and efficiency	Recommend necessary actions to develop and assist States/Territories in the AIS Automation Implementation Plan approved for the Caribbean Region, developing the pertinent data basis.	Valid	ICAO	Technical Cooperation Project directed to solve aspects of AIS deficiencies which, among others, are emphasized: - The digital elaboration of aeronautical charts for visual or instrument navigation; - Quality assurance; -Automation; - AIP diffusion by electronic means; and - Implementation and harmonization of WGS-84 Coordinates.	2008	ICAO Council informed on the assistance in order to concrete the project. In GREPECAS/14 Meeting it was informed that ICAO will prepare a Global Aeronautical information exchange model (AIXM) at the end of 2007, for this reason ICAO was urged to define the corresponding guidance material as soon as possible.
6	Safety and efficiency	Review, propose actions and carry out the follow-up of the AIS/MAP requirements implementation established in the CAR/SAM Air Navigation Plan and GREPECAS conclusions.	Valid	E/T/OI	It is required to notify to NACC Office on the action plans for the resolution of AIS/MAP deficiencies.	2008	The Deficiencies Table gives follow-up on the implementation of AIS/MAP requirements established in the ANP. In most of the cases it is not updated.

No.	Strategic Objective/ AN-Conf/11 Global Plan/ GPI Regional Plan / FASID GREPECAS No. Con/Dec/Pa	Target Activity	Status	To be developed by	Deliverable	Target date	Remarks
1	2	3	4	5	6	7	8
7	Efficiency	Study the human factors elements applied to AIS/MAP, in correspondence with the AIS/MAP/SG/10 Meeting results.	Completed	E/T/OI	The AIM Quality Management Task Force of GREPECAS AIM Subgroup in its new terms of reference and work programme, and complying with the established requirements in ISO 2001:2000 standard regarding Human Resources management finalized the elaboration of pertinent guidelines.	TBD	In GREPECAS/14 Meeting the *Application of the human factors principles in Aeronautical Information Management (AIM)* was reviewed considering that the AIS/MAP Subgroup changes its name as AIM Subgroup and initiated the necessary actions for the development of the Human factors principles in Aeronautical Information Management and its application. It was also discussed the need to elaborate a manual containing human factors guidelines and a Plan for its implementation, including all the activities to direct human factors in the air navigation systems.

Agenda Item 8:   Other Air Navigation Matters

ICAO Framework for Transition to an Electronic Air Navigation Plan (eANP)

8.1   The Secretariat presented information on ICAO electronic tools, which will facilitate the coordination and implementation of regional air navigation plans and support the Global Air Navigation Plan with an electronic version of the Air Navigation Plan (eANP). Due to the relevant information concerning worldwide coordination with planning processes in support of a global traffic management (ATM) system, relevant information is included in the **Appendix** to this part of the report.

Destination Alternate Requirements

8.2   The Meeting recalled the amendment to ICAO Annex 6 (4.3.4.3), which details the implementation of international flight operations without having to include an alternate aerodrome. Currently, several airlines are authorized by their civil aviation authorities to function with no destination alternate airport.

8.3   Participants acknowledged that by not having a destination alternate airport they have allowed airlines to carry more passengers and/or cargo and less fuel in order to enhance efficiency and reduce operational costs, which can play a vital role in airline operations and the environment. Considering the crisis in the fuel prices, States must be committed to comply with the provisions of Annex 6.

APPENDIX

ICAO FRAMEWORK FOR TRANSITION TO AN ELECTRONIC AIR NAVIGATION PLAN (eANP)

(Briefing on ICAO planning for the implementation of the electronic Air Navigation Plan)

1.   Introduction

1.1   ICAO's efforts to address the needs of the Air transport Industry and International Civil Aviation have aimed at coordinating the worldwide planning processes in support of a global traffic management (ATM) system, as it evolves from the technology-based CNS/ATM System concept. The first plan of action for transition to ICAO CNS/ATM Systems (Global Coordinated Plan) was published on 1998, which evolved in its revised document known as the Global Air Navigation Plan for CNS/ATM Systems (Global Plan, Doc. 9750). This revised document was developed as a strategic document to guide the implementation of CNS/ATM systems.

1.2   Under this guidance, regional Air Navigation Plans have been developed, being the Doc. 8733: Regional Air Navigation Plan the document applicable to the CAR/SAM regions.

1.3   To facilitate the coordination and implementation of regional air navigation plans as well as supporting the Global Air Navigation Plan an electronic version of the Air Navigation Plan (eANP) is foresee. It will also contribute to the further development of air navigation planning by providing a framework for the efficient implementation of new air navigation systems and services at the national, regional, inter-regional and global levels. The framework will support, in particular, the work of regional planning and implementation groups that plan, monitor and analyze the implementation status of planned facilities and services for inclusion in the regional air navigation plans, and recommend ways to expedite these plans in accordance with ICAO priorities. The availability of this information online will greatly facilitate updating and access to the latest information for States, ICAO regional offices and various other users.

2.   **Transition to eANP**

        Primary Objectives of eANP

2.1   This transition to an eANP has two primary objectives:

        a)   at the global level: reconcile the Regional Air Navigation Plan with the ATM operational concept, the new Global ANP provisions and the ICAO new business planning processes; and

        b)   at the regional level: expedite regional planning and coordination through simplifying and freeing the core of planning from a long and cumbersome formal approval process, (whilst maintaining the planning and coordination process requirements within the ICAO regional machinery).
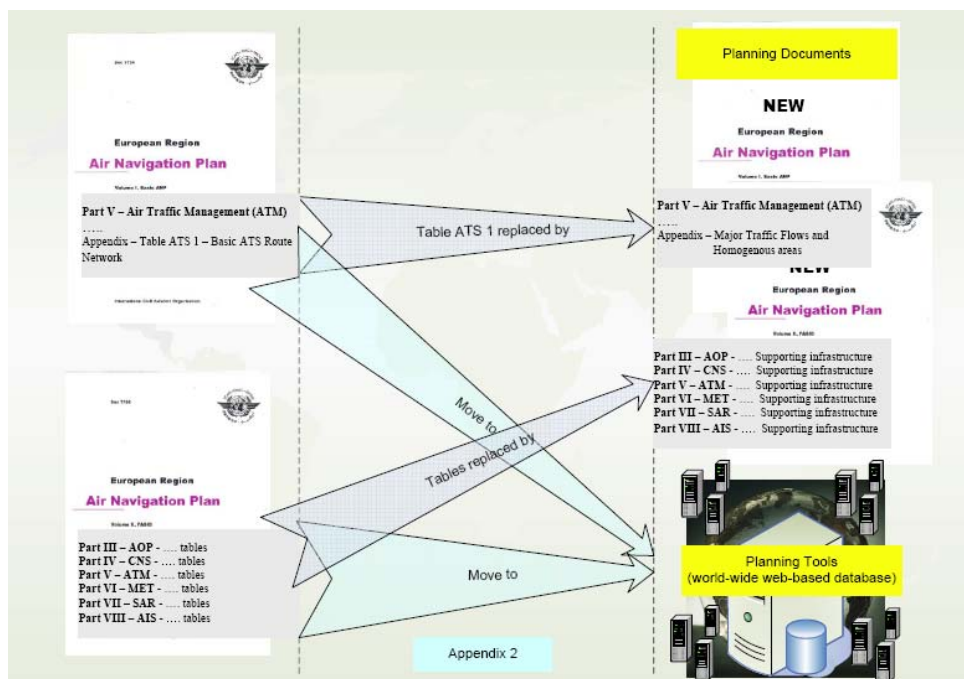
Deliverables of eANP

2.2   To reach the above objectives, the following deliverables will be produced:

a)   Easy-to-use planning documents that would contain the relevant elements, specifically, homogeneous ATM areas and major international traffic flows, and the agreed CNS/ATM systems infrastructure necessary to support the implementation of the homogeneous ATM areas and major international traffic flows; and

b)   an integrated world-wide web-based Air Navigation Planning Database containing details currently listed in Table ATS 1 and all FASID Tables (AOP, CNS, ATM, MET, SAR, AIS). This will be designed to easily support the coordination, agreement and recording process between States and international organisations, also through a user-friendly interface.

Proposed eANP Methodology

2.3   The proposed methodology that will be employed to achieve the above deliverables is as
follows:

a)   Replace the current provisions in the ANP Volume I, concerning Establishment of ATS Routes and Table ATS 1, by the relevant elements of the Global ANP and the evolving ATM operational concept, specifically, homogeneous ATM areas and major international traffic flows;

b)   Replace the current provisions in the ANP Volume II, comprised of FASID tables (AOP, CNS, ATM, MET, SAR, AIS), by the agreed air navigation system elements necessary to support the implementation of a performance-based infrastructure to support homogeneous ATM areas and major international traffic flows;

c)   Move all details currently listed in Table ATS 1 and all FASID Tables to an integrated world-wide web-based Air Navigation Planning Database which will be designed to support the coordination, agreement and recording process between States and international organisations; and

d)   Propose the necessary amendments to current ICAO SARPs, e.g. Annex 11 — Air Traffic Services, Appendix 1, be revised to remove the distinction between regional and non-regional networks of ATS routes.

Appendix 1

Appendix 2

Framework elements

2.4   The framework elements for the deliverables of this transition will be:
a)   Planning documents
- homogeneous ATM areas and major international traffic flows, and
- agreed CNS/ATM systems infrastructure necessary to support this implementation
- Proposed new Layout and Content
- Introduction/BORPC/General Planning Aspects (Common to all Regions)
- Coloured pages of specific requirements per Region per discipline

b)   Integrated world-wide web-based air navigation planning database

- Tools that are proposed under the electronic Air Navigation Plan (eANP) environment effort:
    i.   5LNC Management Tool
    ii.   Navaid Management Tool
    iii.   Communications planning
    iv.   HF SELCAL allocations
    v.   AMHS assignments
    vi.   SBAS Channel Allocation Utility
    vii.   Route Designator Management Tool
    viii.   Automated ANP update processing utility
    ix.   eBORPC
    x.   eFASID
    xi.   FIRs Amendment and Information Tool
- Process model for ATS route planning tool (suggested model for all other FASID table-related tools)

2.5   This transition process is an ongoing process with the participation of several stakeholders including ICAO offices, EUROCONTROL and States through their corresponding Planning/Implementation Group (for example for the CAR/SAM Regions: GREPECAS). In general terms the transition to the eANP will de accomplished as illustrated on figure 1.
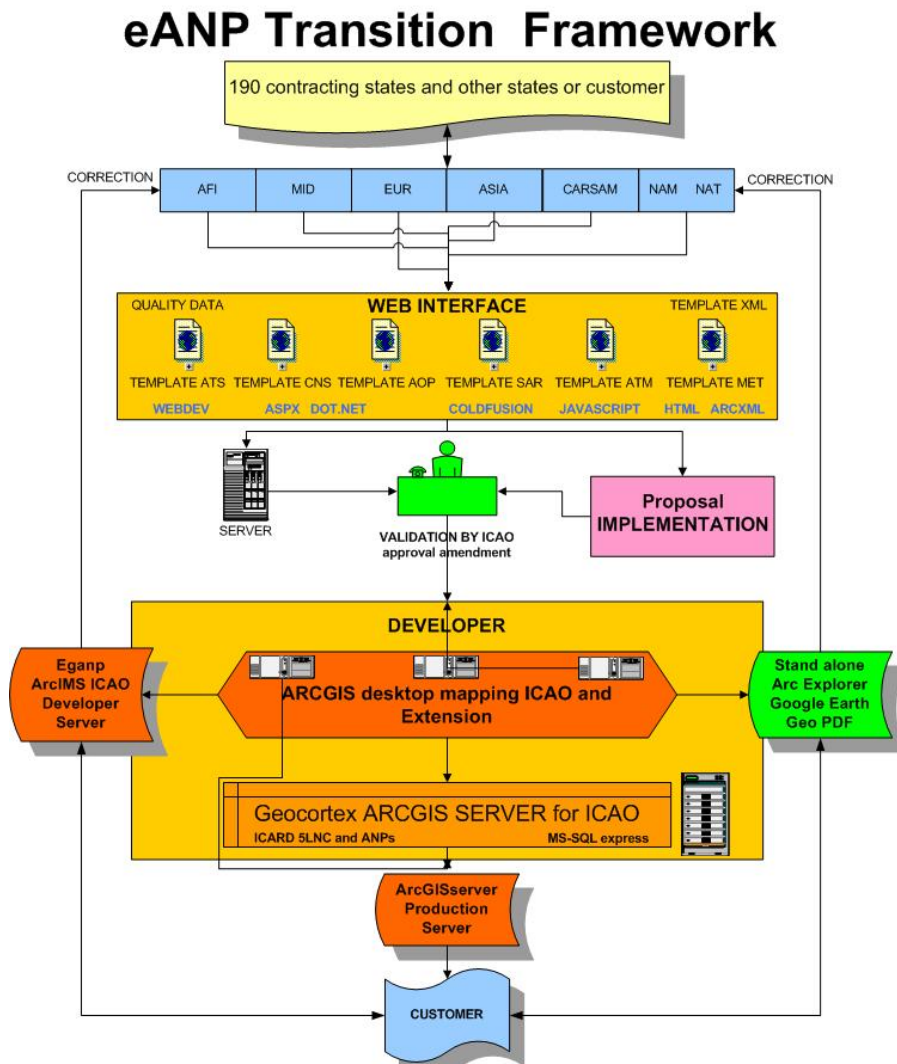
Figure 1