FINAL VERSION

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

FIFTH CENTRAL CARIBBEAN WORKING GROUP MEETING

C/CAR WG/5

SUMMARY OF DISCUSSIONS

MEXICO CITY, MEXICO, 21 TO 24 FEBRUARY 2005

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HISTORICAL

ii.1 Place and Date of the Meeting

The Fifth Meeting of the Central Caribbean Working Group (C/CAR WG/5) was held at the ICAO Regional NACC Office in Mexico City, Mexico, from 21 to 24 February 2005.

ii.2 Opening Ceremony

The Meeting was opened by Mr. Raymond Ybarra, Regional Director for North American, Central American and Caribbean Office, who thanked the presence of the participants, gave an overview of the scope of the Meeting's Agenda, pointed out the need of continuing the efforts towards the development of air navigation systems in the Central Caribbean and, finally, opened the Meeting.

ii.3 Organization of the Meeting

The Meeting was chaired by Mr. Jacques Boursiquot, Haiti, Chairman of the Central Caribbean Working Group, and Ms. Leslie Cary, United States, was elected Vice-Chairman for the duration of this Meeting. Mr. Víctor Hernández, Regional Officer, Air Traffic Management and Search and Rescue acted as Secretary of the Meeting assisted by Mr. Guillermo Vega, Regional Officer Aeronautical Meteorology. The meeting also counted with the consultancy of Messrs. Aldo Martínez, Regional Officer Communications, Navigation and Surveillance; Jan Jurek, Regional Officer Safety Oversight**,** and Mr. Bernal Mesén, Regional Officer Aeronautical Information Services/MAP, all from the ICAO NACC Regional Office.

ii.4 Working Languages

The working languages of the Meeting were Spanish and English. The Working Papers and Summary of Discussions of the Meeting were available to participants in both languages.

ii.5 **Agenda**

The Meeting adopted the following agenda:

Agenda Item 1: **Follow-up on the actions taken concerning the valid Conclusions/Decisions of previous Meetings**

1.1 Review of the Conclusions/Decisions of the C/CAR WG.
1.2 Review of the Conclusions/Decisions of the C/CAR DCA meetings.

Agenda Item 2: Review of the air navigation deficiencies and of the Action Plans to resolve them

Agenda Item 3: Activities for the development of the air navigation systems/services

3.1 Aeronautical Information Services (AIS/MAP)
3.2 Air Traffic Management (ATM)
3.3 Communications, Navigation and Surveillance (CNS)
3.4 CNS/ATM
3.5 Aeronautical Meteorology (MET)
3.6 Search and Rescue (SAR)

Agenda Item 4: Safety Oversight Activities

Agenda Item 5: Human Resources and Training

Agenda Item 6: Review of the Terms of Reference and Work Programme

Agenda Item 7 Other business

7.1 Next Meeting Site

ii.6 **Schedule and Work Mode**

The Meeting agreed to hold its daily sessions from 09:00 to 14:00 hours, with adequate breaks. Taking into consideration Decision 4/9 of the Working Group, it was agreed that all the C/CAR/WG Task Forces met simultaneously during the afternoon of the first two days of the Meeting. Ad hoc groups were created to review specific issues of the Agenda.

ii.7 **Attendance**

The Meeting was attended by 15 participants from 6 States/Territories of the Central Caribbean Region, and 18 observers from Mexico, ARINC, IFALPA, IFATCA and SITA, making a total of 33 delegates. The Meeting regretted the absence of the following invited States/Territories/International Organizations: Aruba, Bahamas, Cayman Islands, Turks and Caicos Islands and IATA. A list of participants is shown in pages iii-1 to iii-8.

ii.8 **Conclusions and Decisions**

The Central Caribbean Working Group recorded its activities as Draft Conclusions and Decisions as follows:

DRAFT CONCLUSIONS: Activities requiring a communication to States/Territories/International Organizations and/or endorsement by Central Caribbean Directors of Civil Aviation (C/CAR DCAs)

DECISIONS: Internal activities of the Central Caribbean Working Group (C/CAR WG)

LIST OF DRAFT CONCLUSIONS AND DECISIONS ADOPTED BY THE C/CAR/WG/5 MEETING

ii.9 List of Working, Information and Discussion Papers

Working Papers

Number	Agenda Item	Title	Date	Presented by
WP/01	---	Agenda and Schedule	11/01/05	Secretariat
WP/02	1.1	Status of the Outstanding C/CAR/WG Conclusions and Decisions	12/01/05	Secretariat
WP/03	2	Specific Air Navigation Planning and Implementation Deficiencies in the Central Caribbean	07/02/05	Secretariat
WP/04	3.1	Need for Effective Actions in the AIS/MAP aspects	08/02/05	Secretariat
WP/05	3.2	Post RVSM Implementation Activities in the Central Caribbean	10/02/05	Secretariat
WP/06	3.2	ATS Routes in the C/CAR	09/02/05	Secretariat
WP/07	3.3	Follow-Up on the Development of the CNS Systems	20/01/05	Secretariat
WP/08	3.4	Planning and Implementation of the CNS/ATM Systems	08/02/05	Secretariat
WP/09	3.5	Current Status of the WAFS Operations in the CAR/SAM Regions and GRID/BUFR Training within the ISCS Footprint	07/02/05	Secretariat
WP/10	4	Progress Report on the Implementation of the ICAO Universal Safety Oversight Audit Programme	10/01/05	Secretariat
WP/11	5	Human Resources and Training Planning	19/01/05	Secretariat
WP/12	6	Terms of Reference and Work Programme of the C/CAR WG	21/01/05	Secretariat
WP/13	3.6	Terms of Reference and Work Programme of the C/CAR SAR TF	11/02/05	Rapporteur of the SAR/TF
WP/14	3.1	Harmonization of Bordering Coordinates	18/02/05	Rapporteur of the AIS/TF
NE/15	3.2	Rutas ATS de Cuba en el C/CAR (**Available only in Spanish**)	18/02/05	Cuba

Information Papers

Number	Agenda Item	Title	Date	Presented by
IP/01	--	General Information	19/01/04	Secretariat
IP/02 **Rev.**	--	List of Working and Information Papers	21/02/04	Secretariat
IP/03	1.2	Conclusions of the C/CAR DCA/7 meeting relevant to the C/CAR WG	18/01/05	Secretariat
IP/04	3.2 & 3.6	ATM/SAR Events	03/02/05	Secretariat
IP/05	7.1	Meeting Host Rotation Programme for Future C/CAR Working Group Meetings	18/01/05	Secretariat
IP/06	7	Tentative Schedule – 2005 ICAO NACC Office Meetings,	10/02/05	Secretariat

Number	Agenda Item	Title	Date	Presented by
		Seminars, Courses and Workshops		
IP/07	1	Status of Implementation of C/CAR/WG Conclusions in Haiti	01/02/05	Haiti
IP/08	2	ICAO CAR/SAM Air Navigation Deficiencies Database	03/02/05	Secretariat
IP/09	2	Corrected Deficiencies in AIS	04/02/05	Haiti
IP/10	3.4	Enabling CNS/ATM	16/02/05	SITA
NI/11	2	Actualización del Plan de Acción de Cuba para la Solución de Deficiencias de Navegación Aérea (**Available only in Spanish**)	18/02/05	Cuba

Discussion Papers

Number	Agenda Item	Title	Date	Presented by
DP/01	3.3	Report of the C/CAR Radar Data Sharing Task Force	22/02/05	Rapporteur

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Agenda Item 1: Follow-up on the actions taken concerning the valid Conclusions/Decisions of previous Meetings

1.1 Review of the Conclusions/Decisions of the C/CAR WG

1.1.1.1 The Secretariat presented WP/02 with the on-going conclusions and decisions of the previous meetings of the C/CAR WG, inviting the Meeting to notify on the updated status of their implementation.

1.1.2 Haiti presented IP/07, with updated information, on the status of implementation of its State of the pending conclusions of previous meetings of the C/CAR WG. The results of the review are presented in the **Appendix** to this part of the Report.

1.2 Review of the Conclusions/Decisions of the C/CAR DCA meetings

1.2.1 The Secretariat presented IP/03 with the conclusions of the C/CAR DCA/7 meeting concerning the C/CAR WG for the Meeting's information.

STATUS OF OUTSTANDING CONCLUSIONS AND DECISIONS OF PREVIOUS MEETINGS OF THE C/CAR WORKING GROUP CONCLUSIONS REVIEWED BY THE DIRECTORS OF CIVIL AVIATION

FIELD	CONCLUSION	ACTION FOR	COMMENTS AND FOLLOW-UP	STATUS
OPS	**CONCLUSION 1/15** agreed as: **CONCLUSION 5/13 IMPLEMENTATION OF ACAS II IN THE CENTRAL CARIBBEAN** That the Central Caribbean States / Territories take necessary measures to promulgate national regulations to allow them to adopt the International Standard of ACAS II implementation as indicated by Annex 6, Part I, paragraph 6.18.	States / Territories		Completed
OPS	**CONCLUSION 1/16** agreed as: **CONCLUSION 5/14 MANDATORY USE OF PRESSURE ALTITUDE REPORTING TRANSPONDERS** That: a) the Central Caribbean States / Territories take necessary measures to promulgate national regulations to allow them to adopt the International Standard to implement the mandatory use of Pressure Altitude Reporting Transponders (SSR Mode C) as indicated in Annex 6, Part I, International Commercial Air Transport – Aircraft, paragraph 6.19; Part II International General Aviation – Aircraft, paragraph 6.13 and Part III, Helicopters, paragraph 4.15; and b) that the ICAO NACC Regional Office prepare a questionnaire and send it to the C/CAR States / Territories in order to obtain information on the status of adoption, publication and implementation of what was mentioned in a) above.	States / Territories	Inquiry about the compliance with the Mandatory Use of Pressure Altitude Reporting Transponders, is included in both, the USOAP "Audit protocol" and the "Compliance Check list".	Completed
CNS	**CONCLUSION 1/22** Agreed as: **CONCLUSION 5/17 REVIEW OF THE VHF AIR-GROUND VOICE COMMUNICATIONS COVERAGE IN THE CENTRAL CARIBBEAN** That, States / Territories/International Organizations controlling Central Caribbean airspace provide, a) the ICAO NACC Regional Office information on their respective VHF air-ground voice communications stations according to the form shown in Appendix C that should be completed with a maximum period of 60 days; and b) calculated graphic coverage and/or in flight inspection measures.	States / Territories	It may be consider that this Conclusion was superseded by Conclusion 10/29 of GREPECAS and by Conclusion 3/10 of the C/CAR WG. Also, this agenda item is dealt with under the agenda item 3.4 of this Meeting.	Superseded

FIELD	CONCLUSION	ACTION FOR	COMMENTS AND FOLLOW-UP	STATUS
MET	**CONCLUSION 1/31** agreed as: **CONCLUSION 5/23 TRAINING FOR MET/ATS/CNS/AIS/SAR PERSONNEL** That, a) the Directors of Civil Aviation of the C/CAR organize, in coordination with the MET authorities, a series of training activities for ATS/CNS/AIS/SAR and aeronautical meteorological personnel covering the following issues: 1) operational coordination procedures concerning the provision of aeronautical MET service; 2) respective roles and responsibilities of ATS/CNS/AIS/SAR units and meteorological offices in the provision of aeronautical MET service; and 3) interpretation of aeronautical meteorological products available to ATS/COM/AIS/SAR units and meteorological offices, in order to ensure the safety of aircraft operations.	States / Territories/ ICAO NACC Office		Completed
MET	**CONCLUSION 1/33** agreed as: **CONCLUSION 5/25 OPMET INFORMATION EXCHANGE IN C/CAR STATES** That, a) the Directors of Civil Aviation of the C/CAR Region implement, as soon as possible, Conclusion 9/6 formulated by the GREPECAS/9 Meeting on the establishment of coordination committees among AIS/ATM/CNS/MET/SAR units; and b) in support of this proposal, submit to the C/CAR WG for action, the established quality control mechanisms for OPMET exchange messages.	States / Territories		Completed.
ATM	**CONCLUSION 2/3 STANDARDIZED FORMAT FOR LETTERS OF AGREEMENT** That C/CAR States / Territories review and update their interfacility ATS Letters of Agreement using the standardized format, shown in Appendix C to this part of the Report, as applicable.	States / Territories	The States/Territories have updated their LOAs with RVSM information.	Completed
ATM and CNS	**CONCLUSION 2/15 PREPARATION OF A CENTRAL CARIBBEAN CNS/ATM SUBREGIONAL PLAN** That C/CAR States/Territories through the C/CAR/WG develop a Central Caribbean CNS/ATM Subregional Plan taking into account their corresponding national Plans, the neighboring States/Territories/International Organizations and the CAR/SAM Regional CNS/ATM Implementation Plan	States / Territories and C/CAR WG		Completed

FIELD	CONCLUSION	ACTION FOR	COMMENTS AND FOLLOW-UP	STATUS
AIS	**CONCLUSION 3/2 RESPONSES TO THE INVENTORY QUESTIONNAIRE ON THE STATUS OF IMPLEMENTATION OF THE WGS-84** That the Central Caribbean States/Territories are urged to complete the Survey Inventory Questionnaire on the status of the WGS-84 implementation and to submit it to the ICAO NACC Regional Office by 31 October 2003.	States/ Territories		Completed
AIS	**CONCLUSION 3/4 FULL IMPLEMENTATION OF AIS/MAP SERVICES PRIOR TO ICAO USOAP ATS & AGA AUDITS** That, given the direct impact of complete, accurate and timely availability of AIS/MAP information in the required format, including WGS-84 coordinates, on the safety of aircraft operations, States/Territories shall complete full implementation of AIS/MAP Quality Assurance and Automation systems, including the Integrated Aeronautical Information Package, in preparation for the ICAO USOAP ATS and Aerodromes audits that are scheduled to commence in February 2004.	States / Territories		Completed
ATM	**CONCLUSION 3/6 RVSM POINTS OF CONTACT** In support of GREPECAS Conclusions 11/26 and 11/27, that States/Territories of the Central Caribbean that have not yet done so, provide the points of contact for the ATS Service Provider and for the State Aircraft and Operator Approval Authority to the Rapporteur of the RVSM Task Force of the ATM Committee of the ATM/CNS Subgroup of GREPECAS through the ICAO NACC Office by 30 September 2003.	States/ Territories		Completed
ATM	**CONCLUSION 3/7 REVIEW OF ATS LETTERS OF AGREEMENT BETWEEN STATES/TERRITORIES AND VENEZUELA** That ICAO, on behalf of the CAR States/Territories, urge Venezuela to cooperate in the review, coordination and implementation of ATS Letters of Agreement between Maiquetia ACC and Curacao ACC and San Juan ACC to include use of 10-minute/80 NM separations.	ICAO NACC Office, Netherlands Antilles, United States		Completed
CNS	**CONCLUSION 3/9 FASID CNS 4A TABLE UPDATE** That, in order to update the FASID CNS 4A table, States/Territories/International Organizations should send information related to the update of their primary and secondary radar facilities to the ICAO Regional Office no later than November 28, 2003.	States/ Territories/ International Organizations	The C/CAR WG/4 Meeting carried out the follow-up of this Conclusion. Finally, GREPECAS/12 adopted all the amendments presented to the Table CNS 4A.	Completed

FIELD	CONCLUSION	ACTION FOR	COMMENTS AND FOLLOW-UP	STATUS
CNS	**CONCLUSION 3/10 COMPLEMENTARY ACTIONS FOR THE IMPROVEMENT OF VHF/AMS COVERAGE IN THE CENTRAL CARIBBEAN** That, in order to comply with GREPECAS Conclusion 10/29, States/Territories/International Organizations should send information related to their VHF/AMS Stations, and also graphical information regarding their VHF air-ground communications coverage to the ICAO NACC Office no later than 28 November 2003.	States/ Territories/ International Organizations	The C/CAR DCA/7 agreed that this Conclusion has been completed..	Completed
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.	States/ Territories of the C/CAR	The ICAO NACC Regional Office has not received other proposals for amendment. Cuba sent updated information.	Valid
GEN	**DRAFT** **CONCLUSION 4/1 C/CAR/WG CONCLUSIONS IMPLEMENTATION REPORTS** That, States/Territories, prepare an Information Paper on the status of implementation of C/CAR/WG Conclusions in their respective State/Territory for review at each C/CAR/WG meeting, using a simple tabular format.	States/ Territories	It will be incorporated the Terms of Reference. This matter will be discussed under agenda item 6.	Completed

FIELD	CONCLUSION	ACTION FOR	COMMENTS AND FOLLOW-UP	STATUS
ATM	**CONCLUSION 4/2 GUIDANCE FOR THE STUDY OF RVSM OPERATIONAL REQUIREMENTS IN ATM AUTOMATED SYSTEMS** That States/Territories of the Central Caribbean: a) adopt the Guidance shown in the Appendix to this part of the report; b) based on the aforementioned Guidance, they present the preliminary results to the 8th Meeting of ATM Authorities and Planners (AP/ATM/8) and the final results be presented to the 9th Meeting of that Group; and c) submit the results of item b) above to the ICAO NACC Office	States/ Territories of the Central Caribbean	Reformulated by the DCAs as presented in this table. c) Will be further analyzed under Agenda Item 3.4 .	Completed
ATM	**DRAFT** **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.	States/ Territories of the C/CAR	c) Superseded by Conclusion 7/8 of the C/CAR DCA/7 Meeting.	a) and b) Valid
ATM	**DRAFT** **CONCLUSIÓN 4/4 ATS ROUTES IN THE C/CAR AIRSPACE** That the C/CAR States/Territories agree that in order to conduct the corresponding procedure for ATS routes implementation prepared by the C/CAR ATM Task Force and endorsed by the C/CAR/WG, the proposal shown in Appendix B a this part of the report should be followed.	States/ Territories of the C/CAR	Will be dealt with under Agenda Item 3.2	Superseded by Conclusion 7/5 of the C/CAR DCA/7 Meeting.
ATM	**DRAFT** **CONCLUSION 4/6 PARTICIPATION IN THE CAR/SAM RVSM TASK FORCE** That the States/Territories give full support to, and attend the CAR/SAM RVSM Task Force in the meetings/workshops of ATM Authorities and planners to ensure a seamless implementation of RVSM throughout the Region.	States/ Territories of the C/CAR	The participation in the RVSM Scrutiny Group has to be analysed. This matter will be discussed under Agenda Item 3.2.	Superseded by Conclusion 7/4 of the C/CAR DCA/7 Meeting

FIELD	CONCLUSION	ACTION FOR	COMMENTS AND FOLLOW-UP	STATUS
CNS	**CONCLUSION 4/8 ATN/AMHS TRAINING** That, ICAO, if possible, coordinate with States/Territories to hold an ATN/AMHS training event in the 2004-2005 timeframe.	ICAO	In compliance with this Conclusion and Conclusion 12/41 of GREPECAS, ICAO has scheduled an ATN Seminar for 2005.	Valid
AIS	**DRAFT** **CONCLUSION 4/12 FOLLOW-UP TO THE TOTAL IMPLEMENTATION OF WGS-84** **Replaced by Conclusion:** **CONCLUSION 7/9 TOTAL IMPLEMENTATION OF WGS-84** Considering that the RNAV and RNP systems, including RVSM, are in an advanced implementation phase, and that for their efficient application the strict accuracy and integrity of data on which they are based is required, the States/Territories of the C/CAR agree to: a) carry out a greater and more effective follow-up to the total implementation of the WGS-84 System; b) establish 30 November 2004 as the deadline for the total implementation of WGS-84 in the States/Territories of the C/CAR; c) develop technical assistance agreements of which the experience obtained by the States that have already implemented the system in their territories may be taken advantage; d) designate the C/CAR WG to electronically carry out the task of preparing and completing the tables included in the Appendix D to this part of the Report, so that States/Territories with adjacent FIRs determine bilaterally the geographical coordinates of the common points at the boundaries of the FIRs, as well as its standardization and publication by 30 November 2004; and e) request the Regional Office to act as mediator for the quick resolution of the cases where discrepancies may arise.	States/ Territories of the C/CAR	States/Territories and the AIS/MAP TF are expected to inform on this matter.	Valid
MET	**DRAFT** **CONCLUSION 4/13 MET SHORT COURSE FOR AIR NAVIGATION PERSONNEL** That, a) Cuba send the MET short course material to the ICAO NACC Regional Office by 30 April 2004; and b) ICAO coordinate the possible translation and distribution to C/CAR States/Territories.	Cuba and ICAO	The C/CAR DCA/7 Meeting noted the compliance by Cuba of the C/CAR WG/4 Conclusion 4/13 related to a short course on aeronautical meteorological services for air navigation personnel. The course was developed by the Cuban Civil Aviation Institute (IACC), in order to focus attention on MET services as they influence safety, regularity and efficiency of en-route and terminal air navigation systems.	Completed.

FIELD	CONCLUSION	ACTION FOR	COMMENTS AND FOLLOW-UP	STATUS
GEN	**CONCLUSION 4/17 C/CAR WORKING GROUP WORK PROGRAMME** That, the C/CAR/WG Work Programme be updated as shown in the Appendix to this part of the Report.		Accepted by the C/CAR DCA/7 Meeting without modifications	Completed
CNS/ ATM	**CONCLUSION 4/18 C/CAR CNS/ATM IMPLEMENTATION PLAN** That, ICAO coordinate with States/Territories to study options and prepare a proposed action plan for the development of a C/CAR CNS/ATM Imp lementation Plan to be presented to the C/CAR/DCA/7 Meeting and guide the C/CAR/WG in carrying out this assigned task.	ICAO	Accepted by the C/CAR DCA/7 Meeting without modifications	Valid

DECISIONS

FIELD	DECISIONS	ACTION FOR	REMARKS AND FOLLOW-UP	STATUS	REQUIRED ACTION
ATM	**DECISION 1/11 CENTRAL CARIBBEAN ATS ROUTES TASK FORCE** That: a) in order to review the Central Caribbean ATS route network and recommend any changes that may be required, as well as to study and recommend solutions to the congestion on some ATS routes that cross the sub-region, the ATS Routes Task Force was set up as follows: Cuba: Fidel Ara, Colombia: Valid, Netherlands Antilles: Rolando Emers, United States: Leslie Cary, IATA: Julio Lopez; b) the ATS Routes Task Force will mainly work by using electronic communications and will only meet if considered necessary; c) the ATS Routes Task Force will coordinate such changes that affect FIRs adjacent to the Central Caribbean by using direct electronic means or through the ICAO NACC Office, prior to presenting a proposal to the C/CAR Working Group; and d) the task force will present a consolidated proposal, according to a) above, to the Second Meeting of the Central Caribbean Working Group.	ATS Route Task Force	The ATS Route Task Force submitted the proposal of ATS routes, which were included in the Proposal for Amendment S ATM 04/04. Other routes are being coordinated in order to be included in the respective proposal for amendment and corresponding publication. The C/CAR DCA/7 Meeting formulated Conclusion 7/5 on this matter. It will be dealt with under Agenda Item 3.2	Completed	Note
CNS	**DECISION 1/19 REVIEW/IMPLEMENTATION OF THE CNS 2A, CNS 2B, CNS 3 AND CNS 4A – FASID** That the C/CAR Working Group as a follow-up of its immediate work:, a) review the installation Plan and related services to the Aeronautical Mobile Service and the AMSS (Table CNS 2A), the HF Network Designators Table (Table CNS 2B), the Radio Navigation Aids Plan (Table CNS3), as well as Surveillance Systems (Table CNS 4A) all from the FASID; and b) analyze difficulties in the implementation in order to suggest all pertinent actions to complete the implementation.	C/CAR WG	This C/CAR WG Meeting, under agenda item 3.4 and WP/07 will review the Table CNS 2A of the FASID. The Table CNS 4A has already been reviewed.	Valid	Follow-up

FIELD	DECISIONS	ACTION FOR	REMARKS AND FOLLOW-UP	STATUS	REQUIRED ACTION
GEN	**DECISION 1/20 REVIEW OF EXISTING CNS SHORTCOMINGS AND DEFICIENCIES IN THE CENTRAL CARIBBEAN** The Meeting agreed that the C/CAR Working Group, as a continuation of its work, review the existing CNS shortcomings and deficiencies in the Central Caribbean as shown in the Appendix C, with the purpose to suggest the necessary updated amendments and suggest solutions in order to implement the CNS international requirements, eliminating those shortcomings and deficiencies.	C/CAR WG	The C/CAR WG has taken note of this Decision. Consequently, during its meetings deficiencies are reviewed.	Completed	Note
CNS	**DECISION 1/23 ORIENTATION ON THE LABOR OF THE C/CAR WORKING GROUP REGARDING THE VHF AIR-GROUND VOICE COMMUNICATIONS COVERAGE** That the C/CAR Working Group, a) based on the information supplied by the States / Territories/Organizations of the Central Caribbean, and in accordance with the dispositions of Annex 10, Volume III, Part II, Chapter II, on the required field intensity levels required, should calculate such coverages for its terminal areas considering the minimum in-flight levels to be 4,000 ft and the maximum 12,000 ft and for control area the minimum of 7600 m (25,000 ft) and the maximum of the 13,700 m (45,000 ft) level of flight; and b) if range gaps are detected, it should propose corrective measures.	C/CAR WG	The C/CAR WG has taken note of this Decision. This item is dealt with under item 3.4 and WP/07 of this Meeting.	Completed	Note
CNS	**DECISION 1/27 ESTABLISHMENT OF A RADAR DATA SHARING TASK FORCE FOR THE CENTRAL CARIBBEAN** The Meeting agreed to establish a Task Force on the Radar data sharing in the Central Caribbean, together with the Terms of Reference, Work Programme, Composition and Rapporteur, which is attached to this part of the Report in Appendix F. This Task Force should also report its progress to every C/CAR Working Group Meeting, as well as to make periodical reports if necessary.	C/CAR WG	This matter will be discussed under Agenda Item 3.4 of this Meeting. Results of the work of the Task Force are expected.	Valid	Follow-up

FIELD	DECISIONS	ACTION FOR	REMARKS AND FOLLOW-UP	STATUS	REQUIRED ACTION
CNS	**DECISION 2/10 CREATION OF A VHF/AMS COVERAGE TASK FORCE** It was agreed that Colombia, Haiti, Jamaica, United States and IATA comprise a Task Force with Jamaica as the Rapporteur to review the information of the VHF/AMS Stations of the Area Control and Approach Services and to identify lack of coverage deficiencies and to recommend solutions.	C/CAR WG	As agreed by this Decision, the Task Force was created.	Completed	Note
CNS	**DECISION 2/13 RADAR DATA SHARING TASK FORCE RAPPORTEUR** It was agreed to, a) nominate Mr. Vilmo Pieter, from the Netherlands Antilles, as the Radar Data Sharing Task Force Rapporteur; and b) have the group mentioned in a) to initiate its work as soon as possible, considering the preliminary guidelines that exist on this issue, which were adopted by Conclusion 10/33 of the GREPECAS.	C/CAR WG	This Decision is noted. The Group has started its work. Likewise, the Group subsequently adopted Decision 4/10.	Completed	Note
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		Valid	Follow-up
ATM	**DECISION 3/5 C/CAR ATM TASK FORCE** A new C/CAR ATM Task Force is established, composed by members from Cayman Islands, Cuba, Haiti, Jamaica (Rapporteur), Netherlands Antilles and United States, deactivating the ATS routes Task Force and incorporating to the new Task Force created, the Work Programme of the deactivated Task Force.			Completed	Note
GEN	**DECISION 4/1 C/CAR/WG CONCLUSIONS IMPLEMENTATION REPORTS** That, States/Territories, prepare an Information Paper on the status of implementation of C/CAR/WG Conclusions in their respective State/Territory for review at each C/CAR/WG meeting, using a simple tabular format	States/ Territories	It will be incorporated to the Terms of Reference. This matter will be discussed under agenda item 6.	Completed	Note

FIELD	DECISIONS	ACTION FOR	REMARKS AND FOLLOW-UP	STATUS	REQUIRED ACTION
GEN	**DECISION 4/5 TERMS OF REFERENCE AND WORK PROGRAMME OF THE C/CAR ATM TASK FORCE** That in order for the C/CAR ATM Task Force to perform its assigned activities and tasks, it be governed by the Terms of Reference, Work Programme and Composition shown in the Appendix to Agenda Item 4 of this report.			Completed	Note
CNS	**DECISION 4/7 VHF/AMS COMMUNICATIONS COVERAGE** That the C/CAR VHF/AMS Coverage Task Force (Rapporteur – Jamaica), with the support of the ICAO Regional Office, review the pending VHF/AMS communications coverage issues and develop a regional action plan for their resolution to be presented at the C/CAR/WG/5 Meeting.	C/CAR VHF/AMS Coverage Task Force	This item was dealt with under item 3.4 of this Meeting.	Valid	Follow-up
GEN	**DECISION 4/9 C/CAR/WG TASK FORCE MEETINGS** That the C/CAR/WG/5 Meeting Schedule allocate three days for that Meeting and two days for all the C/CAR/WG Task Forces to meet simultaneously.		It was incorporated to the Agenda of the C/CAR WG/5.	Completed	Note
CNS	**DECISION 4/10 RADAR DATA SHARING** That the Radar Data Sharing Task Force (Rapporteur – Netherlands Antilles), with the support of the ICAO Regional Office, collect the required radar data sharing information from C/CAR States/Territories and neighbouring sub-regions by 31 May 2004, and develop a regional action plan for the implementation of radar data sharing to be presented at the C/CAR/WG/5 Meeting.	Radar Data Sharing Task Force	It is expected that the Task Force will present their work results under item 3.4 of this Meeting.	Valid	Follow-up
GEN	**DECISION 4/11 ESTABLISHMENT OF THE C/CAR AIS/MAP TASK FORCE** That, the C/CAR WG/4 approve: a) establishing a C/CAR AIS/MAP Task Force, which will begin its work as of this Meeting, and will perform its tasks primarily through the use of electronic mail; and **b)** that in order to develop the work of this Task Force, it will be governed by the Terms of Reference, Work Programme and composition shown in the Appendix to Agenda Item 4 of this report.			Completed	Note

FIELD	DECISIONS	ACTION FOR	REMARKS AND FOLLOW-UP	STATUS	REQUIRED ACTION
GEN	**DECISION 4/14 C/CAR MET TASK FORCE** A new C/CAR MET Task Force is established, composed by members from Cayman Islands, Cuba (Rapporteur), Dominican Republic and United States, with the Terms of Reference and Work Programme included in **Appendix** to Agenda Item 4 to this report.			Completed	Note
GEN	**DECISION 4/15 C/CAR SAR TASK FORCE** That a new C/CAR SAR Task Force be established, composed by members from Cuba, Dominican Republic (Rapporteur), Haiti, Netherlands Antilles and United States, which will develop its Terms of Reference and Work Programme by 30 April 2004 and to be presented at the next C/CAR/WG/5 Meeting.			Completed	Note
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 SAR Task Force	It is expected that the Rapporteur C/CAR SAR Task Force will present results to the Meeting under Agenda Item 3.6.	Valid	Follow-up

Agenda Item 2: Review of the air navigation deficiencies and of the Action Plans to resolve them

2.1 The Secretariat presented a current list of the deficiencies that have an impact on Air Navigation safety for each one of the States/Territories in particular, urging them to take every possible measures to eliminate these deficiencies in accordance with the procedures approved by GREPECAS (**Appendix A** to this part of the Report). Note was taken that the classification is in accordance with the Methodology of the ICAO Council for the identification and priorization of the Air Navigation Deficiencies, this is, "U": having a direct impact on safety and requiring immediate corrective actions, "A": Top priority requirements necessary for air navigation safety and "B": Intermediate requirements necessary for air navigation regularity and efficiency.

2.2 Likewise, the Meeting was provided with a list of deficiencies of which the States/Territories have submitted an Action Plan for their correction, as well as a list of deficiencies that have been corrected or eliminated during 2004 and 2005. The delegates from Cuba and Haiti presented relevant information on their Action Plans for the correction of the deficiencies.

2.3 In order for the States to comply with their responsibility of providing safe, regular and efficient air navigation services according to the provisions of Article 28 of the Chicago Convention, it was recognized that the careful analysis of those deficiencies, as well as their correction is a routine procedure in all the Working Groups of the CAR Region, as well as in the GREPECAS Contributory Bodies.

2.4 The Secretariat provided information on the Air Navigation Deficiencies Database in the CAR/SAM Regions, resulting from a Special Implementation Project (SIP) approved by ICAO Council, whose objective is to provide a safe and restricted on-line access to deficiencies information to the CAR/SAM States and Territories, and some selected International Organizations. The database is available through the ICAO NACC Office web site (www.mexico.icao.int/nacc); the information on the process, infrastructure and electronic access instructions for the database are presented in **Appendices B, C** and **D** to this part of the Report.

2.5 The Meeting noted that this project was developed by the ICAO NACC Office to improve the diffusion of the information as well as to facilitate the handling and follow-up of this information, as a response to the concerns expressed by the States/Territories and International Organizations during past regional meetings regarding the inclusion of the corrections to the deficiencies in a timely fashion.

2.6 This improvement consists of making the database access available on-line in order to facilitate the implementation of the uniform methodology for the identification, assessment and reporting of air navigation deficiencies, which will allow a safe process for handling and the efficient presentation of data in deficiency reporting, including the Action Plans of the States/Territories. In this regard, the meeting recalled the need for States and Territories to provide the ICAO NACC Office the contact persons who will have access to the GREPECAS Air Navigation Deficiencies Database (GANDD).

2.7 One of the benefits of the use of the database software is that States and Territories of the CAR/SAM Regions and selected International Organizations will be able to consult on-line the information on deficiencies and notify the changes that will allow to update in a reasonable time their respective deficiencies, and thence the ICAO Regional Office may validate them and update the information received, as appropriate. This will benefit the States, Territories, International Organizations, GREPECAS mechanism and ICAO, by improving the diffusion and facilitating the handing and follow-up of the information on deficiencies contained in the Air Navigation Deficiencies Database of the CAR/SAM Regions.

2.8 As a result of the discussions on Air Navigation Deficiencies, the Meeting adopted the following Draft Conclusion:

DRAFT
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**.**

APPENDIX A

UNIFORM METHODOLOGY FOR THE IDENTIFICATION, ASSESSMENT AND REPORTING OF AIR NAVIGATION DEFICIENCIES

(Approved by the Council on 30 November 2001)

1. INTRODUCTION

1.1 Based on the information resulting from the assessment carried out by ICAO on the input received from various regions regarding deficiencies in the air navigation field, it became evident that improvements were necessary in the following areas:

a) collection of information;
b) safety assessment of reported problems;
c) identification of suitable corrective actions (technical/operational/financial/organizational), both short-term and long-term; and
d) method of reporting in the reports of ICAO planning and implementation regional groups (PIRGs).

1.2 This methodology is therefore prepared with the assistance of ICAO PIRGs and is approved by the ICAO Council for the efficient identification, assessment and clear reporting of air navigation deficiencies. It may be further updated by the Air Navigation Commission in the light of the experience gained in its utilization.

1.3 For the purpose of this methodology, the definition of deficiency is as follows:

A *deficiency* is a situation where a facility, service or procedure does not comply with a regional air navigation plan approved by the Council, or with related ICAO Standards and Recommended Practices, and which situation has a negative impact on the safety, regularity and/or efficiency of international civil aviation.

2. COLLECTION OF INFORMATION

2.1 Regional office sources

2.1.1 As a routine function, the regional offices should maintain a list of specific deficiencies, if any, in their regions. To ensure that this list is as clear and as complete as possible, it is understood that the regional offices take the following steps:

a) compare the status of implementation of the air navigation facilities and services with the regional air navigation plan documents and identify facilities, services and procedures not implemented;
b) review mission reports with a view to detecting deficiencies that affect safety, regularity and efficiency of international civil aviation;

c) make a systematic analysis of the differences with ICAO Standards and Recommended Practices filed by States to determine the reason for their existence and their impact, if any, on safety, regularity and efficiency of international civil aviation;
d) review aircraft accident and incident reports with a view to detect possible systems or procedures deficiencies;
e) review inputs, provided to the regional office by the users of air navigation services on the basis of Assembly Resolution A33-14, Appendix M;
f) assess and prioritize the result of a) to e) according to paragraph 4;
g) report the outcome to the State(s) concerned for resolution; and
h) report the result of g) above to the related PIRG for further examination, advice and report to the ICAO Council, as appropriate through PIRG reports.

2.2 States' sources

2.2.1 To collect information from all sources, States should, in addition to complying with the Assembly Resolution A31-10, establish reporting systems in accordance with the requirements in Annex 13, paragraph 7.3. These reporting systems should be non-punitive in order to capture the maximum number of deficiencies.

2.3 Users' sources

2.3.1 Appropriate international organizations, including the International Air Transport Association (IATA) and the International Federation of Air Line Pilots' Associations (IFALPA), are valuable sources of information on deficiencies, especially those that are safety related. In their capacity as users of air navigation facilities they should identify facilities, services and procedures that are not implemented or are unserviceable for prolonged periods or are not fully operational. In this context it should be noted that Assembly Resolution A33-14, Appendix M and several decisions of the Council obligate users of air navigation facilities and services to report any serious problems encountered due to the lack of implementation of air navigation facilities or services required by regional plans. It is emphasized that this procedure, together with the terms of reference of the PIRGs should form a solid basis for the identification, reporting and assisting in the resolution of non-implementation matters.

3. REPORTING OF INFORMATION ON DEFICIENCIES

3.1 In order to enable the ICAO PIRGs to make detailed assessments of deficiencies, States and appropriate international organizations including IATA and IFALPA, are expected to provide the information they have to the ICAO regional office for action as appropriate, including action at PIRG meetings.

3.2 The information should at least include: description of the deficiency, risk assessment, possible solution, time-lines, responsible party, agreed action to be taken and action already taken.

3.3 The agenda of each PIRG meeting should include an item on air navigation deficiencies, including information reported by States, IATA and IFALPA in addition to those identified by the regional office according to paragraph 2.1 above. Review of the deficiencies should be a top priority for each meeting. The PIRGs, in reviewing lists of deficiencies, should make an assessment of the safety impact for subsequent review by the ICAO Air Navigation Commission.

3.4 In line with the above, and keeping in mind the need to eventually make use of this information in the planning and implementation process, it is necessary that once a deficiency has been identified and validated, the following fields of information should be provided in the reports on deficiencies in the air navigation systems. These fields are as follows and are set out in the reporting form attached hereto.

a) **Identification of the requirements**

As per ICAO procedures, Regional Air Navigation Plans detail inter alia air navigation requirements including facilities, services and procedures required to support international civil aviation operations in a given region. Therefore, deficiencies would relate to a requirement identified in the regional air navigation plan documents. As a first item in the deficiency list, the requirements along with the name of the meeting and the related recommendation number should be included. In addition, the name of the State or States involved and/or the name of the facilities such as name of airport, FIR, ACC, TWR, etc. should be included.

b) **Identification of the deficiency**

This item identifies the deficiency and would be composed of the following elements:

i) a brief description of the deficiency;
ii) date deficiency was first reported;
iii) appropriate important references (meetings, reports, missions, etc)

c) **Identification of the corrective actions**

In the identification of the corrective actions, this item would be composed of:

i) a brief description of the corrective actions to be undertaken;
ii) identification of the executing body;
iii) expected completion date of the corrective action[1]; and

[1] It should be noted that a longer implementation period could be assigned in those cases in which the expansion or development of a facility was aimed at serving less frequent operations or entailed excessive expenditures.

iv) when appropriate or available, an indication of the cost involved.

4. ASSESSMENT AND PRIORITIZATION

4.1 A general guideline would be to have three levels of priority organized on the basis of safety, regularity and efficiency assessment as follows:

"U" priority = Urgent requirements having a direct impact on safety and requiring immediate corrective actions.

Urgent requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is urgently required for air navigation safety.

"A" priority = Top priority requirements necessary for air navigation safety.

Top priority requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is considered necessary for air navigation safety.

"B" priority = Intermediate requirements necessary for air navigation regularity and efficiency.

Intermediate priority requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is considered necessary for air navigation regularity and efficiency.

5. MODEL REPORTING TABLE FOR USE IN THE REPORTS OF PIRGS

5.1 Taking the foregoing into account, the model table at the Appendix is for use by PIRGs for the identification, assessment, prioritization etc. of deficiencies. It might be preferred that a different table would be produced for each of the different topics i.e. AGA, ATM, SAR, CNS, AIS/MAP, MET. However, all tables should be uniform.

6. ACTION BY THE REGIONAL OFFICES

6.1 Before each PIRG meeting, the regional office concerned will provide advance documentation concerning the latest status of deficiencies.

6.2 It is noted that the regional offices should document serious cases of deficiencies to the Air Navigation Commission (through ICAO Headquarters) as a matter of priority, rather than waiting to report the matter to the next PIRG meeting, and that the Air Navigation Commission will report to the Council.

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REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE …. FIELD IN THE ….. REGION

Identification		Deficiencies			Corrective action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Date of completion**	**Priority for action***
Requirement of Part.., paragraph (table).. of the air navigation plan	Terra X Terra Y	Speech circuits not implemented Villa X - Villa Y	12 Dec. 2..X	Coordination meeting between Terra X and Terra Y on 16 July 2..X to finalize arrangements to implementation circuit via satellite	Implementation of direct speech circuit via satellite	Terra X	20 Aug. 2..X	A

* Priority for action to remedy a deficiency is based on the following safety assessments:

"U" priority = Urgent requirements having a direct impact on safety and requiring immediate corrective actions.

Urgent requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is urgently required for air navigation safety.

"A" priority = Top priority requirements necessary for air navigation safety.

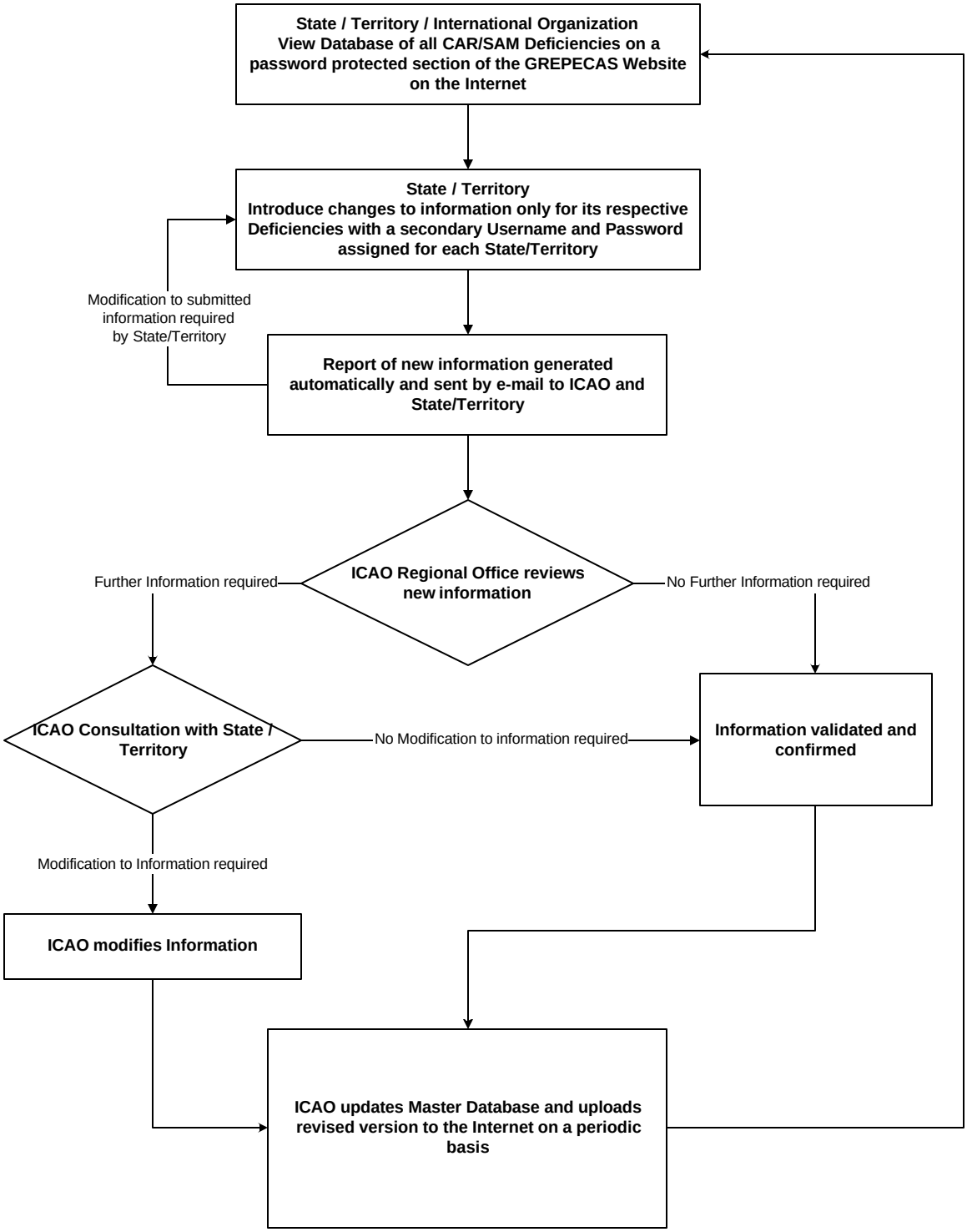
Top priority requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is considered necessary for air navigation safety.

"B" priority = Intermediate requirements necessary for air navigation regularity and efficiency.

Intermediate priority requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is considered necessary for air navigation regularity and efficiency.

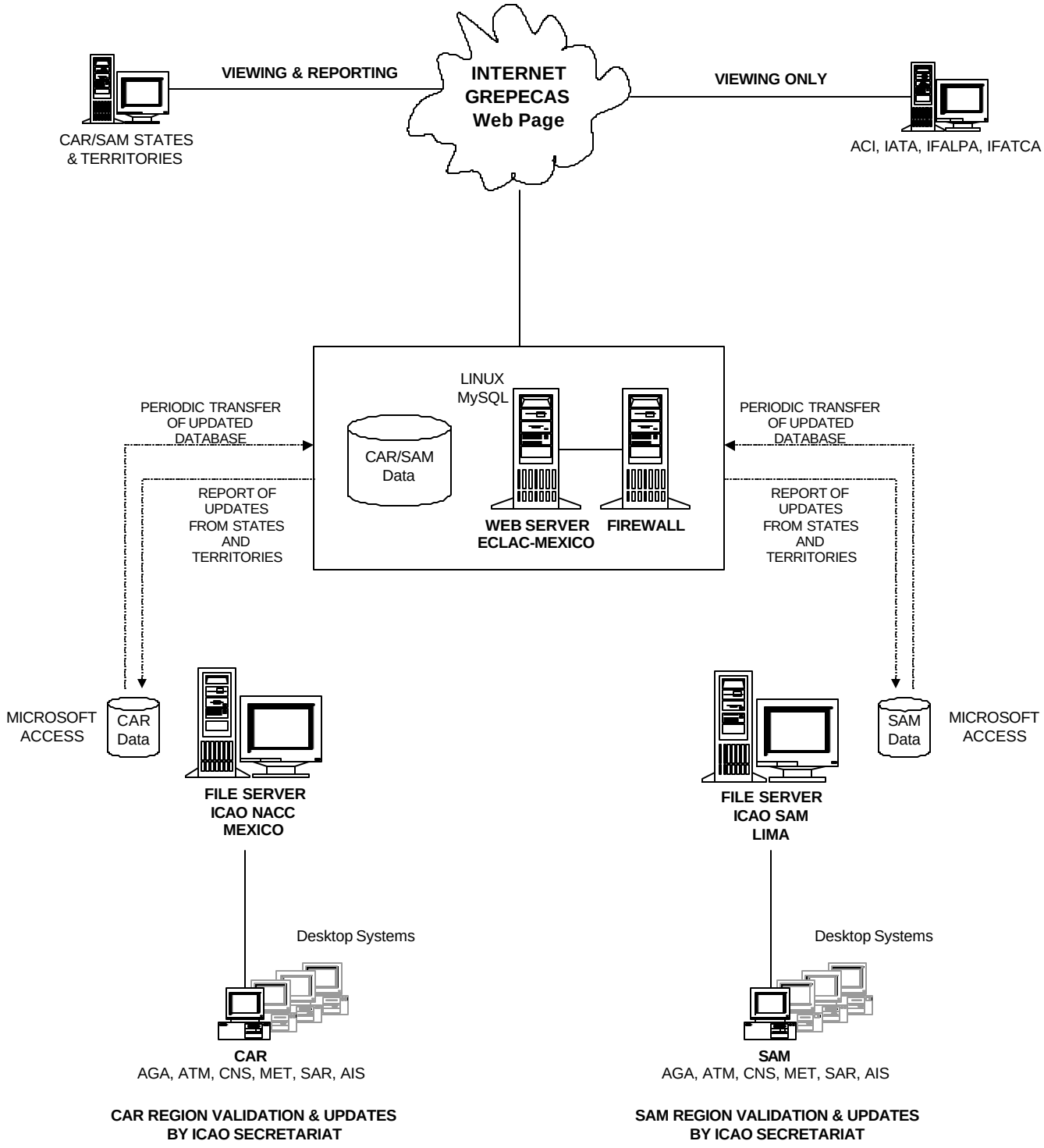
APPENDIX B

PROCESS



APPENDIX C

INFRASTRUCTURE



APPENDIX D

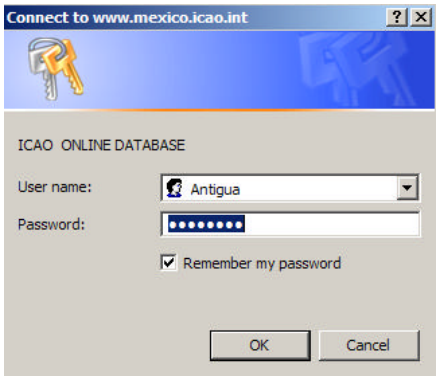
SPECIAL IMPLEMENTATION PROJECT
PUBLICATION OF THE CAR/SAM AIR NAVIGATION DEFICIENCIES VIA INTERNET

With the purpose of providing on-line access to the Air Navigation Deficiencies Database and that States/Territories in the CAR/SAM Regions have an appropriate way to identify, assess and report changes, an application to publish the Database through the Internet has been implemented in such a way that a timely follow-up can be given by using this technology.

This application has been finished and is available for the States/Territories of the CAR/SAM Regions through the link "GREPECAS AIR NAVIGATION DEFICIENCIES DATABASE (GANDD) available in the following address: www.icao.int/nacc

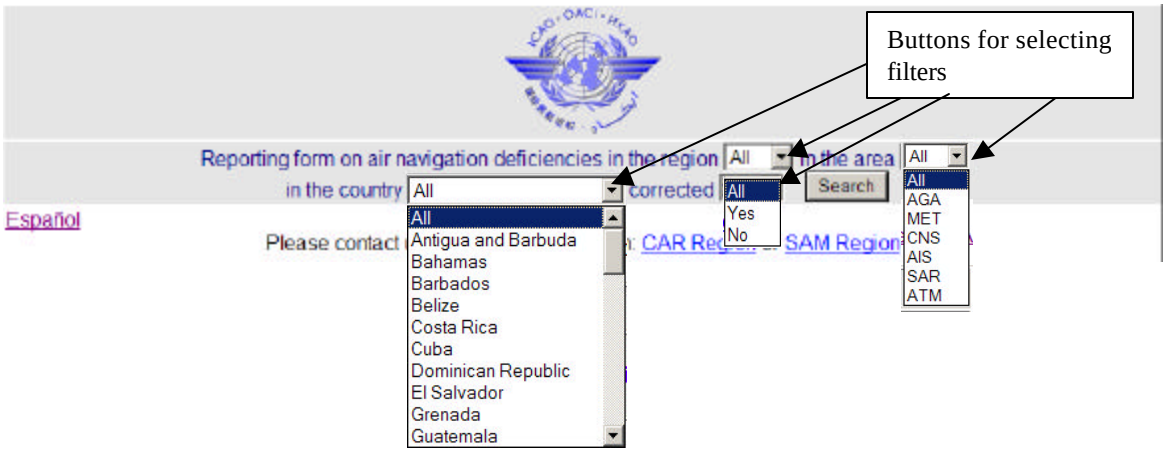
When accessing this link a header will open where some selection buttons will appear for filtering the search of some deficiencies in particular (it is recommended to use a resolution screen of 1024 x 768 pixels even though it is also possible to work with 800x600 pixels.

Access to this site is restricted with the use of a username and a password which will be requested at the moment of accessing the corresponding link.



In accordance with the username used, the deficiencies corresponding to that State will initially appear, however, it is also possible to see the global information by using the corresponding filters.

Filters can be created by selecting the Region, Area, State and corrected fields.



Once the combination of these is selected, press the button "Search" and the table or tables containing the requested information will show as follows:

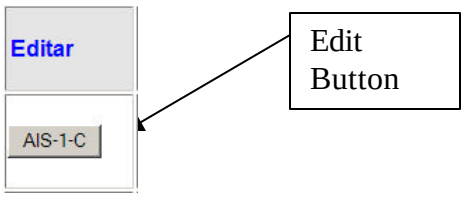
Records found for region CAR in the area AGA in Costa Rica

Identification			Deficiencies			Corrective Action			
Edit	Requirements	States/ Facilities	Description	Date First Reported	Remarks	Description	Executing Body	Date of Comple - tition	P
AGA-44-C	Visual Aids (Annex 14, Vol. I, Chap. 5 and ANP, Table AOP 1)	Costa Rica, ALAJUELA, Juan Santamaria Intl.	Non standard TWY markings and non standard signs	1996	IFALPA Meeting November 2000	Replaced by deficiency AGA 232 C	Costa Rica	2002	A
AGA-86-C	Bird Strike Hazards (Annex 14, Vol. I, Chap. 9.5)	Costa Rica, ALAJUELA, Juan Santamaria Intl	Bird strikes reported, sanitary landfills located in the vicinity of airport	2000	ASB/4 Review	Undertake bird hazard assessment to identify mitigation measures	Costa Rica	2002	U
AGA-76-C	Pavement Surface Conditions (Annex 14, Vol. I, Chap. 9.4)	Costa Rica, ALAJUELA, Juan Santamaria Intl	Excessive rubber deposit on runway surface resulting in poor friction characteristics - Ref. Annex 14, Vol. I, Section 9.4.10	2000	IATA Report December 2000	Remove rubber from runway surface	Costa Rica	2002	U

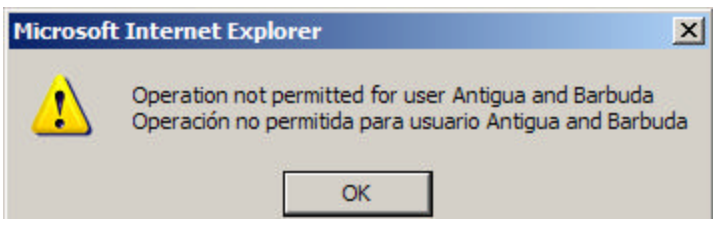
Initially the information will be presented in English, if the information is required in Spanish, press the button of language shown in the upper left corner of the page.

The information shown is the present information captured in the databases of each one of the CAR/SAM Regional Offices.

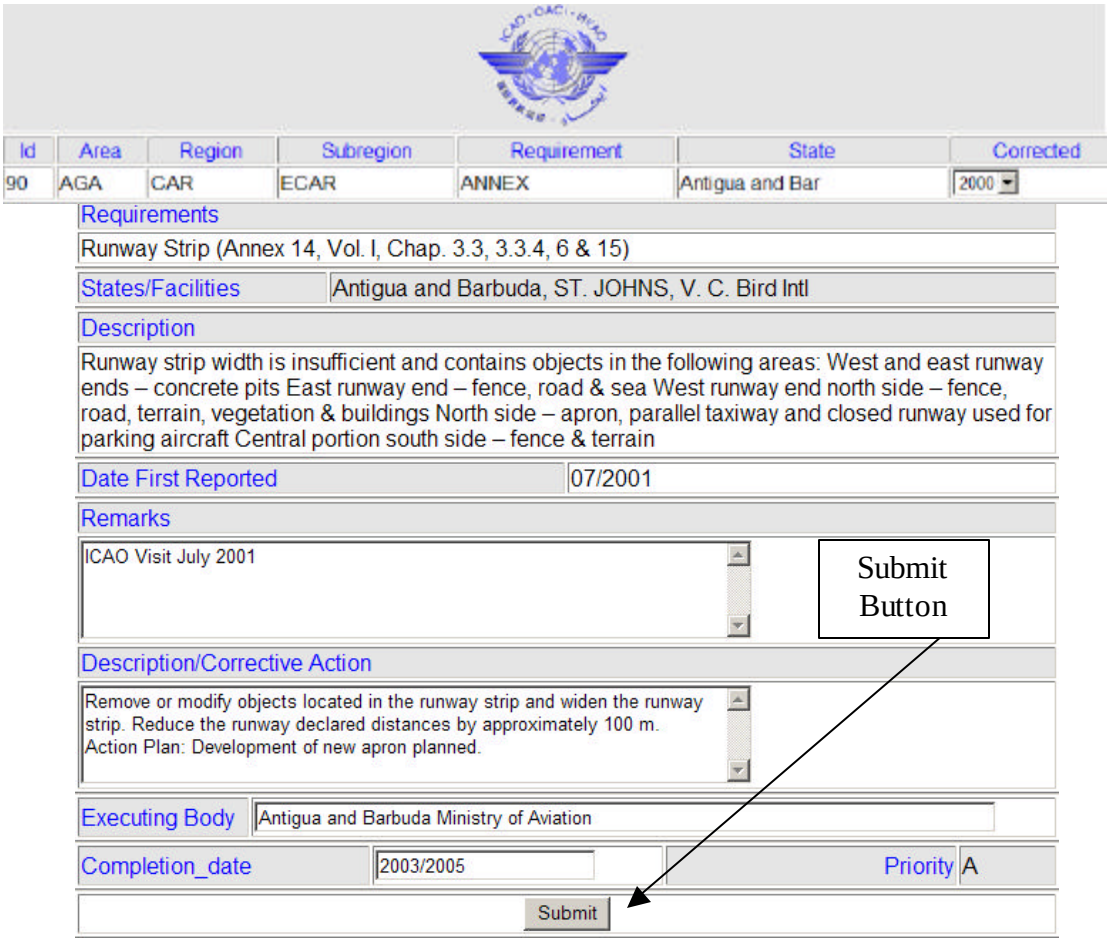
The intention of showing the databases through the Internet is for Contracting States/Territories to see the information at any moment and request its change and/or update. For this purpose a capture form has been created that could be displayed for each deficiency by pressing the buttons of the column "Edit".



Only those users whose name and password correspond to the deficiency edited will be the ones authorized for its edition, on the contrary a message similar to the following will be shown:



In case the edition is authorized, a form with the information of the selected deficiency will appear as shown below:



The request for changing and/or updating the information should be captured directly on such form in the fields allowed, either in Spanish or English, and once done press the Button “Submit”.

The same procedure should be followed for each Registry willing to be modified.

The modified information of each registry will be sent via e-mail to the Regional Office concerned, NACC or SAM, according to the selected State, however, the database will not reflect immediately the requested changes. Those changes will be previously validated by the Regional Officer in each area before being updated in the database.

Updates to the databases published in the Web will be made periodically, at least 45 days or less which will be decided by each area officer.

Agenda Item 3: Activities for the development of the air navigation systems/services

3.1 Aeronautical Information Services (AIS/MAP)

3.1.1 Considering that it is urgent that the higher levels of the respective Aeronautical Administrations take effective measures for the implementation of the necessary AIS/MAP elements for the simultaneous development of the CNS/ATM Systems, the Meeting recognized that the Global Air Navigation Plan for CNS/ATM Systems sets forth that, to support and facilitate the transition towards these systems, the development of high quality aeronautical information system is required, ensuring inter-functionality for the continuous and seamless exchange. Likewise, the Meeting recognized that within the ATM global operational concept, the Eleventh Air Navigation Conference considered the AIS as one of the essential components of this concept, in view of the collaborative decision-making (CDM) environment, requiring the timely availability from authorized sources of high quality electronic aeronautical information, meteorological, airspace and flow management information.

3.1.2 The Meeting also invited the States/Territories to take action and to provide the information requested in Conclusions 12/87, 12/93, 12/97, 12/98, and 12/100, relating to the AIS/MAP of the GREPECAS/12 Meeting, whose deadlines in some cases have already expired.

3.1.3 The Group centered the discussion on the need for fostering bilateral technical assistance projects among States/Territories, indicating the convenience of receiving this kind of assistance in view that in addition to taking advantage of the development and progress experienced by States that have already implemented the AIS automation, quality system, electronic AIP, digital cartography and WGS-84 system, etc., this kind of assistance is easy and feasible to be carried out in the short-time, and it also reduces costs significantly. In this regard, the Meeting recognized the progress obtained by the Cuban Administration in the field, and it agreed to invite those States that have not yet implemented the aforementioned requirements to consider the development of technical assistance bilateral agreement.

3.1.4 Based on the above, the Meeting formulated the following Draft Conclusion:

DRAFT
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.

3.1.5 Likewise, the Meeting was informed by the Rapporteur of the C/CAR AIS/MAP Task Force on the work carried out on the determination and harmonization of bordering geographical coordinates among adjacent FIRs, informing that some progress had been attained, highlighting the harmonization of coordinates of the points of the FIRs among Cuba and Jamaica; United States (Miami) and CENAMER. The States/Territories were invited to follow the procedure used by these States/Organization to make the same work concerning WGS-84 implementation.

3.1.6 The Meeting also noted Conclusion 7/9 of the C/CAR DCA/7 Meeting on the Total Implementation of the WGS-84 System, and the deadline set for the action contained in the aforementioned Conclusion, 30 November 2004, was highlighted, as no information on the action taken by some States is available. Likewise, it was pointed out that through the same Conclusion 7/9 it was agreed to develop technical assistance agreements among States and Territories on this matter.

3.1.7 In the discussion of this subject, the Meeting was also informed on the offer made by ICAO Headquarters of providing WGS-84 geographical coordinates of its database, to work with them in the establishment of points of the borders of the respective FIRs of the Central Caribbean. To this end, the NACC Regional Office will provide each State/Territory with the corresponding coordinates.

3.1.8 In this framework, the Rapporteur also referred to the progress made by some States of the C/CAR with regard to the AIS quality assurance field and of the geographical data through the development of a Guidance Manual for the Implementation of an AIS/MAP Quality Management System in the CAR/SAM Regions, elaborated by the AIS/MAP QM/TF which will be presented for approval by the GREPECAS AIS/MAP Subgroup AIS/MAP Quality Management Task Force at the Ninth Meeting of the GREPECAS AIS/MAP Subgroup to be held in Dominican Republic in June 2005.

3.1.9 As a result of the discussion of this matter, the Meeting formulated the following Draft Conclusion:

DRAFT
CONCLUSION 5/3 FOLLOW-UP TO THE IMPLEMENTATION OF WGS-84 COORDINATES AT THE BORDERS OF THE FIRs

That the States/Territories that have not determined their bordering geographical coordinates at their respective FIRs, as a follow-up and fulfillment of Conclusion 7/9 of the C/CAR DCA/7 Meeting, and under the coordination of the NACC Regional Office and the C/CAR AIS/MAP Task Force of the C/CAR WG:

a) designate a point of contact in each Administration for the coordination among States and Territories informing the NACC Office of the name of the incumbent by **30 April 2005**;

b) harmonize their border coordinates in accordance with the information in the ICAO database that will be distributed by the NACC Regional Office, as appropriate; and

c) inform the NACC Office and the C/CAR AIS/MAP Task Force on the agreements reached on this matter **by 5 September 2005**.

3.2 Air Traffic Management (ATM)

Implementation of the Reduced Vertical Separation Minimum (RVSM)

3.2.1 In accordance with the guidelines of GREPECAS/12, who agreed upon the implementation of RVSM in the NAM/CAR/SAM Regions, the C/CAR WG reported a successful RVSM implementation in the Central Caribbean, from FL 290 to FL 410 in the different FIRs of the CAR Regions on 20 January 2005.

3.2.2. The Secretariat made a brief summary of the monitoring activities carried out by the ICAO NACC Regional Office during the transition and implementation procedures towards RVSM in the CAR/NAM Regions, in which all the States/Territories/International Organizations reported the finalization of the transition procedures as well as the different tasks related with their national programmes such as supervising safety, publication of regulations and procedures, ATC training, development of handbooks and publications, etc. for a successful implementation of RVSM.

3.2.3 The Meeting was also informed that ICAO Headquarters kept in continuous communication with the NACC Office, that ICAO's Secretary General sent a congratulations letter to the respective Civil Aviation Authorities involved in the implementation process. A copy of this communication is included in **Appendix A** to this part of the report.

RVSM Scrutiny Group

3.2.4 The delegates recalled that the RVSM Task Force of the ATM Committee of the GREPECAS ATM/CNS Subgroup, during the Ninth Meeting of ATM Authorities and Planners of the RLA/98/003 Project, carried out the final evaluation of safety prior to RVSM implementation and that, from the results obtained, that meeting recommended the implementation of preventive measures so that ATS providers might reduce the risk level, in accordance with the ATS safety management programmes.

3.2.5 Considering that these are important measures that help to increase safety, it is required that the C/CAR WG deemed it suitable to remind the States/Territories of the Central Caribbean to take the relevant actions allowing to improve the prevention of RVSM risk, which will be analysed together with the assessment of safety to be held 90 days after RVSM implementation and in a yearly basis.

3.2.6 The Meeting noted that the assessment of safety oversight is a task entrusted to the CARSAMMA (CAR/SAM Monitoring Agency) through the analysis and classification of LHDs (Large height deviations). Likewise, it was reminded that the recently activated RVSM Scrutiny Group of the CAR/SAM Regions will be the Group composed by experts of different areas who in the future will collaborate with the CARSAMMA to recommend actions and measures to prevent risk, required to ensure safety, as set forth in ICAO Doc 9574.

3.2.7 Taking into consideration the above paragraphs, the Meeting considered updating the national RVSM programmes in accordance with the recommendations of the RVSM Scrutiny Group of the CAR/SAM Regions, and the C/CAR DCA Conclusion 7/7, with measures for risk prevention.

Implementation of RNAV Routes and Required Navigation Perfomance (RNP)

3.2.8 The Meeting examined new ATS routes and the proposed changes affecting the CAR Region, within the programme agreed upon by the C/CAR WG and supported by GREPECAS/12 as a regional CAR/SAM strategy, which have already been implemented as well as other routes to be implemented.

3.2.9 With the implementation of RNAV Routes in the Central Caribbean airspace, substantial benefits have been attained concerning the flexible use of airspace and direct improvements to safety, which in turn may provide more possibilities of obtaining optimum flight levels, as well as big savings of flight time and fuel for users. The information on ATS routes agreed for their implementation by the C/CAR WG are described in **Appendix B** to this part of the report.

3.2.10 The Meeting was informed of the implementation of the ATS routes UL347, UL599 and UGG629 scheduled for March 17, 2005.

3.2.11 Jamaica indicated that L417 was being implemented in the Kingston FIR and proposed the harmonization of this route in the Havana FIR to facilitate arriving and departing flight profiles. Cuba agreed to publish related information by NOTAM with effective date March 17, 2004.

3.2.12 After implementation of the UL 347, upon Cuba request, this route will be implemented in the lower airspace to facilitate operations between Santiago and Kingston. Cuba and Jamaica agreed to publish related information by NOTAM with effective date March 17, 2004.

3.2.13 For the agreed L/UL212, Cuba proposed a new trajectory from HOLGUIN direct to ETBOD. Due to internal constraints in the Port-au-Prince FIR, and after detailed analysis, Haiti agreed to the realignment of this route within its airspace as depicted in the Appendix B to this report.

3.2.14 Also, Cuba proposed the implementation of three (3) new routes depicted in the Appendix B to this Report to rationalize traffic flows. Based in the aforementioned information, the Meeting agreed to submit to the ICAO NACC Office related information under the next:

DRAFT CONCLUSION 5/4 IMPLEMENTATION OF ATS ROUTES IN THE CENTRAL CARIBBEAN

That ICAO NACC Office take action to coordinate with the States/Terrirories the concerned implementation and changes of ATS routes depicted in the Appendix B to this part of the Report, in order to initiate coordination for the proposal for amendment to the CAR/SAM ANP.

3.2.15 Likewise, notwithstanding the successful implementation of ATS routes during the coordination and implementation process, other factors have been found affecting the execution of national implementation programmes, and therefore more emphasis is needed for integral implementation studies of standardized SID/STAR procedures and RNAV/RNP procedures.

3.2.16 Bearing in mind that the routes and RNAV/RNP procedures also provide important operational advantages to users and ATS services providers in those TMAs and airports serving as start/end, the Meeting deemed it appropriate that the C/CAR WG begins studies to develop a strategy on the implementation of RNAV/RNP procedures and standardized SID and STAR procedures in the Central Caribbean airports and the already implemented RNAV Routes or in process of implementation, in such a way that it allows to make better use of airspace and terminal control areas (TMAs) to assimilate the increase of air traffic a task that has been supported by GREPECAS/12.

3.2.17 Based on the above, the Meeting decided to formulate the following:

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.

Coordination Issues and Letters of Agreement

3.2.18 Regarding the concern of Haiti regarding possible operational conflict in the vicinity of LODMA and W1001, the United States delegate took note and committed report to the Group on this matter. Additionally, Haiti will be included on the list of ACCs to be alerted by Miami ACC, via voice circuit, on activation of W1001.

3.2.19 LOA/Miami/Port au Prince - Item 7 of the Agreement was raised as a concern by Haiti due to the non-compliance with the requirement to send flight estimates. It was agreed that the modification of the LOA be effected to reflect that Miami ACC has separation responsibilities for aircraft

at ALBEE and TUMAR at and above FL 290 and that a contingency procedure be incorporated in the LOAs between Miami and Port au Prince ACCs detailing transfer of separation and control responsibilities in the event of radar failure.

3.2.20 The C/CAR WG was pleased with the information that all regional LOAs were updated at or prior to AP/ATM 9 last year reflecting complete agreement in whole CAR Region for the successful implementation of RVSM on January 20, 2005.

3.3 Communications, Navigation and Surveillance (CNS)

General matters

Protection of the aeronautical Radio-Frequency Spectrum

3.3.1 The Meeting recalled that, according to Conclusion 12/33 of GREPECAS, States and International Organizations with the view at preparing and supporting ICAO's position for the ITU World Radio Communication Conference – 2007, should:

a) *"support and follow-up ICAO work on the preparation and updating of ICAO's position for the WRC-07"*. In this sense, through a State letter Ref.: E 3/5-04/99, dated 30 November 2004, ICAO sent a project of ICAO's position for the ITU WRC-2007. Comments from States are expected to be received in Montreal not later than 31 January 2005. The Meeting was informed that the Air Navigation Commission will proceed with the project's final test according to comments received from the States formulating the respective recommendations to the Council by the second trimester 2005. Upon the Council's approval, ICAO's position in the WRC-2007 will be informed to the contracting States and correspondent international organizations and presented in the ITU WRC-2007.

b) *"designate a focal point or a contact person with ICAO and with the national authority of radio-frequency spectrum management for the coordination of matters related with the WRC-07"*: The Meeting was informed that, to this date, no messages have been received in this NACC Regional Office from the States indicating the focal point person; although the person in charge of Mexico has coordinated with the ICAO CNS Regional Officer.

c) "participate in an active manner in the preparatory work for the WRC-07 in the CITEL meetings of the Organization of American States (OAS)". In the ICAO NACC Regional Office only the information on Mexico's participation in the CITEL Meetings is available.

3.3.2 Therefore, the Meeting formulated the following Draft Conclusion:

DRAFT
CONCLUSION 5/6 COMPLIANCE WITH GREPECAS CONCLUSION 12/33 FOR THE PREPARATION AND SUPPORT TO ICAO POSITION AT THE ITU WRC-2007

That ICAO urge the States and International Organizations to comply with GREPECAS Conclusion 12/33 by,

a) providing support and follow-up to the work of ICAO in the preparation and updating of ICAO position for the WRC-07;

b) nominating a focal point or a person of contact with ICAO and with the national authority responsible for the radio-frequencies spectrum management for the coordination of the matters pertaining to the WRC-07; and

c) actively participating at the Inter-American Telecommunications Commission (CITEL) of the Organization of American States (OAS) on the preparatory work for the WRC-2007.

3.3.3 Regarding GREPECAS Conclusion 12/34 paragraph d), some frequency assignments have been detected without the international coordination through the ICAO NACC Office. Therefore, the Meeting agreed the following Draft Conclusion:

DRAFT
CONCLUSION 5/7 INTERNATIONAL COORDINATION OF THE ASSIGNMENTS OF AERONAUTICAL FREQUENCIES

That, in accordance with GREPECAS Conclusion 12/34, States and Territories are urged to coordinate all the aeronautical frequency assignments through the ICAO Regional Office.

3.3.4 The Delegate of Jamaica informed to the Meeting that the air-ground communications service of the West Sector of Kingston ACC, which uses the frequency 124.000 MHz is suffering interference apparently coming from a station in Florida, which is operating in the same frequency. ICAO Regional Officer CNS informed that he was not aware that such interference was being produced, and he recalled that in accordance with the established procedures, the cases of interference produced should be urgently communicated to the ICAO Regional Office as well as to the national authorities responsible for the radio-frequency spectrum management. Therefore, the Meeting formulated the following Draft Conclusion:

DRAFT
CONCLUSION 5/8 ACTIONS TO AVOID AND RESOLVE THE INTERFERENCE PROBLEMS IN THE CNS SYSTEMS

That, in order to avoid and resolve interference problems in the CNS systems,

a) the States, Territories and International Organizations apply the measures listed in GREPECAS Conclusion 12/35, and the detected interference problems be urgently communicated to the ICAO Regional Office; and

b) ICAO NACC Office establish coordination with United States to investigate and detect the source of the interference being produced in frequency 124.000 MHz assigned to Kingston ACC, as a basis for the application of corrective measures.

Communications

3.3.5 The Meeting was reminded that the function of the communication systems is to improve the coverage, accessibility, capability, integrity, security and performance of the aeronautical communication in accordance with the ATM requirements. The communication elements should provide the speech and data communications between the aeronautical users and ATS/ATM units in the Region, as well as through the data interchange with the aeronautical automated systems. Also, the Meeting recognized the need for developing the communications systems in support of the navigation and surveillance specific functions.

A) Ground-ground communication development

AFTN Plan implementation status

3.3.6 The Meeting recalled that GREPECAS, through its Conclusion 12/36, the updated AFTN Plan. Likewise, through Conclusion 12/37, ICAO NACC and SAM Regional Offices and the States, Territories and International Organizations were guided to continue updating the AFTN routing lists in accordance with the amendments made to the AFTN Plan, as well as, an action plan was recommended to some States and Territories in order to improve the circuits and AFTN centres.

Implementation status of the ATS speech circuits Plan

3.3.7 The Meeting noted that in the Central Caribbean the AFS communication requirements including ATS speech circuits were being efficiently supported, mainly through the VSAT MEVA Digital Network. With regard to other circuits using leased channels to commercial service providers, the Meeting was informed that the speech circuit ATS Belize APP – Merida ACC is not working since some time, being a deficiency, in view that Table CNS 1C to the FASID establishes the requirement Type A for this circuit. In order to solve this deficiency, the delegate of Mexico informed that COCESNA has been requested to analyze the feasibility of using the Central American digital network. The Meeting therefore adopted the following Decision:

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.

Development and interconnection of regional/subregional digital network

3.3.8 The Meeting was informed that the MEVA/10 meeting, held in Mexico City from 13 to 15 December 2004, approved the Service Provider for the MEVA II Network. It is expected that the MEVA Team Management Group (TMG) will complete the elaboration and recommendation of a Transition Plan towards MEVA II.

3.3.9 On the other hand, the Meeting recalled that Conclusion 12/36 of GREPECAS, among other aspects, recommended the implementation of a station/node of the MEVA II Network in Merida, Mexico with the purpose to contribute to the completion of a digital platform supplying homogeneous interoperability in the CAR/SAM Regions, providing the interconnection of the network in Mexico with the MEVA II, with CAMSAT, as well as, with the NAM Region networks, this would improve the AFS communications services efficiency.

Implementation of the ATN ground portion

3.3.10 The Meeting noted that, as a result of the Conclusion 4/8 of the C/CAR WG and the GREPECAS Conclusion 12/41, ICAO is organizing for the last quarter of 2005 a CAR/SAM Seminar on the development of ATN and its applications. Additionally, the Meeting recognized the importance of following-up the work done by the GREPECAS mechanism for the implementation of the ATN ground portion, proceeding to develop action plans for the transition of AFTN to the AMHS.

B) Development of the air-to-ground communications

3.3.11 The Meeting examined Table CNS 2A of the FASID, which constitutes the CAR/SAM Aeronautical Mobile Service (AMS) Regional Plan and the Aeronautical Mobile Service by Satellite (AMSS). The Table includes speech and data communications requirements through VHF, HF and satellite, as well as, data communications of Mode S. The part of the table corresponding to the area coverage of the Meeting is shown in **Appendix C** to this part of the report.

Review of the status of the aeronautical mobile service VHF and HF speech communications implementation

3.3.12 Based on Conclusion 10/29 of GREPECAS and Conclusions 2/9 and 3/10 of the C/CAR Working Group, which deals with the deficiencies resulting from a lack of VHF/AMS coverage, on information received in the ICAO NACC Regional Office and in the Group Meetings, and taking into

account the Decision 4/7 of the C/CAR WG/4, the Meeting analyzed the status of the VHF/AMS coverage.

3.3.13 With respect to the coverage area of the Meeting, according to information provided by the States, Territories, International Organizations, the Meeting deemed that the VHF/AMS areas of poor coverage, which are in the process to be resolved, are the following:

a) the Northwest portion of the FIR CENAMER of which COCESNA has an action plan to solve the deficiency with the support of Cayman Islands, as well as, other areas. Therefore, COCESNA and Cayman Islands are expected to inform the Meeting the status of the actions to resolve the above-mentioned deficiency; and

b) the Central part of the Gulf of Mexico, in which Mexico and the United States are executing an action plan to improve and mitigate the lack of VHF coverage. Among the measures being applied is the use of the automatic dependent surveillance-broadcast (ADS-B)

3.3.14 The Meeting also expressed concern on the possibility of other zones with VHF communication coverage deficiencies, as it is important to obtain the information by the airspace users; therefore, the Meeting formulated the following Draft Conclusion:

DRAFT CONCLUSION 5/10 INFORMATION REQUEST TO THE AIRSPACE USERS ON THE VHF COMMUNICATION COVERAGE STATUS IN THE CAR REGIÓN

That ICAO request information to IATA and IFALPA on the VHF voice communications coverage voids that they have detected in the CAR Region.

3.3.15 The Meeting was also informed on the difficulties and the lack of information that motivated that the C/CAR VHF/AMS Coverage Task Force could not complete its work. But the Meeting was of the opinion that this Task Force shall remain active awaiting the response of IATA and IFALPA, as well as obtaining the tools and information to complete its tasks.

3.3.16 On the other hand, the Meeting observed that, regarding Port-au-Prince ACC, FASID Table CNS 2A only contains two VHF frequency requirements, one for the Area Control Centre (ACC) and the other one for General Purposes (GP), nevertheless, Haiti recently coordinated with the ICAO NACC Office an additional VHF frequency assignment for the ACC service. Therefore, the Meeting agreed that it was necessary to amend the requirements in respect to Haiti, and formulated the following

DRAFT
CONCLUSION 5/11 PROPOSAL FOR AMENDMENT TO FASID TABLE CNS 2A WITH REGARD TO HAITI

That ICAO process the proposal for amendment to FASID Table CNS 2A under Haiti, adding a voice frequency for area control service of the Port-au-Prince ACC.

3.3.17 With respect to the HF voice radio-communications, in accordance with the requirements contained in Table CNS 2A of the FASID, the Meeting was informed of the following status:

a) Havana ACC, Cuba has executed an equipment modernization plan of its station in 6 HF frequencies in the CAR-A family.
b) CENAMER ACC, COCESNA has their HF station functioning with 6 frequencies of the CAR-A family and 2 SAM-1 frequencies.
c) Merida ACC, Mexico is executing a plan to improve their station radio-communications service with 5 frequencies in the CAR-A family, through which new equipment has been installed and is in the stage of observation of its operation.
d) San Juan ACC, Puerto Rico has their station functioning with 5 frequencies CAR-A, one frequency CAR-B and 5 frequencies NAT-A.
e) Piarco ACC, Trinidad and Tobago is implementing a new HF speech radio-communications equipment in their station with 3 frequencies CAR-A, one frequency CAR-B and 2 frequencies SAM-2.
f) New York, United States has their station functioning with the families CAR-A and CAR-B frequencies.

3.3.18 Likewise, the Meeting noted that the CNS 2A Table contains the requirements of the speech implementation by satellite for the following ACCs: CENAMER, Kingston, Mazatlan, Merida, Mexico City, Monterrey, Curacao, San Juan, Piarco and New York, which should be on service in June 2008.

Implementation of air-ground data links

3.3.19 The Meeting noted that through its Conclusion 12/42, GREPECAS recommended to the CAR/SAM States, Territories and International Organizations and airspace users to continue implementing feasible applications to be used with data links via ACARS (Aircraft Communications Addressing and Reporting System) and FANS-1A aircraft equipment during the transition to the ATN bit oriented data links.

3.3.20 Likewise, the Meeting pointed out to the C/CAR WG that GREPECAS Conclusion 12/43, based on Recommendation 7/3 of the AN-Conf/11, recommended the planning or continuation of the air-ground data communications with VDL Mode 2 implementation as an infrastructure support to the air-ground sub-networks to enable the ATN applications evolutionary implementation according to the operational requirements.

3.3.21 Additionally, the Meeting, when analysing FASID Table CNS-2A, noted that the table contains implementation VHF and HF data requirements and by satellite for the ACC's Region, but considered that this required a review and update.

3.3.22 ARINC and SITA explained to the Meeting the detailed information on air-ground data link developments, their characteristics, applications, benefits, as it has been programmed in other regions, trials, personnel training, evolutionary implementation and planning, and interesting arrangements among States and the service providers ARINC and SITA. **Appendix D** to this part of the Report depicts ARINC's presentation, and **Appendix E,** SITA's presentation. These presentations also covered issues related with the ADS and ADS-B, on which comments are expressed under Agenda Item 3.4 to this part of the Report.

3.3.23 Also, ARINC and SITA invited States, Territories and International Organizations of CAR Region to participate in the scheduled seminars and workshops regarding air-ground data links.

3.3.24 Taking into account the information and considerations expressed in the above paragraphs, the Meeting recommended that the C/CAR Working Group might review the VHF, HF and by satellite data implementation plan, and develop a planning and implementation plan, tentatively based on the activities expressed in **Appendix F t**o this part of the report.

3.3.25 After this analysis, the Meeting formulated the following Draft Conclusion and Decision:

DRAFT 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.

DECISION 5/13 **WORK OF THE C/CAR WORKING GROUP ON PLANNING OF INITIAL ACTION TO UPDATE THE CAR REGIONAL DATA LINK PLAN**

That the C/CAR Working Group provide follow-up and support the programme of initial actions shown in Appendix F to this part of the Report, expanding and proposing finalization dates of each activity.

Navigation

3.3.26 The Meeting was reminded that the objective of the Navigation systems is to improve the coverage and to allow the navigation capacity in all phases and airspaces, including approach and landing, at the same time maintaining or improving the integrity, precision and performance in conformity with the ATM requirements. New elements of air navigation should be implemented in the Region aimed at providing a specific function of a precise position, reliable and continuous in all airspace by introducing the Global Navigation Satellite System (GNSS).

Implementation of GNSS and application of non visual aids approach, landing and departure

3.3.27 The Meeting considered that, based on GREPECAS Conclusion 12/45, which was issued in accordance with the results of the AN-Conf/11, the States, Territories and International Organizations should take into account the new *"Regional guidelines for the transition to the global navigation satellite systems (GNSS)"* and the *"Regional strategy for the introduction and application of non visual aids to approach, landing and departure"*.

3.3.28 On the other hand, the Meeting was informed that ICAO, through State letter Ref.: AN 7/1.3.84-04/11, dated 27 February 2004, was in the process of amending Annex 10, Volume I related to the strategy for the introduction and application of non visual aids in the approach and landing. It is foreseen that the proposal of amendment be applied by November 24, 2005.

3.3.29 The Meeting was of the opinion that as a result of GREPECAS Conclusion 12/46, the States, Territories and International Organizations should continue participating in the trials, planning and implementation activities of SBAS and GBAS, carried out by the RLA/00/009 and RLA/03/902 projects.

Surveillance

3.3.30 The Meeting agreed upon the need that the Region should continue improving the radar surveillance systems, as well as implementing the new surveillance systems to improve and increase the surveillance efficiency in the oceanic and distant zones, at the same time and in conformity with the ATM requirements, improve the comprehension of air traffic situations in the flight deck.

Update of the surveillance plan corresponding to the Central Caribbean

3.3.31 GREPECAS/12 Meeting through its Conclusion 12/50 updated Table CNS 4A of the FASID – *FASID Surveillance Plan*. Nevertheless, the States/Territories/International Organizations participating in the Meeting could provide new information for the corresponding Central Caribbean Surveillance Regional Plan update, especially on the Primary Surveillance Radar (PSR), Secondary Surveillance Radar (SSR) and Automatic Dependent Surveillance (ADS). Additionally, taking into account to that expressed in the Agenda Item 3, paragraphs 3.2.3.44 to 3.2.3.46 of the GREPECAS/12 Meeting Report, the Meeting should review the plans to implement SSR Mode S and the functioning improvement of the airborne collision avoidance system (ACAS), as well as reviewing the plans for the implementation of ADS and ADS-B surveillance functions in the Region.

Radar data exchange

3.3.32 The Meeting recalled that concerning the implementation of the radar data sharing, the C/CAR WG/3 meeting guided the States, Territories, International Organizations and the Radar Data Sharing Task Force, to continue their planning and implementation work taking into account the "*Regional Guidelines for the Exchange of SSR Radar Data" published by GREPECAS* through its Conclusion 11/47. The C/CAR WG/4 Meeting through Decision 4/10 also indicated to the Task Force, to develop action plans for the implementation of the radar data sharing, which could be presented in the C/CAR WG/5 Meeting, in order to support the over-all ATM implementation.

3.3.33 According to what was expressed in the above paragraph and in accordance with the Terms of Reference and Work Programme of the Radar Data Sharing Task Force, this Task Force informed the Meeting on the work carried out. The results reviewed by the Meeting are the following.

3.3.34 The Meeting noted that for the exchange of radar data it is necessary to observe the processes, technologies, standards and other factors to process and represent radar data information.

3.3.35 The final goal of the radar data sharing programme is to facilitate the optimization of the provision and use of radar surveillance function through the installation of new equipment or the sharing of radar data among ATC units when feasible and beneficial, in order to build a common seamless radar image for the C/CAR area and enhance air traffic control harmonization within this area, that would enable establishing a reduction in applied separation standards within the C/CAR flight information regions and increasing flight safety. This will increase the airspace capacity and consequently offers significant benefits for the airspace users, ATC systems and SAR operations.

3.3.36 Once the C/CAR radar network, supported by the exchange of radar data is fully developed, the target for the harmonization of air traffic control system may be achieved by the standardization of ATC procedures within the area.

3.3.37 Based on the above paragraphs, the Meeting formulated the following Draft Conclusion:

DRAFT
CONCLUSION 5/14 IMPROVEMENT Of SURVEILLANCE SERVICES IN ATS UNITS

That all C/CAR States/Territories/ Organizations that require surveillance services in their ATS units and have not implemented radar services as yet, adopt an aggressive action plan for its implementation or study the feasibility to implement ADS or ADS –B.

The use of the Asterix protocol format

3.3.38 The Meeting recalled that Asterix protocol has been formally accepted by GREPECAS through its Conclusions 11/47 and the CAR/SAM SAC-ASTERIX code assignment Regional Plan approved through its Conclusion 12/48.

3.3.39 Based on the report of the Radar Data Sharing Task Force, the Meeting noted that as a result of the analysis of the technical specifications of the radar systems received from the States/Territories/International Organizations indicates that not all radar systems of the Central Caribbean have the ability to transmit and receive information under the Asterix format. This format is however widely accepted because it offers the following benefits:

- a means to streamline and standardize surveillance data processing;
- a means to transfer enhanced surveillance information necessary for critical ATC functions; and
- a means to transfer information necessary for next generation surveillance systems.

3.3.40 The Task Force was of the opinion that Asterix facilitates the target of sharing of surveillance data in an efficient way. Its ability to transmit information, e.g. aircraft identification, will have a positive effect on the data integration between multiple surveillance systems in the C/CAR area.

3.3.41 An analysis of the received information indicates however that the FAA uses the Common Digitizer (CD) message format. CD message formats use a non standard, 13 bit and general data word, are restricted in length, and have limited error checking capability.

Distribution of radar data

3.3.42 Likewise, the Task Force informed the Meeting that the distribution of radar data is optimized by applying a real time network, with the highest availability, performance capacity and which allows that any kind of radar system be used by any other user system regardless of its location. Such a network system will substantially decrease the cost of communication links.

3.3.43 There would be no need for radar antennas to be connected separately via expensive dedicated communication circuits. One single access line to the network would be sufficient. Additionally, it permits the use of radar information from any source within the network without making an extra investment.

Redundancy

3.3.44 The Task Force informed the Meeting that a networked radar data sharing solution would enable consequently the mutual back-up of whole centers, providing as such a high redundancy within the C/CAR ATC system.

3.3.45 The Meeting noted that the primary goal of any communication strategy is to develop safe, efficient and cost-effective communication means to support the evolution of ATM and air navigation services within the C/CAR area. In this regard, the Meeting indicated that the new Aeronautical Communications VSAT Network MEVA II, which will be implemented shortly, has been conceived with capacity for the implementation of radar data circuits. Notwithstanding, the technical implementation capacity of radar data specific circuits should be assessed by the MEVA II Technical Management Team (TMG).

3.3.46 As requested by the Radar Data Sharing Task F, the Meeting formulated the following Draft Conclusion:

DRAFT CONCLUSION 5/15 ANALYSIS ON THE FEASIBILITY OF THE MEVA II NETWORK TO SUPPORT RADAR DATA CIRCUITS

That,

a) the NACC Office request the MEVA II TMG to perform a general analysis on the feasibility of the MEVA II Network to support radar data circuits; and

b) depending on the analysis by the MEVA II TMG in accordance with item a) above, the States/Territories/Organizations who adopt a decision to implement circuits for the radar data exchange present in a timely fashion to the MEVA II TMG the details of the requirements of the circuits to switch their radar data systems for its analysis.

Composition of the Radar Data Sharing Task Force

3.3.47 The Meeting deemed that, with a view to obtaining more results from the Radar Data Sharing Task Force, the support of individuals or institutions with technical knowledge in the transmission of data, its management, collection and inventory is necessary. Therefore, the Meeting formulated the following Draft Conclusion:

DRAFT
CONCLUSION 5/16 PROVISION OF RADAR EXPERTS TO THE RADAR DATA SHARING TASK FORCE

That every State/Territories/International Organizations in charge with the provision of air traffic services within the C/CAR that is interested in radar data sharing provides adequate experts who assist to the work of the radar data sharing task force in order to help the Task Force to advance expeditiously in the execution of its tasks.

Radar data exchange training

3.3.48 Furthermore, concerning radar data exchange training, the Meeting formulated the following Draft Conclusion:

DRAFT
CONCLUSION 5/17 ASSESSMENT OF THE TRAINING NEEDS FOR RADAR DATA EXCHANGE

That, based on a regional consultation through ICAO, States/Territories/International Organizations assess the need for providing training to their operational and technical personnel through an integrated regional solution, with a view to implementing radar services and/or radar data exchange.

Organization of the meetings of the Radar Data Sharing Task Force

3.3.49 The Meeting recognized the need that the Radar Data Sharing Task Force hold a meeting with the participation of States/Territories/International Organization to identify the C/CAR ATC units where it would be feasible and beneficial to proceed with the implementation of radar data exchange, and that also address the radar data sharing issues, identify responsibilities, setting priorities, assessing cost and personnel, and setting time frames for either bilateral or multilateral projects. Therefore, the Meeting formulated the following:

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.

Safety management in connection with radar data sharing

3.3.50 The Meeting agreed with the view of the Radar Data Sharing Task Force in the sense that the most critical phase of the radar data sharing programme is the implementation phase. Radar data sharing should not be commenced before the achievement of the required target level of safety. The means for achieving high safety standards are, essentially, the following:

- an appropriate organization:

  a) this means competent staff, which are well trained and motivated;
  b) a documented system dealing with the documentation of data quality arising from a safety policy:
  c) the existence of a safety management function within the organization; and
  d) ensuring that external services received or provided meet the level of safety.

- appropriate systemic action:

  a) demonstrate the safety of the new system using a risk based approach;
  b) derive performance levels whenever practicable;
  c) ATM operational or technical occurrences are investigated promptly; and
  d) Establish an occurrence reporting system for the sharing of data on ATC and pilot deviations.

3.3.51 Once radar data sharing is implemented its on-going safety must be verified on a continuous basis by safety surveys, safety monitoring and analysis of safety. Safety records must be produced as well as the result of risk assessment and the related mitigation processes must be documented throughout the existence of radar data sharing agreements. Therefore, the Meeting formulated the following Draft Conclusion

DRAFT
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.

Radar coverage

3.3.52 The chart in **Appendix G** to this part of the report shows an ideal theoretical indication of the radar coverage of the various SSR stations within the C/CAR and E/CAR area. The Meeting considered that it is necessary to count with more accurate information on radar coverage, so that it may constitute a solid basis for the analysis and identification of the zones where benefits may be obtained.

3.3.53 The Meeting recalled that Appendices D and F to Agenda Item 5 of the C/CAR WG/3 Meeting depict respectively the radar coverage in the Havana FIR and in the Kingston FIR, which should also be taken into account by the Radar Data Sharing Task Force.

3.3.54 The Delegate of Dominican Republic informed the Meeting that deriving from the discussions held with the San Juan ACC, Puerto Rico, it has been identified that it would be beneficial to share radar data of Punta Cana, Dominican Republic, with the radar coverage of the Western sector of the San Juan ACC.

3.3.55 The Meeting considered that it would be beneficial that the aforementioned Task Force also gather information on the radar coverage corresponding to the Eastern and Southern portions of the Merida ACC and the Northern part of the CENAMER FIR. Therefore, the Meeting formulated the following Decision:

DECISION 5/20 INFORMATION REQUEST FOR THE RADAR COVERAGE CORRESPONDING TO MERIDA ACC AND CENAMER FIR

That, as part of the identification of the areas where it would be feasible and beneficial to share radar data, the ICAO NACC Office request Mexico and COCESNA up-to-date information on the SSR coverage of the following sectors:

a) East and South sectors of the Merida ACC, Mexico; and

b) Northeastern sector of the CENAMER FIR.

3.3.56 Likewise, based on GREPECAS Conclusion 11/47, the Meeting formulated the following Draft Conclusion:

DRAFT 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.

3.3.57 **Appendices H** and **I** show information sent by some States on Table -Information on the Secondary Surveillance Radar (SSR) for radar data sharing

Bilateral or Multilateral agreements

3.3.58 The Meeting noted that the Radar Data Sharing Task Force has a proposed text agreement which can best be customized or adapted both for bilateral as well as multilateral agreements between radar service providers in their attempt to cover all aspects to guarantee reliability, integrity and sustainability from their service provider of radar data. This text has been developed by the European Commission for the safety of Air Navigation. The title of the model agreement is Guidelines for an Agreement for the Shared use of Radar Sensor Data.

3.3.59 The Meeting also suggested that the States/Territories/Organizations to consult this model agreement when negotiating with other service providers on elements of radar data exchange.

3.4 CNS/ATM

3.4.1 The Secretariat presented the guidelines established in the Global Plan of air navigation for the CNS/ATM systems and the CAR/SAM Regional Air Navigation Plan, in order to progress in the planning and implementation of the CNS/ATM systems and taking advantage of the technological developments evolution allowing to satisfy civil aviation requirements improving the efficiency, safety and regularity, the establishment and execution of action plans are necessary.

3.4.2 The Meeting recalled ICAO State Letter, Ref.: AN 1/63-04/96, dated 30 November 2004, pointing out to the Sates the amendments to Resolution A33-15 of the 35th Session of the ICAO General Assembly, corresponding to the consolidated statement of the ICAO policies and practices related to a global air traffic management (ATM) system and to the communications, navigation and surveillance/air traffic management (CNS/ATM) systems, as well as the required international contribution to favour the evolution of the ICAO CNS/ATM systems is required, in order to ensure that the systems become seamless and interoperable and contribute to a global, seamless ATM system allowing adaptation to efficiently meet regional and local needs.

Study of the ICAO SARPs and guidance material on ADS and ADS-B

3.4.3 The Secretariat presented a study on ADS and ADS-B implementation based on the operational analysis of the guidance material on ADS for air traffic services in Annex 2, Annex 11 and Doc 4444, PANS-ATM of ICAO. It was recognized that the ADS-B concept was adopted by the AN-Conf/11 as a key application of data link for the future ATM system as an integral co-operation and collaboration environment offering new surveillance capabilities for pilots and controllers as well as for other elements of the global ATM community. The general guidelines of ADS-B examined by the Meeting appear in **Appendix J** to this part of the Report.

3.4.4 The Meeting recalled that GREPECAS has adopted the preliminary regional guidelines on the ADS systems, and the Meeting agreed to examine the development of CNS/ATM issues and to develop relevant subregional action plans to contribute to the coordination and implementation of these systems.

3.4.5 In accordance with paragraph 3.2.3.46 of Agenda Item 3 of the GREPECAS/12 Meeting Report, GREPECAS noted that in the CAR/SAM FASID (Table CNS 4A), the requirements do not yet appear for ADS and ADS-B surveillance functions. In this respect, it was observed that there are plans in various CAR/SAM States/Territories/International Organizations for the future implementation of these surveillance functions. In this context, the GREPECAS/12 Meeting took note of the need to include ADS requirements in the FASID, but that this required a definition of operational requirements.

3.4.6 The Delegate of United States expressed that her State is studying the possibility of implementing ADS or ADS-B as a very useful surveillance option and less expensive than the option of using radar.

3.4.7 She added that the ADS option requires the application of an interface with great benefits that considerably reduces the workload of ATC controllers, as well as the negative impact of human resources, and it increases the precision of data which also results in the increase of safety.

3.4.8 In view of the characteristics of air navigation in the CAR Region, the C/CAR WG decided to begin the review of the Preliminary Guidance on the technical infrastructure of ADS shown in Appendix J to this part of the report. Based on the above, the Meeting formulated the following

DRAFT
CONCLUSION 5/22 SUB-REGIONAL ACTION FOR THE STUDY AND IMPLEMENTATION OF THE ADS AND ADS-B SYSTEMS

That,

a) with a view to the deployment of ADS and ADS-B systems in the Central Caribbean in the short-term, ICAO request information from IATA on the current avionics capacity and on their member airlines plans for the deployment of the use of ADS and ADS-B in the Caribbean and Central America;

b) each State/Territory/International Organization of the Central Caribbean is urged to,

- taking into account the operational requirements of its airspace, evaluate its respective radar coverage, its radars' useful life and the potentialities of covering empty spaces and substitute or replace the radar coverage with ADS or ADS-B;

- evaluate and plan the existing and future ATC automated systems capacity in order to support ADS or ADS-B systems;
- investigate and evaluate their policies related to the ADS and ADS-B data sharing with their respective neighbouring areas in which the position is provided by the same aircraft instead of being measure by the radars; and
- consider the feasibility to apply ADS-B as a solution to the movement control in the airports surface.

DECISION 5/23 ADS-B STUDIES IN THE CENTRAL CARIBBEAN

The C/CAR Working Group,

a) review the last activities related to the ADS and ADS-B conducted by the States, Territories and International Organizations that have responsibility of the FIRs control;

b) identify the areas with more air traffic density, current and foreseen until 2015;

c) gather information from the States/Territories/International Organizations on the existing and planned ATC automated systems capacities to support ADS or ADS-B systems; and

d) identify the design phases and deployment development of the ADS and ADS-B systems, in order to improve and to extend the surveillance data sharing plan, taking advantage of the ADS or ADS-B systems ground potential stations.

Evolutionary Integration of ATM Automated Systems

3.4.9 It was recalled that at the GREPECAS/12 Meeting held in Havana, Cuba, 3-7 June 2004, through Conclusion 12/31 the *"Regional Strategy for the Integration of ATM Automated Systems" was* formulated, contained in Appendix K to Agenda item 3 of the GREPECAS/12 Report.

3.4.10 Mexico briefly informed the Meeting on the many benefits it is obtaining as a result of the ATM automatic exchange with United States, even if it has been task that has demanded many resources and time.

3.4.11 United States expressed its satisfaction with the significant benefits obtained through the automation systems interface with Mexico, in particular the reduction in controller workload, and increased accuracy of flight data being exchanged, both resulting in increased safety. Many difficulties were encountered while developing the programme requiring close coordination between experts from both States. Mexico and United States added that they are hoping to expand the automation systems interface programme to other Caribbean States.

3.4.12 The Meeting recognized that this development between Mexico and United States was produced by the need of assuming the high air traffic density among both States, which is foreseen to keep growing.

3.4.13 The Meeting also pointed out its concern on the air traffic volume, which is considerably increasing at the Havana, Santo Domingo, San Juan, CENAMER FIRs, which will also impact the Kingston y Curacao FIRs. It was recognized that this is a particular and homogeneous characteristic aof the CAR Region.

3.4.14 Mexico also informed that it has begun discussions with Cuba to establish in an evolutionary manner the ATM automatic exchange among their ACCs. Cuba confirmed these plans with Mexico and added that if there are no problems, discussions will also begin with United States to proceed to the ATM automatic exchange between Havana ACC and Miami ARTCC.

3.4.15 On the other hand, Dominican Republic expressed that its State has started discussions with San Juan CERAP for the exchange of radar data. Jamaica also expressed its willingness to begin bilateral discussion on automated information exchange.

3.4.16 These bilateral strategies took into account the need to gradually evolution towards the inter-functional, flexible and adaptable systems for the digital processing of the required information with security, quality, integrity and in real time as a platform for the process of the collaborative decision-making (CDM) in benefit of the global ATM community, as stressed in the ATM operational concept approved by the AN-Conf.-11.

3.4.17 The AN-Conf-11 recommended the States to begin the studies of regional implementation according to the ATM planning guidelines and requirements approved by ICAO, studies that have been supported by GREPECAS/12

3.4.18 In accordance with this recommendation, the CNS, MET, AIS and AGA elements should be taken into account for the design and integration of information and data in the automated systems as an early evolution for the air traffic flow management (ATFM). Some aspects concerning ATFM are the provision of ATM services, the balance between demand and capacity, the traffic synchronization, the operations of the airspace users, aerodromes operations, etc.

3.4.19 The Meeting recognized the importance of beginning ATFM studies as an early evolution towards the application of ATM automated systems, in the integration, use, and development of the technical infrastructure, including the communication systems as a support mean, for the operational applications implementation.

3.4.20 Likewise, note was taken that the necessary technical infrastructure should be available and be used, such as the AFTN plus an Interphase Control Document (ICD), in order to begin the evolutionary integration of the ATM automated systems towards the final phases of the ATN ground-ground and air-ground sub-networks implementation, as well as the ATN applications.

3.4.21 Based on the previously mentioned and in the strategy for the integration of the ATM automated systems approved by GREPECAS; the C/CAR WG agreed to begin early actions towards a regional ATFM evolution through the following Draft Conclusion:

DRAFT
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.

Sub-Regional Plan and National Plans for the CNS/ATM Systems

3.4.22 In accordance with the recommendations of the AN-Conf./11 the C/CAR WG should continue its follow-up work to implement the CNS/ATM systems contained in the FASID; studying the feasibility of implementing some elements of the CNS/ATM systems, for example, the new ADS and ADS-B surveillance systems.

International Cooperation for the CNS/ATM Systems Implementation

3.4.23 Likewise it was recognized that, a globally coordinated and harmonious implementation and the early realization of benefits to States, users and providers, the technical cooperation in the implementation and efficient operation of CNS/ATM systems is necessary. Therefore, States in a position to do so, should provide assistance with respect to technical, financial, managerial, legal and cooperative aspects of implementation.

3.4.24 The NACC DCA/1 Meeting, held in Grand Cayman, 8-12 October 2003, supported the international cooperation through its Conclusion 1/24 - *Instruments for the effective implementation of new Civil Aviation Systems*, and guided the States/Territories and International Organizations to: dedicate financial resources to provide the necessary support to the implementation of new civil aviation systems, analyze the feasibility of developing regional technical cooperation projects, consider promoting the international cooperation and bilateral/multilateral agreements, make greater efforts to actively integrate and participate in the CAR/SAM Region Technical Cooperation projects, currently in execution, and propose new projects as considered appropriate.

3.5 Aeronautical Meteorology (MET)

3.5.1 When dealing this Agenda Item, the Meeting took note of the information presented by the Secretariat with updated information on the requirements of the World Area Forecast System (WAFS) for the final phase in the CAR/SAM Regions. With the aim of ensuring the reception of the WAFS forecasts in GRIB and BUFR codes, the States of the CAR/SAM Regions should take the necessary actions in order to comply with the ICAO schedule, as established in **Appendix K** to this part of the report, which will allow the access to the world forecasts.

3.5.2 The Meeting was informed of the extension of the transmissions of the International Satellite Communication Systems (ISCS) using Protocol X.25. It was indicated that the latest information provided by United States, State provider of ISCS, indicated that the acceptance of the trials of the new TCP/IP Protocol has not been finalized, and therefore, the State Provider has decided to continue the transmissions using X.25 Protocol in parallel with the TCP/IP Protocol until the TCP/IP system has been totally approved by the MCI corporation. The transmission using X.25 Protocol will not be interrupted until end April 2005.

Training on GRIB and BUFR codes for the States covered by ISCS

3.5.3 The Meeting was also reminded of an integral part of the final phase of WAFS which represents the diffusion of all the T4 products that include wind and temperature forecasts, as well as significant weather forecasts, will cease as of July 2005. Moreover, it is essential that the States be able to fully use in an appropriate manner the coded data using GRIB and BUFR codes, which will substitute these products. The Meeting was informed that a training programme had started, which objective is to ensure that all the States of the CAR/SAM Regions using ISCS have the capacity of fully using in an appropriate manner the information coded in GRIB and BUFR.

3.5.4 The need for training for the MET personnel was highlighted to the States, which were urged to make the necessary arrangements to allow that the ideal individuals attend the forthcoming workshop on the operation of working stations and visualization of WAFS products using the GRIB and BUFR codes, to be held from 16 to 18 March 2005 at the ICAO NACC Office in Mexico City, which is aimed at training English-speaking officers of the CAR/SAM States.

2004 Hurricane Season in the Caribbean Sea

3.5.5 The Meeting was informed of the intense 2004 hurricane season that occurred in the North Atlantic, Caribbean Sea and the Gulf of Mexico. Four hurricanes, Charley, Frances, Ivan and Jeanne struck the Caribbean. Charley hit western Cuba, while Frances and Jeanne also hit the Bahamas, all as major hurricanes (category three or higher on the Saffir-Simpson hurricane scale). Ivan inflicted considerable damage to Grenada and had significant impact on Jamaica, Grand Cayman and Western Cuba. Jeanne also hit the Dominican Republic as a hurricane and Puerto Rica as a strong tropical storm.

3.5.7 The occurrence of tropical cyclones in the CAR region had a major disruptive effect on air navigation. During this time aircraft operations are potentially dependent on the occurrence of this meteorological phenomenon, which has a critical incidence on flight safety, efficiency and aerodromes operations.

3.6 Search and Rescue (SAR)

Terms of reference and work programme of the C/CAR SAR TF

3.6.1 According to the mandate expressed in the Seventh Meeting of Directors of Civil Aviation of the Central Caribbean (C/CAR DCA/7), the Meeting took note of the terms of reference and work programme for the Search and Rescue Task Force (C/CAR SAR TF) that were presented by the Task Force Rapporteur; which have been incorporated to the terms of reference and work programme of the C/CAR WG and are included in the Appendix to the Report on Agenda Item 6.

Development of SAR Activities in the Central Caribbean

3.6.2 The Rapporteur of the C/CAR SAR TF presented the progress made to prepare the project for the SAR C/CAR Plan. Regardless of the lack of participation of the remaining members of the Group, who have not replied the coordination e-mails, thus making it difficult to compile information; the SAR Task Force Rapporteur initiated the works, in coordination with the ICAO NACC Regional Office, to exchange information for the development of a SAR Regional Plan.

3.6.3 The Meeting was informed that half of the SAR C/CAR plan project has been done and that the last corrections are being done for the development of Chapters 4 and 5 of the same plan. It is expected to finalize the development of the plan in order to present it for the next NACC/DCA/2 Meeting.

3.6.4 As a support for the work to elaborate the SAR Regional Plan in the CAR Region, the Dominican Republic delegation expressed its approval to sponsor the SAR Meeting/Workshop which will be convened from 28 March to 1st. April of the current year in Santo Domingo, Dominican Republic, and suggested to foster the participation of States, Territories and International Organizations of the CAR Region. The objective of this event is to assist States and Territories of the CAR Region in the SAR Regional Plan harmonization.

3.6.5 Among the issues to deal are the analysis of the current amendments of Annex 12 and Doc 973, IAAMSAR Handbook, SAR Agreements for C/CAR Region, mass casualty victims exercises/testing (MCI) at the International Airport Las Américas (AILA), as well as a session of meetings one to one for the coordination of bilateral agreements for SAR service in the CAR Region.

Ref.: SWG 16/1

18 February 2005

Representatives of Argentina, Austria*, Brazil, Canada, Chile, Colombia, France*, Honduras, Mexico, Peru, Saint Lucia, United Kingdom*, United States on the Council of ICAO

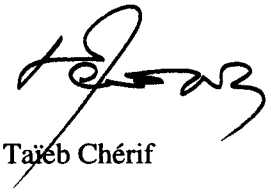
Resident Non-Council Members: Antigua and Barbuda, Belize, Costa Rica, Cuba, Ecuador, Uruguay

Dear Sir/Madam,

Please allow me to congratulate you and the respective civil aviation authorities on supporting and participating in the implementation of reduced vertical separation minimum (RVSM) in the airspace of South America, the Caribbean, Central America and North America effective 20 January 2005. This RVSM project, which was a part of the overall regional vision, was successfully implemented thanks to the well functioning regional and interregional planning and implementation mechanism. It is also a significant step in global cooperation with Contracting States and airspace users to maximize operational benefits as well as to reinforce safety as a high priority.

I take this opportunity to acknowledge with thanks the unstinting support provided by your State in furthering the development of the regional air navigation infrastructure, which has resulted in increased safety, efficiency and regularity of air transport operations. This support has been greatly appreciated by the ICAO Regional Offices in Lima and Mexico.

Yours sincerely,



Taïeb Chérif

bcc: ICAORDs Lima and Mexico
C/RAO

*With regard to the Territories located in the Caribbean and South American Regions

APPENDIX B

PROGRAMA DE IMPLANTACIÓN DE RUTAS RNAV EN LAS REGIONES CAR/SAM – FASE II – B
RNAV ROUTES IMPLEMENTATION PROGRAMME IN THE CAR/SAM REGIONS – PHASE II – B

SÓLO PUNTOS DE INICIO/FIN START/END POINTS ONLY	
Administraciones Administrations	**Ruta Route**
Netherlands Antilles - Ecuador	Bonaire/Quito **(*)** Bonaire/Guayaquil **(*)**
Netherlands Antilles - Perú	Bonaire/Lima
México - Panamá	Cancún/Panamá
Venezuela – Cuba	Caracas/La Habana
Venezuela – Brasil	Elorza/Sao Gabriel
Cuba – Panamá	La Habana/Panamá
Panamá – Haití	Panamá/Port-au-Prince
(*) Estas rutas podrían unirse en una sola ruta: Bonaire/Quito/Guayaquil (*) These routes might join in only one route: Bonaire/Quito/Guayaquil	

PUNTOS DE INICIO/FIN Y EN LOS LÍMITES FIR START/END AND FIR LIMITS POINTS	
Administraciones Administrations	**Ruta Route**
Argentina – Paraguay	Buenos Aires/Asunción
Argentina – Chile	Buenos Aires/Balmaceda Buenos Aires/Santiago de Chile (sentido único) Santiago de Chile/Buenos Aires (sentido único) Buenos Aires/Puerto Montt
Netherlands Antilles - United States	Aruba/San Juan de Puerto Rico
México – COCESNA	México/San Pedro Sula
Haití - Santo Domingo	Cap. Haitien/Puerto Plata **(*)**
Haití – Cuba	Cap. Haitien/Santiago de Cuba **(*)**
Bolivia - Perú	La Paz-Lima **(**) (segmento de la ruta UM 415 Sao Paulo/Lima Fase I y Fase II-a)**
Ecuador - Perú	Guayaquil/Lima **(**) (segmento de la ruta UL780 Santiago/Lima/Guayaquil/Miami Fase I)**
Colombia	Cúcuta/Villavicencio **(**) (Ruta nacional)**
(*) Estas rutas podrían unirse en una sola ruta: Puerto Plata/Cap. Haitien/Santiago de Cuba. (*) These routes might join in only one route: Puerto Plata/Cap. Haitien/Santiago de Cuba.	
(**) Estas rutas podrían suprimirse de la Fase II-b (**) These routes might be suppressed from Phase II-b	

RUTAS ATS EN EL CARIBE CENTRAL
ATS ROUTES IN THE CENTRAL CARIBBEAN

- La L417 dentro de la FIR Havana para facilitar perfiles de vuelo de salida y llegada.
- The L417 within the Havana FIR to facilitate arriving and departing flight profiles.

- La L 347, en el espacio aéreo inferior de la FIR Havana para facilitar operaciones entre Santiago y Kingston.
- The L 347, in the lower airspace of Havana FIR to facilitate operations between Santiago and Kingston.

Realinear la L/UL212, de Holguin a ETBOD como sigue:
Realign the L/UL212, from Holguin to ETBOD as follows:

R/POINTS PUNTOS/R	REMARKS OBSERVACIONES
UHG VOR	
URLAM (new/nueva)	FIR común - HAV/PAP Common FIR - HAV/PAP
ONPAD (new/nueva)	Con intersección UB882 Crossing UB882
SINKA (new/nueva)	Con intersección PAP TMA Crossing PAP TMA
PAP VOR	
ETBOD	FIR común - PAP/STO. DOM. Common FIR - PAP/STO. DOM.
OKOSO	

Nuevas rutas ATS
New ATS Routes

- Ruta RNAV desde GELOG directo a BORDO
- RNAV Route from GELOG direct to BORDO.

- Ruta RNAV desde TANIA directo a GONIS directo a SIA.
- RNAV Route from TANIA direct to GONIS direct to SIA.

- Extensión de la Ruta ATS R/UR 628 desde Varder VOR (UVA) a CAYABO NDB (UCY) vía Zarago NDB (UZG) Havana VOR (UHA) directo.
- Extension of ATS Route R/UR 628 from Varder VOR (UVA) to CAYABO NDB (UCY) via Zarago NDB (UZG) Havana VOR (UHA) direct.

APPENDIX/APÉNDICE C

Table CNS 2A – Tabla CNS 2A
AERONAUTICAL MOBILE SERVICE AND AMSS
SERVICIO MÓVIL AERONÁUTICO Y SMAS

EXPLANATION OF THE TABLE

Column

1 The name of the State and the locations within the same where the service is provided.

2 The required services or functions are provided. Suitable abbreviations for these services or functions are listed below.

ACC-L	Area control service for flights up to FL 250.
ACC-SR-I	Area radar control service up to FL 250.
ACC-SR-U	Area radar control service up to FL 450.
ACC-U	Area control service up to FL 450.
AFIS	Aerodrome flight information service.
APP-L	Approach control services below FL 120.
APP-I	Approach control service below FL 250.
APP-PAR	Precision approach radar service up to FL 40.
APP-SR-I	Surveillance radar approach control service up to FL 250.
APP-SR-L	Surveillance radar approach control service up to FL 120.
APP-SR-U	Surveillance radar approach control service up to FL 450.
APP-U	Approach control service below FL 450.
ATIS	Automatic terminal information service.
D-ATIS	Data link-automatic terminal information service.
CLRD	Clearance delivery.
FIS	Flight information service.
VHF-ER	VHF – Extended range.
GP	Facility providing VHF or HF en-route general purpose system (GPS) communication. These facilities provide air-ground radiotelephony for all categories of messages listed in Annex 10, Volume II, 5.1.8. This system of communication is normally indirect, i.e. exchanged through the intermediary of a third person who is usually a communicator at an aeronautical station.
SMC	Surface movement control up to limits of aerodrome.
TWR	Aerodrome control service.
VOLMET	VOLMET broadcast.

3 Number of voice VHF channels for the corresponding services indicated in column 2. The number of implemented channels is shown in parentheses.

4 Number of VHF channels for data communication for the corresponding services indicated in column 2. The implementation date (month/year) is shown in parentheses.

5 HF network designators for the corresponding services indicated in column 2. The number of implemented frequencies is shown in parentheses.

6 Requirement for HF data link (x) for the corresponding services indicated in column 2. The implementation date (month/year) of the service is shown in parentheses.

7 Requirement for satellite voice communications (x) for the corresponding services indicated in column 2. The implementation date (month/year) of the service is shown in parentheses.

8 Requirement for satellite data communications (x) for the corresponding services indicated in column 2. The implementation date (month/year) of the service is shown in parentheses.

9 Requirement for Mode S data communications (x) for the corresponding services indicated in column 2. The implementation date (month/year) of the service is shown in parentheses.

10 Remarks.

Note.– The implementation year for the data links and satellite voice communication are indicated by two digits.

EXPLICACIÓN DE LA TABLA

Columna

1 El nombre del Estado y de las localidades dentro del mismo donde se proporciona el servicio.

2 Se proporcionan los servicios o funciones que se requieren. Se enumeran a continuación las abreviaturas correspondientes a estos servicios o funciones.

ACC-L	Servicio de control de área hasta el FL 250
ACC-SR-I	Servicio de control de área radar hasta el FL 250
ACC-SR-U	Servicio de control de área radar hasta el FL 450
ACC-U	Servicio de control de área hasta el FL 450
AFIS	Servicio de información de vuelo de aeródromo
APP-L	Servicio de control de aproximación por debajo del FL 120
APP-I	Servicio de control de aproximación por debajo del FL 250
APP-PAR	Servicio radar para la aproximación de precisión hasta el FL 40
APP-SR-I	Servicio de aproximación de control con radar de vigilancia hasta el FL 250
APP-SR-L	Servicio de aproximación de control con radar de vigilancia hasta el FL 120
APP-SR-U	Servicio de aproximación de control con radar de vigilancia hasta el FL 450
APP-U	Servicio de control de aproximación por debajo del FL 450
ATIS	Servicio automático de información terminal
D-ATIS	Servicio automático de información terminal por enlace de datos
CLRD	Servicio de entrega de autorización de tránsito
FIS	Servicio de información de vuelo
VHF-ER	VHF **C** Alcance ampliado
GP	Instalación que proporciona comunicaciones VHF o HF en ruta para fines generales (GPS). Estas instalaciones suministran transmisión radiotelefónica aeroterrestre en todas las categorías de mensajes citadas en el Anexo 10, Vol II, 5.1.8. En este sistema las comunicaciones son normalmente indirectas, es decir, que son intercambiadas por intermedio de un tercero que habitualmente es un operador de comunicaciones de una estación aeronáutica.
SMC	Control del movimiento en la superficie hasta los límites del aeródromo.
TWR	Servicio de control de aeródromo.
VOLMET	Radiodifusiones VOLMET.

3 Número de canales VHF para comunicaciones orales para los correspondientes servicios indicados en la Columna 2. El número de canales implantados se indica entre paréntesis.

4 Número de canales VHF para comunicaciones en datos para los correspondientes servicios indicados en la Columna 2. La fecha de implantación (mes/año) se indica entre paréntesis.

5 Designadores de red HF para comunicaciones orales para los correspondientes servicios indicados en la Columna 2. El número de frecuencias implantados se indica entre paréntesis.

6 Requisito para enlace de datos HF (x) para los correspondientes servicios indicados en la Columna 2. La fecha de implantación (mes/año) del servicio se indica entre paréntesis.

7 Requisito para comunicaciones orales por satélite (x) para los correspondientes servicios indicados en la Columna 2. La fecha de implantación (mes/año) del servicio se indica entre paréntesis.

8 Requisito para comunicaciones de datos por satélite (x) para los correspondientes servicios indicados en la Columna 2. La fecha de implantación (mes/año) del servicio se indica entre paréntesis.

9 Requisito para comunicaciones de datos en Modo S (x) para los correspondientes servicios indicados en la Columna 2. La fecha de implantación (mes/año) del servicio se indica entre paréntesis.

10 Observaciones.

Nota. ***C*** *El año de implementación para los enlaces de datos y comunicaciones orales por satélite se indican en dos dígitos.*

TABLE CNS 2A – TABLA CNS 2A

(Part of the CAR Region/Parte parcial de la Región CAR)

-A3-

CNS

Country and location Pays et emplacement País y localidad	Service or function Service ou fonction Servicio o función	VHF voice Voix VHF Voz VHF	VHF data Données VHF Datos VHF	HF voice Voix HF Voz HF	HF data Données HF Datos HF	Satellite voice Voix satellite Voz por satélite	Satellite data Données satellite Datos por satélite	Mode S Modo S	Remarks Remarques Observaciones
1	2	3	4	5	6	7	8	9	10
BAHAMAS									
MYBS ALICE TOWN/ South Bimini, Bimini I.	TWR	1							
MYSM COCKBURN TOWN/ San Salvador I.	TWR	1							
MYGF FREEPORT/Intl., Grand Bahama I.	APP-U APP-L TWR SMC	1 1 1 1							
MYEG GEORGETOWN/ Georgetown, Exuma Intl.	APP-L TWR	1 1							
MYEM GOVERNOR=S HARBOUR/ Governor=s Harbour, Eleuthera I.	APP-L TWR	1 1							
MYNA NASSAU	ACC-U GP ACC-L	3 1 1							
MYNN NASSAU/Intl., New Providence I.	APP-I TWR SMC APP-SR-I	1 1 1 1							
MYEH NORTH ELEUTHERA/ New Providence I.	TWR	1 1							
MYLS STELLA MARIS/Long Island I.	TWR	1							
MYAT TREASURE CAY/ Treasure Cay, Abaco I.	TWR APP-L	1 1							
MYGW WEST END/West End, Grand Bahama I.	TWR	1							
CAYMAN ISLANDS (United Kingdom)									
MWCB CAYMAN BRAC/ Gerrard Smith Intl.	TWR SMC	1 (1) 1							
MWCR GEORGETOWN/ Owen Roberts Intl.	APP-I TWR SMC ATIS	1 -1 1 1 (1)							

Country and location Pays et emplacement País y localidad	Service or function Service ou fonction Servicio o función	VHF voice Voix VHF Voz VHF	VHF data Données VHF Datos VHF	HF voice Voix HF Voz HF	HF data Données HF Datos HF	Satellite voice Voix satellite Voz por satélite	Satellite data Données satellite Datos por satélite	Mode S Modo S	Remarks Remarques Observaciones
1	2	3	4	5	6	7	8	9	10
CUBA									
MUCM CAMAGUEY/ Ignacio Agramonte	APP-SR-L TWR	1 1 (1)							
MUCL CAYO LARGO DEL SUR/Vilo Acuña	APP-L TWR	1 (1) 1 (1)							
MUCA CIEGO DE AVILA/ Máximo Gómez	APP-L TWR	1 1 (1)							
MUHA HABANA	ACC-SR-U ACC-SR-I GP-U	5 (4)-ER 3 (1)-ER 2 (1)	2 (06/06)	CAR-A (6)	X (06/06)				
MUHA HABANA/José Martí	APP-SR-L APP-SR-I TWR SMC ATIS	1 1 (1) 1 (1) 1 (1) 1 (1)							
MUHG HOLGUIN/Frank País	APP-SR-L TWR	1 1(1)							
MUCU SANTIAGO DE CUBA/ Antonio Maceo	APP-SR-I TWR SMC	1 (1) 1 (1) 1							
MUVR VARADERO/Juan Gualberto Gomez	APP-SR-L TWR SMC	1 1 (1) 1							
DOMINICAN REPUBLIC									
MDBH BARAHONA/ Maria Montes Intl.	TWR	1 (1)							
MDHE HERRERA/ Herrera Intl.	TWR	1 (1)							
MDLR LA ROMANA/ La Romana Intl.	APP-L TWR	1 (1) 1 (1)							
MDPP PUERTO PLATA/ Gregorio Luperon	APP-SR-I TWR SMC	1 (1) 1 (1) 1 (1)							
MDPC PUNTA CANA/Punta Cana Intl.	APP-L TWR	1 1 (1)							
MDST SANTIAGO/Cibao	APP-L	1							

CNS

Country and location Pays et emplacement País y localidad	Service or function Service ou fonction Servicio o función	VHF voice Voix VHF Voz VHF	VHF data Données VHF Datos VHF	HF voice Voix HF Voz HF	HF data Données HF Datos HF	Satellite voice Voix satellite Voz por satélite	Satellite data Données satellite Datos por satélite	Mode S Modo S	Remarks Remarques Observaciones
1	2	3	4	5	6	7	8	9	10
Santiago Intl.	TWR	1 (1)							
MDCS SANTO DOMINGO	ACC-U ACC-SR-U GP	4 1 (1) 1	1 (06/08)						
MDSD SANTO DOMINGO/ De las Américas Intl.	APP-SR-I TWR SMC ATIS CLRD	2 (1) 1 (1) 1 (1) 1 (1) 1							
HAITI									
MTCH CAP HAITIEN/Intl.	APP-L TWR	1 1 (1)							
MTEG PORT-AU-PRINCE	ACC-SR-U GP	1 (1) 1	1 (06/08)						
MTPP PORT-AU-PRINCE/Intl.	APP-SR-I APP-I TWR SMC	1 1 (1) 1 (1) 1							
HONDURAS									
MHTG TEGUCIGALPA (CENAMER)	ACC-SR-U GP	7 (4) 1	3 (06/08)	CAR-A (6) SAM-1 (2)	X (06/08)	X (06/08)	X (06/08)		
JAMAICA									
MKJK KINGSTON	ACC-SR-U ACC-U GP	1 5 (2) 1	2 (06/06)		X (06/06)	X (06/06)	X (06/06)		
MKJP KINGSTON/Norman Manley Intl.	APP-SR-1 APP-I TWR SMC	1 1 (1) 1 1 (1)							
MKJS MONTEGO BAY/ Sangster Intl.	APP-SR-I APP-I TWR SMC	1 1 1 (1) 1 (1)							

Country and location Pays et emplacement País y localidad	Service or function Service ou fonction Servicio o función	VHF voice Voix VHF Voz VHF	VHF data Données VHF Datos VHF	HF voice Voix HF Voz HF	HF data Données HF Datos HF	Satellite voice Voix satellite Voz por satélite	Satellite data Données satellite Datos por satélite	Mode S Modo S	Remarks Remarques Observaciones
1	2	3	4	5	6	7	8	9	10
MEXICO									
MMAA ACAPULCO/Gral. Juan Alvarez Intl.	APP-SR-I APP-SR-L ATIS SMC TWR GP	1 (1) 1 (1) 1 1 1 (1) 1							
MMBT BAHIAS DE HUATULCO/ Bahías de Huatulco	TWR	1 (1)							
MMCP CAMPECHE/Ignacio Alberto Acuña Ongay Intl.	TWR	1 (1)							
MMUN CANCUN/Cancún Intl.	APP-L APP-I SMC TWR ATIS CLRD GP	1 (1) 1 (1) 1 1 (1) 1 1 1							
MMCM CHETUMAL/ Chetumal Intl.	TWR	1 (1)							
MMCU CHIHUAHUA/Gral. Roberto Fierro Villalobos Intl.	APP-I TWR ATIS GP	1 (1) 1 (1) 1 1							
MMMC CIUDAD ACUÑA/Intl.	AFIS	1 (1)							
MMCS CIUDAD JUAREZ/ Abraham González Intl.	APP-I TWR	1 1 (1)							
MMCZ COZUMELCozumel/ Intl.	TWR	1 (1)							
MMCL CULIACAN/Fidel Bachigualato	APP-I TWR GP	1 (1) 1 (1) 1							
MMDO DURANGO/Pte. Guadalupe Victoria, Intl.	TWR	1 (1)							
MMGL GUADALAJARA/	APP-SR-I	1 (1)							

CNS

Country and location Pays et emplacement País y localidad	Service or function Service ou fonction Servicio o función	VHF voice Voix VHF Voz VHF	VHF data Données VHF Datos VHF	HF voice Voix HF Voz HF	HF data Données HF Datos HF	Satellite voice Voix satellite Voz por satélite	Satellite data Données satellite Datos por satélite	Mode S Modo S	Remarks Remarques Observaciones
1	2	3	4	5	6	7	8	9	10
Don Miguel Hidalgo y Costilla Intl.	APP-SR-L ATIS SMC TWR CLRD GP	1 (1) 1 (1) 1 (1) 1 (1) 1 1							
MMGM GUAYMAS/Gral. José María Yáñez Intl.	TWR	1 (1)							
MMHO HERMOSILLO/Gral. Ignacio Pesqueira Garcia Intl.	APP-I ATIS TWR SMC	1 (1) 1 (1) 1 (1) 1							
MMZH IXTAPA-ZIHUATANEJO/ Ixtapa-Zihuatanejo Intl.	APP-I TWR	1 (1) 1 (1)							
MMLP LA PAZ/Gral. Manuel Márquez de León Intl.	APP-I TWR	1 (1) 1 (1)							
MMLO LEON/Guanajuato	APP-L TWR	1 1 (1)							
MMLT LORETO/Loreto Intl.	TWR	1 (1)							
MMZO MANZANILLO/Playa de Oro Intl.	APP-L TWR	1 1 (1)							
MMMA MATAMOROS/Gral. Servando Canales	APP-L TWR	1 1 (1)							
MMMZ MAZATLAN/Gral. Rafael Buelna Intl.	ACC-SR-L ACC-SR-U APP-I SMC TWR ATIS GP	4 4 (5) 1 (1) 1 1 (1) 1 (1) 1	5 (06/08)		X (06/08)	X (06/08)	X (06/08)		
MMMO MERIDA/Lic. Manuel Crescencio Rejón Intl.	ACC-SR-L ACC-SR-U APP-I ATIS GP TWR	3 4 (4) 1 (1) 1 1 (1) 1 (1)	3 (06/08)	CAR-A (5)	X (06/08)	X (06/08)	X (06/08)		
MMML MEXICALI/Gral. Rodolfo Sánchez Taboada Intl.	APP-I TWR	1 1 (1)							
MMMX MEXICO/Lic. Benito Juárez Intl.	ACC-SR-L ACC-SR-U APP-SR-I	5 5 (7) 1 (1)	3 (06/08)		X (06/08)	X (06/08)	X (06/08)		

Country and location Pays et emplacement País y localidad	Service or function Service ou fonction Servicio o función	VHF voice Voix VHF Voz VHF	VHF data Données VHF Datos VHF	HF voice Voix HF Voz HF	HF data Données HF Datos HF	Satellite voice Voix satellite Voz por satélite	Satellite data Données satellite Datos por satélite	Mode S Modo S	Remarks Remarques Observaciones
1	2	3	4	5	6	7	8	9	10
	APP-SR-L ATIS GP SMC TWR CLRD	1 (1) 1 (1) 1 (1) 1 (1) 1 (1) 1 (1)							
MMAN MONTERREY/ Aeropuerto Del Norte Intl.	TWR	1 (1)							
MMMY MONTERREY/Gral. Mariano Escobedo Intl.	ACC-SR-L ACC-SR-U APP-SR-I APP-SR-L ATIS GP SMC TWR	2 2 (3) 1 (1) 1 (1) 1 (1) 1 1 (1) 1 (1)	3 (06/08)		X (06/08)	X (06/08)	X (06/08)		
MMMM MORELIA/ Gral. Francisco Mujica Intl.	APP-L TWR	1 1 (1)							
MMNG NOGALES/Nogales Intl.	AFIS	1							
MMNL NUEVO LAREDO/ Quetzalcoatl Intl.	APP-L TWR	1 1 (1)							
MMPG PIEDRAS NEGRAS/Intl.	ATIS	1 (1)							
MMPR PUERTO VALLARTA/ Lic. Gustavo Díaz Ordaz Intl.	APP-SR-I APP-SR-L ATIS SMC TWR	1 (1) 1 (1) 1 1 1 (1)							
MMRX REYNOSA/Gral. Lucio Blanco Intl.	APP-L TWR	1 1 (1)							
MMSF SAN FELIPE/ San Felipe Intl.	AFIS	1 (1)							
MMSD SAN JOSE DEL CABO/San José del Cabo Intl.	APP-I TWR GP	1 1 (1) 1							
MMTM TAMPICO/Gral. Francisco Javier Mina Intl.	APP-I TWR GP	1 (1) 1 (1) 1							
MMTP TAPACHULA/ Tapachula Intl.	TWR	1 (1)							
MMTJ TIJUANA/ Gral. Abelardo	APP-SR-I APP-SR-L	1 (1) 1 (1)							

CNS

Country and location Pays et emplacement País y localidad	Service or function Service ou fonction Servicio o función	VHF voice Voix VHF Voz VHF	VHF data Données VHF Datos VHF	HF voice Voix HF Voz HF	HF data Données HF Datos HF	Satellite voice Voix satellite Voz por satélite	Satellite data Données satellite Datos por satélite	Mode S Modo S	Remarks Remarques Observaciones
1	2	3	4	5	6	7	8	9	10
L. Rodríguez Intl.	ATIS GP TWR SMC	1 (1) 1 (1) 1 (1) 1							
MMTO/TOLUCA/Lic. Adolfo Lopez Mateos	TWR GP	1 (1) 1							
MMTC TORREON/Torreón Intl.	APP-L TWR	1 (1) 1 (1)							
MMVR VERACRUZ/Gral. Heriberto Jara Intl.	APP-L TWR	1 (1) 1 (1)							
MMVA VILLAHERMOSA/ C.P.A. Carlos Rovirosa	APP-L TWR	1 1 (1)							
MMZC ZACATECAS/Gral. Leobardo Ruíz Intl.	APP-I TWR	1 1 (1)							
NETHERLANDS ANTILLES (Netherlands)									
TNCF CURACAO	ACC-U GP	3 (2)-ER 1 (1)	2 (06/08)		X (06/08)	X (06/08)	X (06/08)		
TNCB KRALENDIJK/ Flamingo, Bonaire I.	APP-I TWR	1 1 (1)							
TNCE ORANJESTAD/ F.D. Rossevelt, St. Eustacius I.	TWR	1							
TNCM PHILIPSBURG/Prinses Juliana, St. Maarten I.	APP-I TWR SMC	1 1 1							
TNCC WILLEMSTAD/Hato, Curacao I.	APP-I TWR SMC APP-SR-I	1 1 (1) 1 1 (1)							
PUERTO RICO (United States)									
TJBQ AGUADILLA/Rafael Hernández Intl.	TWR	1 (1)							
TJFA FAJARDO/Diego Jiménez Torres	TWR	1 (1)							
TJMZ MAYAGUEZ/Mayaguez	SMC TWR	1 1							

Country and location Pays et emplacement País y localidad	Service or function Service ou fonction Servicio o función	VHF voice Voix VHF Voz VHF	VHF data Données VHF Datos VHF	HF voice Voix HF Voz HF	HF data Données HF Datos HF	Satellite voice Voix satellite Voz por satélite	Satellite data Données satellite Datos por satélite	Mode S Modo S	Remarks Remarques Observaciones
1	2	3	4	5	6	7	8	9	10
TJPS PONCE/Mercedita	TWR SMC APP-L	1 1							
TJZS SAN JUAN	ACC-U GP-U	11	4 (06/08)	CAR-A (6) CAR-B (1) NAT-A (5)	X (06/08)	X (06/08)	X (06/08)		
TJSJ SAN JUAN, PUERTO RICO/Luis Muñóz Marin Intl.	ATIS TWR SMC APP-SR-I	1 (1) 2 (1) 1 (1) 2 (2)							
TJVQ VIEQUES/Antonio Rivera	TWR	1 (1)							
TRINIDAD AND TOBAGO									
TTZP PIARCO	ACC-SR-U ACC-U GP	3 4 (2) 1 (1)	2 (06/08)	CAR-A (3) CAR-B (1) SAM-2 (2)	X (06/08)	X (06/08)	X (06/08)		
TTPP PORT OF SPAIN/ Piarco Intl., Trinidad I.	APP-I APP-SR-I TWR SMC ATIS	1 2 (1) 1 (1) 1 (1) 1 (1)							
TTCP SCARBOROUGH/ Crown Point, Tobago I.	APP-I TWR SMC	1 (1) 1 (1) 1 (1)							
TURKS AND CAICOS ISLANDS (United Kingdom)									
MBGT GRAND TURK/ Grand Turk Intl.	APP-L TWR	1 1 (1)							
MBPV PROVIDENCIALES/ Intl.	APP-L TWR	1 (1) 1 (1)							
MBSC SOUTH CAICOS/Intl.	APP-L TWR	1 1 (1)							
UNITED STATES									
KZWY NEW YORK	GP-U CLRD	1-ER 1	1 (06/08) 1 (06/01)	CAR-A CAR-B	X (06/08)	X (06/08)	X (06/08)		

Appendix D

Airspace Tracking & Management Through Data Link for the Latin American & Caribbean Region

February 2005

For
5th C/CAR WG

Carlos Negrete
ARINC

Core ARINC Aeronautical Services

Latin America / Caribbean Region

- **Air – Ground Voice**
  - **VHF (Mexico)**
  - **Satellite**
  - **HF**
- **GLOBALink**
  - **ACARS**
    - **VHF data link**
    - **HF data link**
    - **Satellite data link**
  - **VDL Mode 2**

→

- **Airline Specific Reports**
- **ARINC AOC Services**
- **ARINC ATC Services**

Airspace Tracking and Management Support

How do we use Data Link?

The Plan:

- Leverage Current Data Link Infrastructure
- Use Proven Data Link Applications

The Benefits:

- Relieves Voice Congestion
- Improves Communications
- Enhances Situational Awareness
- Develops Roadmap to a CNS/ATM Environment

Data Link

Applicable to all Phases of Flight

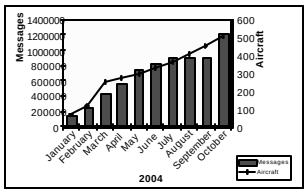
Taxi	*Take -off*	*Departure*	*En route*	*Approach*	*Landing*	*Taxi*
From Aircraft Link test/clock Update Fuel/crew information Delay reports Out **To Aircraft** PDC ATIS Weight & balance Airport analysis V-speeds flight Plan-hard copy Load FMC	**From Aircraft** Off	**From Aircraft** Engine data **To Aircraft** Flight plan Updated weather	**From Aircraft** Position reports Weather reports Delay info/ETA Voice request Engine info Maintenance info **To Aircraft** ATC oceanic clearances Weather reports Re-clearances Ground voice request	**From Aircraft** Provisioning Gate requests ETA Special requests Engine info Maintenance info **To Aircraft** Gate assignments Connecting gates Passenger & crew ATIS	**From Aircraft** On	**From Aircraft** In Fuel info Crew info Fault data (from central maintenance computer)

ACARS System Status

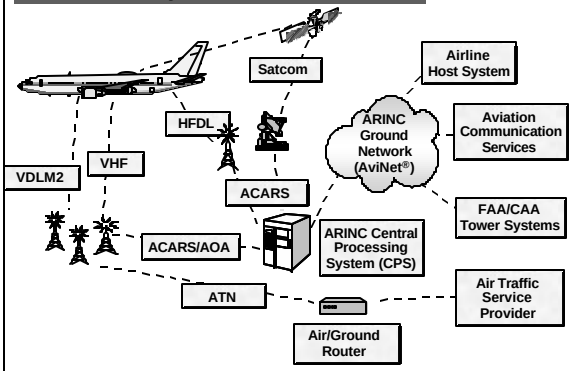
- Worldwide ACARS
  - 8,000+ aircraft from 100+ customers
  - ~750 ground stations
  - ~650 locations in 66 countries
  - ~25 million messages per month
- ARINC operates as many as ten frequencies to support ground/terminal/en-route traffic volumes
  - ~80% of messages are AOC related
  - ~20% are ATS related

ARINC VDLM2 AOA Service

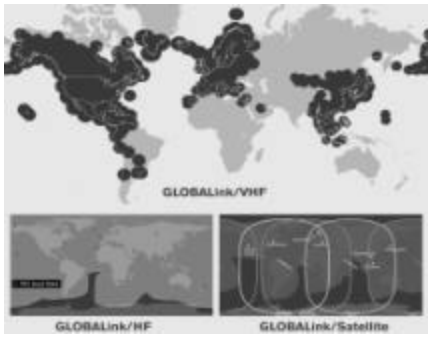
- **540+** aircraft regularly using AOA service
  - Expect 1000+ by end of 2005
- **~200** VDLM2 stations operational (US, Europe and Japan)
- **~1.3M** messages in January
- Transit delay
  - Average ~1.52s
  - 95 percentile <3s



GLOBALink System Overview



Global Coverage



AOC & ATC Applications

Airline Operational Control

- Airline Operations Center Network (AOCnet)
- OpCenter℠
- Web Aircraft Situation Display (WebASD ℠)
- Digital Automatic Terminal Information Service (D-ATIS)
- Terminal Weather Information for Pilots (TWIP)
- Graphic / Text Weather Service (GTWS)
- ARINC Digital Signature Service (ADSS)

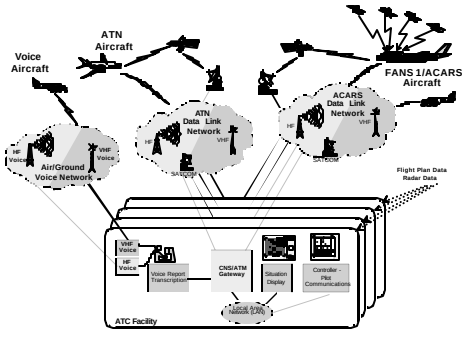
Air Traffic Control

- Centralized Automatic Dependent Surveillance (CADS)
- Centralized Flight Management Computer (FMC) Waypoint Reporting Service (CFRS)
- Oceanic Clearance Delivery (OCD)
- Future Air Navigation System (FANS)
- Pre Departure Clearance (PDC)

Specific Services to Help "Fill the Gaps"

- ARINC Airspace Tracking and Management Applications can be used to Leverage Enhanced Situational Awareness for a Caribbean Implementation
  - Communications, Navigation, Surveillance/Air Traffic Management (CNS/ATM)
  - Future Air Navigation System (FANS)
  - Centralized Automatic Dependent Surveillance (CADS)
  - Centralized Flight Management Computer (FMC) Waypoint Reporting Service (CFRS)

CNS/ATM Architecture (Existing)



Future Air Navigation Systems (FANS)

ICAO CNS/ATM

- Concept developed by ICAO Future Air Navigation Systems (FANS) Committee
- Major Elements
  - Satellite Navigation and Communications
  - Air/Ground Data Link Communications
  - Common airborne and ground message sets
  - Air Traffic Management

FANS 1/A

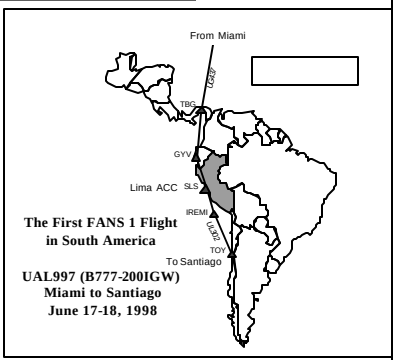
- First CNS/ATM Application
- FANS 1 - Boeing aircraft certified June 1995
- FANS A - Airbus aircraft
- Three ATC data link applications
  - ATS Facilities Notification (AFN ARINC 622)
  - ADS (ARINC 745-2)
  - CPDLC (DO-219)
- Uses existing ACARS data link

FANS 1 Applications

- ATS Facilities Notification
  - Allows aircraft/ground to exchange information
- Automatic Dependent Surveillance (ADS)
  - Aircraft automatically sends ID and current position/speed/intent/etc as contracted for by ground system
- Controller-Pilot Data Link Communications (CPDLC)
  - ATC message exchange between controller and pilot

First FANS Flight in Latin America

- CORPAC, Peru
  - CNS/ATM Work Station Training
  - First FANS Flight in Latin America
  - Trials: 1998-2000



CNS/ATM Operations

- Airlines are operating with CNS/ATM around the world

  AA, AC, AF, AP, AZ, BA, BD,
  BR, CI, CO, CX, CZ, DL, EK,
  GS, JL, KE, KL, KU, L4, LH,
  LY, MC, MH, MS, MT, NH, NG,
  NW, NZ, OZ, PO, QF, SA, SK,
  SQ, SS, SV, TG, UA, US, VS, 5Y

- Eighteen (18) CAAs use ARINC's FANS product with an additional six (6) in trials

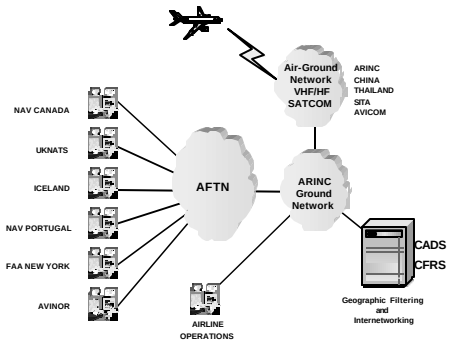
Use of ARINC's CNS/ATM Applications

- As a Standalone CNS/ATM Workstation; or
- Integrated into conventional ATC system
  - NITA, Russia
  - ATECH, Brazil
  - NAV CANADA, Canada
  - AEROTHAI, Thailand
  - Lockheed Martin (MicroEARTS), USA

CNS/ATM with conventional ATC System

- Centralized ADS – CADS
  - CADS translates FANS/ADS POS and MET for CAA's without a local CNS/ATM capable system
  - CADS began service on 15 July 1999
  - Message applications
    - ATS facilities notification (AFN)
    - Automatic dependent surveillance (ADS)
- Centralized FMC Waypoint Reporting System – CFRS
  - Position Reports from aircraft that have FMC WPR (Flight Management Computer Way Point Reporting) capability
  - CFRS began service on 25 November 2002

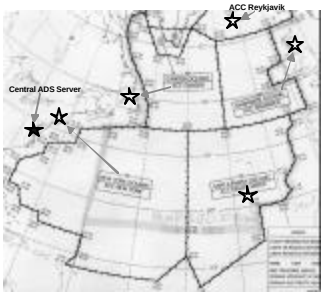
Existing CADS/CFRS Operations



3D-6

CADS in North Atlantic Region

- FANS in North Atlantic
- Participating Aircraft
  - Boeing – 747-400, 777, 757,767
  - Airbus – A340, A330
- Over 400 flights/day
- ~100,000 unique CADS messages delivered each month
- 34 Airlines participate in CADS
- Over 99% ADS waypoint position reports delivered in less than 3 minutes



CFRS – Overview

Centralized Flight Management Computer (FMC) Waypoint Reporting Service (CFRS)

- Allows non-FANS-equipped aircraft to send position reports in a manner similar to Centralized ADS (CADS)
- Honeywell PIP (Product Improvement Package) or Pegasus avionics
  - Boeing 757-200
  - Boeing 767-300
  - Airbus 310
  - Airbus 319

- 4 airlines currently participating
  - Enables an additional 30 to 40 flights/day to participate in data link position reporting trials

Airspace Tracking & Management Through Data Link

Summary

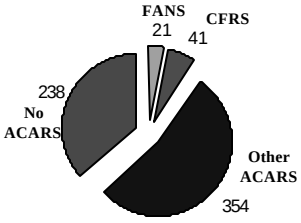
•Why Caribbean Region

•Actions

Why Caribbean

- Current Infrastructure Exists
- Current Carriers Use ACARS
- Need for Additional Situational Awareness and Communications Exists

Who Can Be Seen in the Region? How Can We Get More?



"Other ACARS" may contain
- **Additional FANS**
- **Additional CFRS**
- **Potential CFRS**
- **Pre-set ACARS formats**
- **Manual ACARS reports**

Estimated 654 Total Daily Flights

1111 ACARS Contacts on 416 Flights / Day

ACARS Position Reporting

- Using position reports which are sent from the ACARS MU and received at a centralized processor, the CAAs can be provided with the information they need to effectively manage aircraft using Datalink
- No avionics upgrades will be required to participate in this project
- Procedural upgrades may be needed depending on the airline's use of position reports now

Existing ACARS Position Reporting Capabilities

- Most airlines using ACARS currently have some position reporting capabilities in the core software of their avionics
- These reports typically have different ACARS message labels and formats depending on the core software type and vendor (non-standard ACARS position reporting formats)
- Some airlines may not currently utilize this capability in their avionics and hence may need a procedural update to participate
- Arinc's processor will receive these position reports for participating airlines through our extensive Datalink ground network to provide the needed information to the CAAs.

Message Format to CAA End System

- Our processor will accept all these message formats (and more!) and be able to provide a FANS standard message format to the CAA
- FANS Standard Message Format:

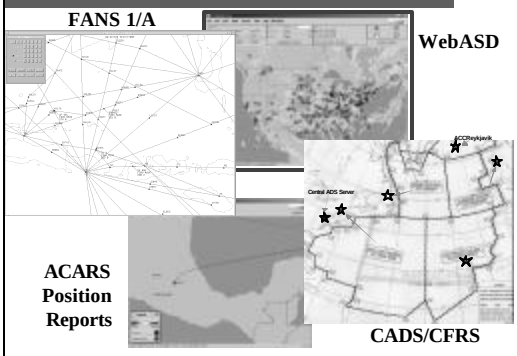
  POSN47261W122185,SEA,093118,350,ORTIN,093436,BARRO,M32,12000
  15,0485

- FANS message format provides current position, next position, times for these, altitude, static air temperature, winds, and fuel remaining
- The CAA end system may not need all of this information to perform aircraft tracking. We'll determine these requirements as the project progresses

How do we get more aircraft equipped?

- Provide Tangible Benefits to Data Llink Users
  - Preferred Routes
  - Minimize Time On-Ground (TANGO) with Data Link Tools (i.e. PDC, D-ATIS, etc)
- Formulate ATM Roadmap for CARSAM Region to let Airlines See & Understand the Future so They Can Make Their Business Case to Equip
  - ARINC has assisted states in formulating ATM roadmaps to the point of preparing procurement documentation for the implementation

Which Data Link Sources? What Ever is There



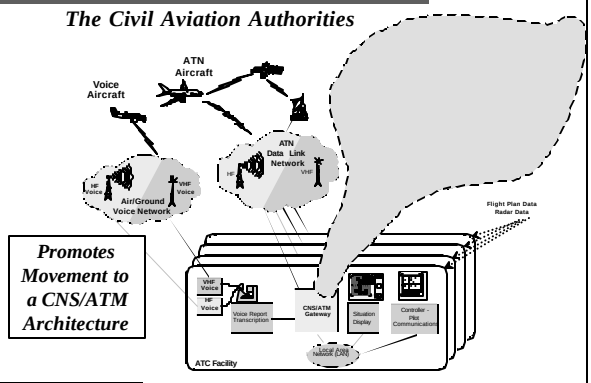
Who Can Benefit – Today, Tomorrow

The Airlines & CAAs with Improvements and Enhancements in:

Situational Awareness
Communications
Safety
Routing

The Airlines & CAAs benefit with use of additional automation by increasing efficiency and allowing controllers to safely handle more aircraft.

Who Can Benefit – Today, Tomorrow



3D-9

Actions

- Identify Airlines And Avionics That Can Benefit
- Identify Air Traffic Control Centers That Can Benefit
- Identify Best Suite Of Applications
- Support Trial Evaluation Period

And After the Trial

- Update Roadmap with Lessons Learned from ARINC ATM Implementation Demonstration
- What about CPDLC?
  - Through Enhanced Use of FANS via VHF?
  - Through Development of ATN ?
    - FANS and ATN can deliver ADS & CPDLC data

Thank You

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Air Traffic Services, Latin American and Caribbean Region
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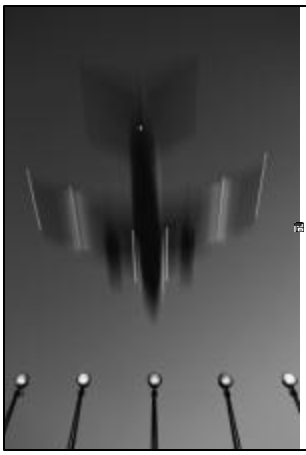
APPENDIX E



SITA

SITA AIRCOM
Enabling CNS/ATM

Fifth Central Caribbean Working Group Meeting
(C/CAR WG/5)
Mexico
Feb 2005

Data Link Evolution

- Data link is not new …
  - Airlines have been using it for over 20 years for Operational Communications
  - Air Navigation Service Providers have been using it for over 15 years for initial ATC applications
  - Global coverage via VHF and Satellite media
  - Over 10,000 aircraft are equipped with ACARS data link and
- ACARS infrastructure is used by over 30 Air Navigation Service providers to deliver ATC applications
  - Digital-ATIS, Departure Clearance
  - FANS 1/A (ADS, CPDLC)
- ATN/VDL2, as being implemented by European Link2000+, is a significant step forward in the global evolution of Air Traffic Management
  - Enable delivery of increasingly sophisticated ATC messages

The CAR/SAM Requirements

- Regional ATSP need to move forward on CNS/ATM transition and improve current ATS level of service
- Need for data link awareness
- size of airspace X potential for civil aviation
- low density en route x hard voice comms
- heterogeneous existing infrastructure for CNS/ATM
- Increasing numbers of ACARS equipped aircraft operating in the region
- Existing extensive VHF ACARS and SATELLITE coverage

Regional equipped airlines

Regional AIRLINES	*Data link equipped Fleet*
TAM	54
MEXICANA	32
TACA	31
LAN	29
AIR JAMAICA	28
COPA	21
AEROMEXICO	21
BWIA	10
VARIG	7
AEROLINEAS ARGENTINAS	4
GOL	27

SITA Role in CNS/ATM Implementation

- SITA has and continues to actively participate and contribute to various CNS/ATM fora including:
  - ICAO Technical Panels (ACP)
  - ICAO PIRGs (GREPECAS, MIDANPIRG, APANPIRG…)
  - Industry Groups (RTCA/EUROCAE, AEEC)
  - IATA Regional Technical Committees
  - CANSO Working Groups

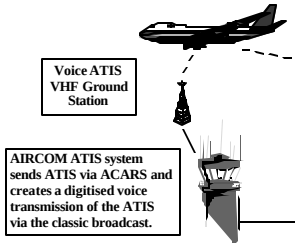
Air Traffic Service use of ACARS

- As the ACARS equipped fleet has grown exponentially since the introduction of the VHF ACARS service, airlines have requested the ATS providers to leverage their investment in ACARS avionics to introduce simple ATS applications whilst the ICAO definition of CNS/ATM continued.
- In response, many ATS providers around the world have implemented or are planning ATS data link services using ACARS:
  - Simple applications using the ACARS basic text capability:
    - Departure Clearance (DCL)/Pre-Departure Clearance Services (PDC)
    - Oceanic Clearance Services (OCM)
    - Digital-ATIS (D-ATIS) Services
  - FANS 1/A (ADS, CPDLC) binary applications

D-ATIS and DCL Implementation

- D-ATIS and DCL are rather simple to implement, not too critical
- Mature worldwide approved standards
- Many equipped aircraft (with ACARS data-link)
- Provides immediate operational benefit
- Gain knowledge in the technology, confidence in the applications

ACARS use for Digital ATIS



MAIN BENEFITS:

1. Reduction on the # of voice msgs used over congested VHF frequencies
2. Safety improvement by way of reduction for potential errors
3. Reduction in pilot workload
4. Ability for pilot to have a printed copy of ATIS

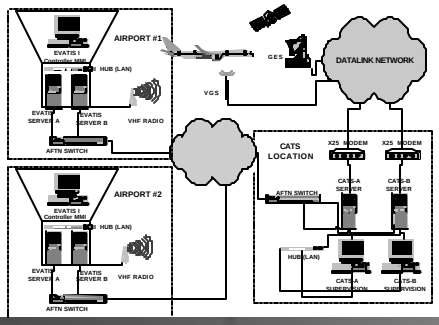
D-ATIS Services:

- SITA provides d-ATIS Services to 20 ATS Providers worldwide of a total of 27

Country	ATS Provider	Country	ATS Provider
Australia	Airservices Australia	Korea	Incheon Airports Authority
Austria	Austrocontrol	Korea	Korea Airports Corporation
Belgium	Belgocontrol	Norway	Avinor
China Hong Kong SAR	CAD Hong Kong	Portugal	NAV - EP
Denmark	SLV Denmark	Singapore	CAA Singapore
Egypt	NANSC	Spain	AENA
France	DGAC France	Switzerland	Skyguide
Germany	DFS Germany & d-ATIS Gateway	Taiwan	CAA Taiwan
Ireland	Irish Aviation Authority	UAE Bahrain	CAA Bahrain
Ivory Coast	ASECNA	UK	UK NATS

- Other countries providing d-ATIS Services
  - Canada, Japan, New Zealand, Sweden, Thailand, UAE Sharjah, USA

Centralised ATS Server



DCL Services:

- SITA provides DCL Services to 11 ATS Providers worldwide of a total of 14

Country	ATS Provider	Country	ATS Provider
Australia	Airservices Australia	Ireland	Irish Aviation Authority
Belgium	Belgocontrol	Korea	Incheon Airports Authority
China Hong Kong SAR	CAD Hong Kong	Korea	Korea Airports Corporation
Denmark	SLV Denmark	Spain	AENA
France	DGAC France	UK	UK NATS
Germany	DFS Germany		

- Other countries providing DCL (or PDC) Services
  - **Canada, Sweden, USA**

FANS 1/A:

- 30 ATS Providers around the world are able to offer FANS Services

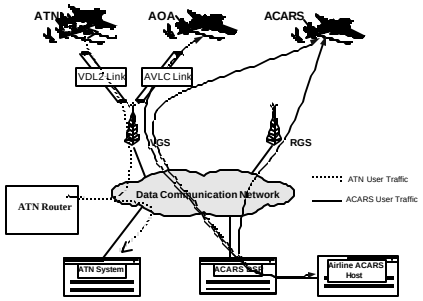
Country	ATS Provider	Country	ATS Provider
Australia	Airservices Australia	Korea	Korea Airports Corporation
Brazil	DECEA	Madagascar	ASECNA Madagascar
Cabo Verde	ASA Cabo Verde	Mauritius	DCA Mauritius
China Hong Kong SAR	CAD Hong Kong	Myanmar	DCA Myanmar
Egypt	NANSC	The Philippines	ATO Philippines
Europe	Eurocontrol	Singapore	CAA Singapore
Fiji	Airports Fiji Ltd	South Africa	ATNS South Africa
France	DGAC	Spain	AENA
French Polynesia	SEAC	Sri Lanka	AASL Sri Lanka
India	Airports Authority of India	USA	FAA
Iran	CAO – IR Iran	Uzbekistan	CAA Uzbekistan

- Other countries providing FANS Services
  Canada, China, Japan, Mongolia, New Zealand, Russian Far East, Thailand

ATN Implementation

- ATN for air/ground communications (CPDLC) is being implemented in Europe under the Eurocontrol "Link2000+" Programme
- For ground/ground communications the European position is to use TCP/IP instead of ICAO compliant ATN, primarily for cost reasons

Transition to ATN



Link2000+ Programme

- Main driver for CPDLC is to reduce voice congestion on VHF R/T channels
  - => increase in sector capacity, decrease in delays => $$$ fuel savings for airlines
- CPDLC will be implemented over ATN/VDL Mode 2
- States committed to implement CPDLC include Eurocontrol Maastricht, Italy, Portugal, Spain, Germany, Switzerland, France.
- Airlines implementing CPDLC/ATN/VDL avionics include:
  - SAS, Lufthansa, Air Europa, Hapag Lloyd, American Airlines, Alitalia, Aeroflot, Fedex
  - Avionics available from Honeywell, Collins and AIRBUS

SITA and Link2000+

- Airlines that have elected to use the SITA ATN Service include:
  - Lufthansa (20 A320)
  - Federal Express (15+ A310)
  - Air Berlin (2 B737)
  - Air Europa(19 B737)
  - Hapag-Lloyd (20 B737)
- Air Navigation Service Providers that have elected to use or partner with SITA include:
  - DFS in Germany (Partner)
  - AENA in Spain (Partner)
  - NAV EP in Portugal
  - Eurocontrol Maastricht UACC (via "internetworking")

VDL Customers

- **Operators using the SITA VDL Service include:**
  - **AAL (25), AEA (4) , AFL (18), AFR (15), DLH (17), FDX (12), JAL (12), QFA (19), RAM (2), SWR, TRS (3), UVA (2)**
  - **Average monthly total of 170 VDL equipped aircraft**

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VDL Service Partnerships

- **SITA has concluded VHF Data Link partnership agreements with:**
  - **AENA (Spain) in December 2002**
  - **DFS (Germany) in December 2004**
- **Agreements are similar in that our partners will/have assumed ownership and responsibility of control/monitoring of the VHF data link stations through which they will deliver the Link2000+ Services**

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Partnership VDL Deployment Status

- **Spain (AENA):**
  - **Deployment project completed**
  - **21 VGS (ACARS/VDL) stations deployed and now operational**
- **Germany (DFS)**
  - **19 installed VGS to be transferred to DFS over next 6 months**
  - **Further 8 or 9 VGS to be installed in 2007 to supplement VDL coverage in Germany**

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ADS B Development Status

- **ICAO 11th Air Navigation Conference – 2003**
  - **Recommended Mode S Extended Squitter be the enabling technology for ADS-B**
- **European Mandate for:**
  - **Mode S Elementary Surveillance – latest 31 March 2005**
- **Aircraft manufacturers (Boeing, AIRBUS) making the "ADS-B Out" capability via "Extended Squitter" available with new aircraft and Mode-S transponder retrofits as a part of the upgrade to comply with the European Mandate**
- **Airservices Australia Upper Airspace Programme that will result in ADS-B coverage throughout Australian airspace by end 2005**
- **ICAO Asia/Pac APANPIRG decision to implement ADS-B out in the region from January 2006**

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ADS-B Regional Service

- Airservices Upper Airspace ADS-B programme
  - Will provide ADS-B surveillance throughout upper airspace in Australia
- SITA and Airservices have entered into a strategic partnership that is promoting ADS-B regional services in ASIA/PAC
  - Radar "gap-filler"
  - Potential alternative to radar replacement
- Anticipated roles
  - Airservices: Procedure definition, training, ATM system upgrade definition
  - SITA: Infrastructure installation, control & monitoring, communications network services

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Regional Service Objectives

- To facilitate the early, uniform and optimal deployment of ADS-B in the Asia/Pac region to:
  - Improve safety
  - Avoid cost of radar installations and upgrades
  - Reduce enroute charges
  - Improve operational efficiency and capacity
  - Reduce separation minima
  - Encourage cross border data sharing
- Whilst initial focus is ASIA/PAC, other regions of the world are not excluded

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SITA enabling CNS/ATM

- SITA enables pragmatic evolution of CNS/ATM by supporting:
  - Implementation of ATS services based on available technology (ACARS) for ground and airborne systems
  - Introduction of ATN services.
  - Regional requirements for CNS/ATM transition
  - VHF Partnership with ANS Providers (ex: DFS and AENA)

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Recommendation to WG5

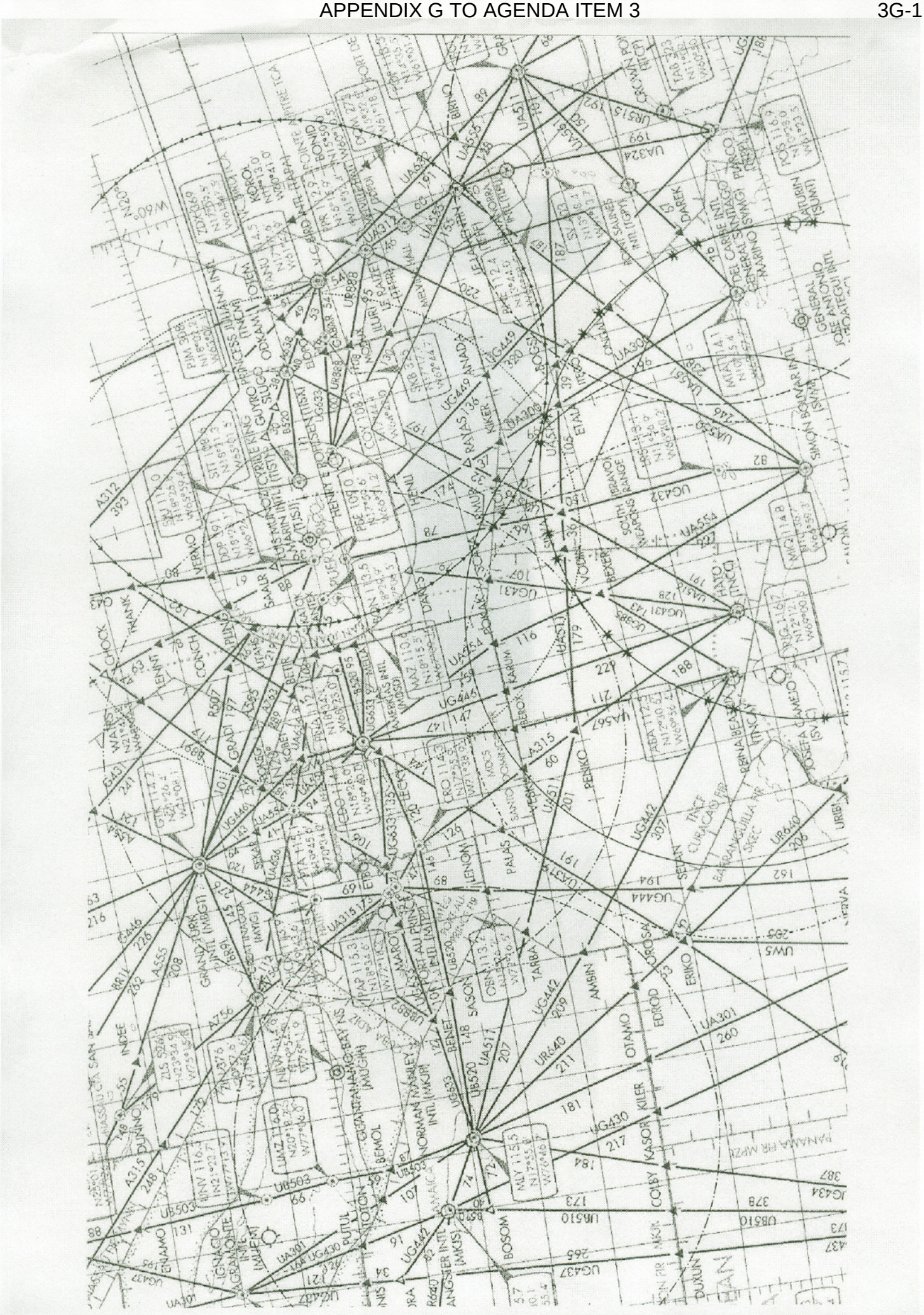
- SITA recommends the establishment of a funded trials programme for those ATS services that can make use data link communications

C/CAR, WG5 – MEXICO City, Feb 2005 SITA

APPENDIX F

Table 1 – Initial Programme of activities for the detailed planning and implementation of the air-ground data link to satisfy ATM requirements

No.	Activity
1.	Participate in seminars and workshops on data link
2.	Establish and participate in a trial programme on systems and applications of data link currently available.
3.	Study and evaluate the arrangements done by other States for the implementation of the data link.
4.	Establish a Sub-regional programme of implementation developed of the air-ground data link coordinated with the users of the airspace to satisfy the ATM requirements.


CARACAS FIR
MAIQUETIA INTL (SVMI)
SIMON BOLIVAR INTL
GENERAL JOSE ANTONIO ANZOATEGUI INTL
MARGARITA ISLAND
GENERAL SANTIAGO MARINO
PUERTO LA CRUZ
BARCELONA
CUMANA
CARUPANO
MATURIN (SUMI)
BARQUISIMETO
VALENCIA
MARACAY
EL VIGIA
MERIDA
SAN ANTONIO DEL TACHIRA
SAN CRISTOBAL
BARINAS
GUANARE
ACARIGUA
SAN FERNANDO DE APURE
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APPENDIX H
Table - Information on Secondary Surveillance Radar (SSR) for radar data exchange

State	ATS Unit Served	Other ATS Units	Latitude (D/M/S) WGS84	Longitude (D/M/S) WGS84	Elevation (M)	focal height (M)	Manufacturer	Model	Mechanical tilt (elev/degrees)	Electrical tilt (elev/degrees)	Certified SSR coverage (NM)	Data format	Modes	Type (enroute/terminal)	Last Update	Asterix	Rotation Speed	Time Stamping
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Havana, Cuba	ACC Havana	APP VAR, APP HAV, APP CMW, TMA SCU	22 06 22.0	84 09 16.0	34	38	Informe tecno-logía Ltd.	RADUGA	-0.7	Unknown	215 MN	RU (Russian format)	A y C	ACC/ APP	2001	--	6 rpm	No
			22 54 56.1	82 17 07.9	175	179									2004		10 rpm	
			22 29 39.3	79 54 08.8	150	154									2001		6 rpm	
			21 23 06.7	77 49 45.6	210	214									1997		6 rpm	
			20 49 48.7	76 17 59.1	182	186									2001		6 rpm	
			22 58 48.3	82 23 59.7	110	114									2001		12 rpm	

APPENDIX I
TABLE – Information on the Secondary Surveillance Radar (SSR) For Radar Data Sharing

State	ATS Unit Served	Other ATS Units	Latitude (D/M/S) WGS84	Longitude (D/M/S) WGS84	Elevation (M)	focal height (M)	Manufacturer	Model	Mechanical tilt (elev/degrees)	Electrical tilt (elev/degrees)	Certified SSR coverage (NM)	Data format	Modes	Type (enroute/terminal)	Last Update	Asterix	Rotation Speed	Time Stamping
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
D.W.I. Curaçao	Curaçao ACC Plesman APP Flamingo APP		12º10'50.39''N	068º57'25.76''W	76 m	79.5m	Raytheon	Condor MK2D	-2 º	unknown	256 NM	Asterix	A and C	ACC/ APP	2002	CAT 001 CAT 002 CAT 008	5s/tr 10tr/mn	GPS
USA, Puerto Rico																		
QJQ Pico del Este	ZSU CERAP		18º16'14''N	065º45'31''W	1048m	1061m	Bendix	ATCBI-5	UNK	+3.0	200	CD-2	3/A and C	Enroute	???	N/A	12s/r 5 rpm	N/A
STT St. Thomas	ZSU CERAP		18º20'49.8''N	065º01'33.5''W	181.5m	192m	Bendix	ATCBI-5	0.0	+7.44	180	CD-2	3/A and C	Enroute Terminal		N/A	4.7s/r 12.5 rpm	N/A
SJU San Juan	ZSU CERAP		18º27'06.7''N	065º59'28.5''W	1.5m	21.5m	Bendix	ATCBI-5	UNK	UNK	60	CD-2	3/A and C	Terminal			4.7s/r 12.5 rpm	N/A

The FAA currently has three secondary surveillance radar facilities located in the San Juan/Saint Thomas area.
Prepared by ASO-472 based on available data.

APPENDIX J

PRELIMINARY GUIDELINES ON THE ADS TECHNICAL INFRASTRUCTURE

ADS System

It should be reminded that automatic dependent surveillance (ADS) is an application for the ATS use in which the aircrafts transmit to the ATC automatically, through the air-ground data communications, information, sufficiently accurate and reliable, derived from the airborne navigations systems. As a minimum those data include the aircraft identification and in three-dimensional position, but additional data may be provided as appropriate. The ATC system would use the ADS data to present information to the controller and it must also have the capacity to exchange messages between the pilot and the controller, through data and voice links, in order to perform emergency and non-routine communications.

The ADS may provide surveillance services in the following areas:

a) where the current infrastructure lacks of radar surveillance services in particular the oceanic areas and other in which the conventional systems are difficult, very expensive or impossible to implement;
b) in high density air traffic areas where it may serve as an adjunct and/or back-up for the secondary surveillance radar (SSR) thereby reducing the need for primary surveillance radar (PSR); and
c) in some circumstances, it may substitute the secondary radar.

ADS-B system

The ADS-B is an application of the ADS technique that involves a broadcast of the position information to multiple aircraft or multiple ATM units. Each ADS-B equipped aircraft or ground vehicle periodically broadcasts its position and other relevant data derived from the airborne equipment. All user segment, airborne or on ground within range of this broadcast, can process the information. Nowadays, the ADS-B it defined only for line-of-sight operations (e.g. broadcast over VHF digital link or by Mode S SSR extended squitter). GREPECAS, by its Conclusion 12/44 provided guidance on the initial usage of the SSR Mode S extended squitter signals for implementation of the ADS-B in the CAR/SAM Regions.

Well equipped aircrafts with ADS-B can be used:

a. to complete the coverage of SSR (to cover areas without secondary radar coverage);
b. to replace the SSR service in areas with low and medium traffic density;
c. as the basis for a air traffic presentation of the piloting position (CDTI); and
d. for the surface movement, therefore becoming an alternative for the surface radar such as the airport surface detection equipment (ASDE) and the Advanced Surface Movement Guidance and Control System (A-SMGCS).

The essential technical requirements for the ADS and the ADS-B implementation systems are the following:

Technical requirements for the implementation of the ADS and ADS-B in the short term			
No.	**Technical requirement**	**ADS**	**ADS-B**
1	Position data supplied by the airborne navigational equipment.	✓	✓
2	Message time stamp within one second coordinated universal time (UTC).	✓	✓
3	VHF data communication links by air-ground or bi-directional satellite.	✓	
4	Unidirectional data links by spontaneous extended signals of the SSR in Mode S.		✓
5	A ground infrastructure that provides ATC information.	✓	✓*

APPENDIX K

TRANSITION PLAN TOWARDS THE FINAL PHASE OF WAFS IN THE CAR/SAM REGIONS

Task	Description of task	Date
1	WAFC Washington to provide global gridded W/T data in GRIB code.	Completed
2	WAFC Washington to produce SWH charts.	Completed
3	ICAO NACC and SAM Regional MET officers survey states ability to produce wind/temperature charts from GRIB data for the purpose of assessing training needs.	Completed
4	ICAO to coordinate with States and users if there is validated regional requirement for SWM Charts for limited geographical area.	Completed
5	United States to provide BUFR decode software to the workstation manufactures.	Completed
6	Provide the technical functionality specifications for the purpose of acquiring new WAFS workstations.	Completed
7	Buenos Aires and Brasilia RAFC close.	Completed
8	States to initiate a process to procure new workstations, service agreements, and training to support these stations with a planned installation of workstations by November 2003.	Ongoing
9	Establishment of back-up distribution arrangements for WAFS products.	Completed
10	Provision of test BUFR coded SIGWX via File Transfer Protocol Server (FTP) to selected States for testing.	Completed
11	Satellite distribution of global SWH and SWM for limited geographical areas in BUFR format.	Ongoing
12	Training in the operational conversion of GRIB to wind and temperature charts and BUFR to significant weather charts at Regional seminars.	October 2004 – March 2005
13	States have the ability to operate the decoding and presentation software to convert GRIB forecasts into operational wind and temperature charts and BUFR SIGWX forecasts into operational significant weather charts.	March 2005
14	Removal of T4 wind and temperature and SIGWX products from satellite broadcast.	1 July 2005
WAFS Transition Completed		1 July 2005

Agenda Item 4: Safety Oversight activities

4.1 The Secretariat presented to the Meeting WP/10, which contained the report on the implementation of the ICAO Universal Safety Oversight Audit programme, and the results from the Audit follow-up visits conducted between April and October 2004. It also provided an update on the transition of the USOAP to a Comprehensive System Approach, introduction of new audit tools, as well as the date for the National Safety Oversight Coordinators training seminars scheduled to be held on the premises of the ICAO NACC Regional Office.

4.2 Although related questions were answered by the Secretariat, it was explained that some additional specific questions will be answered to the States appointed National Safety Oversight Coordinators during the National Safety Oversight Coordination Meeting, to be held in Mexico City on 10-11 March 2005. Some questions were raised regarding the Airport Security audit in progress in Costa Rica, the relation of the FAA IASA audit programme, the ICAO USOAP and the possible duplication of the audit efforts between the two. Information was provided on the Secretary General letter ref. AN 19/9-04/102 dated 30 November 2004 on the distribution of the scheduled audit visits among the States for the 2005 and 2006 audit cycle. The information provided is included in the **Appendix** to this part of the report.

International Civil Aviation Organization | Organisation de l'aviation civile internationale | Organización de Aviación Civil Internacional | Международная организация гражданской авиации | منظمة الطيران المدني الدولي | 国际民用航空组织

Tel.: +1 (514) 954-6409

Ref.: AN 19/9-04/102

30 November 2004

Subject: Implementation of the Universal Safety Oversight Audit Programme — Activity Plan

Action required: To note

Sir/Madam,

1. I have the honour to draw your attention to the latest developments relating to the ICAO Universal Safety Oversight Audit Programme (USOAP).

2. As you are aware, the 35th Session of the Assembly of ICAO resolved (Resolution A35-6 refers) that USOAP be further expanded to include the safety-related provisions in all safety-related Annexes to the *Convention on International Civil Aviation* (Doc 7300) and unanimously supported the transition to a comprehensive systems approach for safety oversight audits under USOAP, as of January 2005.

3. In line with Assembly Resolution A35-6, a tentative plan of safety oversight audits to be conducted in 2005 and 2006 under the new comprehensive systems approach has been prepared and is enclosed with this letter. Actual mission dates will be coordinated directly with the States concerned, as they are affected by factors such as State priorities, national holidays, language used and transportation arrangements.

4. Please note that, under a comprehensive systems approach for audits, regional organizations performing safety oversight tasks on behalf of Contracting States will also be considered for an audit.

Accept, Sir/Madam, the assurances of my highest consideration.

Taïeb Chérif
Secretary General

Enclosure:
Tentative audit mission plan for 2005 and 2006

ATTACHMENT to State letter AN 19/9-04/102 4A-3

ICAO UNIVERSAL SAFETY OVERSIGHT AUDIT PROGRAMME
TENTATIVE AUDIT MISSION PLAN UNDER THE COMPREHENSIVE SYSTEMS APPROACH

APRIL 2005 TO DECEMBER 2006

Second Quarter 2005 (April to June)	
April	Canada
May	Germany (EASA and EUROCONTROL)
June	Thailand and Malaysia
Third Quarter 2005 (July to September)	
July	———
August	———
September	Gambia and Cape Verde
Fourth Quarter 2005 (October to December)	
October	Panama, Trinidad and Tobago
November	Bulgaria, Egypt, Kuwait
December	Czech Republic
First Quarter 2006 (January to March)	
January	Costa Rica (ACSA and COCESNA), Fiji, Vanuatu (PASO)
February	Belgium, Luxembourg
March	Colombia, New Zealand, Niger, Peru, Senegal (ASECNA), Solomon Islands
Second Quarter 2006 (April to June)	
April	Greece, Namibia
May	Austria, Botswana, Cameroon, Cyprus, Italy
June	Armenia, Democratic Republic of the Congo, El Salvador, Israel, Mexico
Third Quarter 2006 (July to September)	
July	———
August	———
September	Benin, Russian Federation (IAC (MAK)), Togo
Fourth Quarter 2006 (October to December)	
October	Bhutan, India, Lebanon
November	Ghana, Jordan, Nigeria, Sudan

Agenda Item 5: Human Resources and Training

5.1 The Meeting recognized that human resources planning is a subject requiring priority action by the Aeronautical Administrations, so a consistent performance of human resources concurrent with the development and implementation of new technologies is required. This would benefit all civil aviation fields involved in aeronautical services and would keep an efficient transition towards the new systems.

5.2 When reviewing Conclusion 1/21, *Human Resources Planning and Training*, of the NACC/DCA/1 Meeting (Grand Cayman, Cayman Islands, October 2002), the Meeting agreed on the importance and need to take actions stipulated in the Conclusion to appoint and train personnel in human resources planning as well as in the urgency of developing a national plan on this matter, that should project to cover the needs of the following five years, including a training programme for civil aviation personnel involved in the implementation and operation of the new CNS/ATM systems, civil aviation safety and security .

5.3 The above-mentioned Conclusion 1/21 also commissioned the NACC Regional Office to prepare and distribute a form, attached as **Appendix** to this part of the Report so that States/Territories inform on the need for human resources and training in the different aeronautical fields. In this regard, the Meeting agreed to set 15 May 2005 as deadline for the Administrations to submit to the NACC Regional Office the form duly filled out which, additionally, is aimed at informing the NACC/DCA/2 Meeting (Tegucigalpa, Honduras, October 2005) on the measures taken by the Administrations on the aforementioned Conclusion.

5.4 Likewise, the Meeting recognized that among the elements that should be considered when planning and developing a human resources plan are:

- audit the existing levels of personnel;
- project the needs of the personnel (all categories);
- plan the required human resource in the different services;
- draft a forecast of the need for personnel at all the categories
- determine the effect that automation and new systems cause;
- plan HR projects for the transition and implementation of the new systems;
- plan the human resources training with a quality assurance focus (QA);
- review the selection criteria and personnel qualifications;
- plan the preparation of new instruction programmes;
- plan the instructor's training in new techniques;
- review the personnel's current training and plan the future training;
- review, if necessary, the organizational structures and fit them to the new needs;
- review the aeronautical technical personnel tasks and functions; and
- determine if the new systems will create new work disciplines.

5.5 In this context, the convenience that this Working Group include within its tasks the development of a human resources plan that could help as guidance to States/Territories counting with the professional support of IFATCA, was discussed. To this end, the Meeting decided to activate a Human Resources and Training Planning Task Force

5.6 The Meeting also considered important activities that Mexico carries out to reassume the role that it had in the past in aeronautical personnel regional training, increasing the training level with the high quality that it always offered.

5.7 Based on the above, the Meeting formulated the following Draft Conclusion:

DECISION 5/25 HUMAN RESOURCES AND TRAINING PLANNING TASK FORCE

That, bearing in mind the need for the States/Territories to take care of the human resources and training subject as an essential element for the implementation of the new aeronautical systems, the Human Resources and Training Planning Task Force be activated, in accordance with the following considerations:

a) it will endorse the Terms of Reference and Work Programme included in the Appendix to the report on Agenda Item 6; and

b) it will be formed by Cuba, Dominican Republic, Jamaica and IFATCA, and it will begin its functions as from this meeting, using electronic mail as the main mean to develop its tasks.

APPENDIX

TRAINING NEEDS-CAR REGION STATES (PERIOD 2005-2009)
State/Territory/Organisation_____
(Please indicate in each column the estimated total number of personnel to be trained each year locally or abroad and by specialty)

AREA	CATEGORY/SPECIALTY	LOCAL INSTRUCTION					EXTERNAL INSTRUCTION					Total HR required	
		2005	2006	2007	2008	2009	2005	2006	2007	2008	2009	Local	Ext.
AIG	Officer - Accident Investigation and Prevention												
AIR	Inspector - Shop Specialist												
	Inspector - Fixed wing												
	Inspector - Helicopter												
	Specialist - Avionics												
	Inspector - Airworthiness certification												
	Specialist - RVSM												
AIS	Directorate/Supervisor AIS												
	AIS Officer												
	Aeronautical Cartography (MAP)												
	Specialist Data Base/Automation and Quality Assurance AIS												

NOTE: 1)The information required in the blank columns will be provided by the Administrations
2) Useful information for the Administration's training programmes planning
3) Information considered by the CATCs, GREPECAS and ICAO's for the programming of courses, seminars, etc.

AREA	CATEGORY/SPECIALTY	LOCAL INSTRUCTION					EXTERNAL INSTRUCTION					Total HR required	
		2005	2006	2007	2008	2009	2005	2006	2007	2008	2009	Local	Ext.
AGA	Supervision/Certification/Aerodrome Regulations												
	Aerodromes Inspector/Auditor												
	Officer – Airport Operations												
	Officer Airport Security												
	Trainer – Aerodrome Emergencies												
	Fire fighter - Rescue												
	Control – Natural resources												
	Maintenance - Pavements and drainage - Civil Engineer												
	Electric maintenance (lighting, markings, power generators) – Electric engineer												
	Inspector –Obstacle control												
	Inspector-environment control												
ATM	Air Traffic Controller - TWR												
	Air Traffic Controller - APP												
	Air Traffic Controller -Area												
	Air Traffic Controller-Radar/Area												
	Air Traffic Controller - Radar/APP												
	Supervisor – Air Traffic Control												
	ATC/OJT Instructor												
	ATS Airspace Planner												
	ATS Regulations Officer												
	Specialist – ATS Quality Assurance												
	Safety Officer												
	ATM Internal Audit Officer												
	Specialist – Search and Rescue SAR for RCC or RSC												
AVSEC	Administrator AVSEC												
	Control Officer AVSEC												

AREA	CATEGORY/SPECIALTY	LOCAL INSTRUCTION					EXTERNAL INSTRUCTION					Total HR required	
		2005	2006	2007	2008	2009	2005	2006	2007	2008	2009	Local	Ext.
CNS	Specialist - Communications												
	Specialist - Navigation												
	Specialist –ADS and Radar Systems												
	Digital communication system specialization course												
MET	Technician Meteorologist/Observer												
	Professional Meteorologist/Forecaster												
OPS	Inspector – Flight checks - Large airplanes												
	Inspector – flight checks – General aviation												
	Inspector – flight checks - Helicopter												
	Specialist – Regulatory compliance												
	Inspector OPS Certification												
	Inspector – Cabin safety												
	Inspector- Dangerous goods												
	Inspector – Ramp safety												
PEL	Specialist - Licensing												
	Examiner/Inspector – Flight schools												
GENERAL	Introduction to CNS/ATM Systems												
	CNS/ATM - Implementation systems global												
MANA-GEMENT	Management – Civil Aviation												
	Management – Aeronautical Operations												
	Management – AIS Services												
	Management – ATM Services												

AREA	CATEGORY/SPECIALTY	LOCAL INSTRUCTION					EXTERNAL INSTRUCTION					Total HR required	
		2005	2006	2007	2008	2009	2005	2006	2007	2008	2009	Local	Ext.
PLNG	Human Resources Planning												
Q.A.	Specialist – Quality Assurance												
TRNG	Instructors training -TRAINAIR												

Agenda Item 6: Review of the Terms of Reference and Work Programme

6.1 The Secretariat presented WP/12 inviting the Meeting to review, amend as necessary and update the Terms of Reference and Work Programme for the Central Caribbean Working Group, the results of which are presented in the **Appendix** to this part of the report.

6.2 Based on the above, the Meeting decided to formulate the following Draft Conclusion:

DRAFT CONCLUSION 5/26 C/CAR WG TERMS OF REFERENCE AND WORK PROGRAMME

That the C/CAR WG, adopt the revised Terms of Reference and Work Programme as presented in the Appendix to this part of the report.

6.3 The Delegate of Dominican Republic informed the Meeting that his Administration will assign the following members to each one of the Task Forces of the C/CAR WG:

Mr. Sergio Antonio Gómez, assigned to the Radar Data Sharing Task Force; and VHF/AMS Coverage Task Force
Mr. Julio César Mejía Alcántara, assigned to the ATM Task Force
Mr. Ramón Pirón Bautista, assigned to the SAR Task Force
Mr. Andrés Sención Villalona, assigned to the AIS/MAP Task Force
Mr. Alejandro Bartolomé, assigned to the MET Task Force

APPENDIX

DRAFT OF THE TERMS OF REFERENCE AND WORK PROGRAMME OF THE CENTRAL CARIBBEAN WORKING GROUP (C/CAR WG)

1 Background

The Central Caribbean Working Group was established by Conclusion 4/10 of the Fourth Meeting of Directors of Civil Aviation of the Central Caribbean, held in the Cayman Islands from 17 to 20 May 2000, to deal with the development of air navigation systems/service issues in the Central Caribbean. The aforementioned Meeting also agreed that ICAO should assist in the establishment of the Working Group and provide Secretariat services. A draft of the Terms of Reference and Work Programme was circulated to States/Territories/International Organizations of the Central Caribbean inviting them to nominate their respective member to the Working Group. The Meeting also felt it necessary to transfer the work of the C/CAR ATS Task Force to the Central Caribbean Working Group, incorporating it into its tasks.

The First Central Caribbean Working Group Meeting (C/CAR WG/1) was held at the ICAO NACC Regional Office in Mexico City, from 19 to 23 February 2001. The Second Central Caribbean Working Group Meeting (C/CAR WG/2) was held in Pétion Ville, Haiti, from 18 to 22 February 2002. The Third Central Caribbean Working Group Meeting (C/CAR WG/3) was held in Willemstad, Curaçao, Netherlands Antilles from 24 to 28 March 2003.

Conclusion 4/10 Establishment of a Central Caribbean Work Group (C/CAR/WG)

That,

a) an informal work group dealing with the air navigation areas be established for the Central Caribbean;

b) the ICAO Regional Office prepare the Terms of Reference and Work Programme for the work group and provide Secretariat services;

c) the ICAO Regional Office, by 30 July 2000, should circulate the Terms of Reference and Work Programme for the work group to all States/Territories in the Central Caribbean as well as to relevant International Organizations for comments and invite them for the nomination of members of the working group;

d) the work of the C/CAR ATS Task Force be incorporated into the tasks of the work group and that the ATS Task Force be disbanded, with the appropriate note of gratitude being sent to its members by the ICAO Regional Office on behalf of the States/Territories of the Central Caribbean; and

e) a meeting of the work group be scheduled prior to the Fifth Meeting of the C/CAR Directors of Civil Aviation.

2 Terms of Reference

a) The Central Caribbean Working Group (C/CAR WG) will examine on a continual basis the sub-regional problems in all fields of Air Navigation (AIS/AGA/ATM/CNS/MET/SAR) for States and Territories within the geographic limits of the Curaçao, Havana, Kingston, Miami Oceanic, Houston Oceanic, Nassau, Port-au-Prince, and Santo Domingo FIRs;

b) The C/CAR WG will promote, coordinate and follow-up the implementation of the AIS/AGA/ATM/CNS/MET/SAR requirements established in the CAR/SAM Air Navigation Plan of the States/Territories in its area of responsibility, as well as the compliance of GREPECAS conclusions taking into account the ICAO SARPs; and

c) The C/CAR WG will identify and propose actions to correct the air navigation systems/services deficiencies affecting international civil aviation in its area of responsibility.

3 Objectives

The objectives of the C/CAR WG in each air navigation field are as follows:

Aerodromes (AGA)

To study AGA issues and recommend actions to be implemented associated with the planning and implementation of regional developments related to airport operations, physical characteristics, facilities, services and safeguarding in relation to airport safety, and efficiency, as well as environmental protection at and around airports.

Communications, Navigation and Surveillance (CNS)

To study CNS issues associated with solutions to deficiencies, the planning and implementation of regional developments related to communications, navigation and surveillance systems, proposing action plans and contributing to the coordination and follow-up of their implementation.

Air Traffic Management (ATM)/Search and Rescue (SAR)

To study ATM and SAR issues and recommend actions, to contribute to the coordination and follow-up associated with the planning and implementation of regional developments related to airspace organization and management (AOM), air traffic services (ATS), air traffic flow management (ATFM), search and rescue (SAR) and the ATS quality assurance programmes.

Meteorology (MET)

To study MET issues and recommend actions to be implemented, contributing to the coordination and follow-up associated with the planning and implementation of regional developments related to observation, forecasting and exchange of operational meteorology (OPMET) information, functioning and utilization of WAFS.

Aeronautical Information Services (AIS)

To study planning and implementation of regional developments related to automation of aeronautical information services, aeronautical databases and the Integrated Aeronautical Information Package, as well as the standardization of aeronautical mapping and its evolution toward providing electronic formats information services and quality assurance programmes, proposing action plans and contributing to the coordination and follow-up of these issues.

4 Work Programme

No.	Field	Task	Priority	Completion	Responsible
1	GEN 1	Review, promote, contribute to the coordination and propose relevant actions for the implementation of AIS/AGA/ATM/ CNS/MET/SAR requirements established in the CAR/SAM ANP.	A	Permanent	C/CAR WG
2	GEN 2	Review, propose actions and follow-up the implementation of the recommendations/conclusions of the CAR/SAM/3 RAN and the conclusions of GREPECAS related to all air navigations fields.	A	Permanent	C/CAR WG
3	GEN 3	Review the database of deficiencies in the AIS/AGA/ATM/CNS/MET/SAR fields for each State/Territory and propose corrective actions.	A	Permanent	C/CAR WG
4	GEN 4	Foster the development of national programmes for human resources planning in all the aeronautical fields.	A	Permanent	C/CAR WG
5	GEN 5	Examine and propose solutions for aeronautical staff training in the different aeronautical fields.	A	Permanent	C/CAR WG
6	GEN 6	Develop and keep up-to-date a Regional Safety Oversight Programme for the Central Caribbean	A	Permanent	C/CAR WG
7	AGA 1	Identify, evaluate and recommend actions to improve safety oversight and security in international Central Caribbean airports. .	A	C/CAR WG/6	C/CAR WG
8	AIS 1	Recommend actions to solve the discrepancies of information published in the AIPs.	A	NACC/DCA/2	AIS/MAP TF
9	AIS 2	Contribute to the coordination and follow-up of the total implementation of WGS-84 in the States/Territories in the Central Caribbean and adjacent regions..	A	NACC/DCA/2	AIS/MAP TF

No.	Field	Task	Priority	Completion	Responsible
10	AIS 3	Carry out the coordination, assistance and follow-up of the implementation of a standard AIS/MAP Quality Assurance System, in the Central Caribbean States/Territories.	A	C/CAR WG/6	AIS/MAP/TF
11	AIS 4	Impel, with the assistance of the ICAO NACC Office, training actions related with the correct application and effective compliance with the quality requirements of the aeronautical data established in the ICAO Annexes 15, 11 and 14, in support of the AIS/MAP Quality Management Systems.	A	C/CAR WG/6	AIS/MAP TF
12	AIS 5	Recommend the necessary actions to develop and assist States/Territories with implementing the AIS Automation Plan in the Central Caribbean and, developing the relevant databases.	A	Permanent	AIS/MAP TF
13	AIS 6	Review, propose actions and follow up the implementation of the AIS/MAP requirements established in the CAR/SAM Air Navigation Plan and of GREPECAS conclusions.	A	Permanent	AIS/MAP TF
14	AIS 7	Study the elements of human factors applied to the AIS/MAP, in accordance with AIS/MAP/SG/9 Meeting results.	A	C/CAR WG/6	AIS/MAP TF
15	ATM 1	Develop an ATS Route implementation programme in coordination with the adjacent FIRs and recommend solutions to the congestion on some ATS routes in the Central Caribbean.	A	Permanent	ATM TF
16	ATM 2	Study ATS incidents and propose risk prevention solutions based on the ATS quality assurance programmes in the Central Caribbean.	A	Permanent	ATM TF
17	ATM 3	Develop an action plan for ATM automation systems considering flexibility, interoperability and harmonization between systems of the Central Caribbean.	B	C/CAR WG/6	ATM TF
18	ATM 4	Review Letters of Agreement of ACCs in the Central Caribbean and adjacent FIRs, contribute to the coordination and recommend corrective actions if necessary.	B	Permanent	ATM TF
19	ATM 5	Develop and provide improvements for a Regional ATM safety management programme for the Central Caribbean	A	C/CAR WG/6	ATM TF
20	ATM 6	Develop a Regional ATM Contingency Plan for the Central Caribbean	A	NACC/DCA/2	ATM TF
21	ATM 7	Develop an action plan for the implementation of RNP in the Central Caribbean	B	C/CAR WG/6	ATM TF
22	CNS 1	Review the VHF AMS (R) communications coverage in the Central Caribbean airspace and recommend actions for its completion.	A	C/CAR WG/6	VHF/AMS Coverage Task Force
23	CNS 2	Assist and contribute to the coordination among the C/CAR States/Territories for the implementation of radar data sharing in the Central Caribbean.	B	C/CAR WG/6	Radar Data Sharing Task Force
24	CNS 3	Conduct a study and recommend a plan for GNSS implementation, including its augmentation system.	B	To be determined	To be determined

No.	Field	Task	Priority	Completion	Responsible
25	CNS 4	Assist and contribute to the coordination and follow-up of the implementation of VHF air-ground data links (VDL).	B	To be determined	To be determined
26	CNS 5	Propose a C/CAR subregional action plan for the implementation of ATN and its applications, contributing to its coordination and follow-up.	B	To be determined	C/CAR WG
27	CNS/ ATM 1	Identify and study ATM and CNS scenarios in the Central Caribbean with a view to improving and implementing these systems/services.	A	C/CAR WG/6	C/CAR WG
28	CNS/ ATM 2	Contribute to maintaining up-to-date the National CNS/ATM Implementation Plans for the Central Caribbean States/Territories.	A	Permanent	C/CAR WG
29	CNS/ ATM 3	Develop a C/CAR CNS/ATM Implementation Subregional Plan	B	C/CAR/WG/6	C/CAR WG
30	SAR 1	Develop an Action Plan to introduce improvements to the National SAR Plans and develop a C/CAR SAR Plan	A	C/CAR WG/6	SAR TF

5 Priority

A Tasks of high priority on which work should be completed as soon as possible.

B Tasks of medium priority on which work should be undertaken as soon as possible, but without detriment to Priority **A** tasks.

C Tasks of low priority on which work should be undertaken as time and resources permit, but without detriment to Priority **A** and **B** tasks.

6 Members

Aruba, Bahamas, Cayman Islands, Cuba, Dominican Republic, Haiti, Jamaica, Netherlands Antilles, Turks and Caicos Islands, United Kingdom, United States, ACI, IATA, IFALPA and IFATCA.

Note: Colombia, Mexico, Panama, Venezuela and COCESNA will be invited to attend C/CAR WG Meetings to deal with co-ordination issues with adjacent FIRs of the Central Caribbean.

7 Chairman and Vice-Chairman of the C/CAR Working Group

The chairperson will serve a term of 3 years to provide continuity and a communications link between the ICAO NACC Regional Office and members of the C/CAR WG between meetings. A participant from the host State/Territory will be elected as vice-chairperson of the corresponding meeting.

The chairperson of the C/CAR Working Group will present the results of each meeting of the Group to the corresponding meeting of Directors of Civil Aviation of the Central Caribbean.

8 Task Forces

C/CAR ATM TASK FORCE

1. Terms of Reference

The C/CAR ATM Task Force is responsible to the C/CAR/WG for the review, assessment and analysis of all ATM related matters specifically delegated by the Working Group and to recommend/propose action plans to correct deficiencies and implement solutions.

2. Work Programme

No	Task	Priority	Completion
1	Review Letters of Agreement between ACCs in the Central Caribbean and update action if required.	B	Permanent
2	Review ATS Route issues in coordination with the FIRs of the adjacent States and recommend changes/solutions for an ATS routes implementation programme in the Central Caribbean.	A	Permanent
3	Study ATS Incidents and propose risk prevention solutions based on the ATS Quality Assurance Programmes in the Central Caribbean.	A	Permanent
4	Identify ATM matters relating to ATM/CNS implementation with a view to improving and implementing these systems/services.	A	Permanent
5	Develop an action plan for ATM automation considering the seamlessness, flexibility, interoperability and harmonization between systems of the CAR Region and adjacent Regions.	B	C/CAR WG/6
6	Coordinate with the C/CAR Radar Data Sharing Task Force on the use of radar data for ATS operational purposes.	B	C/CAR WG/6
7	Develop a Regional ATM Contingency Plan for the Central Caribbean.	B	NACC/DCA/2
8	Develop and provide improvements for an ATM Safety Management programme for the Central Caribbean	B	C/CAR WG/6
9	Develop an action plan for the implementation of RNP in the Central Caribbean	B	NACC/DCA/2

3. Priority

A Tasks of high priority on which work should be completed as soon as possible.
B Tasks of medium priority on which work should be undertaken as soon as possible, but without detriment to Priority **A** tasks.
C Tasks of low priority on which work should be undertaken as time and resources permit, but without detriment to Priority **A** and **B** tasks.

4. Composition

Cayman Islands, Cuba, Haiti, Jamaica*, Netherlands Antilles, United States and IFATCA.

*Rapporteur – Randolph Jones

C/CAR RADAR DATA SHARING TASK FORCE

1. Terms of Reference

Study and assist the C/CAR Working Group on the feasibility of implementing the radar data exchange in the Central Caribbean area based on the Surveillance Plan contained in Table CNS 4A of the FASID and the relevant GREPECAS Conclusions and guidelines with a view to proposing a Subregional C/CAR Radar Data Exchange Plan and to advising actions to arrange bilateral and multilateral agreements for the implementation of radar data exchange.

2. Work Programme

No.	Task	Priority	Completion date
1	Based on the updated information of the Surveillance Plan – Table CNS 4A corresponding to the Central Caribbean and neighbouring areas, to analyze the information of the radar facilities of the States/Territories/Organizations of the Central Caribbean and to compile their respective radar coverage diagrams at flight levels 12.000 for terminal area and 25.000 ft for en-route functions.		
2	Propose the primary and secondary radar data sources, as well as the ATS units that might benefit from the exchange of those radar data sources.		
3	Develop an Action Plan for the implementation of radar data in the C/CAR area.		
4	Contribute to keep data up-to-date with any new implementation or change that may be produced regarding the closing of any radar facility service (during the working period of the Group).		
5	Conduct a cost/benefit analysis for the implementation of radar data exchange projects.		
6	Prepare a radar data exchange plan for the Subregion that allows to share resources for the use of a surveillance radar service in an efficient and safe manner.		
7	Develop and recommend a prototype Letter of Agreement for bilateral and/or multilateral agreements		
8	Assess the available information on traffic density in the FIRs and other airspace comprised within the Central Caribbean in order to recommend the use of radar as well as radar data exchange.		
9	Assist and contribute to the coordination among the States and Territories of the Central Caribbean for the implementation of radar data exchange.		December 2005
10	Distribute the results of the Work Programme to the members of the Task Force of the Working Group for their consideration.		

3. Composition

Cuba, Jamaica, Netherlands Antilles*, United States and IFATCA.

* Rapporteur: Vilmo Pieter

C/CAR VHF/AMS COVERAGE TASK FORCE

1. Terms of Reference

Review the information of the VHF/AMS Stations of the Area Control and Approach Services and to identify lack of coverage deficiencies and to recommend solutions.

2. Work Programme

No.	Task	Priority	Completion
1	Review the VHF AMS (R) communications coverage in the Central Caribbean airspace and recommend actions for its development.	A	C/CAR WG/6

3 Priority:

A Tasks of high priority on which work should be completed as soon as possible.

B Tasks of medium priority on which work should be undertaken as soon as possible, but without detriment to Priority **A** tasks.

C Tasks of low priority on which work should be undertaken as time and resources permit, but without detriment to Priority **A** and **B** tasks.

4. Composition

Colombia, Haiti, Jamaica*, United States and IATA

* Rapporteur

C/CAR AIS/MAP TASK FORCE

1 Terms of Reference:

a) To examine on a continual basis the sub-regional problems in the fields of Air Navigation related to AIS/MAP of States/Territories within the geographical limits of the Curaçao, Havana, Kingston, Miami Oceanic, Houston Oceanic, Nassau, Port-au-Prince, and Santo Domingo FIRs;

b) To foster , coordinate and follow-up the implementation of the AIS/MAP requirements established in the CAR/SAM Air Navigation Plan of the States/Territories in the area of responsibility of the C/CAR WG, as well as the compliance with GREPECAS conclusions taking into account the ICAO SARPs;

c) To identify and propose corrective actions to the AIS/MAP deficiencies affecting international civil aviation in the area of responsibility of the C/CAR WG; and

d) To act as advisor group, within the C/CAR WG, for the Meeting of Directors of Civil Aviation in AIS/MAP aspects, and follow-up the implementation of the Conclusions approved by them in these areas.

2 Work Programme

No.	Task	Priority	Completion
1	Resolve, under the ICAO NACC Office coordination, the discrepancies of the WGS-84 coordinates of common points in the adjacent FIRs, published in the AIPs of the States/Territories of the Central Caribbean and their adjacent regions.	A	NACC/DCA/2
2	Contribute to the coordination and follow-up of the total implementation of WGS-84 in the States/Territories in the Central Caribbean.	A	NACC/DCA/2
3	Carry out the coordination, assistance and follow-up the implementation of a standard AIS/MAP Quality Assurance System, in the Central Caribbean States/Territories.	A	C/CAR WG/6
4	Impel, with the assistance of the ICAO NACC Office, training actions related with the correct application and effective compliance with the quality requirements of the aeronautical data established in the ICAO Annexes 15, 11 and 14, in support of the AIS/MAP Quality Management System.	A	C/CAR WG/7
5	Recommend the necessary actions to develop and assist States/Territories with implementing the AIS Automation Plan approved for the Central Caribbean, and developing the relevant databases.	A	Permanent
6	Review, propose actions and follow up the implementation of AIS/MAP requirements established in the CAR/SAM ANP and in GREPECAS conclusions.	A	Permanent

No.	Task	Priority	Completion
7	Study the elements of human factors applied to the AIS/MAP, in accordance with the AIS/MAP/SG/9 Meeting results.	A	C/CAR WG/6

3 Priority:

A Tasks of high priority on which work should be completed as soon as possible.

B Tasks of medium priority on which work should be undertaken as soon as possible, but without detriment to Priority **A** tasks.

C Tasks of low priority on which work should be undertaken as time and resources permit, but without detriment to Priority **A** and **B** tasks.

4 Members:

Cayman Islands, Cuba*, Dominican Republic, Jamaica, and United States.

* Rapporteur: Mirta Crespo

C/CAR MET TASK FORCE

1. Terms of Reference

a) Assess the current status of the MET systems and services in the States/Territories of the Central Caribbean;

b) Promote, coordinate and follow-up the implementation of the MET requirements established in the CAR/SAM Air Navigation Plan for the States/Territories in the C/CAR WG area of responsibility, as well as the compliance with GREPECAS conclusions considering the ICAO SARPs; and

c) Identify and propose actions to correct the international civil aviation MET services deficiencies in the C/CAR WG area of responsibility.

2 Work Programme

No.	Task	Priority	Completion
1	Follow-up on a regular basis OPMET information exchange and propose actions in order to achieve a high degree of reliability and efficiency in OPMET information exchange, in accordance with the requirements of the FASID Tables MET2A and MET2B (CAR/SAM ANP, Doc 8733).	A	C/CAR WG/6
2	Develop a C/CAR MET Contacts Database	A	C/CAR WG/6

3 Priority

A Tasks of high priority on which work should be completed as soon as possible.
B Tasks of medium priority on which work should be undertaken as soon as possible, but without detriment to Priority **A** tasks.
C Tasks of low priority on which work should be undertaken as time and resources permit, but without detriment to Priority **A** and **B** tasks.

4 Composition

Fred Sambula (Cayman Islands), Guillermo Armengol (Cuba)*, Alejandro Bartolomé (Dominican Republic), ,and Steven Albersheim (United States).

* Rapporteur

C/CAR SAR TASK FORCE

1. Terms of Reference

a) Evaluate and promote improvements to the SAR plans and services in States/Territories of the Central Caribbean considering the conclusions of GREPECAS and SARPs of ICAO;

b) Promote the periodical carry out of SAR activities and simulations in order to exchange information between States/Territories of the Central Caribbean and with States of other Regions;

c) Promote, coordinate and follow up with States/Territories of the Central Caribbean the implementation of SAR requirements established in the CAR/SAM Air Navigation Plan (Doc. 8733); and,

d) Identify and propose corrective actions to solve deficiencies in the SAR services in the Central Caribbean.

4 2. Work Programme

No	Task	Priority	End
1	Identify and propose solutions on training needs for SAR personnel in the Central Caribbean.	A	C/CAR WG/6
2	Perform a continuous follow-up of the information exchange and propose actions in order to attain the efficiency of the SAR service in the Central Caribbean, in accordance with the requirements set forth in the CAR/SAM ANP FASID (Doc 8733)	A	Permanent
3	Coordinate up dates of SAR national plans of States/Territories of the Central Caribbean	A	CCAR WG/6
4	Develop and keep up-to-date SAR Plans of the Central Caribbean in harmony with the SAR Regional Plan of the CAR Region.	A	CCAR WG/6
5	Carry out a SAR simulation programme in the States/Territories of the Central Caribbean	B	CCAR WG/6
6	Develop an action plan to keep close communication with other SAR Task Forces of the CAR Region and adjacent Regions in order to coordinate activities and improvements for the SAR service that are directly related with the Central Caribbean.	B	CCAR/WG/6

3 Priority

A High priority tasks on which work should be speeded up.
B Medium priority tasks, on which work should commence as soon as possible but without detriment to priority **A** tasks.
C Tasks of lesser priority on which work should commence as time and resources allow but without detriment to Priority **A** and **B** tasks.

Composition: Cuba, Dominican Republic*, Haiti and United States,

*Rapporteur: Ramón Pirón

C/CAR HUMAN RESOURCES AND TRAINING PLANNING TASK FORCE

1 Terms of Reference:

a) Develop a Plan for the development of human resources to serve as a guidance for the States/Territories of the Central Caribbean to stress the need for training personnel on human resources planning within the aeronautical activity.

b) Establish guidelines to determine the need for qualified human resources technical-professional training need, for the efficient operation of aeronautical facilities.

c) Identifying the deficiencies affecting air operations safety imputable to the development of human resources and proposing corrective actions.

d) Analyzing the capacity of the CIACs of the subregion (and if possible, of the CAR Region) to fulfill the demand of human resources training of the different aeronautical services.

2 Work Programme

	Task	Priority	Completion
1)	Develop guidelines serving to identify the current personnel needs and planning the required human resource at the different aeronautical services.	A	Feb. 2006
2)	Develop guidelines serving to identify the current training needs and plan the required training for the personnel of the different aeronautical services.	A	Feb. 2006
3)	Determine the types of available training in the C/ CAR and if possible in the CAR Region	A	Feb. 2006
4)	Analyze and recommend the capacity of the existing aeronautical training at a subregional level and if possible at a regional level.	A	Feb. 2006
5)	Identify and recommend the necessary measures for personnel training with regard to human resources planning within the Administrations of the del C/CAR	A	Feb. 2006
7)	Gather and assess the existing guidance material concerning human factors and their development.	A	Feb. 2006
8)	Developing a planning process to rectify the deficiencies generated due to lack of human resources or training.	A	Feb. 2006
9)	Develop and formulate the Plan for the development of HR in the C/CAR area.	A	Feb. 2006

3 Priority:

A Tasks of high priority on which work should be completed as soon as possible.

B Tasks of medium priority on which work should be undertaken as soon as possible, but without detriment to Priority **A** tasks.

C Tasks of low priority on which work should be undertaken as time and resources permit, but without detriment to Priority **A** and **B** tasks.

4 Members:

Cuba*, Dominican Republic, Jamaica and IFATCA

Rapporteur: Cuba

Agenda Item 7: Other business

7.1 Next Meeting Site

7.1.1 According to the meeting host rotation programme, the Secretariat informed the Meeting that Cuba is scheduled to host the Sixth Central Caribbean Working Group Meeting.

7.1.2 Cuba informed the Meeting its ability to host the C/CAR WG/6 Meeting in 2006.

7.2 TENTATIVE SCHEDULE – 2005 ICAO NACC OFFICE MEETINGS

7.2.1 The Secretariat presented IP/06 with information on the ICAO NACC Regional Office Tentative Meeting Schedule for 2005. The Meeting reviewed the list and updated dates and venue of some events.