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

FOURTH NORTH AMERICAN, CENTRAL AMERICAN AND CARIBBEAN WORKING GROUP

NACC/WG/4

FINAL REPORT

OTTAWA, CANADA, 24 TO 28 MARCH 2014

Prepared by the Secretariat

March 2014

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HISTORICAL

ii.1 Place and Date of the Meeting

The Fourth North American, Central American and Caribbean Working Group Meeting (NACC/WG/4) was held at the Ottawa Convention Centre in Ottawa, Canada, from 24 to 28 March 2014.

ii.2 Opening Ceremony

Mr. Víctor Hernández, Regional Officer, Air Traffic Management and Search and Rescue of the North American, Central American and Caribbean (NACC) Regional Office of the International Civil Aviation Organization (ICAO), on behalf of Mrs. Loretta Martin, Regional Director of the ICAO NACC Regional Office, welcomed the participants and thanked Transport Canada and NAV Canada for hosting the meeting. He highlighted the importance of this NACC/WG/04 in the coordination and implementation of the regional implementation groups and the reporting, monitoring and preparation of its activities under the ICAO Aviation System Block Upgrade (ASBU) framework. Mr. Jean Soucy, Chief, International Aviation, Transport Canada and Mr. Rudy Kellar, Executive Vice-President, Service Delivery, NAV Canada, welcomed the participants to Ottawa and emphasized Canada´s interest to support the regional implementation activities through the ICAO NACC Regional Office, the joint results of Transport Canada and Nav Canada and the active participation of Canada in the NAM and NAT Region events to finally welcome the participants and officially opened the meeting.

Delegates were also welcomed later during the Meeting by Mr. Martin Eley, Director General Civil Aviation, Transport Canada.

ii.3 Organization of the Meeting

The NACC/WG/4 Meeting was held with the participation of Mr. Ted Fudge, Manager, International Coordination, NAV Canada, who chaired the meeting plenary. Mr. Julio César Siu, Regional Officer, Communications, Navigation and Surveillance of the ICAO NACC Regional Office, served as Secretary of the Meeting, assisted by Mr. Víctor Hernández, Regional Officer, Air Traffic Management and Search and Rescue and Mr. Raúl Martínez, Regional Officer, Aeronautical Information Management, all from the ICAO NACC Regional Office.

ii.4 Working Languages

The working languages of the Meeting were English and Spanish. The working papers, information papers and draft report of the meeting were available to participants in both languages.

ii.5 Schedule and Working Arrangements

It was agreed that the working hours for the sessions of the meeting would be from 09:00 to 16:00 hours daily with adequate breaks. Ad hoc Groups were created during the Meeting to do further work on specific items of the Agenda.

ii.6 Agenda

Agenda Item 1 Review and approval of the Meeting agenda, working method and schedule

Agenda Item 2 General matters

2.1 Valid conclusions/decisions from previous NACC/WG meetings and the ANI/WG/1 Meeting, and valid and relevant conclusions of the NACC/DCA and subregional DCA meetings
2.2 Follow-up on GREPECAS conclusions and project implementation
2.3 Review of the status of air navigation deficiencies reported in the GREPECAS Air Navigation Deficiencies Database (GANDD)

Agenda Item 3 Follow-up on the NAM/CAR Regional Performance-Based Air Navigation Implementation Plan (NAM/CAR RPBANIP) Progress

3.1 Global/Regional air navigation developments
3.2 NAM/CAR Regional Performance-Based Air Navigation Implementation Plan: update, review and progress
3.3 ANI/WG and other regional group progress reports
3.4 CAR Region Safety and Air Navigation Directors Meeting (CAR/DCA/OPSAN) results
3.5 Performance monitoring of air navigation systems:
- 3.5.1 Review of regional air navigation performance indicators and metrics/ICAO Dashboard
- 3.5.2 Regional level implementation monitoring through the Air Navigation Report Form (ANRF)
- 3.5.3 Annual Global Air Navigation Report
- 3.5.4 National Plan Reports on air navigation implementation

Agenda Item 4 Regional Cooperation and training matters to support implementation

4.1 Review of Regional Projects: RLA/09/801 - *Implementation of the Performance-Based Air Navigation Systems for the Caribbean Region*, and RLA/03/902 *Transition to GNSS in the CAR/SAM Regions – Augmentation Solution for the Caribbean, Central and South America (SACCSA-Phase III)*

4.2 Review of air navigation implementation and performance-based monitoring human factor and training matters
4.2.1 CAR Region Aviation Training Plan
4.2.2 Results from the First Meeting of Directors of Civil Aviation Training Centres in the NAM/CAR Regions (NAM/CAR/CATC/1)

Agenda Item 5 Review of NACC/WG Terms and Reference (ToRs) and Work Programme

Agenda Item 6 Other business

6.1 Host and dates for the next NACC/WG Meeting
6.2 Collaborative Safety Management

ii.7 Attendance

The Meeting was attended by 12 States/Territories from the NAM and CAR Regions and 3 International Organizations, totalling 43 delegates as indicated in the list of participants.

ii.8 Draft Conclusions and Decisions

The Meeting recorded its activities as Draft Conclusions and Decisions as follows:

DRAFT CONCLUSIONS: Activities requiring endorsement by the Directors of Civil Aviation of North America, Central America and Caribbean (NACC/DCA).

DECISIONS: Internal activities of the NACC Working Group (NACC/WG).

ii.9 List of Conclusions

Number	Title	Page
4/1	**APPROVAL OF THE NAM/CAR REGIONAL PERFORMANCE-BASED AIR NAVIGATION IMPLEMENTATION PLAN (RPBANIP) VERSION 3.0**	3-4
4/2	**UPDATE OF NATIONAL AIR NAVIGATION IMPLEMENTATION PLANS IN ACCORDANCE TO THE RPBANIP VERSION 3.0**	3-4
4/3	**FUEL SAVINGS AND CO_2 GAS EMISSION RESULTS IN THE NAM AND CAR REGIONS**	3-6
4/4	**ATS INCIDENTS SAFETY ASSESSMENT**	3-8
4/5	**ACTIVE SUPPORT FROM STATES FOR ICAO ITU WRC-2015 POSITION**	3-10
4/6	**REPORTING ON THE PROGRESS ACHIEVED IN THE IMPLEMENTATION OF THE AERONAUTICAL INFORMATION EXCHANGE MODEL (AIXM)**	3-11

ii.10 List of Working and Information Papers and Presentations

Refer to the Meeting web page:
http://www.icao.int/NACC/Pages/meetings-2014-naccwg4.aspx

WORKING PAPERS

Number	Agenda Item	Title	Date	Prepared and Presented by
WP/01	1	Provisional Agenda; Work Method and Schedule of the Fourth North American, Central American and Caribbean Working Group Meeting (NACC/WG/4)	19/03/14 Rev	Secretariat
WP/02	2.1	Valid Conclusions/Decisions from previous NACC/WG Meetings	26/02/14	Secretariat
WP/03	2.1	Review to valid Conclusions/Decisions from the First NAM/CAR Air Navigation Implementation Working Group (ANI/WG/1) Meeting	06/03/14	ANI/WG Chairman
WP/04	3.3	ANI/WG Air Traffic Services Inter-Facility Data Communication (AIDC) Task Force Progress Report	17/03/14	ANI/WG AIDC Task Force Rapporteur
WP/05	2.2	CAR/SAM Regional Planning and Implementation Group (GREPECAS) outstanding Conclusions and Project implementation	31/01/14	Secretariat
WP/06	2.3	Actions in the resolution of the Air Navigation Deficiencies reported in the GREPECAS Air Navigation Deficiencies Database (GANDD)	18/03/14	Secretariat
WP/07	3.2	NAM/CAR Regional Performance-Based Air Navigation Implementation Plan (NAM/CAR RPBANIP) Version 3.0	03/03/14	Secretariat
WP/08	3.3	ANI/WG Progress Report	20/03/14	ANI/WG Chairman
WP/09	3.3	Progress Report of Aeronautical Information Management (AIM) Task Force	20/03/14	Secretariat
WP/10	3.3	ANI/WG Operational analysis of the Gold Document Version 2 Task Force progress Report	05/03/14	ANI/WG GOLD Task Force Rapporteur
WP/11	3.3	AGA Progress Report	07/03/14	Secretariat
WP/12	3.3	MET Progress and Improvements in the Region	14/03/14	Secretariat
WP/13	3.4	CAR/DCA/OPSAN Meeting outcome	26/02/14	Secretariat
WP/14	3.3	ANI/WG ATS Message Handling System (AMHS) Implementation Task Force progress Report	05/03/14	ANI/WG AMHS Task Force Rapporteur
WP/15	3.5.1	Review of Air Navigation performance Indicators and Metrics/ICAO regional performance dashboard	03/03/14	Secretariat

WORKING PAPERS

Number	Agenda Item	Title	Date	Prepared and Presented by
WP/16	3.5.2	Implementation monitoring through the ICAO Air Navigation Report Form (ANRF)	17/03/14	Secretariat
WP/17	3.5.3	Annual Global Air Navigation Report	26/02/14	Secretariat
WP/18	4.1	ICAO Technical Cooperation Project– Implementation of Performance-Based Air Navigation Systems for the CAR Region (RLA/09/801) – A tool for streamlining Air Navigation Implementation	21/01/14	Secretariat
WP/19	4.2.1	CAR Region Civil Aviation Training; ICAO Next Generation Of Aviation Professionals (NGAP) and TRAINAIR *Plus*	21/01/14	Secretariat
WP/20	4.2.2	Results of the first Meeting of Civil Aviation Training Centres of the NAM/CAR Regions (NAM/CAR/CATC/1) and the creation of the Working Group on Training	17/01/14	Secretariat
WP/21	5	Review of the Terms and reference (ToRs) and Work Programme of the NACC/WG	28/02/14	Secretariat
WP/22	6.1	Host and dates for the next NACC/WG Meeting	05/03/14	Secretariat
WP/23	3.2	Progress on the implementation of PBN Air space concept	20/03/14	Secretariat
WP/24	3.2	Regional ATS Contingency Continuous Planning	07/03/14	Secretariat
WP/25	3.2	Implementation of Strategic Lateral Offset Procedures (SLOP) in Oceanic and remote Continental Airspace of NAM/CAR Regions	14/03/14	Secretariat
WP/26	3.2	Large Height Deviations (LHD) and ATS incidents reports associated with the RVSM Implementation	18/03/14	Secretariat
WP/27	3.3	ANI/WG PBN Implementation Task Force progress Report	05/03/14	ANI/WG PBN Task Force Rapporteur
WP/28	3.3	Destination alternate aerodrome filling exception	21/03/14	IATA
WP/29	3.3	ANI/WG ATFM implementation Task Force progress Report	19/03/14	ANI/WG ATFM Task Force Rapporteur
WP/30	3.2	Aeronautical Information Exchange Model (AIXM) development	20/03/14	Secretariat
WP/31	3.2	AIM implementation	20/03/14	Secretariat
WP/32	3.2	The ICAO position for the Onternational Telecommunication Union (ITU) World Radiocommunication Conference (2015) (WRC-15) and updates on Frequency Alignment Lists	14/03/14	Secretariat
WP/33	3.3	ANI/WG ADS-B Task Force Progress Report	05/03/14	ANI/WG ADS-B Task Force Rapporteur

WORKING PAPERS

Number	Agenda Item	Title	Date	Prepared and Presented by
WP/34	3.5.2	ICAO Fuel Savings Estimation Tool (IFSET)	06/03/14	Secretariat
WP/35	3.3	Canadian Automatic Dependent Surveillance — Broadcast (ADS-B) Implementation and planning	17/03/14	Canada
WP/36	3.3	FPL errors/Duplication	19/03/14	IATA

INFORMATION PAPERS

Number	Agenda Item	Title	Date	Prepared and Presented by
IP/01	--	List of Working, Information Papers and Presentations	21/03/14	Secretariat
IP/02	2.1	Valid and relevant Conclusions of the NACC/DCA and subregional DCA Meetings	27/02/14	Secretariat
IP/03	3.1	ICAO Global Air Navigation Plan	11/02/14	Secretariat
IP/04	3.1	The evolution of Electronic Tools and Data: A strategic plan for the creation of a Community-driven decision-support digital environment for the global Aviation community	03/03/14	Secretariat
IP/05	3.1	Implementation of ICAO Aviation System Block Upgrades (ASBUs) Methodology	18/03/14	Secretariat
IP/06	3.1	Latest Air Navigation and ICAO Standards and Recommended Practices Amendments	07/03/14	Secretariat
IP/07	2.1	Revision to Valid Conclusions/Decisions from the E/CAR/CATG/1 Meeting	10/03/14	E/CAR/CATG Chairman
IP/08	4.1	Progress of the RLA/03/902 Project – "Transition to GNSS/SBAS in the CAR/SAM Regions – SACCSA – PHASE III	11/02/14	Secretariat
NI/09	3.5.4	Proyecto del Plan de Navegación Aérea de la República de Cuba – ***Available only in Spanish***	06/03/14	Cuba
IP/10	3.3	Consolidation of Inter-Regional Interface Control Document	04/03/14	United States
IP/11	3.3	Implementing Automated Data Exchange within the North American, Central American and Caribbean (NACC) Region	04/03/14	United States
IP/12	3.3	ADS-B tests in the Central America FIR	12/03/14	COCESNA
IP/13	3.3	ADSC/CPDLC implementation in the Central America FIR	07/03/14	COCESNA
IP/14	3.3	OLDI and AIDC Implementation in the Central America FIR	07/03/14	COCESNA
IP/15	3.3	IP Network implementation in COCESNA	07/03/14	COCESNA

INFORMATION PAPERS

Number	Agenda Item	Title	Date	Prepared and Presented by
IP/16	3.3	ATFM progress in Central America	07/03/14	COCESNA
IP/17	3.3	The MEVA II III Network	05/13/14	MEVA TMG Rapporteur
NI/18	3.3	Avances en la Implantación de la PBN – ***Available only in Spanish***	05/03/14	Cuba
NI/19	3.3	Avances en la aplicación de la Hoja de Ruta AIM – ***Available only in Spanish***	06/13/14	Cuba
IP/20	3.3	Progress Report of the ECAR/NTG: E/CAR AFS: Network Improvements and Radar Data Sharing Implementation	03/03/14	E/CAR/NTG Rapporteur
IP/21	3.3	AIM Transition advance	07/03/14	COCESNA
IP/22	3.3	PBN advance in COCESNA	07/03/14	COCESNA
IP/23	3.3	E/CAR/CATG Progress Report	10/03/14	E/CAR/CATG Chairman
NI/24	3.3	Información suministrada por la República de Cuba en apoyo al Taller que sobre la Coordinación entre los servicios ATM, AIM y MET se organiza para el mes de agosto de 2014 – ***Available only in Spanish***	13/03/14	Cuba
NI/25	3.3	Avances y desafíos en el cumplimiento a las metas MET del Plan de implementación de la navegación aérea basado en el desempeño de la República de Cuba – ***Available only in Spanish***	13/03/14	Cuba
NI/26	3.3	Avances de Cuba en la implantación del AMHS – ***Available only in Spanish***	13/03/14	Cuba
IP/27	3.5.4	Status of United States implementation of the Aviation System Block Upgrades (ASBU) Block 0 Modules	17/03/14	United States
IP/28	3.3	Flight planning Quality improvement initiative in the North American, Central American and Caribbean Region	17/03/14	United States
IP/29	3.3	Planned Operational enhancements between New York, Santa Maria, and PIARCO Centers	17/03/14	United States
IP/30	3.3	Gulf of Mexico Route redesign and Automatic Dependent Surveillance-Broadcast (ADS-B): Stakeholder Benefits gained	17/03/14	United States
IP/31	3.3	Implementation of 30 Nautical mile Longitudinal and Lateral separation in the New York Oceanic FIR	17/03/14	United States
IP/32	3.1	Update on the Mini-global Demonstration	17/03/14	United States
IP/33	3.3	Miami Air Route Traffic Control Center (ARTCC) – Santa Domingo Area Control Centre (ACC) – ATS Automated Data Exchange Implementation in the North American, Central American and Caribbean Region Available only in English	05/03/14	United States
IP/34	3.3	Canadian PBN Implementation and Planning	17/03/14	Canada
IP/35	3.3	Canadian Implementation of CPDLC and ADS-C	17/03/14	Canada

INFORMATION PAPERS

Number	Agenda Item	Title	Date	Prepared and Presented by
IP/36	6	Transport Canada and NAV CANADA - Collaborative Safety Management	17/03/14	Canada
IP/37	2.3	Reduction of Air Navigation Deficiencies within the Port-Au-Prince FIR	17/03/14	Haiti
IP/38	3.3	PBN implementation progress within the Haitian Airspace	18/03/14	Haiti
NI/39	3.3	Resultados del monitoreo 14 meses posteriores a la implementación del Nuevo formulario de plan de vuelo OACI – ***Available only in Spanish***	18/03/14	Cuba
NI/40	3.5.4	Avances en la implementación de la Metodología de Mejoras por Bloques de la Aviación en Cuba – ***Available only in Spanish***	20/03/14	Cuba
NI/41	3.5.4	Plan nacional de Navegación Aérea Costa Rica (CRANIP) – ***Available only in Spanish***	20/03/14	Costa Rica

PRESENTATIONS

Number	Agenda Item	Title	Presented by
P/01	3.1	ICAO Data Tool Applications and Data Bases	Secretariat
P/02	3.3	JetBlue GOMEX ADS-B Test Route Benefits Assessment Review	United States
P/03	6	Collaborative Safety Management	Transport Canada

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Agenda Item 1 Review and Approval of the Meeting Agenda, Working Method and Schedule

1.1 The Secretariat presented WP/01 Rev. inviting the Meeting to approve the Provisional agenda, working method and schedule, and referred to IP/01 with the list of associated documentation and presentations. The Meeting approved the agenda, working method and schedule as presented in the historical section of this report.

Agenda Item 2 General matters

2.1 Valid conclusions/decisions from previous NACC/WG meetings and the ANI/WG/1 Meeting, and valid and relevant conclusions of the NACC/DCA and subregional DCA meetings

2.1.1 Under WP/02, the Meeting reviewed the valid conclusions from previous NACC/WG meetings, mainly the seven conclusions from the NACC/WG/3 meeting. As a result of the review, all these conclusions of the NACC/WG/3 meeting were superseded or completed.

2.1.2 Similarly under WP/03, the ANI/WG Chairman presented a review of the valid conclusions/ decisions from the first Meeting of the NAM/CAR Air Navigation Implementation Working Group (ANI/WG/1) Meeting. All the ANI/WG/1 meeting conclusions and decisions were completed or superseded, except Decision ANI/WG/1/9 *Operational use of CPDLC and ADS-C in the CAR Region*, urging Mexico, Trinidad and Tobago and COCESNA to progress on this decision.

2.1.3 Through IP/02, the Meeting took note and followed-up on the outstanding conclusions of the Fourth North American, Central American and Caribbean Civil Aviation Directors Meeting (NACC/DCA/4) and of other sub-regional Civil Aviation Directors Meetings.

2.1.4 Under IP/07, the Meeting took note of the implementation progress of the First Eastern Caribbean Civil Aviation Technical Group Meeting (E/CAR/CATG/1) conclusions and decisions.

2.2 Follow-up on GREPECAS Conclusions and Project Implementation

2.2.1 Under WP/05 the Meeting was informed of the GREPECAS projects implementation mechanism and its outstanding considerations, and urged all States to maintain their participation in the Programmes and Projects that were formulated in the GREPECAS/16 meeting (see Appendix A to WP/05). Similarly the Meeting took note of the follow-up to the six outstanding conclusions of the GREPECAS Second Meeting of the Programmes and Projects Review Committee (PPRC/2).

2.2.2 The Secretariat recalled the Meeting that all the progress informed by the implementation Groups and the NACC/WG will be reported to the GREPECAS/17 meeting.

2.3 Review of the status of air navigation deficiencies reported in the GREPECAS Air Navigation Deficiencies Database (GANDD)

2.3.1 The Secretariat presented WP/06 with the relevant deficiencies in the air navigation fields classified as A, B and U priority, which impact safety. The Meeting noted that, based on ICAO Safety Management System (SMS) methodology, a Hazard Identification and Risk Assessment (HIRA) process was established for identification, assessment and reporting of the GREPECAS Air Navigation Deficiencies Database (GANDD).

2.3.2 The Meeting agreed on the need to urge States to implement SMS methodology to identify mitigation actions and establish dates for their resolution. The common deficiencies in many States are as follows:

a) Need to implement or improve the documental procedure/process;
b) Inefficient use of resources;
c) Lack of service/infrastructure implementation as established in the CAR/SAM ANP (Doc 8733);
d) Inaccurate Aeronautical Information Publication (AIP) information vs. current operational status.

2.3.3 Several deficiencies may be validated submitting the applicable evidence by email to ICAO NACC Regional Office including evidence on the approved official procedure, photos showing the solution, etc.

2.3.4 The ICAO NACC Regional Office reminded that its Regional Officers are permanently available to review the deficiencies description and understanding, as well as to provide assistance to States to develop an appropriate Corrective Action Plan (CAP). Some particular actions should be included in the Regional Work Programme to solve the identified common deficiencies.

2.3.5 Under IP/37, the Meeting noted that Haiti has been working to correct identified valid deficiencies since January 2010 earthquake. The valid Haitian CAP for 2014 is:

- Acquisition of a modern communication system to provide satisfactory coverage within the Haitian airspace
- A new comprehensive training framework is currently under development to support human resource strategy for aviation. The number of air traffic controllers has increased with the outstanding cooperation of Cuba, Dominican Republic and Jamaica
- Comprehensive navigation capabilities are being restored to allow full use of terminal Instrument Flight Rules (IFR) approach procedures at both Port-au-Prince and Cap-Haitien international airports

- Search and rescue service within the Port-au-Prince Flight Information Region (FIR) is expected to be fully operational by December 2014. Procedural manuals have already been adopted with many protocols of agreement with adjacent FIRs.
- The Port-au- Prince Toussaint Louverture international airport control tower has been removed and elevated to a temporary position while the new permanent control tower is expected to be functional by December 2014.
- Flight planning function was transferred to a particular service provider to ensure flight plan filling in accordance with the ICAO Flight Plan Form.
- Air Traffic Control Aerodrome service will be provided at Cap-Haitien international airport in a short term. A new temporary control tower is expected soon and a permanent control tower is already under contract with the airport expansion.
- An automatic weather observation system will be operational in short term with the cooperation of World Meteorological Organization (WMO).

Agenda Item 3 **Follow-up on the NAM/CAR Regional Performance-Based Air Navigation Implementation Plan (NAM/CAR RPBANIP) Progress**

3.1 Global/Regional air navigation developments

3.1.1 *The Global Air Navigation Plan (GANP)* – Doc 9750, 4th edition was presented by the Secretariat under IP/03 that indicates to the Meeting the ICAO technical work programme strategic direction related to global air navigation systems efficiency, and also serves as guidance for the Planning and Implementation Regional Groups (PIRGs), States, service providers, airspace users and other stakeholders.

3.1.2 The fourth edition of the GANP approved by the ICAO Council (C199/5) on 29 May 2013, is available to users at the following ICAO link:
http://www.icao.int/sustainability/Pages/GANP.aspx

3.1.3 Under IP/04 and P/01, the Secretariat informed of the continued transition of the ICAO's centred, paper-based, data collection and reporting processes into a set of tools and databases designed to support the implementation of the global strategies, including the Global Aviation Safety Plan (GASP) and the GANP.

3.1.4 Similarly, based on the Assembly resolution A38-2 - *ICAO global planning for safety and air navigation*, the Secretariat indicated that while recognizing the importance of effective implementation of regional and national plans and initiatives based on the global frameworks, the ICAO Assembly invited PIRGs/States to use ICAO standardized tools or adequate regional tools to monitor and, in collaboration with ICAO, analyse the implementation status of air navigation systems.

3.1.5 The ICAO tools and databases included: SPACE for accessing applications such as iStars 2.0 and the electronic Air Navigation Plan (eANP), Frequency Finder (http://192.206.28.81/ff1/FF1.php), ICAO´s Geographical Information System (GIS) (www.gis.icao.int), Electronic Notice of proposed Amendment (ENOPA), Air Operator Certificates (AOC) System ICAO Portal and the Application for Mobile Annexes (MANNEX).

3.1.6 Under IP05, the Meeting was briefed on the ASBUs implementation methodology and the efforts ongoing by ICAO and the States for air navigation implementation under this strategy.

3.1.7 The block upgrades coordinate clear air and ground based operational objectives together with the avionics, data link and Air Traffic Management (ATM) system requirements needed to achieve them. The overall strategy serves to provide industry wide transparency and essential investment certainty for operators, equipment manufacturers and Air Navigation Service Providers (ANSPs).

3.1.8 The Meeting was reminded that the detailed explanation of the ASBU modules is included in the Appendix of the AN-Conf/12 Report and Doc 10007 – *Report of the Twelfth Air Navigation Conference* (2012) and in Appendix 2 of the GANP.

3.1.9 Regarding the implementation of ICAO ASBUs methodology, the Secretariat commented:

a) ICAO is providing guidance and practical assistance through its regional offices, to States, regions and sub-regions for implementing ASBUs blocks or individual modules;

b) ICAO Regional NAM/CAR Workshop on the Aviation System Block Upgrades (ASBU) Framework: Planning, Implementation and Monitoring from 22 to 26 July 2013 in the ICAO NACC Regional Office in Mexico City, Mexico;

c) other technical support regional workshops such as the Implementation of ATS Messages Handling Systems (AMHS) (September 2014), Automatic Dependent Surveillance-Broadcast (ADS-B) (May 2014), Performance-Based Navigation (PBN) (September 2014) and automation of ATC systems (April 2014) will be held;

d) follow-up to regional implementation plans undertaken by the NAM/CAR Air Navigation Implementation Working Group (NAM/CAR ANI/WG) and by other subregional implementation groups;

e) following AN-Conf/12 Recommendation 6/1 – *Regional performance framework – planning methodologies and tools*, in the implementation of the ASBUs, particularly Block 0, the NAM/CAR implementation groups will use the regional electronic Air Navigation Plans (eANPs) as the primary tool to assist in the implementation of the agreed regional planning framework for air navigation services and facilities; and

f) ICAO has created a multi-disciplinary working group (MDWG-ASBU) to consider the challenges associated with the establishment of operational and economic incentives, such as service priority, to allow early benefits of new technologies and procedures, as described in the ASBUs modules, Ref MDWG-ASBUs, Ref.: EC2/104-13/73.

3.1.10 Under IP/32, United States provided an update on their Mini-Global Demonstration, a programme with the goal of simulating a seamless transfer of data between air navigation service providers to ultimately promote more efficient operations across Flight Information Regions (FIRs). The Mini-Global Demo also fully supports the validation of ICAO Flight and Flow-Information for a Collaborative Environment (FF-ICE). The demonstration is planned for September 2014, following a Risk Mitigation Demonstration in March 2014.

3.1.11 The Mini-Global Demonstration will help participants observe the benefits of using standardized information exchange models of communication to transmit data, paving the way for a more efficient air traffic management system. It also aims to reduce the use of antiquated flight plan formats. The Mini-Global Demonstration will seek to advance collaborative flight information exchanges amongst operators and other ANSPs worldwide. The Demonstration supports the ultimate goals of interoperability and harmonization.

3.1.12 In support of global harmonization and interoperability, the Mini-Global demonstration will also be part of ICAO's Block Upgrade Demonstration Symposium & Showcase (BUDSS).

3.1.13 Additionally, the Meeting took knowledge of IP/06 that presented information related to the amendments to the Annexes and air navigation Documents, which constitute the proposals for the 2013 – 2014 period such as: Amendment 88 to Annex 10, Amendment 5 to PANS-OPS Volumes I and II, Amendment 5 to the PANS-ATM, Proposal for the amendment of the *Procedures for Air Navigation Services — Air Traffic Management* (PANS-ATM, Doc 4444) relating to 9.3 km (5 NM) terminal separation based on Required Navigation Performance (RNP), Performance-based Navigation (PBN) lateral separation and VHF omnidirectional radio range (VOR)/ Global Navigation Satellite System (GNSS) VOR/GNSS lateral separation.

3.2 NAM/CAR Regional Performance-Based Air Navigation Implementation Plan: update, review and progress

3.2.1 Under WP/07, the Secretariat briefed on the process conducted for the NAM/CAR Regional Performance-Based Air Navigation Implementation Plan (NAM/CAR RPBANIP) update, resulting in the draft Version 3.0. The RPBANIP was aligned with the ICAO ASBU methodology, and updated with all the NAM/CAR States comments received and the Port-of-Spain Declaration targets.

3.2.2 The Meeting recalled that the RPBANIP serves as the basis for air navigation implementation matters in the NAM/CAR Regions, reflecting regional priorities and milestones.

3.2.3 The Meeting formed an Ad hoc Group (Canada, Trinidad and Tobago, United States and ICAO) to conduct a final review to the RPBANIP, particularly on several targets and supporting metrics, which was presented and accepted by the Meeting as shown in:
http://www.icao.int/NACC/Documents/Meetings/2014/NACCWG4/NAMCARRPBANIPFINAL2014NACCWG.pdf

3.2.4 This final revised version of the RPBANIP is to be approved by the Civil Aviation Directors in their NACC/DCA/5 Meeting. The Meeting emphasized the need to ensure that this final review to the RPBANIP Version 3.0 was available to all the States/Territories and other stakeholders prior to the NACC/DCA/5 Meeting. In this regard, ICAO commented that this reviewed version of the RPBANIP will be submitted to the States/Territories and other stakeholders for their consideration and final approval in the NACC/DCA/5 Meeting.

3.2.5 Based on the agreements, the following draft conclusions were formulated:

DRAFT CONCLUSION NACC/WG/4/1

APPROVAL OF THE NAM/CAR REGIONAL PERFORMANCE-BASED AIR NAVIGATION IMPLEMENTATION PLAN (RPBANIP) VERSION 3.0

That, considering that the NAM/CAR Regional Performance Based Air Navigation Implementation Plan (NAM/CAR RPBANIP) is the basis for air navigation implementation in the NAM/CAR Regions, where regional targets and milestones have been agreed and regional air navigation priorities are reflected, the Civil Aviation Directors approve the RPBANIP version 3.0.

DRAFT CONCLUSION NACC/WG/4/2

UPDATE OF NATIONAL AIR NAVIGATION IMPLEMENTATION PLANS IN ACCORDANCE TO THE RPBANIP VERSION 3.0

That, for the effective and timely development and implementation of air navigation in the NAM/CAR Regions ensuring harmonization and coordination of efforts aimed at improving international civil aviation safety, capacity and efficiency, the States/Territories and International Organizations of the NAM/CAR Regions:

a) review and update their national Air Navigation Implementation Plans in accordance to their national needs and RPBANIP regional framework; and

b) inform and submit ICAO these national plans by **31 December 2014.**

PBN

3.2.6 Under WP/23, the Meeting was informed that in accordance with ICAO Assembly Resolution A37-11, the CAR Region developed a PBN airspace concept. The particular PBN implementation achievements are:

- 100% of NAM/CAR States and Territories have presented their PBN implementation action plans
- RNP-10 and Polar routes network have been implemented in the Canadian airspace
- RNP-4 was implemented in the airspace of the Anchorage Arctic FIR
- RNP-10 and RNAV routes implemented WATRS oceanic airspace, the Gulf of Mexico, Houston and Miami Oceanic FIR
- Random routes were also implemented in the Piarco FIR
- Regional Agreement to publish RNAV-5/RNAV-2 routes in the continental upper airspace

- 60% of international aerodromes implemented instrument approach procedures with vertical guide (APV), (BARO-VNAV and/or Global Navigation Satellite System (GNSS) augmentation) as the primary approach or as a back-up for precision approaches
- 60% of international aerodromes implemented SIDs/ Integrated Safety Trend Analysis and Reporting System (STARs) with PBN specifications and continuous descent and continuous climb operations criteria (CDO/CCO)
- The analysis of the RNP-10 and the 11 new Area Navigation (RNAV) routes in the Gulf of Mexico (GoMEX Project, 10th January 2013) shows total fuel savings of more than 712,066 kg, resulting in financial savings for $1.5M dollars per month (about $18M annually)
- According to Resolution A37-19, all States should submit benefits accomplished in reducing CO_2 emissions with PBN implementation by using the online ICAO Fuel Saving Estimation Tool (IFSET). The indicators estimation should be based on operational improvements obtained in air traffic management, operational efficiency, use of infrastructure and alternative fuels.

3.2.7 The Meeting took note of the PBN airspace projects going on in Costa Rica, El Salvador, Honduras, Jamaica, Mexico, Trinidad and Tobago, Turks and Caicos Islands and COCESNA. For the redesign of the PBN airspace, States should apply provisions contained in ICAO Doc 9992. The challenges to be developed are:

- States should develop PBN training programmes for all staff concerned (Civil Aviation Authority (CAA), Air Traffic Services (ATS), airlines, etc.)
- States should develop and implement PBN operational approval processes and recognize other States PBN operational approval as described in the ICAO Doc 9613 - *Performance-based Navigation (PBN) Manual*
- With the implementation of Continuous Descent Operations (CDO) ATS Letters of Agreement among adjacent Air Traffic Control (ATC) units should be reviewed in order to ensure safety
- States should ensure the high quality of the aeronautical information and the associated data for the publication of PBN aeronautical charts
- States shall review their navigation infrastructure coverage (Distance Measuring Equipment (DME)/DME, VHF omnidirectional radio range (VOR), etc.) for PBN implementation in the terminal areas
- States should revise restricted areas based on the Flexible Use of Airspace (FUA) in order to improve safety, efficiency and airspace capacity for aircraft operations according to necessities of the civil and military users
- States should inform the ICAO NACC Regional Office about routes implementation and PBN approach procedures (Lateral Navigation (LNAV), Vertical Navigation (VNAV), Localizer Performance with Vertical Guidance (LPV), Required Navigation Performance Authorization Required (RNP AR)).

3.2.8 The Meeting took note that 90% of the aircraft fleet operating in the region has different RNAV/RNP capabilities. However, despite the progress made by States in PBN implementation, only approximately 30% of air operators use PBN routes and procedures. Considering the need to have real information regarding operators on the use of PBN approach procedures and fuel savings, the Meeting agreed to the following:

DRAFT CONCLUSION NACC/WG/4/3 **FUEL SAVINGS AND CO_2 EMISSION RESULTS IN THE NAM AND CAR REGIONS**

That, considering the importance of obtaining effective information on the consumption of fuel, IATA:

a) coordinate with Canada, Dominican Republic, Mexico and United States regarding effective fuel savings information resulting from the implementation of RNAV routes as well as PBN approach procedures at peak hours in 10% of airports in States with the largest number of operations, as applicable, in accordance with the format included in **Appendix A** to this report; and

b) provide the ICAO NACC Regional Office with information on fuel savings and reduction of CO_2 emission obtained from implementation of PBN routes and approach procedures in the NAM and CAR Regions not later than **31 December 2014**.

3.2.9 As to the feasibility of regional implementation, Satellite-Based Augmentation System (SBAS) technical and operational benefits, the Project RLA/03/902 - *Transition to GNSS in the CAR/SAM Regions - Augmentation Solution for the Caribbean, Central and South America* (SACCSA) reported that this is positive. However, there are associated costs and other capabilities that should be analyzed on an evolutionary medium and long term for the CAR/SAM Regions.

3.2.10 Regarding the use of Wide Area Augmentation System (WAAS), Mexico informed that they are testing 5 stations to apply LPV approach procedures. The extension and use of the WAAS system requirements for the CAR Region will be reviewed in the medium term.

3.2.11 The Meeting took note of the PBN implementation progress presented by Canada, Cuba, Haiti, United States and COCESNA. The relevant information will be coordinated with ICAO Headquarters for the Dashboard. ICAO will coordinate with the States concerned regarding updates to Doc 7030 if required.

Strategic Lateral Offset Procedures (SLOP)

3.2.12 Under WP/25, the Meeting was informed that ICAO has recognised the inherent risk of a collision between aircraft flying at the same route and altitude as the result of highly accurate navigation systems. The use of SLOP becomes more relevant as time goes by because navigation systems accuracy such as GNSS is increasingly becoming standard on all types of aircraft to reduce the mentioned risk.

3.2.13 Considering the increased use of GNSS in the CAR and NAM Regions and the operational benefits in the remote continental and oceanic airspace, the Meeting supported that ICAO, in coordination with the NAM/CAR States, study the possible introduction of the ICAO Strategic Lateral Offset Procedures (SLOP) in the *Regional Supplementary Procedures* (Doc 7030).

Large Height Deviations (LHD) and ATS Incident Reports

3.2.14 Under WP/26, the Meeting was informed that the GREPECAS Scrutiny Working Group (GTE) conducted a safety assessment in the CAR/SAM Reduced Vertical Separation Minimum (RVSM) airspace and noted that ATC operational coordination errors cover a range of 94-97% of LHD reports, which are not caused by RVSM operations but rather by the common aircraft data transfer between ATC units.

3.2.15 To avoid duplication of RVSM approvals registers by States, all CAR and SAM States carry out coordination with CARSAMMA, and Canada, United States and Mexico carry out related coordination with North American Approvals Registry and Monitoring Organization (NAARMO). However, not all States, organizations and service providers timely meet their respective responsibilities of LHD coordination.

3.2.16 LHD reports contain events resulting in altitude deviations of 300 ft or more, events caused by turbulence or other weather, responses to Airborne collision avoidance system/Traffic Collision and Avoidance System (ACAS/TCAS) advisories, deviations due to in-flight contingencies and operational errors.

3.2.17 GTE has identified the reports trends as well as the critical points where the majority of LHD errors related to RVSM use on the CAR/SAM airspace occurred. Some of these LHD reports are also qualified as ATS incidents. Therefore, States should organize databases on air safety incident reports and safety databases which could possibly be sources of information concerning incidents in the ATS airspace.

3.2.18 The waypoint in the airway segment with the highest rate of LHDs in the CAR Region is VESKA/REPIS (UA315) in the Curacao FIR (TNCF). However, the safety assessment conducted by the GTE concludes that the collision risk in CAR/SAM Regions meets the agreed Target Level of Safety (TLS) of $5x10^{-9}$ fatal accidents per hour of flight.

3.2.19 The Meeting noted that errors are caused by the apparently deficient ATC-ATC radio communication between ATC units and aircrafts or due to the lack of compliance of the operational agreements, as well as controllers lack of knowledge of previously signed operational agreements between States.

3.2.20 This trend evidence the necessity for States to conduct safety assessments within the jurisdiction of their airspace, and take immediate mitigation actions in order to eliminate the LHD occurrences.

3.2.21 The coordination issue is not reflected in the Letters of Operational Agreement between adjacent FIRs, especially with respect to the reception of flight plans, duplication of flight plans, or lack of aircraft attitude specifications (climb/descent). Other problems include aircraft operations without operational clearance in the RVSM airspace and the lack of safety assessments in the different ATS airspaces below FL 290, resulting in an unknown risk level.

3.2.22 The Meeting agreed on the need for ANSPs to conduct a safety assessment of all incidents and ATC operational errors based on the ICAO Safety Management System (SMS) provisions of Doc 9859 – *Safety Management Manual (SMM)*. In addition, States should promote the implementation of a safety oversight system and a notification system in accordance with requirements contained in Annex 19. For this reason the Meeting agreed to the following:

DRAFT
CONCLUSION
NACC/WG/4/4 ATS INCIDENTS SAFETY ASSESSMENT

That, considering the need to improve ATS safety, NAM/CAR States/Territories and Service Providers that have not yet done so, implement by **31 May 2015**:

a) training programmes on flight plan coordination messages in ATC units; and

b) ATS incidents and LHD occurrences safety assessment processes in accordance with the ICAO Safety Management System (SMS) and timely reporting of assessment tendencies to their corresponding civil aviation authorities.

3.2.23 Likewise, States must provide additional instructions to aircraft operators to ensure that “W” in item 10 a) from the Flight Plan Form is well introduced for RVSM flights. For non-RVSM approved aircrafts it must be indicated "STS/NONRVSM" in item 18, without a “W” in item 10 a) of the Flight Plan Form, as established in ICAO Doc 4444.

ICAO Position for the International Telecommunication Union (ITU) World Radiocommunication Conference (2015) (WRC-15)

3.2.24 Under WP/32, the Meeting was briefed on the current ICAO Position for the International Telecommunication Union (ITU) World Radiocommunication Conference (2015) (WRC-15) pertaining issues of critical concern to aviation, as approved by the ICAO Council at the fourth meeting of its 199th Session, held on 27 May 2013. The Meeting was also advised by Canada that the ICAO 38th Assembly had noted the possibility that the ICAO Position might require a review for the space-based reception of Automatic Dependent Surveillance – Broadcast (ADS-B) signals (paragraph 3.3.33 refers).

3.2.25 Recalling the importance of this matter, the Secretariat informed the Meeting that States and Territories adopted the ICAO Twelfth Air Navigation Conference Assembly Recommendation 1/12 (*Development of the aeronautical frequency spectrum resource*) and the Assembly Resolution A38-6 (*Support of the ICAO policy on radio frequency spectrum matters*).

3.2.26 Similarly to this support, the Meeting was reminded of the NAM/CAR Air Navigation Implementation Working Group (ANI/WG) Conclusion ANI/WG/1/10 - *Active State Support to ICAO Position for WRC-15*; and the Eastern Caribbean Civil Aviation Technical Group Meeting (E/CAR/CATG/1) Conclusion 1/23. Finally the Meeting recalled that the ICAO position was approved by the ICAO Council through an electronic bulletin, Ref: E 3/5. 15-13/57, dated 2 July 2013.

3.2.27 The Secretariat commented the Assembly Resolution A38-6 where the ICAO Council and the Secretary General, as a matter of high priority within the budget adopted by the Assembly, ensure the availability of the necessary resources to support the development and implementation of a comprehensive aviation frequency spectrum strategy, as well as increased participation by ICAO in international and regional spectrum management activities.

3.2.28 The Meeting was informed of the several activities undertaken by ICAO on this matter:

a) the CAR/SAM Regional Preparatory Workshop for ITU WRC-15 conducted in the ICAO SAM Office in 2013 to support States in the appropriate management of the frequency spectrum and preparing to support the ICAO position at ITU WRC-15;

b) introduce this topic in all the working group meetings such as the ANI/WG, E/CAR/WG and GREPECAS;

c) maintain a list of States Points of Contact (PoCs) in support of the ICAO WRC-15 Position for coordination and mutual support (**Appendix B** to this Report);

d) maintain the list of Regional Frequency Assignments available to the States and public in general ar ICAO website: http://www.icao.int/NACC/Pages/frequency.aspx; and

e) develop online tools for finding and frequency management – geo-reference evaluation of frequency planning and interferences identification.

3.2.29 Based on the above mentioned, the following draft conclusion was formulated:

DRAFT CONCLUSION NACC/WG/4/5 **ACTIVE SUPPORT FROM STATES FOR ICAO ITU WRC-2015 POSITION**

That NAM/CAR States/Territories, in order to ensure their active support for the ICAO WRC-15 position for the protection of the aeronautical frequency spectrum and satisfy future frequency spectrum aviation needs:

a) include the main points addressed by the ICAO International Telecommunication Union (ITU) WRC-15 position for the protection of the C-band when used for aeronautical purposes and the ICAO WRC-15 position as a whole, including any amendments, when preparing national ITU WRC-15 proposals in coordination with the National Spectrum Management Authority;

b) include representatives from civil aviation administrations and aviation experts from national delegations, to the extent possible, when participating in the ITU- Radio and regional preparatory activities for WRC-15; and

c) if not already done so, nominate their focal point for WRC-2015 to ICAO by **December 2014.**

Aeronautical Information Exchange Model (AIXM)

3.2.30 The Secretariat presented WP/30 highlighting the importance of the FAA and/or EUROCONTROL text analysis that allows providing guidance to States on the Aeronautical Information Exchange Model (AIXM) and the related Aeronautical Information Conceptual Model (AICM). ICAO proposed the modification of the existing ICAO Recommended Practices for the “Use of automation” in Aeronautical Information Service (AIS) in order to allow the exchange of digital data based in an ICAO reference model.

3.2.31 In order to support the States to comply with this standard, it was proposed to review all Guidance Material mentioned in the previous paragraph about an aeronautical conceptual and data exchange model, based on the AIXM version 5.1. To achieve this, the Meeting was indicated on the need to implement strict Quality Management System (QMS) taking into account that all available information is validated and secure to provide confidence on the fact that all received information comes from an authorized data originator with quality processes implemented.

3.2.32 In this regard, the Meeting proposed the following draft conclusion:

DRAFT CONCLUSION NACC/WG/4/6 **REPORTING ON THE PROGRESS ACHIEVED IN THE IMPLEMENTATION OF THE AERONAUTICAL INFORMATION EXCHANGE MODEL (AIXM)**

That NAM/CAR States and international organizations:

a) adopt the AIXM 5.1 information exchange model; and

b) report on the progress achieved with application of the conceptual model and aeronautical information exchange to the ICAO NACC Regional Office by **31 December 2014**.

Transition to Aeronautical Information Management (AIM)

3.2.33 The Secretariat explained the purpose of WP/31, on the importance of the transition to AIM and informed on the progress made by the States, Territories and International Organizations, requesting to review and update table on item 2.10 of the reference paper, particularly the related to the Transition Plan Action development, as well as the progress in the transition that requires that all issues of the new AIM concept of the Integrated Aeronautical Information Package (IAIP) be considered as defined in the RPBANIP Regional Performance Objective (RPO), such as: electronic processing and digital management of aeronautical information and data are one of the most important aspects of AIM implementation, which implies the use of AIXM, migration to Electronic Aeronautical Information Publication (eAIP), application of QMS to electronic data processes, and availability of Electronic Terrain and Obstacle Data (eTOD) for Areas 1, 2, 3 and 4 among others.

3.2.34 Based on the above and the reference paper content, the Meeting adopted the following draft conclusion:

DRAFT CONCLUSION NACC/WG/4/7 **AIM ACTION PLANS FOR THE AIS TO AIM TRANSITION**

That CAR States that have not yet done so:

a) develop/update and execute the Action Plans for transition from AIS to AIM taking into consideration the latest AIM developments and AIM Task Force work until AIM is completed according to the RPBANIP AIM RPO; and

b) inform the ICAO NACC Regional Office of all AIM progress to be presented at the upcoming GREPECAS/17 Meeting.

3.3 ANI/WG and other regional group progress reports

PBN implementation Reports

3.3.1 The PBN Task Force (TF) presented under WP/27 and DP/02 the progress of its work programme and the results achieved as included in Appendixes A and B to WP/27, whose Membership will be updated accordingly. The TF reviewed the PBN implementation information provided by COCESNA (IP/22), United States (IP/29 and IP/31), Canada (IP/34), Haiti (IP/38) and Cuba (NI/18).

3.3.2 The tasks developed by the PBN TF are:

- To identify deficiencies and constraints of PBN implementation, and to propose solutions that would facilitate resolution of such problems
- To develop and review the material needed to meet the ICAO initiative on the introduction of Approach Procedure with Vertical Guidance (APV) approaches including Barometric Vertical Navigation (Baro-VNAV) and Required Navigation Performance-Authorization Required (RNP-AR) as part of the PBN initiative
- To assist on the coordination of PBN routes with adjacent regions to ensure Global harmonization

3.3.3 Although many States/Territories/International Organizations are on their way to meet ICAO Assembly Resolution A37 – 11 mandates regarding PBN approaches with APV, there are still some States facing difficulties.

3.3.4 In order to determine an accurate status of PBN implementation within the Region as well as to determine roadblocks, the PBN TF developed a survey form which was sent by the ICAO NACC Regional Office to States, Territories and International Organizations and which will be analysed with recommendations for solutions.

3.3.5 Many TF members have identified lack of PBN training as a major impediment to a better progress. Training courses high cost, as well as travel and accommodation, make difficult for some States to ensure that personnel is adequately trained. The TF agreed that the ICAO website provided an excellent resource for basic PBN training. However, technically intensive areas such as Procedure Design and Validation, Terminal Airspace Design, Route restructuring, Conducting Safety Assessments etc., require a more detailed training programme.

3.3.6 The TF recognises the issue with regard to harmonization of routes across the various regions requires coordination with ICAO Regional Offices to ensure that the Collaborative Decision Making (CDM) process is applied to route restructuring with regard to LOAs update. A list of proposed routes will be tabulated and provided to the ICAO NACC Regional Office. Similarly, in order to improve safety, maximise efficiency and reduce CO_2 emissions along the upper level, North–South routing system through the Eastern Caribbean, an ad hoc meeting between Trinidad and Tobago, United States, IATA and ICAO led to a commitment to form a multilateral group aimed at re-aligning these routes based on the PBN concept. ICAO, with the assistance of IATA, will coordinate the re-alignment process with the SAM Region to ensure harmonization.

3.3.7 PBN is a gate-to-gate concept and is not restricted only to the implementation of PBN approaches or high level RNAV/RNP routes. Terminal airspace design is a high priority within the NAM/CAR Regions. The TF will support ICAO to review and complement the necessary information/activities for the next PBN-related event for more hands-on exercises and implementation discussion and activities.

3.3.8 CDM is a critical step in the planning and design process of airspace, routes and approaches, and the TF is working to assist States and Territories to incorporate this important part of the process into their implementation plan. The PBN TF suggests that:

- a recommendation is made to the Directors of Civil Aviation to ensure that a high level of emphasis is placed on PBN training and associated disciplines, such as airspace design, procedure design, operational approvals, safety/risk assessments, and performance metering etc.
- States, Territories and International Organizations engage in the CDM process in all phases of PBN implementation
- the ICAO NACC Regional Office in collaboration with the PBN TF includes more advanced PBN training courses to the on-line training programmes

Air Traffic Flow Management (ATFM)

3.3.9 Under WP/29, the Meeting noted that ATFM TF Work Programme provides specific initiatives for the development of a regional ATFM implementation concept for the NAM/CAR Regions. This roadmap is consistent with ICAO Doc 9971 and other related global documents.

3.3.10 To date, the ATFM TF has been focused on reviewing the Terms-of-Reference (ToRs) and ensuring that the mission at hand was clearly understood. The subsequent meetings were used to exchange ideas and improve ATFM understanding.

3.3.11 The activities of the ATFM TF in 2014 will be: to address demand and capacity balancing methodology, to review the ATS contingency plans with a natural disaster emergency response approach, and to develop a regional pre-tactical web conference for all ANSPs and stakeholders to participate and share information, as included in Appendix B to WP/29. Keys points for harmonized, collaborative and progressive NAM/CAR ATFM action plan are:

- Incorporate the key ANSPs that comprise the region (Area Control Centres (ACCs))
- Invite air operators (airlines, business/general aviation, airport operators, military organizations etc.) to contribute with the ATFM implementation
- Simplify tasks to obtain measurable and realistic achievable goals
- Foster an open and collaborative approach regarding information sharing
- Implement short term enhancements and strategies that will be cost effective in benefit to the aviation community, i.e., operational status web page, combining weather forecasting services, regional harmonized approach for traffic situation displays for States to utilize, and basic arrival/departure management tools used to provide common situational status
- Develop and cultivate a collaborative culture between ANSPs, stakeholders, and industry participants

3.3.12 Under IP/16, COCESNA presented their ATFM implementation Project.

3.3.13 Considering that the ATFM procedures implementation in the NAM and CAR Regions have a significant progress, the Meeting agreed to include this information in the ICAO *Regional Supplementary Procedures* (Doc 7030) in the following Draft Conclusion:

DRAFT CONCLUSION NACC/WG/4/8

AMENDMENT TO REGIONAL SUPPLEMENTARY PROCEDURES (DOC 7030) ON THE AIR TRAFFIC FLOW MANAGEMENT (ATFM) IMPLEMENTATION IN THE NAM/CAR REGIONS

That:

a) ICAO, with CAR and NAM States support, takes the necessary actions to publish the required information on Air Traffic Flow Management (ATFM) in the Regional Supplementary Procedures (Doc 7030) for NAM and CAR by **31 December 2014**; and

b) States timely publish corresponding information on Air Traffic Flow Management (ATFM) applicable in their ATS airspace jurisdiction in the corresponding AIP.

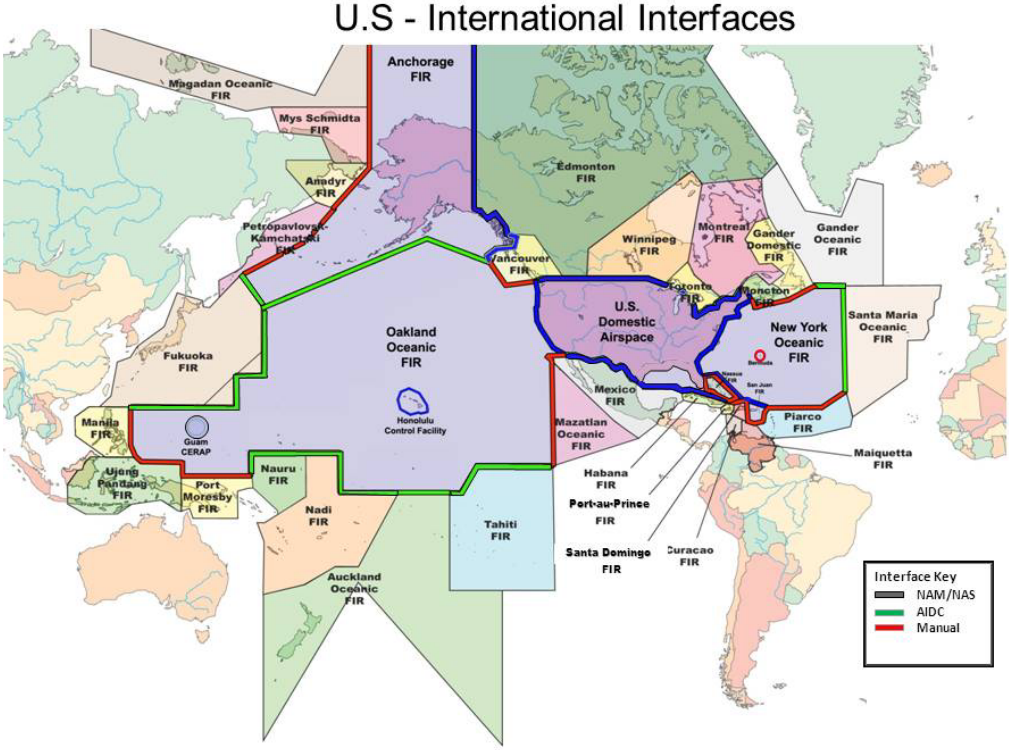
3.3.14 The Secretariat informed that an ATFM Seminar is being organized for NAM/CAR/SAM Regions for the last quarter of 2014, where ATFM matters will be discussed. The objective of the event is to continue the ATFM implementation seeking to prioritize the corresponding activities.

Air Traffic Service Inter-facility Data Communications (AIDC)

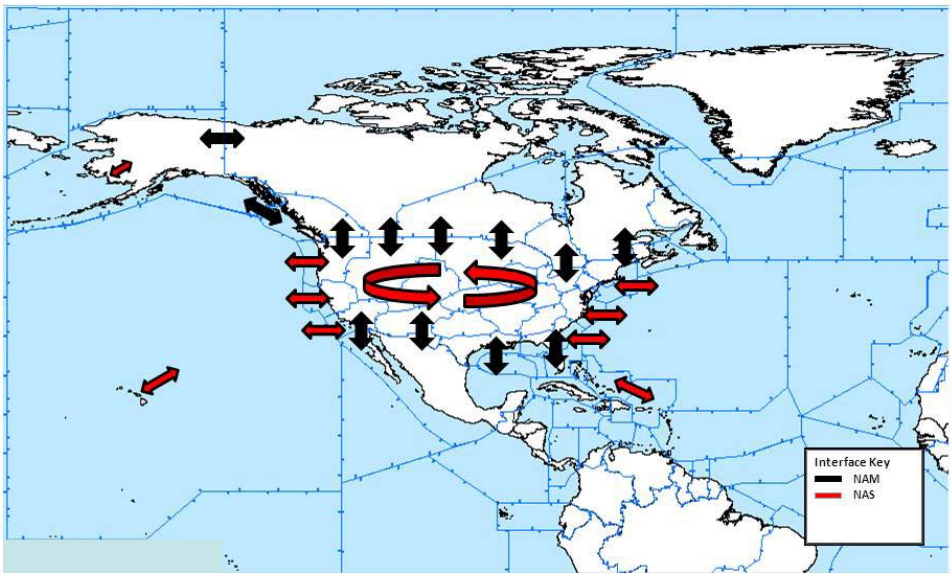
3.3.15 Under IP/10, United States provided an update on the global Air Traffic Service Inter-facility Data Communications (AIDC) harmonization effort being conducted by the ICAO Inter-Regional AIDC Task Force (IRAIDCTF) for consolidating the Interface Control Documents (ICD) of the North Atlantic and Asia/Pacific Regions. The Meeting agreed on a similar approach to consolidate the North American (NAM) ICD and Caribbean/South America ICD under the ANI/WG AIDC Task Force activities.

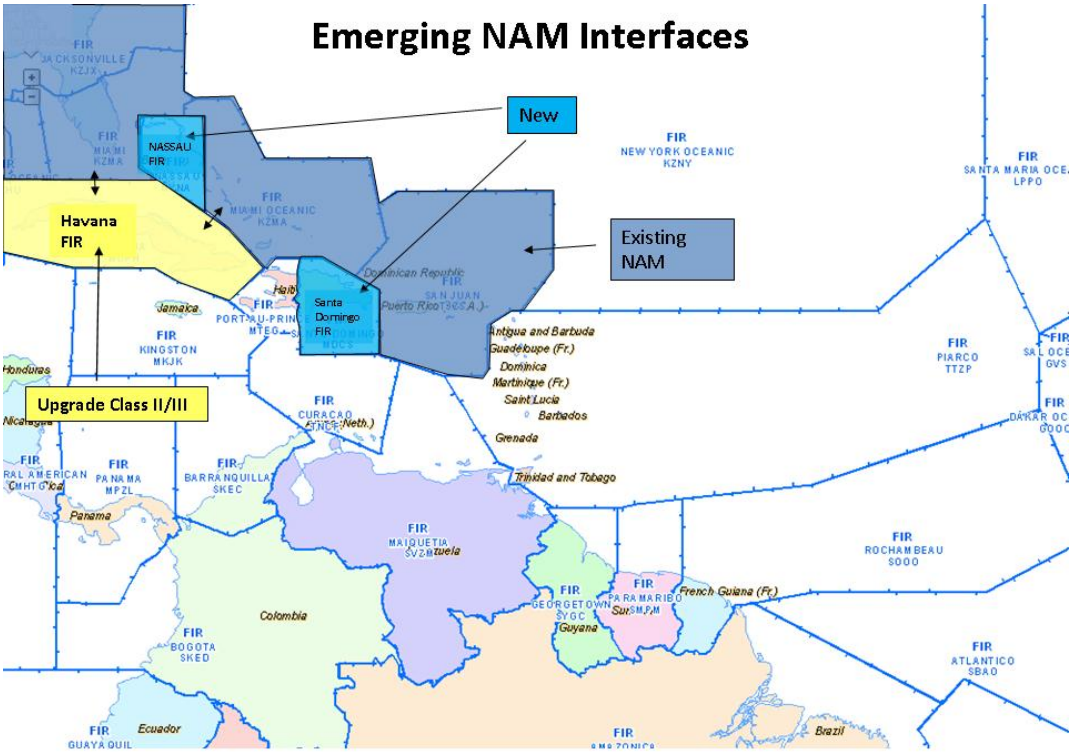
3.3.16 Similarly under IP/11, United States presented their lessons learned, operational benefits and the current Automated Data Exchange as information to help States formulate individual planning strategies for integrating automated data exchange between ATS systems. The following figures show the current interface types of United States and its adjacent State ATS units:

U.S - International Interfaces



North American NAS/NAM Interfaces





3.3.17 Under IP/14, COCESNA informed on the AIDC and OLDI implementation progress, in the Approach and Area Control Centre CENAMER (APP and ACC) and the Area Control Centres adjacent to the Central American FIR, based on their implementation plans for 2014 and 2015:

a) Implementation of an OLDI channel between APP Control Centre La Mesa (Honduras) and ACC CENAMER (COCESNA);

b) Implementation of an OLDI channel between APP Control Centre El Coco (Costa Rica) and ACC CENAMER;

c) Implementation of AIDC channel between the ACC Havana (Cuba) and ACC CENAMER; and

d) Implementation of AIDC channel between the ACC Merida (Mexico) and ACC CENAMER.

3.3.18 Under WP/04 and DP/03, the ANI/WG AIDC TF Rapporteur presented the progress achieved by the AIDC TF since its creation in the First NAM/CAR Air Navigation Implementation Working Group Meeting (ANI/WG/1), highlighting:

- The TF reviewed during this Meeting the information provided by the States and IATA: WP/04, WP/28, WP/36; IP/10, IP/11, IP/14, IP/28, IP/33 and NI/39
- Updated AIDC Regional Plan as shown in **Appendix C** to this report
- A revised ToRs and work programme was presented as shown in **Appendices D and E** to this report

- Evaluation and comparison of NAM and CAR/SAM ICD
- Recommendation and operation suggestions for AIDC trials/implementation
- FPLs analysis missing/duplication results, recollection of results and lessons learned from FPL solutions carried out in E/CAR, Central America and Cuba-United States
  - Sample AICs were provided (Cuba and IATA)
  - A draft action plan will be created based on the recommendations

3.3.19 Based on the above, the Meeting agreed on the following draft conclusion:

DRAFT CONCLUSION NACC/WG/4/9 **ADOPTION OF NAM INTERFACE CONTROL DOCUMENT (ICD)**

That the NAM ICD is adopted as the preferred ICD in the CAR Region, not precluding the use of other ICDs under circumstances favourable to the latter.

3.3.20 Several discussions and proposals by the plenary Meeting were analysed, based on the analysis carried out by the AIDC TF, on the issue of flight plans missing, duplication and errors as well as lessons learned in CAR Region. The collected and analyzed information was from Cuba (IP/39), United States (IP/28), IATA (WP/28, WP/36) and COCESNA (IP/16).

3.3.21 Several reports have been issued by the States and airlines, providing feedback of different types of ATS incidents due to the Flight Plan (FPL) with errors, duplications as well as rejections, lack of FPL, etc. As part of the performed analysis the following causes were detected:

- "When “retyping” into the AFTN/AMHS/FDP, the FPL filled format (paper) given to the AIM officer, several errors were found on the route, especially when going to a far FIR area from the Departure; errors were also found on the Flight level (FL), NAV/COM/SUR equipment (probably related to FPL convertors) and Standard Instrument Arrival (STAR)
- When 2 or more FPLs are sent by the operator (sender) to update a previous one
- When the AIM officer is using a pre-programmed address list to transmit FPLs, with edition mistakes on the destination addresses (some FIR/ATS units are not on the list)
- Under a similar condition, some local procedures use a pre-programmed FPL (such as STAR, routes, FL, etc. for certain flights) and the operator fails to update some fields to the AFTN/AMHS/FDP
- Duplicated or erroneous flight plan messages that are submitted by automation systems causing consistent unnecessary information transmission continue to be elevated
- Index reduction must have an accelerated behaviour to achieve the numbers that promote an appropriate exchange of ATS messages under 5% of the total rejected in comparison with the flight plans amount issued by ATS units
- In spite of the adopted measures and the information provided to give solution to the problem, some States have increased the number of rejected messages

- Although there is an existent flight plan format that corresponds to the aircrafts equipment and its capabilities, as well as the requirements for navigation by the different airspace, the existent problems with the previous format still continue, and are also not associated with the change to the current format. This is proof that some States have not yet taken conscience to correct current problems

3.3.22 To carry on the analysis of the missing/duplication of FPLs, the Meeting agreed on the creation of a FPL Ad hoc Group to report on error situations and follow up on action items in each State regarding the mitigation of flight plan errors. This Ad hoc Group will report to the AIDC Task Force. An initial membership was agreed:

Task Force Member- Name:	State/Territory/ International Organization	email
Lorraine Davis	Antigua and Barbuda	sivad81@hotmail.com
Gilberto Torres	Belize	gilberto.torres@civilaviation.gov.bz
Fernando Naranjo Elizondo	Costa Rica	fer_nar_eli@hotmail.com;
Jorge Centella	Cuba	jorge.centella@iacc.avianet.cu
Fernando Casso (Rapporteur)	Dominican Republic	dan.eaves@faa.gov
Ernso Edmond,	Haiti	ernsoedmond15@gmail.com
Maxine Allen	Jamaica	maxine.Allen@jcaa.gov.jm
Jose Gil Jimenez	México	jigiljim@sct.gob.mx
Margarita Rangel		mrangel@sct.gob.mx
Dan Eaves	United States	fernando.casso@idac.gov.do
Mayda Alicia Ávila	COCESNA	Mayda.avila@cocesna.org

3.3.23 Other members shall be included for the operation of the FPL Ad hoc group through the assistance of ICAO. The AIDC TF will develop the FPL Ad hoc group terms of reference and notify ICAO by **June 2014.**

3.3.24 Alternate aerodrome omission was also discussed. The outcome of the discussion was as follows:

- Annex 2 requires the alternate aerodrome in the filled flight plan, and Annex 6 establishes conditions that permit the omission of an alternate aerodrome
- ATM automated systems are developed based on ICAO Doc 4444 for coordination of aircraft movement messages, and so enforce the alternate aerodrome
- The use of ZZZZ in the alternate aerodrome field (field 16 c), and an agreed value in field 18, after the ALTN/indicator, (for example, TBD) was discussed as an option. This idea was considered not in strict agreement with Doc 4444, as ZZZZ should be used in cases when the alternate aerodrome does not have a location indicator. This idea would avoid the modification in short term of flight data processing systems that currently enforce the alternate aerodrome, and may represent an option for a bilateral agreement between adjacent FIRs
- Doc 4444 gives the provision of terminating field 16 after estimated elapsed time, if there are bilateral or regional agreements that allow it

- This agreement would permit originators to omit the alternate aerodrome in messages when the filers call for it. For this option, flight data processing systems should be updated when needed to permit this condition, based on these agreements

3.3.25 The Secretariat informed that the need to clarify the related SARPs application was coordinated with ICAO Headquarters to ensure the flight plan correct filling by the users.

ADS-B Implementation

3.3.26 Under IP/12, COCESNA informed about the ADS-B trials made by COCESNA in February 2013 and February 2014 with its ADS-B receiver located at Cerro de Hula to obtain information about the coverage, aircraft usage statistics and further analysis of this system in surveillance coverage or redundancy on what currently exists in Central America.

3.3.27 Under IP/30, United States informed on stakeholder benefits gained from the successful implementation of the Gulf of Mexico (GOMEX) Route Redesign project that initiated on 10 January 2013. Houston Air Route Traffic Control Centre (KZHU) presented validation of the intended project results by providing source data that outlines specific advances and overall improvement in efficiency for operations in the GOMEX airspace.

3.3.28 Likewise, United States informed of an ADS-B route test in the GOMEX airspace from 15 August to 15 October 2013 carried out by JetBlue Airways, KZHU, and Miami Air Route Traffic Control Centre (KZMA), whose analysis was presented in P/02. This test yielded favourable results that demonstrated an efficiency increase and cost saving benefits to the user when alternative ADS-B routes were used during periods when weather impacted the GOMEX airspace.

3.3.29 Under WP/33 and ND/06, the ADS-B TF Rapporteur reported on progress achieved by the ADS-B Task Force since its creation in the ANI/WG/1 Meeting, highlighting:

- The ANI/WG ADS-B Task Force ToRs did not need any update
- Revision of WP35, IP12, IP30 and P02
- The activities on trials and implementation of ADS-B were presented
- A survey was prepared and submitted to States, in order to obtain the status of the States/Territories in the region for the ADS-B implementation
- United States in coordination with the ICAO NACC Regional Office organized an ICAO/FAA Workshop on ADS-B and Multilateration Implementation (ADS-B/IMP) from 19 to 22 May 2014
- The TF recommended to consider the Asia/Pacific Region ADS-B implementation experience
- To take note and follow-up on satellite-based ADS-B implementation
- The ANI/WG ADS-B TF work programme was formulated and agreed as shown in **Appendix F** to this report

3.3.30 The ADS-B TF had the following observations on the ADS-B implementation:

a) although few advances have been reported by ADS-B participants to coordinate activities in the NAM/CAR Regions and to have homogeneous criteria in the analysis and ADS-B data exchange; it is required to review the national plans for implementation of ADS-B, aiming to adopt the conclusions arising from the implementation of ASBUs and

b) a number of States have implemented or are working with ADS-B and MLAT receptors and their processing capacity of this type of surveillance data in their automated ATS systems; therefore, it is necessary to coordinate a target date for implementing ADS-B surveillance in airspace if required; based on an operational concept and the ADS-B Regional Strategy. In this regard, a regional implementation date for ADS-B (OUT) can be in 2018, with a phased implementation. In this respect the following Draft Conclusion was formulated:

DRAFT CONCLUSION NACC/WG/4/10 ADS-B OUT IMPLEMENTATION IN THE NAM/CAR REGIONS

That all States/Territories in the NAM/CAR Regions adopt/include the ADS-B implementation date of **31 December 2018** in their implementation plans to finalize operational implementation of ADS-B OUT.

3.3.31 Under WP/35, Canada provided an overview of the implementation of ADS-B in its airspace, describing the network of five ADS-B ground stations in the Hudson Bay area, continuing with ADS-B installations along the north-eastern Coast of Labrador and Baffin Island and recently, in March 2012, ground stations in Greenland.

3.3.32 The foregoing ADS-B implementations allow air traffic controllers to apply surveillance-based separation minima rather than procedural separation minima, which were on the order of 60 nautical miles (NM) laterally and 80 NM longitudinally. The fuel savings from the Hudson Bay implementation are estimated at 21 million litres annually, and those from the Labrador, Baffin Island and Greenland implementations are estimated at 9 million litres annually. These estimated fuel savings equate to 77,000 tonnes CO_2 emissions annually avoided.

3.3.33 Similarly Canada outlined the planned implementation of a global ATS surveillance system using space-based reception of ADS-B signals, highlighting the international partnership between NAV Canada, ENAV (the ANSP for Italy), Irish Aviation Authority (IAA), NAVIAIR (the ANSP for Denmark) and Iridium. Operational use of the service was foreseen as early as late 2017. An operational concept to support stakeholder coordination in relation to this project has been developed and is provided as Appendix A to WP/35. Canada highlighted the necessary agreement on amending the current 1090 MHz allocation as to include the aircraft to satellite signal at the upcoming ITU World Radio Communication Conference (WRC).

3.3.34 In this regard the Meeting supports actions to develop performance-based provisions and guidance material in relation to space-based ADS-B; and urges Canada to keep the States informed on the cost, operation and implementation of such technology. The Meeting also agreed to take appropriate actions to ensure the necessary knowledge and support on this subject by their ITU representatives, including:

a) the desirability for the ITU Regional Director's report to include information on the need to extend the 1090 MHz allocation to include the aircraft to satellite ADS-B signal;
b) the need for extension of the 1090 MHz protection to be discussed at WRC-15; and
c) the need to support a review of the ITU Radio Regulations to protect the aircraft to satellite ADS-B signal.

ADS-C/CPDLC Implementation

3.3.35 IP/13 informed the Meeting on the ADS-C/CPDLC implementation progress made by COCESNA in the Pacific sector of the Central American FIR and the conducted trials until the second quarter 2014.

3.3.36 Under IP/35, Canada provided an overview of their CPDLC and ADS-C planning and implementation, highlighting:

- Implementation of FANS 1/A data link since 2001
- Since January 2001, Automatic Dependent Surveillance - Contract (ADS-C) was implemented in the Gander Oceanic FIR. Current use of ADS-C in Canadian domestic airspace is for position reporting only in the Edmonton FIR. Full ADS-C functionality is planned for 2014 in the Edmonton and Vancouver FIRs
- The *Global Operational Data Link Document* (GOLD) is used by NAV Canada as guidance material for its FANS 1/A data link implementations
- The implementation of Controller Pilot Data Link Communications (CPDLC) in most of the ICAO NAT Region followed a phased approach, started since 2002
- CPDLC is being introduced in Canadian domestic airspace in a phased approach, similar to the one used in the ICAO NAT Region. With the exception of the Toronto FIR, all Canadian domestic FIRs provide CPDLC services at the Phase 3 level
- The use of CPDLC or ADS-C is not mandatory in the Canadian domestic airspace, nor are there any restrictions to flights which are not appropriately equipped

3.3.37 Under WP/10 and DP/07, Trinidad and Tobago, in behalf of the ANI/WG GOLD TF Rapporteur, presented the progress achieved by the GOLD TF since its creation in the ANI/WG/1 Meeting, highlighting:

- The GOLD TF Members present at the NACC/WG/4 meeting (Mexico, Trinidad and Tobago and COCESNA) reviewed WP/10, IP/13 and IP/35

- No operational obstacles to the use of the GOLD Document were identified, so the adoption of the GOLD, Version 2 as the guidance material for data link procedures in the NAM/CAR Regions was recommended
- Further to the need for data link guidance material, the TF suggested to extend the GOLD TF activities scope to provide assistance for the implementation, Canada leading this task
- The current GOLD TF work programme has been fulfilled and completed, but a new deliverable should be suggested to the ANI/WG to provide a means of continued support for data link implementation to newly implementing States/Organizations. The GOLD TF new responsibility would include providing assistance and supporting the coordination of the implementation of CPDLC applications. Therefore, the TF extends certain aspects of the current GOLD TF work programme until the end of 2015. The revised GOLD TF ToR and work programme are included as **Appendix G** and **Appendix H** to this report respectively
- The progress reported by COCESNA with their trials in the Pacific Oceanic Airspace, Trinidad and Tobago´s automated system capabilities for CPDLC and ADS-C
- Curacao joined the work of the GOLD TF for studying the implementation of CPDLC/ADS-C in the north western part of the Curacao FIR
- Mexico participated in the GOLD TF for analysis of the Mazatlan Oceanic Airspace implementation activities
- GOLD TF member States/Organizations to consider and encourage participation in the March 2014 ICAO Automation Workshop on CPDLC implementation

3.3.38 Based on the above, the Meeting agreed on the following draft conclusion:

DRAFT CONCLUSION NACC/WG/4/11 **ADOPTION OF THE GOLD DOCUMENT, VERSION 2, FOR DATALINK APPLICATIONS IN THE NAM/CAR REGIONS**

That, in order to promote and facilitate implementation of data link applications in the NAM and CAR Regions, the respective States and Territories adopt the GOLD Document, Version 2, as the guidance material and reference document for implementation of data link applications.

AMHS Implementation

3.3.39 Under NI/26, Cuba informed about their AMHS development activities with the participation of an integrated multidisciplinary working group, based on the products of the ISODE manufacturer, their own application known as X-SIMA for the MTA, the use of their telecommunications network (REDAC) and the MEVA network. Currently, the AMHS system is on its initial trial phase together with the United States. Cuba shared their experiences for the trial activities based on the EUR Doc 020, Appendix D, which were agreed to be assessed by the AMHS Task Force in order to receive guidance during its implementation.

3.3.40 Under WP/14 and DP/05, the ANI/WG AMHS TF Rapporteur reported the progress achieved by the AMHS TF since its creation in the ANI/WG/01 Meeting, highlighting:

- The revised ToRs and Work Programme as presented under **Appendix I** to this report
- The close coordination with the GREPECAS CAR D Project to avoid duplication and improve results of each group
- An update to the AMHS Regional Implementation Plan for ATN Ground-Ground Applications (AMHS) was presented as shown in **Appendix J**
- A review to the CAR/SAM Router Plan was shown (**Appendix O**) showing Trinidad and Tobago observations
- Inclusion of a task for the AMHS TF to periodically identify AMHS training, as needed
- An updated version of the CAR IPv4 Addressing Plan was proposed – version 1.0 (**Appendix K**). In this regard the following draft conclusion is formulated:

DRAFT CONCLUSION NACC/WG/4/12 APPROVAL OF IPV4 ADDRESSING SCHEME, VER 1.0

That, in order to expedite and facilitate the implementation of the IPv4 ATN in the CAR Region, States/Territories of the CAR Region:

a) approve the revised version of the CAR IPv4 addressing scheme, version 1.0;

b) implement their Aeronautical Telecommunication Networks (ATNs) in accordance with the IPv4 addressing scheme ver. 1.0, where applicable; and

c) report use/planned use to the ICAO NACC Regional Office no later than **December 2015**.

AIM Implementation

3.3.41 The progress contained in NI/19 and IP/21 from Cuba and COCESNA for the transition to AIM were considered. These papers reflect a significant progress in matters covered by action plans presented by both Cuba and COCESNA, which include several aspects such as: WGS-84 implementation, quality assurance management system requirements, progress in the conceptual model and aeronautical information exchange, electronic aeronautical charts, modernization of the communications networks, agreements with data authors and training, as well as a strategic planning as a priority task that will require to intensify the efforts carried out by States who have not yet initiated the transition process.

3.3.42 The Secretariat informed the Meeting about the progress on AIM issues and specifically regarding the eTOD subject, which includes some points to be considered as part of the objectives of the ANI/WG AIM/TF:

a) to share experiences and resources with the eTOD implementation through the establishment of the eTOD Regional Work Group; and

b) to implement technical requirements of ICAO Doc 9881, as necessary.

3.3.43 Additionally, the issue of "Adapting the Obstacle and Terrain Data Manual for the CAR Region" is within the deliverables of the GREPECAS G1 CAR Project. Therefore, this document (of over 200 pages), an excellent complement to ICAO Doc 9881 as well as other references on the matter, will be available in April 2014 through the translation to Spanish of the EUROCONTROL "Terrain and Obstacle Data Manual" document, valid since 2011. The translation was prepared by Mr. Alfredo Mondragón, AIM Chief in COCESNA, Rapporteur of the AIM/TF, and in Section 1.1 it establishes the purpose of the document, which is quoted as follows:

> "*1.1 Purpose of the Document. This document provides assistance to those tasks related with the implementation of obstacle and terrain electronic data and it provides the necessary guidance for a spectrum of providers from those who define the projects and those who initiate budgetary costs to the ones who are responsible to capture information."*

3.3.44 The document points out the implementation general rules and it highlights considerations and areas of special attention that should be considered by States during the eTOD implementation. It is intended to provide enough comprehension for the technician and organizations to achieve a proper decision making process based on information. The document (in both versions) also aims to produce a harmonization in the eTOD implementation within States in the CAR Region. It is intended to be a dynamic document updated with the experiences gained during its implementation. As a result, it should be guaranteed that this document supports the accomplishment of goals that providers need, thus making it important to bring to the attention of EUROCONTROL all comments on the document, as well as any other issue identified that is not properly addressed.

3.3.45 Mr. Gilberto Torres, representative of Belize and Member of the AIM Task Force (AIM/TF) in absence of Rapporteur Mr. J. Alfredo S. Mondragon, presented WP/09 containing the AIM TF activities progress, which was defined by the ANI/WG/1 Meeting. The paper also quoted recommendations to improve the work programme of the AIM TF. Appendixes A and B to the paper presented the approved Work Programme of the AIM TF which were amended to improve their implementation.

Communication improvements

3.3.46 Under IP/15 COCESNA informed the Meeting about the progress and benefits of implementing an IP network in COCESNA (ground and VSAT network).

3.3.47 Under IP/17, the Meeting was briefed on the MEVA III Network implementation activities, including its architecture, design, interconnection with the REDDIG and E/CAR AFS networks and its projection for the future Aeronautical telecommunication Network (ATN) for the CAR Region.

ANI/WG Final Results

3.3.48 Under WP08, the ANI/WG Chairman informed on the progress achieved by the ANI/WG since its creation in the First NAM/CAR Air Navigation Implementation Working Group Meeting (ANI/WG/1). This information is complemented with the reports of the ANI/WG TFs and the following was highlighted:

a) no changes were proposed to the ANI/WG ToRs, methodology and work programme agreed at the ANI/WG/01 Meeting;

b) following Decision ANI/WG1/4 - *ANI/WG Action Plans*, Conclusion ANI/WG/1/5 – *Follow-up on AN-Conf/12 recommendations* and Decision ANI/WG/1/6 – *Update the ANI/WG Work Programme to include AN-Conf/12 Recommendations*, the ANI/WG defined several proposed actions plans (**Appendix L**) for the States/Territories to follow-up on implementation of the RPOs and the agreed air navigation targets;

c) converters reduction in the processing of the ICAO FPL2012 as presented in **Appendix M**; and

d) AMS VHF improvement plan updates (**Appendix N**).

3.3.49 With the support of the ICAO NACC Regional Office, a website for the ANI/WG operation has been implemented in the following address: http://www.icao.int/NACC/Pages/nacc-regionalgroups-aniwg.aspx

3.3.50 Based on the progress and discussion of the ANI/WG TFs and the ANI/WG itself, the following draft conclusion was formulated:

DRAFT CONCLUSION NACC/WG/4/13 APPROVAL OF ANI/WG ACTION PLANS AND TASK FORCE(S) ToRs AND WORK PROGRAMMES

That, in order to align implementation activities with regional NAM/CAR RPBANIP air navigation and optimize implementation working groups coordination and results of the Task Forces, the NAM/CAR States/Territories:

a) approve the ANI/WG Action Plans and revised ToRs and work programme of its Task Forces; and

b) urge all sub-regional working groups to align their work programme by **December 2014** with the ANI/WG Action Plans and Task Force work programmes.

AGA implementation

3.3.51 During the presentation of WP/11, the tasks and activities that the ICAO NACC Regional Office performs in the aerodromes (AGA) field in relation to the regional objectives of the NAM/CAR RPBANIP were highlighted. Furthermore, information was provided on the goals and performance indicators to be accomplished in aerodrome certification in the CAR Region. The Meeting was informed that for the aerodrome certification process, several main tasks are required by the States: the promulgation of national regulations including the certification process, procedures for handling non-compliant established requirements, training to personnel in charge of aerodrome certification, acceptance/approval of the SMS service provider manual and follow-up in its implementation, and the implementation of measures to reduce wildlife/birds related risks.

3.3.52 In this sense, to support the performance indicator implementation to be used (percentage of certified aerodromes in accordance with the selection and information provided by States) according with the CAR Regional Aerodrome Certification Implementation Plan (CRACIP), available at http://www.icao.int/NACC/Pages/ES/edocs-aga_ES.aspx) and for the compliance to complete all required information, the following draft conclusion is proposed:

DRAFT CONCLUSION NACC/WG/4/14 CAR REGIONAL AERODROME CERTIFICATION IMPLEMENTATION PLAN (CRACIP)

That, in order to support and facilitate completion of the CAR Regional Aerodrome Certification Implementation Plan with the required information, CAR States/Territories report aerodrome certification status and aerodrome traffic density contained in the CRACIP at the web link: http://www.icao.int/NACC/Pages/ES/edocs-aga_ES.aspx and return the completed plan of the respective State/Territory to the ICAO NACC Regional Office no later than **15 August 2014**.

MET Implementation

3.3.53 Under NI/24, Cuba informed, in compliance to Conclusion 1/8 del ANI/WG, about the organizational chart of the ATM, AIM and MET units, the Aeronautical Service Provider structure, the procedures for the MET information provision and the valid Letters of Agreement between its units that describe how the coordination and communications between ATM/AIM/MET are developed, included in the Appendix A to this paper. It was also informed about a volcanic ash ATM procedure that is to be implemented.

3.3.54 Under NI/25, Cuba informed about their progress in the achievement of the RPBANIP MET targets: through the ANSP the MET Quality Assurance procedures have been established and certified. These Procedures are audited periodically by a Certification Entity, following the MET Quality Management System (QMS). Additionally in the control of the METAR reception of the national aerodromes, the follow-up and availability control, opportunity and OPMET data quality are ensured. The important challenges are also detailed in the paper.

3.3.55 Under WP/12, the Secretariat presented the MET topics and discussed the NAM/CAR RPO situation corresponding to RPBANIP MET Targets, as well as the progress achieved through different MET events. It was also mentioned that the emerging System-Wide Information Management (SWIM) concept emphasizes the integration of the aeronautical meteorological information to the SWIM, through the application of digital information exchange consistent with other information domains within SWIM.

3.3.56 Likewise, it was informed that a seminar of the Regional aviation Safety Group-Pan America (RASG-PA) – *The impact of volcanic activity in Aviation*, was held in October 2013, in order to support the States efforts to improve communication links between volcano observatories, air navigation and meteorological authorities, due to the need to make aware on the importance of the dissemination of volcanic ash information in an efficient and timely manner and improve products issued by volcano observatories in support of the International Airways Volcano Watch (IAVW) considering that volcanic ash is a significant risk for international air navigation safety and efficiency.

3.3.57 Finally, SENEAM from Mexico required ICAO to conduct a consultancy in order to implement the NOTAM/ASHTAM information dissemination to the international civil aviation users community due to the volcanic activity that could affect safety on the airspace and aerodromes. In this regard, an invitation to aeronautical authority of Mexico (DGAC), for its participation and respective coordination was made.

Eastern Caribbean Air Navigation Implementation Progress

3.3.58 Under IP/20, the E/CAR Network Technical Group (E/CAR/NTG) presented the results of their Fourth Meeting and the results of the Second Eastern Caribbean Radar Data Sharing Ad hoc Group (E/CAR/RD/2) Meeting. Similarly the Meeting was provided with an update on the satisfactory performance and new services (AMHS and AISS) of the E/CAR Aeronautical Fixed Services (AFS) Network and the progress on the radar data sharing project (the infrastructure for radar data exchange, Radar Data Display CPUs donated by France, Radar Display RFI Process and the Radar Display RFP Process planned for 2015). The next E/CAR AFS Network and Radar Data Sharing meeting is scheduled for October 2014 hosted by France.

3.3.59 Taking into consideration the IP/23 contents in relation with the progress achieved by the Eastern Caribbean Civil Aviation Technical Group (E/CAR/CATG), former E/CAR/WG; following the Decision E/CAR/CATG/1/21 AGA, AIM, ATM and CNS Action Plans, to follow-up on air navigation RPOs and the agreed air navigation targets implementation in E/CAR States and/Territories, the paper included the Summary of Discussions (SoD) of the E/CAR/CATG/1 meeting; the E/CAR/CATG ToRs and Work Programme and the relevant actions and results including the progress of the AIM, MET, AGA and SAR Committees.

3.3.60 Regarding ICAO NACC Regional Office support, a website for the operation of the E/CAR/CATG under the sponsoring of ICAO will be implemented in the following address: http://www.icao.int/NACC/Pages/nacc-regionalgroups-ecarcatg.aspx

3.4 CAR Region Safety and Air Navigation Directors Meeting (CAR/DCA/OPSAN) results

3.4.1 Under WP/13, the Secretariat highlighted that the introduction of the ICAO “Regional Performance Dashboards” serves to provide transparency and information sharing is fundamental for a safe and efficient global air transportation system. In this regard, ICAO mandates to develop safety and air navigation targets for the Regional Performance Dashboards. In order to comply with this mandate, the CAR Region Safety and Air Navigation Directors Meeting (CAR/DCA/OPSAN) was carried out.

3.4.2 The CAR/DCA/OPSAN Meeting was specifically convened for the Flight Safety and Air Navigation Directors of States and Territories of the CAR Region, with the objective to review and agree on the preliminary safety and air navigation targets, and respective indicators proposed by ICAO within the framework of the ICAO Global Aviation Safety Plan (GASP) and the Global Air Navigation Plan (GANP).

3.4.3 The air navigation targets were proposed by the ANI/WG/01 Meeting and were included in the RPBANIP, Draft Version 3.1. The safety targets were proposed by the ICAO NACC Regional Office and adjusted by the CAR/DCA/OPSAN Meeting. To this regard, the CAR/DCA/OPSAN Meeting agreed on a commitment with these targets formulating Port-of-Spain Declaration (Appendix to WP/13) and adopting Conclusion CAR/DCA/OPSAN/1 – *Approval of the Port-of-Spain Declaration*.

3.4.4 Considering the revised 3.1 version of the RPBANIP conducted by the NACC/WG/4 Meeting, and the review and approval to be carried out by the NACC/DCA/5 Meeting, the NACC/WG/04 Meeting supported in principle the Port-of-Spain Declaration.

3.4.5 Finally, the Secretariat recalled that the agreed NAM/CAR regional targets of the "Port-of-Spain Declaration" will be published on the ICAO Regional Performance Dashboards website for target achievement monitoring. It was also recognized that in order to achieve the goals/targets, the States/Territories need assistance from the ICAO NACC Regional Office through different mechanisms such as: implementation working groups, NACC regular work programme, technical assistance and technical cooperation assistance.

3.5 Performance monitoring of air navigation systems

3.5.1 Review of regional air navigation performance indicators and metrics/ICAO Dashboard

3.5.1.1 Under WP15, the Meeting was briefed on the ICAO Air Navigation Regional Dashboards to be implemented for monitoring and reporting the air navigation implementation progress within the Aviation System Block Upgrade (ASBU) methodology and the scheduled launch by the end of March 2014. The live version of the dashboard is available at the following link (Prototype): http://www.icao.int/safety/pages/regional-targets.aspx?region=Africa

3.5.1.2 In this regard the Meeting urge States/territories to take the necessary actions in support of the ICAO NACC Regional Office for collecting the required information/data for the performance metrics to be included in the ICAO NACC Regional Performance Dashboard.

3.5.2 Regional level implementation monitoring through the Air Navigation Report Form (ANRF)

3.5.2.1 Following the monitoring and reporting activities, under WP/16 the Secretariat recalled the mechanism adopted with the performance-based framework of the RPBANIP versions 1.0 and 2.0, and the use of the Air Navigation Reporting Forms (ANRFs) within the ASBU methodology for this same purpose. A detailed description of the ANRF is included in Chapter 3 of the RPBANIP.

3.5.2.2 The Secretariat commented that with the implementation of the Electronic Air navigation Plan a third Volume is being included to reflect every adopted regional ASBU module, and the way the monitoring reporting of their implementation will be done.

3.5.2.3 The Meeting recalled that all States and Territories of the NAM/CAR Regions are urged to develop their national implementation plans in accordance to the RPBANIP and that all the NAM/CAR States/Territories have committed themselves to achieve the targets and goals defined in the RPBANIP and the core targets reflected in the Port-of-Spain Declaration.

3.5.2.4 The Meeting was informed that ICAO will assist and take the necessary actions to support the States in the reporting forms completion to ensure the proper understanding and appropriate information provision to monitor implementation.

3.5.2.5 Based on the above and to harmonize the collection of information following the implementation and benefits achieved with the RPBANIP, the following Draft Conclusion was adopted:

DRAFT CONCLUSION NACC/WG/4/15 AIR NAVIGATION REPORTING/ MONITORING IN THE NAM/CAR REGIONS

That no later than **December 2014**, for the harmonized and efficient collection of data for reporting and monitoring air navigation implementation progress and achieved performance/benefits, NAM/CAR States/Territories:

a) invite all air navigation stakeholders to participate in the data collection and reporting process;

b) use the RPBANIP Air Navigation Report Forms (ANRFs) to the extent possible to report their national, sub-regional and regional implementation and performance progress; and

c) periodically report to the ICAO NACC Regional Office on the air navigation implementation status.

ICAO Fuel Savings Estimation Tool (IFSET)

3.5.2.6 The Secretariat presented WP/34 on the current ICAO activities related to the initiatives to assist States in the use of the ICAO Fuel Savings Estimation Tool (IFSET) and to help to evaluate scenarios for future emissions. Information on recent ICAO environmental developments was also provided.

3.5.2.7 The Meeting noted that COCESNA, in coordination with Belize, Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua, has undertaken several initiatives to redesign airspace and implement new concepts of operations to increase capacity. All initiatives seek to reduce flying time, save fuel and reduce the climate change impact through the reduction of emissions. This represents a step towards the global goals achievement to reduce the aviation impact on climate change.

3.5.2.8 The Secretariat convened NAM/CAR States and Territories to the ICAO International Aviation and Environmental Seminar to be held from 1 to 2 April 2014 and to the ICAO State Action Plan Seminar to be held from 3 to 4 April, at the ICAO NACC Regional Office, Mexico City, Mexico. The first Seminar will provide participants with information on present and future impact and trend assessments of aircraft engine noise; the work of the Committee on Aviation Environmental Protection (CAEP); and ICAO policies and guidance material in the environmental field. The Second Seminar will provide national action plan focal points with information on how to develop and update State action plans, with a focus on data collection and mitigation measures undertaken by States. This event is reserved only for national focal points that have been nominated by their respective State.

3.5.3 Annual Global Air Navigation Report

3.5.3.1 Through WP/17, the Meeting was presented with the references of ICAO Assembly Resolution A37-12 within the context of the implementation of the GANP (Doc 9750, Fourth Edition, 2013) and considering the new ASBUs framework. To this end, States and Planning and Implementation Regional Groups (PIRGs) are transitioning to a performance-oriented approach to support their air navigation infrastructure planning. In accordance with the information contained in the paper, the annual Global Air Navigation Report is to be launched by ICAO in April 2014.

3.5.3.2 Successful implementation stories were requested by ICAO to be included in the report, such as several operational benefits in the selected priority topics like PBN, CCO, CDO, ATFM and AIM.

3.5.4 National Plan Reports on air navigation implementation

3.5.4.1 Under NI/41, Costa Rica presented their Performance-Based Air Navigation National Plan known as CRANIP, which establishes the national priorities through National Performance Objectives (NPO), to be complied with during 2014-2018, and which are aligned with the agreed regional air navigation priorities, indicators and metrics.

3.5.4.2 Under NI/09, Cuba presented information on its Performance-Based Air Navigation Implementation Plan under the RPBANIP performance based approach, including performance metrics and indicators to follow-up on and present operational benefits. The Plan is a dynamic process that covers national needs and goals in benefit of safety, efficiency and capacity of aviation in Cuba

3.5.4.3 Under NI/40, Cuba informed of their progress in the adoption of the ASBU methodology in the planning and implementation of air navigation, complementary to their National Plan which is the basis of future air traffic management modernization plans in the Habana FIR.

3.5.4.4 Similarly under IP/27, United States informed on their implementation status of the ICAO ASBUs in support of the GANP, highlighting that all of the modules in Block 0 had been implemented (some modules and capabilities implemented across their national airspace and some modules and capabilities have been implemented at selected locations).

Agenda Item 4 Regional Cooperation and training matters to support implementation

4.1 Review of Regional Projects: RLA/09/801 - *Implementation of the Performance-Based Air Navigation Systems for the Caribbean Region,* and RLA/03/902 *Transition to GNSS in the CAR/SAM Regions – Augmentation Solution for the Caribbean, Central and South America (SACCSA-Phase III)*

4.1.1 Under WP/18, the Meeting was informed on implementation progress of the ICAO Technical Cooperation Project– *Implementation of Performance-Based Air Navigation Systems for the CAR Region* (RLA/09/801), highlighting the membership of all the CAR States, its organization, the results of its two Steering Committee Meetings, the updated activities Plan 2014-2016, the inclusion of the Go-Team assistance to implementation and the progress achieved in these activities.

4.1.2 The Meeting recognized the benefits gained with the RLA/09/801 CAR Project and the promoted mutual technical assistance; therefore, the Meeting urged Project members to participate in the scheduled Project Events Plan for 2014-2016.

4.1.3 Under IP/08, the Meeting was informed of the progress of the RLA/03/902 Project – "*Transition to GNSS/SBAS in the CAR/SAM Regions – SACCSA – Phase III*", detailing the completed activities, Project Work Packages progress, financial situation, support to recommendations 6/5 and 6/9 of the Twelfth Air Navigation Conference and other progress made with the Project objectives.

4.2 Review of air navigation implementation and performance-based monitoring human factor and training matters

4.2.1 CAR Region Aviation Training Plan

4.2.1.1 The Secretariat presented WP/19 as follow-up on the training activities of the ICAO Next Generation of Aviation Professionals (NGAP) initiative, ICAO Civil Aviation Training Policy, and TRAINAIR *Plus* Programme, to be considered for the development of national aviation training plans and regional activities to guide CAR States on their aviation training programmes development. It was also indicated that the information related to the TRAINAIR *PLUS* events is available in the following ICAO website: http://www.icao.int/safety/TrainairPlus/Pages/Upcoming-Events.aspx

4.2.1.2 As part of this information, the Meeting was informed that in Appendix A of WP/19, the ICAO Electronic Bulletin "*Civil Aviation Training Policy*," dated 15 October 2013, was included, in Appendix B of NE/19 a list of training courses offered by the CAR Region Civil Aviation Technical Centres was presented, and in Appendix C the "CAR Region Regional Aviation Training Plan" was shown.

4.2.2 Results from the First Meeting of Directors of Civil Aviation Training Centres in the NAM/CAR Regions (NAM/CAR/CATC/1)

4.2.2.1 With the presentation of WP/20, the information from NE/19 was complemented, and the outcomes from the First Meeting of Civil Aviation Training Centres in the NAM/CAR Regions (NAM/CAR/CIAC/1) and the creation of the NAM/CAR Civil Aviation Training Centres Working Group (NAM/CAR/CATC/WG) were discussed. Both, the documentation and the NAM/CAR/CIAC/1 Report, are available in the following website:
http://www.icao.int/NACC/Pages/meetings-2013-namcarcatc1.aspx

4.2.2.2 The Meeting was informed that the Draft Conclusion NAM/CAR/CIAC/1/10 – *Establishment of the Civil Aviation Training Centres Working Group (NAM/CAR/CATC/WG)* was agreed in the NAM/CAR/CATC/1 meeting proposing the activation of the NAM/CAR/CATC/WG.

4.2.2.3 United States expressed their interest to participate in the NAM/CAR/CATC Meeting, in this regard, United States will nominate a member to the NAM/CAR/CATC/WG.

4.2.2.4 The Meeting was informed that ICAO will conduct a survey and asked States and Civil Aviation Training Centres of the NAM/CAR Region to complete the survey with the training needs for 2015 -2016 period by June 2014.

Agenda Item 5 Review of NACC/WG Terms and Reference (ToRs) and Work Programme

5.1 The Secretariat presented WP/21 with a revision to the NACC Working Group Terms of Reference. The Meeting approved the revision to the document as included in Appendix to WP/21 of this Meeting, for its presentation to the upcoming NACC/DCA/5.

Agenda Item 6 Other business

6.1 Host and dates for the next NACC/WG Meeting

6.1.1 Under WP/22, the Secretariat highlighted the previous meetings of the NACC Working Group (NACC/WG) that have been held as detailed in the Meetings Rotational programme mentioned below. In this regard, the next Meeting agreed to schedule the venue of the next NACC/WG in the Eastern Caribbean (E/CAR). The E/CAR States and Territories will soon coordinate the possible venue for the upcoming meeting and will timely inform to ICAO NACC Regional Office. Finally Dominican Republic offered to host the NACC/WG/6 in 2020.

Meeting	Year	States / Territories
NACC/WG/1	2007	Trinidad and Tobago (E/CAR)
NACC/WG/2	2008	Jamaica (C/CAR)
NACC/WG/3	2011	Guatemala (Central America)
NACC/WG/4	2014	Canada (NAM)
NACC/WG/5	2017	To be determined (E/CAR)
NACC/WG/6	2020	Dominican Republic (C/CAR)
NACC/WG/7	2023	To be determined (Central America)

6.2 Collaborative Safety Management

6.2.1 Canada (IP/36 and P/03) provided an overview of the safety management partnership between *Transport Canada*, the regulator, and *NAV CANADA*, which is the primary Air Navigation Services Provider (ANSP).

6.2.2 As a holder of an Air Traffic Services (ATS) Operations Certificate, *NAV CANADA* was required to establish a safety management programme that provides an internal system of oversight to ensure the safety provision of air navigation services. The regulation also required that the programme manager have direct access to the chief executive officer on operational system safety matters, have conduct risk assessments of current and proposed operational policies, plans and procedures, and coordinate the collection and analysis of operational risk related data.

6.2.3 The Canadian legislative framework required (and continues to require) detailed reporting of timely information concerning operational occurrences within the *National Civil Air Transportation System* (NCATS) translating into an early identification of potential hazards and system deficiencies. This framework requires cooperation with information requests and investigations by *Transport Canada* and the *Transportation Safety Board* (TSB).

6.2.4 The Collaborative Safety Management includes information about the Regulatory Framework the *Transport Canada's* Mission and an overview on Safety Management System (SMS) in *NAV CANADA*, containing reports, investigations, SMS visits, inspections and Hazard Identification and Risk Assesment (HIRA).

APPENDIX A
ROUTES AND PBN APPROACH PROCEDURES POST IMPLEMENTATION SUPPORT METRICS

OBJECTIVE:

Asses and quantify the real benefits in order to be compared with estimated previous values to the routes and SID/STAR/APCH PBN procedures implementation of a selected airspace.

INFORMATION SOURCE:

-Aircraft FMS
-Radar Data Processor (RDP) of ATM systems

ASSESSMENT CRITERIA:

-ID 24 Bit (ACID=additional)
-FL
-Lat-long tracks (geographic)

PROCEDURE:

1) Dates, hours and flight selection
2) Data validation (control test) – for information comparison of the same flights of both sources
3) Main information source selection
4) Information extraction
5) Ploting tracks and results measurement

For ATS surveillance system, it is recommended that information is provided in text format by the State according to the ASTERIX category (1, 2, 34, 48)

Example**:** AST Category 48:

I048/220	I048/240	I048/140	I048/100	I048/042	I048/090

APPENDIX B / APÉNDICE B

POINTS-OF-CONTACT (PoCs) TO COORDINATE MATTERS CONCERNING WRC-2015
PUNTOS DE CONTACTO PARA COORDINAR ASUNTOS RELATIVOS A LA CMR-2015

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APPENDIX / APÉNDICE C
TASK FORCE ON AIR TRAFFIC SERVICES INTER-FACILITY DATA COMMUNICATION (AIDC) IMPLEMENTATION
AIDC IMPLEMENTATION REGIONAL PLAN

State	1 **Does your current Flight Data Processing System (FDP) have the capacity to process CPL-LAM messages? (Y/N) If not, when will your FDP have this capacity? Indicate date If yes, please indicate FDP model, manufacturer and any relevant equipment information to identify the system.**	2 **Indicate with what adjacent FIR/ATS Unit is the CPL-LAM implementation required:**	3 **Please indicate intended date for CPL-LAM testing and implementation:**	4 **Please provide Point of Contact for further CPL-LAM coordination (name, title, e-mail, phone number)**	5 **If CPL-LAM has been implemented, please provide bilateral agreement(s) for its operation, if applicable (for example ICD document)**	6 **CPL-LAM messages are transmitted through AFTN circuits, what is the current AFTN circuit speed and, if any, upgrade for CPL-LAM implementation:**	7 **Provide comment or concerns for CPL-LAM implementation**
Cuba	yes - Oracle Version 9 modified by LITA-CUBA	FIR Miami	With Miami was started in 15 December 2011. Merida started in 9 March 2012.	Manuel Vega Rodríguez, Operations Management Havana ACC (537) 649-7281 manuelvega@aeronav.ecasa.avianet.cu, Víctor Manuel Machado Sánchez, Operation Management Havana ACC (537)-649-7281, email: victormachado@aeronav.ecasa.avianet.cu	NAM-ICD Version D	19200 BPS	We received many mistakes from the users in the FPL, in almost all fields. We have detected changes in the FPL forwarded by ACC´s or ANSP offices related to FPL´s presented by operators
		FIR Merida					
		FIR Kingston	TBD				
		FIR CENAMER	Segundo semestre del 2014				
		FIR Haiti	TBD				
Dominican Republic	Yes - For mid 2013 yes-TopSky-ATC, Thales ATM	KZMA/Miami ARTCC	Q2 - Ready to test	Julio Cesar Mejia A. Enc. ATM, jmejia@idac.gov.do, 809 274-4322. Ext. 2103 + Fernando Casso,fcasso@idac.gov.do	NAM-ICD Versión D	AMHS: 64 Kbps	
		TJZS/San Juan CERAP	Q2 - Ready to test				
		TNCF/Curazao ACC	Q2 - Ready to test				
		MTEG/Port au Prince ACC	TBD				
Mexico	Yes- FDP=EUROCAT-X.V3 Model, Producer= THALES ATM, INFO= Four Control Centres, all Mexico covered	Central America (COCESNA/CENAMER)	Mexico FDP system available	Ing. Jose de Jesus Jimenez Director de Sistemas Digitales SENEAM/SCT/MÉXICO xxxxx@sct.gob.mx 55 57 86 55 32	NAM-ICD Versión D	19200 bps	Mexico already counts with the implementation of CPL/LAM information exchange between: MZT ≤ ≥ LAX, MZT ≤ ≥ ABQ, MTY ≤ ≥ABQ, MTY ≤ ≥HOU, MID ≤ ≥ HOU, MID ≤ ≥ HAB

State	1 **Does your current Flight Data Processing System (FDP) have the capacity to process CPL-LAM messages? (Y/N) If not, when will your FDP have this capacity? Indicate date If yes, please indicate FDP model, manufacturer and any relevant equipment information to identify the system.**	2 **Indicate with what adjacent FIR/ATS Unit is the CPL-LAM implementation required:**	3 **Please indicate intended date for CPL-LAM testing and implementation:**	4 **Please provide Point of Contact for further CPL-LAM coordination (name, title, e-mail, phone number)**	5 **If CPL-LAM has been implemented, please provide bilateral agreement(s) for its operation, if applicable (for example ICD document)**	6 **CPL-LAM messages are transmitted through AFTN circuits, what is the current AFTN circuit speed and, if any, upgrade for CPL-LAM implementation:**	7 **Provide comment or concerns for CPL-LAM implementation**
United States	Yes - The domestic FDP is integrated into the Host Automation / En Route Automation Modernization (ERAM) systems. Lockheed-Martin (LMCO) is the prime contractor for the Host/ERAM system. The flight data function of the San Juan Combined Center / Radar Approach Control (CERAP) is integrated into the Miami Air Route Traffic Control Center (ARTCC) Host/ERAM. Ocean21 provides its own FDP processing in the oceanic environment. LMCO is also the contractor for Ocean21.	Current United States Domestic North American interfaces which have been implemented include: Canada (Seattle ARTCC-Vancouver ACC; Salt Lake ARTCC-Edmonton ACC/Winnipeg ACC; Minneapolis ARTCC-Winnipeg ACC/Toronto ACC; Cleveland ARTCC-Toronto ACC/Mazatlan ACC; Los Angeles ARTCC-Mazatlan ACC Cuba – Miami ARTCC – Havana ACC.ACC; Boston ARTCC-Montreal ACC/Moncton ACC. Mexico – Houston ARTCC-Merida ACC/Monterrey ACC; Albuquerque ARTCC-Monterrey. Class I Miami ARTCC interface with Havana ACC operational.	Future initiatives being evaluated: - Additional NAM ICD Phase II message set enhancements (beyond CPL & LAM) of the Miami ARTCC – Havana ACC interface are being planned airspace/system capabilities for potential interfaces: Cuba Upgrade, Nassau FIR and Santo Domingo FIR tentatively beginning development in 2014. - Analysis of Caribbean and oceanic airspace/system capabilities for potential interfaces.	Dan Eaves, Federal Aviation Administration Air Traffic Control Specialist, Dan.Eaves@FAA.gov, 202-385-8492	NAM-ICD Versión D	US- Mexico: NADIN/AFTN 64 kbps X.25 US- Cuba : MEVA II 19.2 kbps connection to NADIN	None

State	1 **Does your current Flight Data Processing System (FDP) have the capacity to process CPL-LAM messages? (Y/N) If not, when will your FDP have this capacity? Indicate date If yes, please indicate FDP model, manufacturer and any relevant equipment information to identify the system.**	2 **Indicate with what adjacent FIR/ATS Unit is the CPL-LAM implementation required:**	3 **Please indicate intended date for CPL-LAM testing and implementation:**	4 **Please provide Point of Contact for further CPL-LAM coordination (name, title, e-mail, phone number)**	5 **If CPL-LAM has been implemented, please provide bilateral agreement(s) for its operation, if applicable (for example ICD document)**	6 **CPL-LAM messages are transmitted through AFTN circuits, what is the current AFTN circuit speed and, if any, upgrade for CPL-LAM implementation:**	7 **Provide comment or concerns for CPL-LAM implementation**
COCESNA	FDP System to be upgraded in 2013	Merida, Panama (in the future analyses connection with Havana, kingston, Bogota and Guayaquil)	COCESNA still does not has date for testing and implementation	Juan Carlos Trabanino, Director ACNA, juan.trabanino@cocesna.org, (504) 2234 3360 ext. 1510 Roger Perez (roger.perez@cocesna.org) Mauricio Matus (mauricio matus@cocesna.org) Carlos Carbajal (carlos.carbajal@cocesna.org)	NAM-ICD Version D	N/A (the current AFTN circuit speed is 1.2 kbps internally and 9.6 kbps the internationals)	The ability to process this type of messages will be complete once COCESNA have installed the New Control Centre. The required bandwith must be analyzed prior to the implementation of this type of messages, however, considering only text messages we estimated that the actual bandwith wia AFTN is sufficient.
		Havana					
		Panama					
		Merida					
		Kingston					
		Bogota					
		Guayaquil					
Bahamas					NAM-ICD Version D		
Haiti					NAM-ICD Version D		
Trinidad and Tabago	Yes. Flight Data Processing Sub-System integrated within the Selex Air Traffic Control Automatic System supplied by SELEX S.I S.p.A.	SANTA MARIA ACC	Currently testing system capability with a goal to implement by 3rd quarter 2014.	Alexis Brathwaite Manager ATS, TTCAA, abrathwaite@caa.gov.tt 1 868 668 8222	NAT ICD	Current AFTN Circuit Speed is 9600 bps	
		NY ARTCC	Currently testing system capability with a goal to implement by 3rd quarter 2014.		NAT CD		

State	1 **Does your current Flight Data Processing System (FDP) have the capacity to process CPL-LAM messages? (Y/N) If not, when will your FDP have this capacity? Indicate date If yes, please indicate FDP model, manufacturer and any relevant equipment information to identify the system.**	2 **Indicate with what adjacent FIR/ATS Unit is the CPL-LAM implementation required:**	3 **Please indicate intended date for CPL-LAM testing and implementation:**	4 **Please provide Point of Contact for further CPL-LAM coordination (name, title, e-mail, phone number)**	5 **If CPL-LAM has been implemented, please provide bilateral agreement(s) for its operation, if applicable (for example ICD document)**	6 **CPL-LAM messages are transmitted through AFTN circuits, what is the current AFTN circuit speed and, if any, upgrade for CPL-LAM implementation:**	7 **Provide comment or concerns for CPL-LAM implementation**
		SAL, French Guyanne, Maiquetia, San Juan	TBD		TBD		
Curacao		Maiquetia ACC		Jacques Lasten, ATS Manager, DC-ANSP, j.lasten@dc-ansp.org			
		Kingston ACC			NAM-ICD Version D		
Costa Rica	No - FDP Server must upgrade	FIR CENAMER	TBD	Fernando Naranjo Elizondo fer_nar_eli@hotmail.com Warren Quirós navegacionaerea.cns@dgac.go.cr +50622314924	NAM-ICD Version D	1200 bps	AIDC may be implemented until the upgrade of El Coco Center
		FIR MANAGUA	TBD				
		FIR PANAMA	TBD				

APPENDIX D
TASK FORCE ON AIR TRAFFIC SERVICES INTER-FACILITY DATA COMMUNICATION (AIDC) IMPLEMENTATION

1. Background

During the first ANI/WG meeting, an AIDC Implementation Task Force was formed in order to streamline related air navigation implementation activities. This Task Force shall complete AIDC implementation in accordance with the Regional AIDC Implementation Plan as well as update and report progress to the ANI/WG based on the action plan for these tasks.

2. Responsibilities

The Task Force is responsible for:

a) Work Programme Management
b) Analysis and coordination of mitigation/solution actions for duplicate/missing Filed Flight Plans (FPLs)
c) Coordination, implementation, and trials for AIDC implementation (Regional Plan)

3. Working Methods

The Task Force will:

a) Present its work programme containing activities in terms of objectives, responsibilities, deliverables and timelines
b) Avoid work duplication within the ANI/WG and maintain close coordination among the existing entities to optimize use of available resources and experience
c) Designate, as necessary, Ad hoc Groups to work on specific topics and activities and organize clearly defined tasks and activities
d) Coordinate tasks to maximize efficiency and reduce costs via electronic means including emails, telephone and teleconference calls, and convene meetings as necessary
e) Report on and coordinate the progress of assigned tasks to the ANI/WG

4. Membership

Task Force Member-Name:	State/T/IO	email
Pedro Vicente	Canada	vicentpe@navcanada.ca
Fernando Naranjo Elizondo, Costa Rica	Costa Rica	fer_nar_eli@hotmail.com;
Warren Quirós		navegacionaerea.cns@dgac.go.cr;
Jorge Centella	Cuba	jorge.centella@iacc.avianet.cu
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Víctor Manuel Machado		victormachado@aeronav.ecasa.avianet.cu
Julio Mejia	Dominican Republic	jmejia@idac.gov.do
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Rafael Castro Castro,	México	rcastroc@sct.gob.mx;
Alberto Romero		aromerof@hotmail.com;
Alexis Brathwaite	Trinidad and Tobago	abrathwaite@caa.gov.tt
Dan Eaves	United States	dan.eaves@faa.gov
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Mayda Alicia Ávila	COCESNA	mavila@cocesna.org
Abang Floyd	IATA	abangf@iata.org

APPENDIX / APÉNDICE E
TASK FORCE ON AIR TRAFFIC SERVICES INTER-FACILITY DATA COMMUNICATION (AIDC) IMPLEMENTATION
WORK PROGRAMME

Tasks	Deliverables	Start Date	End Date	Responsible	Remarks
Review by each Member of ToR and draft work programme	Comments to AIDC TF	28/Oct/13	12/Nov/13	All Members	Completed
Final Review and definition of Work Programme	Comments to ToR and Work Programme to ICAO	12/Nov/13	15/Nov/13	AIDC TF Rapporteur	Completed
Comments to Rapporteur on Regional AIDC Plan	Update of AIDC Region Plan	28/Oct/13	25/Dec/13	AIDC TF Rapporteur	Completed
AIDC Trials and operational activities	Evaluation of ICDs and comments for most appropriate ICD to adopt	29/Oct/13	16/Dec/13	USA/CUBA	Completed
	Final recommendations for adoption of ICD Doc	28/Oct/13	27/Jan/14	All Members	Completed
	Evaluation-recollection of AIDC requirements from each ATC Unit	17/Dec/13	14/Jan/14	All Members	Rescheduled for 21 Feb 2014
	Recommendation and operation suggestions for trials/implementation of AIDC	17/Dec/13	14/Jan/14	All Members	Ongoing
	Testing and implementation procedures	18/Mar/14	30/Abr/14	All Members	
	AIDC trials and implementations carried out	01/May/14	31/Dec/15	All Members	
AIDC TF Meeting	Review progress and TF activities	25/Apr/14	25/Apr/14	AIDC TF Rapporteur- All Members	
Missing/ duplication of FPLs	Recollection of results and lessons learned from FPL solutions carried out in E/CAR, CA and USA-Cuba	29/Oct/13	25/Jan/14	COCESNA, USA, Cuba, Trinidad and Tobago, Dom. Rep.	Completed
	Evaluations, results and observations to Rapporteur	30/Jan/14	30/Jan/14	All Members (or Ad Hoc group)	Completed
	Draft Action plan	31/Jan/14	26/Mar/14	AIDC TF Rapporteur	Ad-Group: 28 Feb 2014
	Approved action plan	9/Apr/14	18/Apr/14	All Members	
	Executed action plan	9/Apr/14	31/Dec/15	All Members	
2nd AIDC TF Teleconf	Follow-up TF activities	3/Dec/13	3/Dec/13	All Members	Completed
3rd AIDC TF Teleconf	Track actions and follow up on activities	17/Jan/14	17/Jan/14	All Members	Completed
4th AIDC TF Teleconf	Track actions and preparation of NACC AIDC TF Meeting	18/Feb/14	18/Feb/14	All Members	Completed
5th AIDC TF Teleconf	Track actions and review for NACC Meeting	March 18 2014	March 18 2014	All Members	
Coordination of progress within TF Members	Inputs to ANI/WG Rapporteur for presentation to NACC/WG/04 Meeting	31/Jan/14	31/Jan/14	AIDC TF Rapporteur	Completed

APPENDIX F
ANI/WG ADS-B TASK FORCE WORK PROGRAMME

TASK NAME	DELIVERABLE	DATE START	DATE END	PERCENTAGE COMPLETED	RESPONSIBLE
Activities/Tasks ADS- B		1/8/13	31/12/18		
1. Formation of ADS-B TF	Participant List	1/8/13	1/8/13	100 %	Group Members
2. Terms of reference	Present Working Group Terms of Reference	1/8/13	1/8/13	100 %	Cuba (Rapporteur)
3. Develop Work Programme		2/8/13	14/8/13	100%	Cuba (Rapporteur)
3.1 Provide to OACI the Work Programme	Work Programme	14/8/13	14/8/13	100%	Cuba (Rapporteur)
4. Approve ADS-B TF Work Programme		24/01/14	24/01/14	100%	Group Members
5. Begin Work Programme implementation		31/10/13	31/12/18		Group Members
5.1 Develop ADS-B survey		23/01/14	14/02/14	100%	COCESNA
5.1.1 Send ICAO survey for distribution to the States of the region	Survey on the ADS –B status	28/02/14	28/02/14	100%	COCESNA
5.1.2 Collect survey results	Current situation of ADS- B in the States	28/02/14	30/4/14		ICAO NACC
5.2 Surveying information on the implementation of ADS -B aircraft	survey on the status of ADS -B aircrafts	23/01/14	30/4/14		IATA
5.2.1 Information on implementation of ADS -B aircraft	ICAO Current Status of ADS- B aircraft (Recommendation of target dates for the ADS -B)	30/04/14	30/04/14		IATA
6. Conduct of Tests w ith ADS-B		8/2/13	5/20/15		States/Territories of the Region
6.1 Continue ADS-B that are being conducted		8/2/13	5/20/15		Canada , Cuba, Mexico, United States, and COCESNA
6.2 Send to TF members the guidance for testing	Guidance for testing	2/13/14	2/13/14	100%	Cuba (Rapporteur)

TASK NAME	DELIVERABLE	DATE START	DATE END	PERCENTAGE COMPLETED	RESPONSIBLE
6.3 Start of ADS-B trials for those States that have not yet done so/ list of States with dates	Support for those who wish to trials	30/10/14	29/5/15		Costa Rica, Jamaica, Nicaragua Trinidad and Tobago
6.4 Sending quarterly to ICAO any deficiencies of the trials	Test results	30/10/13	29/5/15		Group Members
7. Develop relevant operational requirements for the ADS-B implementation		15/11/13	30/04/14		United States
7.1 Provide relevant operational requirements for the ADS-B implementation	Guide with relevant operational requirements for the ADS-B implementation	30/04/14	30/04/14		United States
8. Collect information on national ADS- B implementation plans	States with implementation plans	23/1/14	30/04/14		ICAO NACC
9. Follow-up meeting to the development of ADS- B	Final Report	19/05/14	23/05/14		ANI/WG ADS-B TF
10. Assist the ADS- B operational implementation process	LoA´s between regional states Metrics	29/5/15	31/12/18		States/Territories of the Region
11. ADS- B operational implementation process Follow-up	ANRF´s	31/12/14	31/12/14		ANI/WG ADS-B TF

APÉNDICE G
TERMINOS DE REFERENCIA DEL GRUPO DE TAREA PARA EL ANÁLISIS OPERACIONAL DEL DOCUMENTO GOLD EDICIÓN 2

1. Antecedentes

Durante la primera reunión del ANI/WG, se acordó activar un Grupo de Tarea sobre Revisión Operacional del Documento Gold/CPDLC con el fin de hacer más eficientes las actividades de implementación relacionadas con navegación aérea. Este Grupo de Tarea habrá de examinar el Documento Mundial de Enlace de Datos Operacional (GOLD) para su aplicación en las Regiones NAM/CAR e identificar cualquier diferencia potencial regional, así como actualizar y notificar su avance al ANI/WG con base en el plan de acción para estas tareas. La Reunión NACC/WG/4 agregó una nueva tarea para apoyar la implementación del CPDLC.

2. Responsabilidades

El Grupo de Tarea es responsable de:

a) Gestión del Programa de Trabajo
b) Revisar el Documento GOLD en cuanto a su aplicación en las Regiones NAM/CAR
c) Identificar cualquier diferencia regional y documentarlas como addenda potenciales para la siguiente edición de GOLD
d) Brindar asistencia y apoyo a la coordinación de la implementación de aplicaciones CPDLC
e) Hacer recomendaciones al ANI/WG sobre la adopción de GOLD en las Regiones NAM/CAR

3. Métodos de trabajo

El Grupo de Tarea:

a) Presentará su programa de trabajo conteniendo actividades en términos de objetivos, responsabilidades, resultados entregables y tiempos
b) Evitará duplicación de trabajo dentro del ANI/WG y mantendrá estrecha coordinación entre las entidades existentes para optimizar el uso de recursos y experiencia disponibles
c) Designará si así lo considera Grupos Ad hoc para trabajar en temas y actividades específicas y organizar claramente definidas las tareas y actividades
d) Coordinará las tareas para maximizar eficiencia y reducir costos a través de medios electrónicos incluyendo emails, teléfono y teleconferencias, y convocará reuniones cuando sea necesario
e) Notificará y coordinará el avance de las tareas asignadas al ANI/WG

4. Membership

Task Force Member- Name:	State/T/IO	email
Noel Dwyer (Rapporteur)	Canada	Noel.dwyer@navcanada.ca
Jacques Lasten	Curacao	j.lasten@dc-ansp.org
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Madison Walton	United States	madison.walton@faa.gov
Tom Kraft	United States	tom.kraft@faa.gov
Steven Pinkerton	United States	steven.pinkerton@faa.gov
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Marco Vidal	IATA	vidalm@iata.org
Kieran Ocarroll	IATA	ocarrollk@iata.org

APPENDIX / APÉNDICE H
GOLD TASKFORCE WORK PROGRAMME

Tasks	Deliverables	Start Date	End Date	Responsible	Remarks
Review by each Member of ToR and draft work programme	Comments to GOLD TF	28/Oct/13	8/Nov/13	All Members	Completed
Final Review and definition of Work Programme	Comments to ToR and Work Programme to ICAO	15/Nov/13	15/Nov/13	GOLD TF Rapporteur	Completed
Review of GOLD Doc for applicability in the NAM/CAR Regions	Comments to Rapporteur on understanding GOLD Document	28/Oct/13	25/Nov/13	All Members	Completed General document and focus on Chap 3 and 4, Appendix E based on each FIR experience
	Identification of regional differences and documenting them as potential additions to the next edition of GOLD, draft 1	26/Jun/14	16/Dec/14	All Members	
	Identification of regional differences and documenting them as potential additions to the next edition of GOLD, draft 2	17/Jan/15	14/Nov/15	All Members	
	Regional differences in GOLD applicability to report to ICAO	15/Nov/15	15/Dec/15	GOLD TF Rapporteur	
	Recommendation to the ANI/WG on adoption of GOLD in the NAM/CAR Regions	28/Oct/13	27/Jan/14	All Members	Completed NACC/WG/04
	Final recommendations for adoption of GOLD Doc	30/Jan/14	30/Jan/14	GOLD TF Rapporteur	Completed NACC/WG/04

Tasks	Deliverables	Start Date	End Date	Responsible	Remarks
2nd GOLD TF Teleconf	Review of GOLD specifics	26/Nov/13	26/Nov/13	All Members	Completed
3rd GOLD Teleconf	Analysis of GOLD and preparation of inputs to the NACC/WG/04 Meeting	10/Jan/14	10/Jan/14	All Members	Completed
Coordination of progress among TF Members	Inputs to ANI/WG Chairman for presentation to NACC/WG/04 Meeting	23/Jan/14	23/Jan/14	Rapporteur	Completed
Assistance and supporting the coordination of the implementation of CPDLC applications	Update CPDLC Regional Plan Identification of implementation gaps the operational considerations and recommendations for the adoption of GOLD, Edition 2	1/Apr/14	31/Dec/15	GOLD TF IATA Interested States	

APPENDIX I
TERMS OF REFERENCE OF THE
ATS MESSAGE HANDLING SYSTEM (AMHS) IMPLEMENTATION TASK FORCE

1. Background

During the first ANI/WG meeting, an AMHS Implementation Task Force was formed in order to streamline related air navigation implementation activities. This Task Force shall complete AMHS implementation in accordance with the Regional AMHS Implementation Plan as well as update and report progress to the ANI/WG based on the action plan for these tasks.

2. Responsibilities

The Task Force is responsible for:

a) Work Programme Management
b) Coordination, implementation and trials of ATN ground applications/AMHS implementation (AMHS Regional Plan)
c) Revising and updating the IPv4 address plan and other CAR Region technical implementation issues in accordance with ICAO technical principles and guidelines

3. Working Methods

The Task Force will:

a) Present its work programme containing activities in terms of objectives, responsibilities, deliverables and timelines
b) Avoid work duplication within the ANI/WG and maintain close coordination among the existing entities to optimize use of available resources and experience
c) Designate, as necessary, Ad hoc Groups to work on specific topics and activities and organize clearly defined tasks and activities
d) Coordinate tasks to maximize efficiency and reduce costs via electronic means including emails, telephone and teleconference calls, and convene meetings as necessary
e) Report on and coordinate the progress of assigned tasks to the ANI/WG

4. *Work Programme*

Tasks	Deliverables	Start Date	End Date	Responsible	Status	Remarks/ Follow-Up
Revision of CAR IPv4 Addressing Scheme	Study Results of Configuration of IP Backbone Network	27 Sept 2013	Feb 2014	Dominican Republic, United States, COCESNA	Valid	Study pending review of current IPv4 address allocation
	Revised/updated IPv4 plan for CAR Region to remove redundancies	27 Sept 2013	Feb 2014	Dominican Republic (Fernando Casso)	Completed	Final version to be sent to ICAO: April 2014
Coordination, implementation and trials for ATN ground applications/AMHS implementation (AMHS Regional Plan)	Updates AMHS Regional Plan	Feb 2014	October 2015	United States	Valid	
	Assistance to AMHS implementing States	Feb 2014	October 2016	All	Valid	
	Recommendations for facilitating implementation of AMHS	Jan 2014	Oct 2014	Dominican Republic, United States	Valid	
CAR Router Plan	Revised router plan based on requirements from Member States	18 Nov 2013	April 2014	Dominican Republic, United States COCESNA	Valid	United States-COCESNA Teleconference held on November 2013. Action: United States, Dominican Republic and COCESNA, will continue reviewing plan
AMHS Transition Plan	Revised and updated ATN Transition Plan	18 Nov 2013	April 2014	Cuba, Dominican Republic, United States, COCESNA	Valid	
Training	Periodically identify AMHS training matters as needed	27 Sept 2013	Sept 2016	All	On-going	

5. Membership

Task Force Member- Name:	State/T/IO	email
Carlos Jimenez Guerra	Cuba	carlosm.jimenez@iacc.avianet.cu
Carmen Dearmas		carmen.dearmas@iacc.avianet.cu
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Fernando A. Casso	Dominican Republic	Fernando.casso@idac.gov.do
Rafael Castro Castro	Mexico	rcastroc@sct.gob.mx;
José de Jesús Jiménez Medina, Mexico		sasin_mx@yahoo.com; disda@sct.gob.mx;
Raul van Heyningen	Sint Maarten	rvanheyningen@sxmairport.com
Veronica Ramdath	Trinidad-Tobago	vramdath@gmail.com
Randy Gomez		rgomez@caa.gov.tt
Emmanuel Rigby	Turks and Caicos Islands	emmanuelrigby@tciairports.com
Dulce M. Rosés (Rapporteur)	United States	dulce.roses@faa.gov
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Eduardo Vega		eduardo.vega@cocesna.org
Roger Pérez		roger.perez@cocesna.org

Update: October 2013	CAR Region AMHS Implementation Matrix (2013-2016)												
Administration	STATUS	System Description					System implementation milestones				(COM CHART) Connection with	POC	Remarks
		Location of Facility	AMHS Facility Type	AMHS Vendor	Current Facility Type	Current Vendor	AMHS System Procurement Date	AMHS System Implementation Date	AMHS Interoperability Test	AMHS Service Cutover			
Antigua & Barbuda	see Trinidad and Tobago	Antigua									Port-of-Spain		Same as Piarco
Aruba	Under study	Aruba	AMHS (MTA + UA)	TBD			2Q2015	2Q 2015	4Q2015-1Q2016	2Q 2016	United States	Joselito Andrade	
Bahamas	Not reported	Nassau					1Q2011 mtg FAA Feb11	Jun 2011	TBD	TBD	United States	Hillard Walker	Q2 2011: will engage an Isode Integrator to provide an AMHS
Canada											United States		
Cayman Islands	Under study	Grand Cayman	MTA + UA	TBD	AFTN switch	Copperchase	TBD	TBD	TBD	TBD	United States	Wayne DaCosta	
Dominican Republic	Implemented	Santo Domingo	AMHS - MTA/UAs	Ubitech	AFTN Switch		already	already	Sep 2013	Oct 2013	United States	Fernando Casso	
Cuba	98% Developed and pending equipment acquisition	La Havanna	AMHS - MTA/UAs	ISODE/ In-house	AFTN Switch	Own system	N/A	TBD	April 2014	TBD	United States	Carlos Jimenez y Layla Rodriguez	
							N/A	TBD	4Q2014	TBD	Mexico (Merida)		
Haiti	Under Study	Port-au-Prince	TBD	TBD	AFTN User	DSA	TBD	TBD	TBD	TBD	United States	Emmanuel Jacques	
COCESNA	Under study	Tegucigalpa	AMHS Gateway	ISODE/ In-house	AFTN Switch	COCESNA	N/A	TBD	TBD	TBD	Belize - MTA	Mayda Avila	
								TBD	TBD	TBD	Guatemala - MTA	Oscar Villela	
								TBD	TBD	TBD	Managua - MTA		
								TBD	TBD	TBD	Mexico - MTA		
								TBD	TBD	TBD	San Jose - MTA		
								TBD	TBD	TBD	San Pedro Sula - MTA		
								TBD	TBD	TBD	San Salvador - MTA		
								TBD	TBD	TBD	United States		
Jamaica	Scheduled for testing	Kingston	AMHS MTA/UAs	TBD	AFTN Switch	TBD	Q2-2012		2Q 2014	TBD	United States	Gordon/Derrick Grant	
Mexico	Pending System installation	Mexico	AMHS - MTA/UAs	THALES	AFTN Switch	Own system	2013-2016 (by phases)	2013-2016 (by phases)	TBD	TBD	Centro-America	Rafael Castro y Jose de Jesus Jimenez	
									4Q 2014	TBD	United States		
									4Q2014	TBD	Cuba		
Curacao	Scheduled for testing	Curacao	AMHS MTA	Ubitech	AMHS System	Ubitech	May 2012	Jul 2012	TBD		Caracas- MTA	Jean Getrouw	
									3Q 2014	4Q 2014	United States	Phylogene Mattheeuw	
St Maarten	Scheduled for testing	Princess Juliana	AMHS MTA	Ubitech	AMHS System	Ubitech	May 2012	Jul 2012	1Q 2014	2Q 2014	United States	Raul Van Heyningen	
Trinidad and Tobago	Scheduled for testing	Port-of-Spain	AMHS MTA/UAs/Gateway	Comsoft	AFTN Switch	Comsoft	Apr 2012	Sep 2012	Nov 2013	Nov 2013	Anguilla	Veronica Ramdath	
									Nov 2013	Nov 2013	Antigua	Randy Gomez	
									Nov 2013	Nov 2013	Barbados-UA		
									TBD		Caracas- MTA		
									Nov 2013	Nov 2013	Dominica - UA		
									Nov 2013	Nov 2013	Fort-de-France- UA		
									Nov 2013	Nov 2013	Georgetown-UA		
									Nov 2013	Nov 2013	Grenada-UA		
									Nov 2013	Nov 2013	Montserrat-UA		
									Nov 2013	Nov 2013	Pointe-a-Pitre- MTA		
									Nov 2013	Nov 2013	Saint Kitts and Nevis-UA		
									Nov 2013	Nov 2013	Saint Lucia-UA		
									Nov 2013	Nov 2013	Saint Vincent-UA		
									January 2014	2 Q 2014	United States		
Turks and Caicos	Under study	Providenciales	MTA	Stonefield Sys	AFTN Term	Stonefield Sys	TBD	TBD	TBD	TBD	United States	Emmanuel Rigby John T. Smith	
United States	Scheduled for testing	Atlanta	AMHS G/W	U.S.A.	AFTN Switch	U.S.A.	now	now	4Q2015-1Q2016	2Q 2016	Aruba	Dulce Roses	
									TBD	TBD	Brazil		
									TBD	TBD	Caracas		
									TBD	TBD	Cayman		
									TBD	TBD	Centro America		
									3Q 2014	2 Q 2014	Curacao		
									TBD	TBD	Turks and Caicos		
									April 2014	TBD	La Habana		
									TBD	TBD	Kingston		
									TBD	TBD	Lima		
									4Q 2014	TBD	Mexico		
									TBD	TBD	Nassau-S		
									TBD	TBD	Panama		
									TBD	TBD	Port-au-Prince		
									January 2014	2 Q 2014	Port-of-Spain		
									1Q 2014	2Q 2014	Saint Maarten		
									Sep 2013	Oct 2013	Santa Domingo		

APPENDIX / APÉNDICE K
PROPOSAL OF INTERNET PROTOCOL (IP) PLAN FOR T-T ROUTERS BETWEEN STATES OF THE NAM/CAR REGION / PROPUESTA DE PLAN DE PROTOCOLO DE INTERNET (IP) PARA ENRUTADORES T-T ENTRE ESTADOS DE LAS REGIÓNES NAM/CAR

Network / Red: 10.31.224.0/19

No.	Subnet / Subred	Admin & local host / Admin y Receptor local	Via	Links / Enlace	IPv4 Address / Dirección IPv4
1	10.31.224.0/30	Anguila	E/CAR	**Network Address / Dirección de Red**	10.31.224.0/30
				Trinidad & Tobago (Piarco)	10.31.224.1/30
				Anguila	10.31.224.2/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.3/30
2	10.31.224.4/30	Antigua and Barbuda / Antigua y Barbuda	E/CAR	**Network Address / Dirección de Red**	10.31.224.4/30
				Trinidad & Tobago (Piarco)	10.31.224.5/30
				Antigua	10.31.224.6/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.7/30
3	10.31.224.8/30	Aruba	MEVA	**Network Address / Dirección de Red**	10.31.224.8/30
				Jamaica (Kingston)	10.31.224.9/30
				Aruba	10.31.224.10/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.11/30
4	10.31.224.12/30	Bahamas / Nassau	MEVA	**Network Address / Dirección de Red**	10.31.224.12/30
				Haiti (Port-au-Prince)	10.31.224.13/30
				Bahamas / Nassau	10.31.224.14/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.15/30
5	10.31.224.16/30	Barbados	E/CAR	**Network Address / Dirección de Red**	10.31.224.16/30
				Barbados	10.31.224.17/30
				Trinidad & Tobago (Piarco)	10.31.224.18/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.19/30
6	10.31.224.20/30	Belice / Belize	CAMSAT	**Network Address / Dirección de Red**	10.31.224.20/30
				Belice / Belize	10.31.224.21/30
				Honduras (COCESNA) Tegucigalpa	10.31.224.22/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.23/30
7	10.31.224.24/30	British Virgin Islands / Islas Virgenes Británicas - Tortola	MEVA	**Network Address / Dirección de Red**	10.31.224.24/30
				British Virgin Islands / Islas Virgenes Británicas - Tortola	10.31.224.25/30
				United States / Estados Unidos (Miami)	10.31.224.26/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.27/30
8	10.31.224.28/30	Cayman Islands / Islas Caimanes	MEVA	**Network Address / Dirección de Red**	10.31.224.28/30
				Cayman Islands / Islas Caimanes	10.31.224.29/30

No.	Subnet / Subred	Admin & local host / Admin y Receptor local	Via	Links / Enlace	IPv4 Address / Dirección IPv4
				Jamaica (Kingston)	10.31.224.30/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.31/30
9	10.31.224.32/30	Costa Rica (San José)	CAMSAT	**Network Address / Dirección de Red**	10.31.224.32/30
				Costa Rica (San José)	10.31.224.33/30
				Honduras (COCESNA) Tegucigalpa	10.31.224.34/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.35/30
10	10.31.224.36/30	Cuba /Havana - La Habana	MEVA	**Network Address / Dirección de Red**	10.31.224.36/30
				Cuba (Havana / La Habana)	10.31.224.37/30
				Haiti (Port-au-Prince)	10.31.224.38/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.39/30
11	10.31.224.40/30	Cuba /Havana - La Habana	MEVA	**Network Address / Dirección de Red**	10.31.224.40/30
				Cuba (Havana / La Habana)	10.31.224.41/30
				Jamaica (Kingston)	10.31.224.42/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.43/30
12	10.31.224.44/30	Cuba /Havana - La Habana	MEVA	**Network Address / Dirección de Red**	10.31.224.44/30
				Cuba (Havana / La Habana)	10.31.224.45/30
				Honduras (COCESNA) Tegucigalpa	10.31.224.46/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.47/30
13	10.31.224.48/30	Cuba /Havana - La Habana	TBD	**Network Address / Dirección de Red**	10.31.224.48/30
				Cuba (Havana / La Habana)	10.31.224.49/30
				México (Mérida)	10.31.224.50/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.51/30
14	10.31.224.52/30	Curaçao / Curazao	MEVA	**Network Address / Dirección de Red**	10.31.224.52/30
				Curaçao / Curazao	10.31.224.53/30
				Dominican Republic / República Dominicana	10.31.224.54/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.55/30
15	10.31.224.56/30	Curaçao / Curazao	MEVA	**Network Address / Dirección de Red**	10.31.224.56/30
				Curaçao / Curazao	10.31.224.57/30
				Haiti (Port-au-Prince)	10.31.224.58/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.59/30
16	10.31.224.60/30	Curaçao / Curazao	MEVA	**Network Address / Dirección de Red**	10.31.224.60/30
				Curaçao / Curazao	10.31.224.61/30
				Puerto Rico (San Juan)	10.31.224.62/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.63/30

No.	Subnet / Subred	Admin & local host / Admin y Receptor local	Via	Links / Enlace	IPv4 Address / Dirección IPv4
17	10.31.224.64/30	Dominican Republic / República Dominicana	MEVA	**Network Address / Dirección de Red**	10.31.224.64/30
				Dominican Republic / República Dominicana (Santo Domingo)	10.31.224.65/30
				Haiti (Port-au-Prince)	10.31.224.66/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.67/30
18	10.31.224.68/30	Dominican Republic / Santo Domingo	MEVA	**Network Address / Dirección de Red**	10.31.224.68/30
				United States / Estados Unidos (Miami)	10.31.224.69/30
				Dominican Republic / Santo Domingo (Santo Domingo)	10.31.224.70/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.71/30
19	10.31.224.72/30	Dominica	E/CAR	**Network Address / Dirección de Red**	10.31.224.72/30
				Dominica	10.31.224.73/30
				Trinidad & Tobago (Piarco)	10.31.224.74/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.75/30
20	10.31.224.76/30	El Salvador / San Salvador	CAMSAT	**Network Address / Dirección de Red**	10.31.224.76/30
				El Salvador	10.31.224.77/30
				Honduras (COCESNA) Tegucigalpa	10.31.224.78/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.79/30
21	10.31.224.80/30	French Antilles / Antillas Francesas (Guadeloupe) / Point-a-Pitre	E/CAR	**Network Address / Dirección de Red**	10.31.224.80/30
				French Antilles / Antillas Francesas (Martinique) / Fort-de-France	10.31.224.81/30
				Trinidad & Tobago (Piarco)	10.31.224.82/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.83/30
22	10.31.224.84/30	French Antilles / Antillas Francesas (Guadeloupe) / Point-a-Pitre	E/CAR	**Network Address / Dirección de Red**	10.31.224.84/30
				French Antilles / Antillas Francesas (Guadeloupe) / Point-a-Pitre	10.31.224.85/30
				Trinidad & Tobago (Piarco)	10.31.224.86/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.87/30
23	10.31.224.88/30	Grenada	E/CAR	**Network Address / Dirección de Red**	10.31.224.88/30
				Grenada	10.31.224.89/30
				Trinidad & Tobago (Piarco)	10.31.224.90/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.91/30
24	10.31.224.92/30	Guatemala (La Aurora)	CAMSAT	**Network Address / Dirección de Red**	10.31.224.92/30
				Guatemala (La Aurora)	10.31.224.93/30
				Honduras (COCESNA) Tegucigalpa	10.31.224.94/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.95/30
25	10.31.224.96/30	Haiti / Port-au-Prince	MEVA	**Network Address / Dirección de Red**	10.31.224.96/30
				Haiti (Port-au-Prince)	10.31.224.97/30
				Jamaica (Kingston)	10.31.224.98/30

No.	Subnet / Subred	Admin & local host / Admin y Receptor local	Via	Links / Enlace	IPv4 Address / Dirección IPv4
				Broadcast Address / Dirección de Multidifusión	10.31.224.99/30
26	10.31.224.100/30	Honduras / Tegucigalpa (COCESNA)	CAMSAT	**Network Address / Dirección de Red**	10.31.224.100/30
				Honduras (COCESNA) Tegucigalpa	10.31.224.101/30
				Honduras (San Pedro Sula)	10.31.224.102/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.103/30
27	10.31.224.104/30	Honduras / Tegucigalpa (COCESNA)	CAMSAT	**Network Address / Dirección de Red**	10.31.224.104/30
				Honduras (COCESNA) Tegucigalpa	10.31.224.105/30
				Panamá	10.31.224.106/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.107/30
28	10.31.224.108/30	Honduras / Tegucigalpa (COCESNA)	CAMSAT	**Network Address / Dirección de Red**	10.31.224.108/30
				Honduras (COCESNA) Tegucigalpa	10.31.224.109/30
				United States / Estados Unidos (Miami)	10.31.224.110/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.111/30
29	10.31.224.112/30	Honduras / Tegucigalpa (COCESNA)	MEVA	**Network Address / Dirección de Red**	10.31.224.112/30
				Honduras (COCESNA) Tegucigalpa	10.31.224.113/30
				México (Mérida)	10.31.224.114/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.115/30
30	10.31.224.116/30	Honduras / Tegucigalpa (COCESNA)	CAMSAT	**Network Address / Dirección de Red**	10.31.224.116/30
				Honduras (COCESNA) Tegucigalpa	10.31.224.117/30
				NAM (Atlanta)	10.31.224.118/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.119/30
31	10.31.224.120/30	México / Mérida	TBD	**Network Address / Dirección de Red**	10.31.224.120/30
				México (Mérida)	10.31.224.121/30
				NAM (Atlanta)	10.31.224.122/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.123/30
32	10.31.224.124/30	Montserrat	E/CAR	**Network Address / Dirección de Red**	10.31.224.124/30
				Montserrat	10.31.224.125/30
				Trinidad & Tobago (Piarco)	10.31.224.126/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.127/30
33	10.31.224.128/30	Puerto Rico / San Juan	E/CAR	**Network Address / Dirección de Red**	10.31.224.128/30
				Puerto Rico (San Juan)	10.31.224.129/30
				United States / Estados Unidos (Miami)	10.31.224.130/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.131/30
34	10.31.224.132/30	Puerto Rico / San Juan	MEVA / REDDIG	**Network Address / Dirección de Red**	10.31.224.132/30
				Puerto Rico (San Juan)	10.31.224.133/30

No.	Subnet / Subred	Admin & local host / Admin y Receptor local	Via	Links / Enlace	IPv4 Address / Dirección IPv4
				SAM (Caracas)	10.31.224.134/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.135/30
35	10.31.224.136/30	Saint Kitts and Nevis / San Kitts y Nevis	E/CAR	**Network Address / Dirección de Red**	10.31.224.136/30
				Saint Kitts and Nevis / San Kitts y Nevis	10.31.224.137/30
				Trinidad & Tobago (Piarco)	10.31.224.138/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.139/30
36	10.31.224.140/30	Saint Kitts and Nevis / San Kitts y Nevis	E/CAR	**Network Address / Dirección de Red**	10.31.224.140/30
				Saint Kitts and Nevis / San Kitts y Nevis	10.31.224.141/30
				Trinidad & Tobago (Piarco)	10.31.224.142/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.143/30
37	10.31.224.144/30	Saint Lucia / Santa Lucia	E/CAR	**Network Address / Dirección de Red**	10.31.224.144/30
				Saint Lucia / Santa Lucia	10.31.224.145/30
				Trinidad & Tobago (Piarco)	10.31.224.146/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.147/30
38	10.31.224.148/30	Sint Marteen	MEVA	**Network Address / Dirección de Red**	10.31.224.148/30
				Sint Marteen	10.31.224.149/30
				United States / Estados Unidos (Miami)	10.31.224.150/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.151/30
39	10.31.224.152/30	Sint Marteen	E/CAR	**Network Address / Dirección de Red**	10.31.224.152/30
				Sint Marteen	10.31.224.153/30
				Trinidad & Tobago (Piarco)	10.31.224.154/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.155/30
40	10.31.224.156/30	Saint Vincent and the Grenadines / San Vicente y las Granadinas	E/CAR	**Network Address / Dirección de Red**	10.31.224.156/30
				Saint Vincent and the Grenadines / San Vicente y las Granadinas	10.31.224.157/30
				Trinidad & Tobago (Piarco)	10.31.224.158/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.159/30
41	10.31.224.160/30	Turks & Caicos Islands / Islas Turcas y Caicos - Grand Turk	MEVA	**Network Address / Dirección de Red**	10.31.224.160/30
				Turks & Caicos Islands / Islas Turcas y Caicos - Grand Turk	10.31.224.161/30
				United States / Estados Unidos (Miami)	10.31.224.162/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.163/30
42	10.31.224.164/30	Trinidad & Tobago / SAM (Venezuela)	E/CAR	**Network Address / Dirección de Red**	10.31.224.164/30
				Trinidad & Tobago (Piarco)	10.31.224.165/30
				SAM (Caracas)	10.31.224.166/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.167/30

No.	Subnet / Subred	Admin & local host / Admin y Receptor local	Via	Links / Enlace	IPv4 Address / Dirección IPv4
43	10.31.224.168/30	CAR/SAM (TBD)	E/CAR	**Network Address / Dirección de Red**	10.31.224.168/30
				CAR	10.31.224.169/30
				SAM (Caracas)	10.31.224.170/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.171/30
44	10.31.224.172/30	Aruba	MEVA	**Network Address / Dirección de Red**	10.31.224.172/30
				Aruba	10.31.224.173/30
				Curaçao / Curazao	10.31.224.174/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.175/30
45	10.31.224.176/30	Bahamas / Nassau	MEVA	**Network Address / Dirección de Red**	10.31.224.176/30
				Bahamas / Nassau	10.31.224.177/30
				United States / Estados Unidos (Miami)	10.31.224.178/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.179/30
46	10.31.224.180/30	Cayman Islands / Islas Caimanes	MEVA	**Network Address / Dirección de Red**	10.31.224.180/30
				Cayman Islands / Islas Caimanes	10.31.224.181/30
				Cuba (Havana / La Habana)	10.31.224.182/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.183/30
47	10.31.224.184/30	Cuba /Havana - La Habana	MEVA	**Network Address / Dirección de Red**	10.31.224.184/30
				Cuba (Havana / La Habana)	10.31.224.185/30
				United States / Estados Unidos (Miami)	10.31.224.186/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.187/30
48	10.31.224.188/30	Curaçao / Curazao	MEVA	**Network Address / Dirección de Red**	10.31.224.188/30
				Curaçao / Curazao	10.31.224.189/30
				Jamaica (Kingston)	10.31.224.190/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.191/30
49	10.31.224.192/30	Dominican Republic / República Dominicana Santo Domingo	MEVA	**Network Address / Dirección de Red**	10.31.224.192/30
				Dominican Republic / República Dominicana (Santo Domingo)	10.31.224.193/30
				Puerto Rico (San Juan)	10.31.224.194/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.195/30
50	10.31.224.196/30	Honduras / Tegucigalpa (COCESNA)	CAMSAT	**Network Address / Dirección de Red**	10.31.224.196/30
				Honduras (COCESNA) Tegucigalpa	10.31.224.197/30
				Nicaragua (Managua)	10.31.224.198/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.199/30
51	10.31.224.200/30	Puerto Rico / San Juan	E/CAR	**Network Address / Dirección de Red**	10.31.224.200/30
				Puerto Rico (San Juan)	10.31.224.201/30
				Trinidad & Tobago (Piarco)	10.31.224.202/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.203/30

No.	Subnet / Subred	Admin & local host / Admin y Receptor local	Via	Links / Enlace	IPv4 Address / Dirección IPv4
52	10.31.224.204/30	Vacant / Vacante		**Network Address / Dirección de Red**	10.31.224.204/30
				Vacant / Vacante	10.31.224.205/30
				Vacant / Vacante	10.31.224.206/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.207/30
53	10.31.224.208/30	Vacant / Vacante		**Network Address / Dirección de Red**	10.31.224.208/30
				Vacant / Vacante	10.31.224.209/30
				Vacant / Vacante	10.31.224.210/30
				Broadcast Address / Dirección de Multidifusión	10.31.224.211/30
…	…	…		**…**	…
				…	…
				…	…
				…	…
2048	10.31.255.252/30	Vacant / Vacante		**Network Address / Dirección de Red**	10.31.255.252/30
				Vacant / Vacante	10.31.255.253/30
				Vacant / Vacante	10.31.255.254/30
				Broadcast Address / Dirección de Multidifusión	10.31.255.255/30

APPENDIX L
ACTION PLANS

ACTION PLAN FOR PBN IMPLEMENTATION

Task Name	Start	Finish	Deliverables	Responsibles	Observations/ Comments-
a) Implement Collaborative Decision-Making (CDM) process in coordination with stakeholders	Abril 2014	Dec 2016	CDM implementation	PBN TF States, Territories, Int. Orgs	
b) Implement PBN airspace concept for oceanic, continental and terminal areas in accordance with the ICAO PBN Manual	Abril 2014	Dec 2016	PBN Airspace concept implementation	PBN TF States, Territories, Int. Orgs	
c) Update Letters of Agreement between ATC units	Abril 2014	Dec 2016	Updates LOAs	States, Territories, Int. Orgs	
d) Publish regulations and procedures for PBN operational approval	Abril 2014	Dec 2016	PBN operational approval implemented	States, Territories, Int. Orgs	
e) Evaluate and implement PBN requirements for ATC automated systems, as required	Abril 2014	Dec 2016	Identify and implement PBN related automated features	PBN TF States, Territories, Int. Org	
f) Analyze and enhance air communication, navigation (ground navaids GNSS) and surveillance infrastructure in accordance with PBN requirements	Abril 2014	Dec 2018	Navaids infrastructure review Introduction of GNSS (GBAS and SBAS-Ionosphere matters)	SACCSA Project support / WAAS States, Territories, Int. Orgs	NDB Deactivation Target: 2018 Navigation Infrastructure Plan-CAR/SAM ANP Related to surveillance (Situational Awareness) and COM Plans
g) GNSS mitigations Plannings	Jan 2015	Dec 2018	Mitigation means	States, Territories, Int. Orgs	
h) Develop and implement PBN training programme for pilots, ATCOs, operators and regulators, as well as implementation of GNSS technologies	Abril 2014	Dec 2018	Identify training needs and Support training centers and Train Air Plus	Training Centers Working Group States, Territories, Int. Orgs	
i) Optimize the ATS route structure through implementation of RNAV routes between major city pairs with navigation specification RNAV-5 /2 for en-route operations	Abril 2014	Dec 2016	Optimize the ATS route structure with RNAV 5/2	PBN TF States, Territories, Int. Orgs	
j) Implement CDOs/CCOs for SIDs/STARS in terminal areas based on RNAV 1-2 and RNP 1-/2 navigation specification, as required	Abril 2014	Dec 2016	CDOs/CCOs	PBN TF States, Territories, Int. Org	
k) Design and implement PBN APV in accordance with Assembly Resolution A37-11	Abril 2014	Dec 2016	PBN Procedures implementations (APV, etc.)	PBN TF States, Territories, Int. Orgs	
l) Conduct PBN safety assessment based ATC simulations (fast time and/or real time), live trials, etc., as required	Abril 2014	Dec 2016	PBN safety assessment	PBN TF States, Territories, Int. Orgs	

Task Name	Start	Finish	Deliverables	Responsibles	Observations/ Comments-
m) Develop performance measurement programme	Abril 2014	Dec 2016	performance measurement programme	States, Territories, Int. Orgs	
n) Develop post-implementation PBN Safety Assessment Programme	Abril 2014	Dec 2016	post-implementation PBN Safety Assessment Programme	States, Territories, Int. Orgs	
o) Monitor implementation progress	Abril 2014	Dec 2018		ICAO, States, Territories, Int. Orgs	

ACTION PLAN FOR DEMAND AND CAPACITY MANAGEMENT

Task Name	Start	Finish	Deliverables	Responsibles	Observations/ Comments-
a) Identify key stakeholders (ATC service providers and users, military authorities, airport authorities, aircraft operators and relevant organizations) for purposes of coordination and cooperation - using a CDM process	Apr 2014	Dec 2016	CDM implementation	ATFM TF States, Territories, Int. Orgs	Coordination with PBN
b) Analyze traffic flow problems and develop methods for improving efficiencies on a gradual basis, as needed for: i. Aerodrome capacity ii. ATS capacity iii. ATS letters of agreement	Apr 2014	Dec 2016	traffic flow problems analysis	ATFM TF States, Territories, Int. Orgs	
c) Define common elements of situational awareness between FMUs: i. Common traffic displays ii. Common weather displays iii. Communications (teleconferences, web) iv. Daily teleconference/messages methodology advisories	Apr 2014	Dec 2016	common elements of situational awareness between FMUs	ATFM TF States, Territories, Int. Orgs	
d) Develop methods to establish demand/capacity forecasting	Apr 2014	Dec 2016	methods to establish demand/capacity forecasting	ATFM TF States, Territories, Int. Orgs	
e) Define common electronic information and minimum databases required for decision support and alerting systems for interoperable situational awareness between centralized ATFM units	Apr 2014	Dec 2016	ATFM common electronic information and minimum databases required for decision support and alerting systems	ATFM TF States, Territories, Int. Orgs	
f) Develop regional procedures for efficient and optimum use of aerodrome and runway capacity	Apr 2014	Dec 2016	regional procedures for efficient and optimum use of aerodrome and runway capacity	ATFM TF States, Territories, Int. Orgs	
g) Develop a national ATFM Procedures Manual to manage demand/capacity balancing	Apr 2014	Dec 2016	national ATFM Procedures Manual	GREPECAS	
h) Develop regional coordination for implementation of ATFM units	Apr 2014	Dec 2016	regional coordination	ATFM TF States, Territories, Int. Orgs	
i) Develop operational agreements between ATFM units for interregional demand/capacity balancing	Apr 2014	Dec 2016	ATFM LOAs	States, Territories, Int. Orgs	
j) Monitor implementation progress	Apr 2014	Dec 2016		ICAO	

ACTION PLAN FOR FLEXIBLE USE OF AIRSPACE

Task Name	Start	Finish	Deliverables	Responsibles	Observations/ Comments- /
a) Establish civil/military coordination bodies	Apr 2014	Dec 2016	civil/military coordination bodies	States, Territories	
b) Arrange for permanent liaison and close cooperation between civil ATS units and appropriate air defence units	Apr 2014	Dec 2016	Permanent liasons	States, Territories	
c) Conduct a regional review of Special Use Airspace: i. assess use of airspace management processes; ii. improve current national airspace management to adjust dynamic changes in tactical stage to traffic flows; and iii. introduce improvements in ground support systems and associated procedures for the extension of FUA with dynamic airspace management processes	Apr 2014	Dec 2016	Special use of Aispace review	States, Territories, Int. Orgs, ICAO	
d) implement dynamic ATC sectorization in order to provide the best balance between demand and capacity to respond in real-time to changing situations in traffic flows and to accommodate the preferred routes of users in short-term	Apr 2014	Dec 2018	dynamic ATC sectorization	States, Territories, Int. Orgs, ICAO	
e) Develop performance measurement programme	Apr 2014	Dec 2016	performance measurement programme	States, Territories, Int. Orgs	
f) Monitor implementation progress	Apr 2014	Dec 2016		ICAO	

ACTION PLAN FOR SITUATIONAL AWARENESS IMPROVEMENTS

Task Name	Start	Finish	Deliverables/	Responsibles/	Observations/ Comments-
a) Identify the automation level required according to the ATM service provided in airspace and international aerodromes, assessing: i. Operational architecture design ii. Characteristics and attributes for interoperability iii. Data bases and software iv. Technical requirements	Abril 2014	Dic 2018	Review status of automation	States, Territories, Int. Orgs	
b) Implement flight plan data processing systems and electronic transmission tools	Abril 2014	Dic 2018	Full FPL2012 processing/ no converters Reduced lack/duplicate FPLs	AIDC TF States, Territories, Int. Orgs	ICAO Model 2012 FPL – converters removal plan Lack/duplicate FPL Action Plan
c) Implement radar data sharing programmes where benefits can be obtained	Abril 2014	Dic 2017	Radar Data Sharing in all continental areas	States, Territories, Int. Orgs	Bilateral agreements ECAR Radar Data Sharing Project
d) Develop situational awareness training programmes	Abril 2014	Dic 2018	Identify and inform of training needs	Training Centers Working Group States, Territories	
e) Identify and implement additional ATM surveillance systems to improve accuracy and coverage of traffic situational information (ADS-B, MLAT, etc.) and associated procedures	Abril 2014	Dic 2018	MLAT implementation ADS-B Implementation	ADS-B TF States, Territories	ADS-B Implementation Plan
f) Implement ATS automated message exchanges as required (FPL, CPL, CNL, DLA, etc.)	Abril 2014	Dic 2015	AIDC implementation-initial phase	AIDC TF States, Territories, Int. Orgs	Regional AIDC Plan
g) Implement automated radar handoffs where possible	Enero 2016	Dic 2017	AIDC implementation-second phase	AIDC TF States, Territories, Int. Orgs	Regional AIDC Plan
h) Implement ground and air electronic warnings as needed: i. Conflict prediction ii. Terrain proximity iii. MSAW iv. DAIW v. Surveillance system for surface movement	Abril 2014	Dic 2017	Improvement in electronic alarms / warnings	GREPECAS C Project States, Territories, Int. Orgs	
i) Implement data link surveillance technologies and applications as required: ADS , CPDLC, AIDC	Abril 2014	Dic 2018	CPDLC/ ADS-C Implementation	GOLD TF States, Territories	CPDLC implementation Plan IDEM COM g)
j) Implement additional/advanced automation support tools to increase aeronautical information sharing i. ETMS or similar ii. MET information iii. AIS/NOTAM dissemination iv. Surveillance tools to identify airspace sector constraints	Abril 2014	Dic 2018	Increase Automation applications	States, Territories, Int. Orgs	Needs from ATFM, MET and AIS
k) Training in the application and implementation of automated surveillance technologies and ATS system automation	Abril 2014	Dic 2018	Identify and inform of training needs	States, Territories	
l) Enhance the training infrastructure of the region and the training programmes related to surveillance and automated systems	Abril 2014	Dic 2018	Support training centers and Train Air Plus	Training Centers Working Group States, Territories	

Task Name	Start	Finish	Deliverables/	Responsibles/	Observations/ Comments-
m) Implement ACAS 7.1	Abril 2014	Dic 2018	ACAS 7.1 implementation	States, Territories	
n) Monitor implementation progress	Abril 2014	Dic 2018		ICAO	

COM ACTION PLAN

Task Name	Start	Finish	Deliverables/	Responsibles	Observations/ Comments-
a) Review the performance status of current AFS services and identify deficiencies or improvements (AFTN, oral ATS services, A/G communications)	April 2014	Dec 2015	Improvements to A/G Communications Plan	States, Territories in Plan	Identify improvements into Regional AMS Communication Improvement Plan
b) Implement communication service improvements as required to support current and planned Air Navigation applications, including Required Communication Performance (RCPs).	April 2014	Dec 2018	Improvements to A/G Communications Plan RCP application- 2015	States, Territories	Follow-up Regional AMS Communication Improvement Plan
c) Develop regional ATN planning documents	April 2014	Dec 2015	ATN and applications documents	GREPECAS Project D AMHS TF	
d) Coordinate and test ATN G-G application implementation aspects (AMHS, AIDC, etc.)	April 2014	Dec 2018	Test G-G Applications	AMHS TF AIDC TF States, Territories	Regional AMHS Plan Regional AIDC Plan
e) Conduct planning, trial and implementation activities for A-G data applications (DCL, D-ATIS, etc.)	April 2014	Dec 2018	Update regional plan D-ATIS implementation	GREPECAS Project D States, Territories	CAR/SAM ANP CNS TABLE 1Bc
f) Carry out technical review of regional telecommunication networks for ATN implementation	April 2014	Dec 2015	MEVA III implementation	MEVA TMG States, Territories	
g) Implement available technologies in order to facilitate ground and airborne applications (CPDLC, ADS-C, ADS-B)	April 2014	Dec 2018	CPDLC/ ADS-C Implementation	GOLD TF States, Territories	CPDLC implementation Plan
h) Implement the necessary communications network for ACDM	April 2015	Dec 2018	Communications for ACDM	States, Territories	Need to de define by AGA
i) Support ICAO position during the ITU WRC and ensure regional coordination for the protection of the aviation spectrum	April 2014	Dec 2018	WRC-2015 support WRC-2018 support Support for C- Band	States, Territories	
j) Ensure participation of civil aviation experts in State delegations to ITU WRC meetings	April 2014	Dec 2018	Participation by States	States, Territories	
k) Disseminate ICAO policy statements on aeronautical radio frequency spectrum requirements	April 2014	Dec 2018	CAA and National Spectrum Authority coordination	States, Territories	
l) Implement frequency spectrum management for protection and new services	April 2014	Dec 2018	• Optimum use of frequencies • No interferences	States, Territories	COM Lists
m) Support training on the application and implementation of advanced communication related technologies and ATN	April 2014	Dec 2018	Identify and inform of training needs	States, Territories	
n) Enhance the regional training infrastructure and training programmes related to communications	April 2014	Dec 2018	Support training centers and Train Air Plus	Training Centers Working Group States, Territories	
o) Monitor implementation and improvement of telecommunications and ATN application issues	April 2014	Dec 2018	ATN implementation	ICAO	

ACTION PLAN FOR IMPLEMENTATION OF AERONAUTICAL INFORMATION MANAGEMENT (AIM)

Task Name	Start	Finish	Deliverables	Responsibles	Observations/ Comments-
a) Comply with the process to introduce and implement Annex15 and 4 amendments to the Chicago Convention	April 2014	Dec 2015	Implementation of the Annexes referred AIS and MAP Standards and Requirements	States / Territories	Comply with all Steps from Phase 1 for the transition to AIM according with ICAO Raodmap for the transition to AIM
b) Periodically report on the generation and distribution of Integrated IAIP aeronautical information that improves the safety of ATS in the Region to the ICAO NACC Office	April 2014	Dec 2016	Provide the proper Report requested	States / Territories	Implement AIM QMS
c) Develop a method to measure the performance and outcomes from States, Territories and international organizations with distribution of quality aeronautical information to improve recognition of ATM requirements, safety, and effectiveness related to the electronic distribution of information	April 2014	Dec 2016	Survey to States / Territories	ICAO, GREPECAS	Consider AIXM implementation as basic requirement
d) Assist States, Territories and international organizations to improve decision making related to their transition to AIM	April 2014	Dec 2016	Provide respective guidance material on AIM issues	ICAO	ANConf/12 Rec 3/6
e) Assist States, Territories and international organizations with the AIM, in order to implement ICAO Standards for aeronautical information products, services, and technologies in electronic format, as required	April 2014	Dec 2018	Identify training needs and Support training centers and Train Air Plus	ICAO, GREPECAS	Development and implementation of AUTO AIS/AIM project
f) Support AIM developments to achieve the ATM system improvements in the *Global Air Traffic Management Operational Concept*; including NOTAM contingency plans	April 2014	Dec 2018	Complete implementation of all AIM Transition phases (1 to 3)	States / Territories	Including all AIM developments associated with SWIM for ASBU Block 1 module B-31
g) Ensure that AIM requirements harmonize and integrate at a regional and international level, on-board electronic management of aeronautical information for the requirements or the use of ground systems	April 2014	Dec 2018	Complete implementation of all AIM Transition phases (1 to 3)	ICAO States / Territories	Including all AIM developments associated with SWIM for ASBU Block 1 module B-31
h) Share experience and resources with implementation of e-TOD through establishment of an e-TOD regional working group	April 2014	Dec 2018	Prepare and Establish LoAs	GREPECAS States / Territories	-------
i) Implement ICAO Doc 9881 technical requirements as required	April 2014	Dec 2018	Identify personnel and training needs and prepare a Report to ICAO for assistance	States / Territories	-------
j) Report requirements to the ICAO NACC Regional Office and monitor implementation status of e-TOD using electronic media	April 2014	Dec 2018		States / Territories	-------
k) Develop a high-level agreement for the management of a national e-TOD programme	April 2014	Dec 2018	Establish permanent liasons and coordination among all bodies involved	States / Territories	-------

APPENDIX M
FPL2012 POST IMPLEMENTATION CHECKLIST AND FOLLOW-UP TO FPL2012 FULL COMPLIANCE ACTIVITIES
FOLLOW-UP: 25 MARCH 2014

Date	Solution	
	AFTN Terminal –FPL	**ATC Automated System - FDP**
Anguilla	Implemented	Manual
Antigua and Barbuda	Implemented	Manual
Aruba	Implemented	Implemented
Bahamas	AMHS (FPL2012) terminals implementation date to be defined **(TBD)**	Full upgrade planned (converter is use)
Barbados	Implemented	Implemented
Belize	Implemented	Full upgrade planned (converter is use)
Bermuda	Implemented	Manual
British Virgin Islands	Implemented	Manual
Canada	Implemented	Implemented
Cayman Islands	Implemented	Implemented
Costa Rica	Implemented	Full upgrade planned (converter is use)
Cuba	Implemented	Implemented
Curacao	Implemented	Implemented
Dominica	Implemented	Manual
Dominican Republic	Implemented	Implemented
El Salvador	Implemented	Implemented
Grenada	Implemented	Implemented
Guatemala	Implemented	Full upgrade planned (converter is use)
French Antilles	Implemented	Implemented
Haiti	Manual	Manual
Honduras	Implemented	Implemented
Jamaica	Implemented	Full upgrade planned (converter is use)
Mexico	Implemented	Implemented
Montserrat	Implemented	Manual
Netherlands (BES Islands)	Manual	Manual
Nicaragua	Implemented	Implemented

Date	Solution	
	AFTN Terminal –FPL	**ATC Automated System - FDP**
Saint Kitts and Nevis	Implemented	Manual
Saint Lucia	Implemented	Manual
Saint Vincent and the Grenadines	Implemented	Manual
Sint Maarten	Implemented	Implemented
Trinidad and Tobago	Implemented	Implemented
Turks and Caicos Islands	Implemented	Implemented
United States	Implemented	Implemented
COCESNA	Implemented	Full upgrade planned (2014). Currently converter is use

APPENDIX / APÉNDICE N
IMPROVEMENTS TO AMS COMMUNICATION SERVICES IN THE CAR REGION/
MEJORAS A LOS SERVICIOS DE COMUNICACIONES AMS EN LA REGIÓN CAR (UPDATE/ACTUALIZACIÓN: 25/03/2014)

State/ International Organization/ Estado/ Organización Internacional	Type deficiency (No coverage, poor quality, intermittent failure) / Tipo de deficiencia (sin cobertura, calidad mediocre, falla intermitente)	Deficiency description (include if permanent, time of day, other considerations)/ Descripción de la deficiencia (incluir si es permanente, hora del día, otras consideraciones)	ATS Route + pair of waypoints/ Ruta ATS + par de puntos de recorrido	Has been reported by airlines, ATCO or other sources / Notificado por aerolíneas, ATCO u otras fuentes	Solution				
					Planned Solution (add more pages as needed) / Solución planificada (añadir más hojas si es necesario)	Target date of solution/ Fecha meta de solución Month- year Mes-año	Is participation of adjacent FIR or airline users requested?/ ¿Se solicita la participación de FIR adyacente o usuarios de aerolíneas?	Focal point for deficiency details and solution/ Punto focal para detalles y solución de deficiencias	Remarks/ Observaciones
COCESNA	Poor quality, and no coverage in some areas in some hours/Calidad mediocre y falta de cobertura en algunas áreas a algunas horas.	Lack of HF AMS Communications in ATS routes in the Pacific Ocean. Falta de Comunicaciones HF AMS en rutas ATS en el océano Pacífico	UL 312: Artom (1°25´N, 87°28´W). Vodir (5°31´N, 90°39´W), Rotro (8°52´N, 95°31´W),	Yes / Sí	COCESNA´s HF improvements. Mejoras a HF de COCESNA	1 phase 15/01/13 (RX System)/1a fase, 15/01/13 (Sistema RX) 2nd Phase, 15/11/2013 (TX System)/2a fase, 15/11/13 (Sistema TX) 1/02/13 FANS 1A (one year contract/test)/1/02/13 FANS 1A (contrato/pruebas 1 año)	Testing the new systems when installed. / Pruebas a los nuevos sistemas una vez instalados. Yes, Mexico/ Si, Mexico	Juan Carlos Trabanino (juancarlos.trabanino@cocesna.org) and Roger Alberto Pérez (roger.perez@cocesna.org)	IATA reportó que con las mejoras al sistema HF de COCESNA, esta deficiencia esta resuelta.

State/ International Organization/ Estado/ Organización Internacional	Type deficiency (No coverage, poor quality, intermittent failure) / Tipo de deficiencia (sin cobertura, calidad mediocre, falla intermitente)	Deficiency description (include if permanent, time of day, other considerations)/ Descripción de la deficiencia (incluir si es permanente, hora del día, otras consideraciones)	ATS Route + pair of waypoints/ Ruta ATS + par de puntos de recorrido	Has been reported by airlines, ATCO or other sources / Notificado por aerolíneas, ATCO u otras fuentes	Solution				
					Planned Solution (add more pages as needed) / Solución planificada (añadir más hojas si es necesario)	Target date of solution/ Fecha meta de solución Month- year Mes-año	Is participation of adjacent FIR or airline users requested?/ ¿Se solicita la participación de FIR adyacente o usuarios de aerolíneas?	Focal point for deficiency details and solution/ Punto focal para detalles y solución de deficiencias	Remarks/ Observaciones
Jamaica	Main radio 128.35 MHz No coverage / Falta de cobertura radio principal 128.35 MHz	Permanent / Permanente	U/G448/Levor Levor, north to about 100 miles south of GCM. U/G448/North Levor UM782	Airline & ATCO / Aerolínea y ATCO	Radios to be placed at Puerto Cabezas (Nicaragua)- ongoing	Not determined / Sin determinar	Yes, Participation from adjacent FIR / Sí, participación de FIR adyacente	Carl Gaynair(mats@jcaa.gov.jm) and Orville Shaw (oshaw@jcaa.gov.jm)	There is no radar coverage or intermittent radar coverage for the area, no or poor radio communication. Radar sharing agreement being envisaged. Links from the radios to Kingston will be via satellite. / No hay cobertura radar o es intermitente para el área y nula o mediocre comunicación por radio. Se contempla compartir datos radar. Los enlaces de radio a Kingston se harán vía satélite.

State/ International Organization/ Estado/ Organización Internacional	Type deficiency (No coverage, poor quality, intermittent failure) / Tipo de deficiencia (sin cobertura, calidad mediocre, falla intermitente)	Deficiency description (include if permanent, time of day, other considerations)/ Descripción de la deficiencia (incluir si es permanente, hora del día, otras consideraciones)	ATS Route + pair of waypoints/ Ruta ATS + par de puntos de recorrido	Has been reported by airlines, ATCO or other sources / Notificado por aerolíneas, ATCO u otras fuentes	Solution				
					Planned Solution (add more pages as needed) / Solución planificada (añadir más hojas si es necesario)	Target date of solution/ Fecha meta de solución Month- year Mes-año	Is participation of adjacent FIR or airline users requested?/ ¿Se solicita la participación de FIR adyacente o usuarios de aerolíneas?	Focal point for deficiency details and solution/ Punto focal para detalles y solución de deficiencias	Remarks/ Observaciones
	Main radio 128.35 MHz poor quality/ Intermittent failure/ / Falta de cobertura radio principal 128.35 MHz	Permanent (During the afternoon especially when there is increased cloud cover and/or precipitation)/ Permanente (Durante la tarde, especialmente cuando hay cobertura de nubes y/o precipitaciones)	UL465 Arnal and south of Arnal UG 448, UB 767, UL 465, UG 633, UR 644, UG 877	Airline & ATCO / Aerolínea y ATCO	Radios to be placed at Puerto Cabezas (Nicaragua) / Radios a ubicarse en Puerto Cabezas (Nicaragua)	Not determined / Sin determinar	Yes, Participation from adjacent FIR / Sí, participación de FIR adyacente		Intermittent radar coverage as well as no or poor radio communication. Radar data sharing agreement being envisaged. / Cobertura radar intermitente y nula o mediocre comunicación radio. Se contempla acuerdo para compartir datos radar.
Haiti	Lack or deficient AMS coverage/ Falta o cobertura AMS deficiente	Permanent / Permanente	Port-au-Prince FIR	Adjacent FIRs and airlines / FIR adyacentes y aerolíneas	TBD	TBD	Yes, Participation from adjacent FIR / Sí, participación de FIR adyacente	Yes, Participation from adjacent FIR / Sí, participación de FIR adyacente	
Mexico	Lack of AMS coverage/ Falta de cobertura AMS	Permanent / Permanente	ATS routes near Acapulco towards oceanic airspace / Rutas ATS cerca de Acapulco hacia el espacio aéreo oceánico.	Airline & ATCO / Aerolínea y ATCO	TBD	TBD	No	Sergio Perez: sperez@sct.gob.mx Ever Molina: emolinac@sct.gob.mx	

State/ International Organization/ Estado/ Organización Internacional	Type deficiency (No coverage, poor quality, intermittent failure) / Tipo de deficiencia (sin cobertura, calidad mediocre, falla intermitente)	Deficiency description (include if permanent, time of day, other considerations)/ Descripción de la deficiencia (incluir si es permanente, hora del día, otras consideraciones)	ATS Route + pair of waypoints/ Ruta ATS + par de puntos de recorrido	Has been reported by airlines, ATCO or other sources / Notificado por aerolíneas, ATCO u otras fuentes	Solution				
					Planned Solution (add more pages as needed) / Solución planificada (añadir más hojas si es necesario)	Target date of solution/ Fecha meta de solución Month- year Mes-año	Is participation of adjacent FIR or airline users requested?/ ¿Se solicita la participación de FIR adyacente o usuarios de aerolíneas?	Focal point for deficiency details and solution/ Punto focal para detalles y solución de deficiencias	Remarks/ Observaciones
	No coverage in some areas in some hours: Mazatlan Oceanic FIR/ Sin cobertura en algunas áreas en algunas horas Mazatlán Oceanic FIR/	Lack of HF AMS Communications in ATS routes in the Pacific Ocean/ Falta de comunicaciones HF AMS en rutas ATS en el Océano Pacífico	No fixed ATS routes / No hay rutas ATS fijas.	Airline/ Aerolínea	TBD	TBD	Yes, Participation from adjacent FIR / Sí, participación de FIR adyacente		
Trinidad and Tabago	HF Communications/ Comunicaciones HF	Permanent / Permanente	Oceanic airspace PIARCO FIR / Espacio Aéreo oceánico FIR PIARCO.	Airline	ADS-C/CPDLC	2014	No	Veronica Ramdath (vramdath@gmail.com)	

APPENDIX O / APÉNDICE O