International Civil Aviation Organization
CAR/SAM Regional Planning and Implementation Group (GREPECAS)
Fourteenth Meeting of the CAR/SAM Regional Planning and Implementation Group (GREPECAS/14)
San Jose, Costa Rica, 16 to 20 April 2007

Agenda Item 3: Review of Reports of GREPECAS Contributory Bodies
3.6 Report of the ATM/CNS/SG/5 Meeting

REPORT OF THE FIFTH MEETING OF THE CNS COMMITTEE

(Presented by the President of the CNS Committee)

SUMMARY
This working paper presents the summary of the results of the Fifth Meeting of the CNS Committee, which are submitted for the consideration of GREPECAS/14.

Reference:
- Report of the CNS/COMM/5, Lima, Peru, 13 – 17 November 2006.

1. Introduction

1.1 The Fifth Meeting of the CNS Committee (CNS/COMM/5) examined seven agenda items and agreed to transfer for consideration of GREPECAS/14, 11 Draft Conclusions and 3 Draft Decisions; likewise, it adopted 4 internal Decisions. The essential results of the Meeting are expressed in the following paragraphs. The Draft Conclusions and Decisions are shown in the **Annex** to this working paper.

2. Report of the CNS/COMM/4 Meeting reviewed by the ATM/CNS Subgroup

2.1 Agenda Item 1: Communication system developments

1.1 Review of the integration/interconnection and development status of the regional digital networks

2.1.1 The Meeting took note that, regarding the status of digital VSAT networks REDDIG and MEVA II, the new REDDIG node in Piarco (Trinidad and Tobago) had entered in operation in late September 2006, and that the network control centre (NCC) had been transferred from Lima, Peru, to Manaus, Brazil, by mid December 2005. Likewise, regarding MEVA II, almost the totality of nodes had been installed by November 2006. Product of the studies carried out during the MEVA II/REDDIG coordination meetings, it was concluded that the integration of the MEVA II and REDDIG networks under one control unit represented the best option, but, due to the impossibility of changing current administrative and operational schemes of both VSAT networks, it was agreed that this option would be implemented after a five-year period which starts in 2006. During this five-year period, the interconnection of the mentioned VSAT networks will be established, and will mainly consist of the installation of one MEVA II MODEM in the REDDIG nodes of Colombia and Venezuela, and of the installation of one REDDIG MODEM in the MEVA II node of Honduras (COCESNA). Under the interconnection solution, the two networks would continue operating independently, managed by their respective control centres. In addition, administrative arrangements were drafted regarding the supervision and control aspects; spatial segment arrangements; spare parts purchase and equipment installation issues; as well as maintenance, security and control aspects. All these aspects will be part of a Memorandum of Understanding (MoU) between the Parties. In this regard, the Meeting was informed that the MoU would be presented to the Fourth MEVA II/REDDIG Coordination Meeting. The Meeting considered that, additionally to the MoU works, it was necessary to elaborate a plan of action for the implementation of the technical configuration. Therefore, the Meeting formulated **Draft Conclusion CNS/5/1**.

1.2 Review of the air-ground data links implementation plan

Initiative for Amendment 2 to the Global Air Navigation Plan on air-ground data links

2.1.2 The Meeting took note that recently the Air Navigation Commission (ANC) reviewed Amendment 2 to the Global Air Navigation Plan (Doc 9750 – AN/963), which established the Global Plan Initiative (GPI) 17 – *Implementation of Data Link Applications*, regarding air-ground data links. The Meeting noted that the *Regional strategy for the evolutionary update and implementation of the air-ground data links plan*, formulated by GREPECAS through Conclusion 13/72, is harmonized with GPI-17 of Amendment 2 to the Global Air Navigation Plan.

Review of the air-ground data links implementation plan

2.1.3 The Meeting reviewed the *CAR/SAM Aeronautical Mobile Service (AMS) and the Aeronautical Mobile Satellite Service (AMSS)* contained in Table CNS 2A of the CAR/SAM Air Navigation Plan, Doc 8733, Volume II (FASID. The Table CNS 2A of the FASID was updated and is presented in **Appendix A** to this paper. The Table contains information available from the CAR and SAM Regions. This includes VHF, HF, satellite and Mode S data implementation requirements for ATC units. Consequently, it formulated **Draft Conclusion CNS/5/2**.

1.3 Review of the ATN regional implementation plan

SARPs development status and ICAO guidance material on ATN

2.1.4 The Meeting received detailed information on the status of the SARPs and the ICAO ATN guidance material which foresees the use of the Internet Protocols (IPS). The guidance material will be used as a Manual when the SARPs are effective (scheduled for November 2008).

ATN Routers and ground-ground applications Implementation Plans

2.1.5 As a result of the responses received and of the follow-up made by the ICAO NACC and SAM Regional Offices to GREPECAS Conclusion 13/75, **Appendix B** to this paper presents an update to Table CNS 1Bb of the FASID, which contains information on ground-ground applications implementation plans in the CAR Region. **Appendix C** presents similar information from the SAM Region. The Meeting reviewed the information presented by Members on their corresponding ATN/AMHS implementation programmes. Argentina, Trinidad and Tobago, United States and COCESNA provided information of their AMHS already implemented. Paraguay informed about their implementation plans. Based on the information presented and the discussions on ICAO Doc 9705 regarding AMHS implementation, the Meeting drafted **Draft Conclusion CNS/5/4**.

2.1.6 The Meeting noted the concern discussed at the European meetings regarding the proper coordination of the global implementation of AMHS electronic messaging systems, specially in two arenas, the AMHS addressing plan and the AMHS global address registry. In this regard, the meeting received two documents prepared by EANPG for Europe but the group has considered the documents to be transferable to the remaining ICAO Regions.

AMHS Addressing Regional Plan

2.1.7 As a follow-up to ICAO State Letter Ref. SP 54/1-03/39, dated 30 May 2003, and based on the responses given by some States, ICAO Headquarters is developing the AMHS Addressing Global Plan. However, in accordance with GREPECAS Decision 13/76, an AMHS Addressing plan for the SAM Region has been developed and is presented in **Appendix D** to this working paper. The AMHS Addressing Plan for the CAR Region is under development. Furthermore, the Secretariat is coordinating with ICAO Headquarters in order to harmonise these regional plans together with the mentioned global plan.

Table format for the ATN air-ground applications regional plan

2.1.8 According to the guidance given by GREPECAS Decision 13/77, the Meeting prepared a Table format proposal for the ATN air-ground applications regional plan, which is presented in **Appendix E** to this working paper.

National plans to prioritise the AMHS and AIDC implementation contributing to ATM Automation

2.1.9 Taking into account the information provided to the Meeting, the AMHS implementation outlook in the CAR and SAM regions is shown in **Appendix F** to this paper.

1.4 Study of a communication system to support the migration towards the meteorological messages exchange (METAR/SPECI and TAF) in BUFR format code

2.1.12 The Meeting recalled two stages had been determined for the migration towards the meteorological messages exchange in BUFR code format; the first starting in 2007, in which the exchange would operate in the traditional format based on alphanumeric codes as well as in BUFR code format; and the second stage, starting in 2015, when BUFR code will be used exclusively. In this regard, the Meeting noted several communication aspects related with this item, but considered that they should be analysed in depth by the ATN Task Force of the CNS Committee and by the COM/MET Task Force, the latter created by the AERMET Subgroup and the CNS Committee. In this regard, the Meeting formulated **Draft Decision CNS/5/5**. Additionally, the United States presented their AMHS BUFR Code Implementation Plan. Information of this plan is being presented in Appendix 1M of the CNS/COMM/5 Meeting Report.

2.2 Agenda Item 2: Navigation system developments

2.1 Review of the results of the SBAS augmentation trials carried out in the CAR/SAM regions

2.2.1 Based on the Reports of Projects RLA/00/009 and RLA/03/902, the Meeting considered that the GNSS implementation, including SBAS and GBAS, will have to be based on operational requirements, as well as on technical and cost/benefit analyses, that support the decision making process for this implementation. The decision making has to be carried out from a common perspective, where the political aspects acquire a vital importance, taking into account that the commitments of States/Territories/International Organizations who provide facilities, especially from the point of view of the legal responsibilities associated with the installation of a specific SBAS element in a determined State. GNSS implementation must take into account the concept at a global level. To do this, it will be necessary to add the study of the operations and contingency plans in case of local degradation of service performance.

Results of the Project RLA/03/902 activities

2.2.2 The Meeting noted the information related to the Project RLA/03/902 - SACCSA, preliminary analysis results and of the network topology proposal. The Project presented the SBAS architecture and a preliminary analysis, which was based on the POLARIS tool, using nominal and flat ionosphere models. A summary of this analysis is shown in Appendix 2A of the CNS/COMM/5 Meeting Report. Based on the SBAS solution with APV I performances that is being studied by SACCSA, the Meeting agreed that this is a technically feasible project for the CAR/SAM Regions. Based on the preliminary results of the project, the Meeting proposed **Draft Conclusion CNS/5/6** and **Draft Conclusion CNS/5/7**. The Meeting took note that Chile, Dominican Republic and Venezuela announced their respective decisions to join the RLA/003/902 – SACCSA project.

Final results of RLA/00/009 Project

2.2.3 When analyzing the RLA/00/009 Project preliminary final report, the Meeting considered that it contemplated important aspects such as the availability of the data collected through the CAR/SAM augmentation test bed (CSTB), as well as the GNSS procedures analysis for non-precision operations by lateral navigation (LNAV). For three years (2002-2005), the data was collected from the thirteen reference stations (TRS) that form the CSTB test bed and was transmitted to the FAA Technological Center in Atlantic City through the CSTB communications bed. The data is available upon request for States/Organizations participating in RLA/00/009 project, as well as for other participants in the GREPECAS mechanism, when they so require. Appendix 2B to the CNS/COMM/5 Meeting Report contains the Final Report of the RLA/00/009 project.

GNSS procedures for Non-Precision Approach for LNAV Operations

2.2.4 The Meeting noted the results of the studies for GNSS procedures for Non-Precision Approach (NPA) for Lateral Navigation (LNAV) Operations which were summarized in three alternatives: GPS use with integrity autonomous surveillance in the receptor, or RAIM (ABAS); use of the space signal of the United States WAAS; and development and use of a CAR/SAM independent SBAS system.

2.2.5 When analyzing the three alternatives, the Meeting considered that for GNSS procedures for LNAV operations, the use of GPS with RAIM and the use of the space signal would be almost feasible, while the development and use of an independent SBAS system for LNAV Operations would not be advisable due to its high cost. Therefore, the Meeting formulated **Draft Conclusion CNS/5/8** as well as **Draft Conclusion CNS/5/9**. Likewise, the Meeting took note that the project RLA/00/009 had reached its final stage and that during its four-year run it had worked hard to implement a trial platform, to carry out trials and to provide support and training to member States/Territories/International Organization.

2.2 Other aspects of the SBAS/GBAS regional implementation system studies

2.2.6 The Meeting was informed on the ATA, IATA, AEA and AAPA's position (representing 94% of the world airlines) presented at the last NSP Meeting in which they requested that any fees, taxes or charges generated by their members are not to be used for future development, operation nor maintenance of any current or future SBAS. Other means of funding should be sought to support this technology including current users. In their position, the mentioned Associations committed have user requirements that help dictate the performance requirements of the system. Therefore, the Meeting formulated **Draft Conclusion CNS/5/10**.

2.2.7 Chile presented an AIC published by them approving RNAV/GNSS for standard approach and departure procedures. The Meeting took note of the information and considered that this experience could benefit other States/Territories in their decision making, publication and obtaining the early benefits from the GNSS. This AIC is presented in Appendix 2C to the CNS/COMM/5 Meeting Report.

2.2.8 Brazil informed that they are considering the implementation of a GBAS network in order to improve the capacity of some terminal areas, as well as to manage in a cost-efficient manner the conventional navigation aids obsolescence. The purpose of the trials is to guarantee that the GBAS can work properly in the peculiar Brazilian ionosphere environment and to acquire knowledge about the system's behaviour in the geomagnetic equatorial zone, in order provide guidance material to support implementations in similar regions.

2.2.9 The Meeting was informed about the CELESTE Project (GALILEO cooperation Project for Latin America) activities. This initiative is in accordance with the need to have other potential non aeronautical users involved in the GNSS implementation. Also, the Meeting was updated with information on the progress of other SBAS initiatives being applied in other regions, including the EGNOS, GAGAN, MSAS and WAAS systems. Regarding WAAS, the Meeting received detailed information of the WAAS progress, and taking into account that the WAAS space signal coverage area also includes the CAR/SAM Regions, this is important information for both Regions. Therefore, it was agreed to include this information in Appendix 2D to the CNS/COMM/5 Meeting Report.

2.2.10 The Meeting considered that a the study presented on the advantages, possibilities and guidelines for the GNSS implementation in the CAR/SAM regions is quite useful and that it should be taken into account in other studies being carried out by the CNS Committee. The study is contained in Appendix 2E to the CNS/COMM/5 Meeting Report. The Meeting received information regarding the status of the technology research and development of the United States FAA ground-based augmentation system (GBAS). The Meeting considered that this information is very useful for these regions. This information is contained in Appendix 2F to the CNS/COMM/5 Meeting Report.

2.2.11 The Meeting received the preliminary report of the ionosphere effects which was prepared by the ICAO Navigations System Panel (NSP). The Meeting recommended reading the referred report and to refer to the studies for the GNSS regional implementation. The NSP Final Report is presented as Appendix 2G to the CNS/COMM/5 Meeting Report.

2.3 Progressive deactivation of NDB Stations

2.2.12 As a result of the analysis made to the SARPs and ICAO guidelines, as well as other considerations, the Meeting agreed about the need to develop a plan for the progressive deactivation of NDB stations, using the format presented in the **Appendix G** to this paper. Therefore, the Meeting formulated **Draft Conclusion CNS/5/11**. Likewise, the Meeting considered that the CNS Committee should follow-up on the development of a regional plan for the deactivation of NDB stations, taking into account the responses received from States/Territories/International Organizations and airspace users to Draft Conclusion CNS 5/11. Therefore, the Meeting formulated **Draft Decision CNS/5/12**.

2.3 Agenda Item 3: Surveillance system developments

3.1 Follow-up to the development of surveillance systems and the regional implementation study of the SSR in Mode S

2.3.1 The Meeting took note of the development of the multilateration and its growing number of world wide installations for the surveillance of vehicles and aircraft at airports, as well as in terminal and en-route areas. Multilateration would have the potential of fulfilling many roles for aeronautical surveillance, such as main surveillance systems for ATM within a specific airspace/airport (en route, approach and ground); alternate surveillance system where another surveillance technology, like ADS-B, is used as the primary surveillance system; and to validate the ADS-B information in order to confirm the correct position of aircraft. Likewise, the Meeting noted that currently, ICAO does not have SARPs regarding the multilateration system, but a high-level standard proposal for review and acceptance would be treated in the Aeronautical Surveillance Panel (ASP), and, if accepted by the ASP.

2.3.2 The Meeting took note that the ground implementation of Mode S secondary surveillance radars (SSR) should be prioritized at the en-route and terminal areas with high traffic density and that each State/Territory/International Organization should assess current traffic density in their respective terminal and en-route areas, as well as that expected for the next ten years, and the useful life of the SSR currently installed in terminal areas.

2.3.3 Regarding the Mode S transponder capability of aircraft operating in the CAR/SAM Regions, the Meeting noted that States/Territories/International Organizations of both Regions apply the procedure established by ICAO for aircraft identification (24-bit address allocation according to the indications given in Annex 10, Volume III, Part I, Appendix to Chapter 9 [A World-wide Scheme for the Allocation, Assignment and Application of Aircraft Addresses]). However, it was considered that, it still would be beneficial to implement a national database with standardized information of aircraft having 24-bit addresses; this would facilitate the surveillance services providers having updated information of aircraft identification, especially in radar processing systems. In this regard, the Meeting formulated **Draft Decision CNS/5/13**.

2.3.4 In order to continue developing the update of the regional implementation plan, including SSR in Mode S, as well as the use of Mode S for ADS-B applications, and to follow-up on the studies of the multilateration system and contribute to the necessary coordination, the Meeting proposed to initiate further actions by the ATM/CNS Subgroup and its Committees. These actions could be integrated with the strategy for the implementation of ADS-C and ADS-B and a general surveillance plan containing all the required surveillance applications could be developed and harmonised with the Global Air Navigation Plan. **Appendix H** to this paper contains preliminary elements in order to develop a regional consolidated strategy for the implementation of surveillance systems. Therefore, the Meeting formulated an internal Decision.

3.2 Study of the regional ADS systems' implementation

Initiative of the Global Air Navigation Plan on data link-based surveillance

2.3.5 The Meeting took note that the Second amendment to the Global Air Navigation Plan (Doc 9750 – AN/963), related to data link-based surveillance (ADS-C, ADS-B and SSR in Mode S), established Global Plan Initiative GPI-09 – *Situational awareness.*

Revised strategy for ADS-C and ADS-B deployment

2.3.6 As a follow-up to the work performed by the CNS Committee, and considering GREPECAS Decision 13/54, and based on the guidelines set forth in the Global Air Navigation Plan, specifically GPI-09, **Appendix I** to this paper presents the revision to the preliminary CAR/SAM Regional Strategy for the ADS-C and ADS-B Systems Implementation in the short, medium and long terms. When reviewing this strategy, the Meeting agreed it would be convenient to integrate the elements into a unified regional strategy for surveillance systems implementation.

ADS-C and ADS-B Implementation Initiatives

2.3.7 Considering the potential airspaces for the ADS-C and ADS-B implementation which were identified by the GREPECAS/13 Meeting, as well as other recent initiatives, the updated table of initiatives for the ADS-C and ADS-B deployment in the CAR/SAM Regions and it is presented in **Appendix J** to this paper.

ADS-B Trials Programme in the CAR/SAM Regions

2.3.8 The Meeting recalled that GREPECAS, through Conclusion 13/87, oriented States/Territories/International Organizations, in collaboration with air space users, to establish and execute an ADS-B trials programme using available services and technology, in order to improve the knowledge on ADS-B and to assess the benefits for Air Traffic Management in the CAR/SAM Regions. On this respect, it was agreed that the proposed task should involve different activities and that the representatives of International Organizations and Industry need to interact in order to carry out the technical and operational assessments to establish optimized solutions for implementation options. The goal of these trials is to provide more accurate information about the operational use of ADS-B as a support for surveillance, giving a new perspective for the States' implementation plans. These trials and the related aspects (necessary infrastructure, specific ATC procedures, applied technologies, statistics, etc) should be monitored under the project methodology in order to provide results that can be assessed and presented to the GREPECAS.

2.3.9 The Meeting noted that according to the experience in the Asia/Pacific region of promoting the development of ADS-B, it has been shown that the significant results achieved by the States in that region came from the adoption of clear deadlines for the implementation as well as the creation of a dedicated Task Force to evaluate all aspects connected to this development. In this regard, the Meeting agreed that the CAR/SAM Regions can obtain full benefits from this experience, since many implementation issues have already been addressed by them. However, the Meeting agreed that the creation of a Surveillance Task Force would be more appropriate for these regions. Therefore, the Meeting created the Surveillance Task Force and also agreed on the Terms of Reference, Work Programme and Composition of the mentioned Task Force. The Meeting was informed about the regional ADS-B Service Concept and the FANS developments in the CAR/SAM Regions. Also, the Meeting noted information about the United States' Automatic Dependent Surveillance – Broadcast (ADS-B) programme as well as information regarding the performance of reception trials of ADS-B signals from aircraft operating in the Havana FIR by Cuba.

Updating of the Regional Surveillance Plan

2.3.10 IATA informed the Meeting that member airlines are providing support for the implementation of ADS-B and that they have requested the fleet capability for ADS-B, GNSS and others according to the routes operating in the CAR/SAM Regions.

2.3.11 Considering the implementation initiatives for ADS-C and ADS-B systems, as well as the results of the study on the Regional implementation of other surveillance systems, the Meeting updated Table CNS 4A of the FASID – Surveillance Systems**. Appendix K** to this paper presents the results as a proposal for amendment.

2.4 Agenda Item 4: Development and integration of the Automated ATM systems

2.4.1 The Meeting, supported by the work carried out by the Automation Ad hoc Group which was jointly formed by the ATM and the CNS Committees, adopted the "*Interface Control Document for Data Communications between ATS Units in the Caribbean and South American Regions (CAR/SAM ICD)*", which is presented in Appendix 4A to the CNS/COMM/5 Meeting Report, as well as a "*Table on ATS Operational Requirements for Automated Systems*", which is also included in Appendix 4B to the CNS/COMM/5 Meeting Report. As a result of all the work, **Draft Conclusions CNS/5/16** and **CNS/5/17** were drafted. Furthermore, the ATM/CNS Subgroup Meeting decided that as of now, the ATM Automation task development and the ATM Automation Task Force will be guided directly by the ATM/CNS Subgroup.

2.5 Agenda Item 5: Review of the deficiencies and status of Conclusions/Decisions of GREPECAS related to the CNS systems

2.5.1 The Meeting reviewed the list of deficiencies in the CNS Field in the CAR/SAM Regions classified with priority "U", "A" and "B". The Meeting noted that there has been progress in the solution of CNS deficiencies in the CAR and SAM regions. The updated information on CNS deficiencies is presented in WP/17 under Agenda Item 4.2 of this Meeting.

2.6 Agenda Item 6: CNS Committee Terms of Reference and Work Programme

2.6.1 The Meeting reviewed the Terms of Reference and Work Programme of the CNS Committee, based on the review made by the GREPECAS/13 and ACG/6 Meetings, and taking into account the considerations of the Meeting. The Terms of Reference, Work Programme and the Composition of the CNS Committee, as reviewed by the Meeting, are presented in WP/19 under Agenda Item 5.2 of this Meeting.

2.7 Agenda Item 7: Other matters

2.7.1 Bearing in mind the task execution status, the Meeting determined the tasks could be developed during the immediate stage up until the Sixth Meeting of the CNS Committee.

3. Suggested action

3.1 The Meeting is invited to:

a) note the information of this working paper;
b) review the Draft Conclusions and Decisions presented in the Annex to this paper as well as the related Appendices; and
c) advise on other aspects that are deemed appropriate.

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ANNEX

DRAFT CONCLUSIONS AND DECISIONS OF THE CNS/COMM/5 MEETING

DRAFT CONCLUSION CNS/5/1 — ACTION PLAN FOR THE IMPLEMENTATION OF THE MEVA II AND REDDIG VSAT NETWORKS INTERCONNECTION

That, in order to implement the MEVA II and REDDIG networks interconnection, the next MEVA II/REDDIG Coordination Meeting, with the support of the Task Force established for this purpose, conclude the elaboration of the Memorandum of Understanding (MoU) and develop a plan of action for the implementation of the interconnection before the end of 2007.

DRAFT CONCLUSION CNS/5/2 — UPDATING OF THE AMS AND AMSS REGIONAL PLAN

That ICAO amend the *CAR/SAM Regional Plan for the Aeronautical Mobile Service (AMS) and the Aeronautical Mobile Satellite Service (AMSS)* included in the Table CNS 2A of the FASID as presented in Appendix A to this part of the Report.

DRAFT CONCLUSION CNS/5/4 — ADOPTION OF IP V6 PROTOCOL AS THE AMHS INTERFACE

That CAR/SAM States/Territories/International Organizations adopt the IP v6 protocol as the AMHS interface between member states, as indicated in the new FASID Table CNS 1Ba, in accordance with ICAO guidelines on this issue.

DRAFT DECISION CNS/5/5 — COMMUNICATION ASPECTS FOR THE MIGRATION TOWARDS THE METEOROLOGICAL MESSAGE EXCHANGE IN BUFR CODE

That, the ATN Task Force, as well as the COM/MET Task Force of AERMET Subgroup analyse in detail the following communication aspects considered necessary for the migration towards the meteorological message exchange in BUFR format in the CAR/SAM Regions for their possible implementation for the first and second transition stages:

a) use of terminals with coding/decoding capacity;

b) use of AMHS systems with extended service; and

c) development of an interface control document (ICD) to integrate AMHS and MET systems, establishment of standards for presentation systems, specification for the conversion of templates and security aspects.

DRAFT
CONCLUSION CNS/5/6 **APV I CAPABILITY AS A MINIMUM PERFORMANCE REQUIREMENT FOR THE CAR/SAM REGIONAL SBAS IMPLEMENTATION**

SBAS solutions proposed by the CAR/SAM Regions must be oriented to achieve at least APV I capability.

DRAFT
CONCLUSION CNS/5/7 **RLA/03/902 PROJECT INVITATION RENEWAL FOR NEW MEMBERS' PARTICIPATION**

All States/Territories/International organizations that have not done so are invited to:

a) join Project RLA/03/902 - SACCSA, in order to obtain full benefits from the Project; and

b) visit the following web page of SACCSA Project: www.rlasaccsa.com.

DRAFT
CONCLUSION CNS/5/8 **GNSS REQUIREMENTS FOR NPA-LNAV OPERATIONS**

That CAR/SAM States/Territories/International Organizations when implementing Non-Precision Approach (NPA) – Lateral navigation (LNAV) procedures with GNSS, should initially use the GPS with RAIM or the United States' WAAS signal in space or those of other SBAS systems available.

DRAFT
CONCLUSION CNS/5/9 **FINAL RESULTS OF RLA/00/009 PROJECT**

The final results of the RLA/00/009 Project should be considered by CAR/SAM States/Territories/International Organizations when making Regional/State GNSS implementation decisions.

DRAFT
CONCLUSION CNS/5/10 **GREATER USER PARTICIPATION IN THE GNSS REGIONAL IMPLEMENTATION PLANNING**

In order to ensure that users' requirements are being met, the ICAO Regional Offices, in the name of the GNSS Task Force, should invite IATA to participate in future Meetings of the GNSS Task Force.

DRAFT
CONCLUSION CNS/5/11 PROGRESSIVE DEACTIVATION OF NDB STATIONS

That in order to develop a progressive deactivation of NDB Stations without affecting safety, States, Territories, International Organizations and airspace users:

a) analyse the service provided by each NDB station, its function, procedural existence with other aids such as VOR/DME, GNSS-RNAV, as well as the aircraft capacity/development that operate in serviced airspace;

b) based on the analysis described in item a) above and in the Table format included in the Appendix G to this part of the Report, develop a plan for the progressive deactivation of NDB stations; and

c) inform the corresponding ICAO NACC or SAM Regional Office regarding their respective plan for the progressive deactivation of NDB stations before **30 November 2007**.

DRAFT
DECISION CNS/5/12 DEVELOPMENT OF A REGIONAL PLAN FOR THE PROGRESSIVE DEACTIVATION OF NDB STATIONS

That the CNS Committee:

a) prepare a regional plan for the progressive deactivation of NDB stations, taking into account the responses received from States, Territories, International Organizations and airspace users to Draft Conclusion CNS/5/11 and the Table presented in the Appendix G to this part of the Report; and

b) based on the results of item a) above, propose the corresponding amendments to Table CNS 3 of the FASID.

DRAFT
DECISION CNS/5/13 REGIONAL STANDARD REGISTRY FOR AIRCRAFT EQUIPPED WITH MODE S TRANSPONDERS

That, in order to assist CAR/SAM States, Territories and International Organizations in the standardization of the 24-bit address allocation to identify aircraft using Mode S transponders, the CNS Committee incorporate a new task related to this issue within its work programme.

DRAFT
CONCLUSION ATM/5/9
CNS/5/16 AGREEMENTS FOR ATM AUTOMATED SYSTEMS INTERFACE

That CAR/SAM States/Territories/International Organizations:

a) take into account technical feasibility studies and operational benefits, and coordinate the establishment of bilateral and multilateral agreements for the interface of automated systems between adjacent units; and

b) use guidance material specified as *"Interface Control Document for Data Communications between ATS Units in the Caribbean and South American Regions (CAR/SAM ICD)"*, included in Appendix 4A to this part of the Report, keeping in mind that:

i) ICAO guidance material contained in said document is applicable at the regional level; and

ii) material that does not comply with ICAO guidelines, should be used only as reference and would be agreed on a bilateral or multilateral basis, as required.

DRAFT
CONCLUSION ATM/5/10
CNS/5/17 ESTABLISHMENT OF AN ACTION PLAN FOR THE INTERFACE OF ATM AUTOMATED SYSTEMS

That CAR/SAM States/Territories/International Organizations, formulate an Action Plan for the interface of ATM automated systems, which includes:

a) the assignment of an expert as point of contact to carry out the regional coordination work for the interface of ATM automated systems;

b) the analysis of the current service level provided by ATS automated systems, as well as requirements to satisfy future operational applications of the ATM community using the Table of ATS Operational Requirements for Automated Systems, included in Appendix 4B to this part of the Report; and

c) document the action plan and share best practices and experiences with other States/Territories/International Organizations, as required.

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APPENDIX A

Table CNS 2A — Tableau CNS 2A — Tabla CNS 2A

AERONAUTICAL MOBILE SERVICE AND AMSS
SERVICE MOBILE AÉRONAUTIQUE ET SMAS
SERVICIO MÓVIL AERONÁUTICO Y SMAS

EXPLANATION OF THE TABLE

Column

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

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

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

SMC Surface movement control up to limits of aerodrome.

TWR Aerodrome control service.

VOLMET VOLMET broadcast.

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

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

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

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

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

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

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

10 Remarks.

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

EXPLICATION DU TABLEAU

Colonne

1 Nom de l'État et des emplacements de cet État où le service est assuré.

2 Services ou fonctions requis assurés. Les abréviations utilisées ont les significations suivantes:

ACC-L Contrôle régional jusqu'au FL 250

ACC-SR-I Contrôle radar régional jusqu'au FL 250

ACC-SR-U Contrôle radar régional jusqu'au FL 450

ACC-U Contrôle régional jusqu'au FL 450

AFIS Service d'information de vol d'aérodrome

APP-L Contrôle d'approche au-dessous du FL 120

APP-I Contrôle d'approche au-dessous du FL 250

APP-PAR Radar d'approche de précision jusqu'au FL 40

APP-SR-I Contrôle d'approche au radar de surveillance jusqu'au FL 250

APP-SR-L Contrôle d'approche au radar de surveillance jusqu'au FL 120

APP-SR-U Contrôle d'approche au radar de surveillance jusqu'au FL 450

APP-U Contrôle d'approche au-dessous du FL 450

ATIS Service automatique d'information de région terminale

D-ATIS Service automatique d'information de région terminale par liaison de données

CLRD Délivrance des autorisations

FIS Service d'information de vol

VHF-ER VHF à portée étendue

GP Installation de communications VHF ou HF en route d'emploi général (GP). Permet des communications radiotéléphoniques air-sol pour toutes les catégories de messages énumérées dans l'Annexe 10, Volume II, 5.1.8. Système normalement indirect, c'est-à-dire dans lequel les communications se font par l'intermédiaire d'un tiers, généralement un opérateur de télécommunications situé dans une station aéronautique.

SMC Contrôle des mouvements à la surface jusqu'aux limites de l'aérodrome

TWR Contrôle d'aérodrome

VOLMET Émissions VOLMET

3 Nombre de canaux vocaux VHF pour les services indiqués dans la colonne 2. Le nombre des canaux mis en œuvre est indiqué entre parenthèses.

4 Nombre de canaux VHF pour les communications de données des services indiqués dans la colonne 2. La date de mise en œuvre (mois/année) est indiquée entre parenthèses.

5 Identification du réseau HF pour les services indiqués dans la colonne 2. Le nombre de fréquences utilisées est indiqué entre parenthèses.

6 Besoin d'une liaison de données HF (X) pour les services indiqués dans la colonne 2. La date de mise œuvre (mois/année) est indiquée entre parenthèses.

7 Besoin de communications vocales par satellite (X) pour les services indiqués dans la colonne 2. La date de mise en œuvre (mois/année) est indiquée entre parenthèses.

8 Besoin de communications de données par satellite (X) pour les services indiqués dans la colonne 2. La date de mise en œuvre (mois/année) est indiquée entre parenthèses.

9 Besoin de communications de données mode S (X) pour les services indiqués dans la colonne 2. La date de mise en œuvre (mois/année) est indiquée entre parenthèses.

10 Remarques

Note.— L'année de mise en œuvre des liaisons de données et des communications vocales par satellite est indiquée par deux chiffres.

EXPLICACIÓN DE LA TABLA

Columna

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

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

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

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

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

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

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

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

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

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

10 Observaciones.

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

Country and location Pays et emplacement País y localidad	Service or function Service ou fonction Servicio o función	VHF voice Voix VHF Voz VHF	VHF data Données VHF Datos VHF	HF voice Voix HF Voz HF	HF data Données HF Datos HF	Satellite voice Voix satellite Voz por satélite	Satellite data Données satellite Datos por satélite	Mode S Modo S	Remarks Remarques Observaciones
1	2	3	4	5	6	7	8	9	10
ANGUILLA (United Kingdom)									
TQPF THE VALLEY/Wall Blake, Anguilla I.	TWR	(1) 1							
ANTIGUA AND BARBUDA									
TAPA SAINT JOHNS/ V.C. Bird Antigua I.	APP TWR SMC APP-SR-I D-ATIS	1 (1) 1 (1) 1 (1) 1 1							
ARGENTINA									
SAEU BUENOS AIRES	ACC-U GP	5 (5) 2(1)	2 (06/05)	SAM-1(5) SAM-2 (5)	X (06/08)	X (06/08)	X (06/08)		
SABE BUENOS AIRES/ Aeroparque Jorge Newbery	APP-L APP-SR-I TWR SMC ATIS CLRD	1 (1) 1(1) 1(1) 1 (1) 1 (1) 1 (1)							
SAEZ BUENOS AIRES/ Ezeiza, Ministro Pistarini	APP-SR-I APP-L ATIS SMC TWR ~~CLRD~~	1 (1) 1 1 (1) 1 (1) 1 (1) ~~1*~~							* ~~Implementation by 2002~~ ~~*Mise en œuvre en 2002~~ ~~*Implantación prevista en 2002~~
SADD BUENOS AIRES/Don Torcuato	TWR SMC	1 (1) 1 (1)							
SADF BUENOS AIRES/San Fernando	APP TWR SMC	1 1 (1) 1 (1)							
SARI CATARATAS DEL IGUAZU/My. Carlos Eduardo K.	TWR	1 (1)							
SAVF COMODORO RIVADAVIA	ACC-U ACC-L GP	2 (2) 1 (1) 1 (1)	1 (06/06)	SAM-1 (5)	X (06/08)	X (06/08)	X (06/08)		
SAVC COMODORO RIVADAVIA/General Mosconi	APP TWR	1(1) 1 (1)							
SACF CORDOBA	ACC-U GP	3 (3) 1	1 (06/06)	SAM-1 (3)					

Country and location Pays et emplacement País y localidad	Service or function Service ou fonction Servicio o función	VHF voice Voix VHF Voz VHF	VHF data Données VHF Datos VHF	HF voice Voix HF Voz HF	HF data Données HF Datos HF	Satellite voice Voix satellite Voz por satélite	Satellite data Données satellite Datos por satélite	Mode S Modo S	Remarks Remarques Observaciones
1	2	3	4	5	6	7	8	9	10
SACO CORDOBA/Ing. A. Taravella	APP-SR-I TWR SMC	1(1) 1 (1) 1 (1)							
SARF FORMOSA/Formosa	APP-L TWR	1(1) 1 (1)							
SASJ JUJUY/Gobernador Guzmán	APP-SR-1 TWR	1(1) 1 (1)							
SAZM MAR DEL PLATA/ Brig. Gral. B. de la Colina	APP-SR-I TWR SMC ATIS	1 (1) 1 (1) 1 (1) 1 (1)							
SAMF MENDOZA	ACC-U GP	3 (1) 1 (1)	1 (06/06)	SAM-1 (3)					
SAME MENDOZA/El Plumerillo	APP-SR-I TWR SMC ATIS	1 1 (2) 1 (1) 1 (1)							
SAZN NEUQUEN/Presidente Perón	APP TWR	1 1 (1)							
SARP POSADAS/Libertador Gral. D. José de San Martín	APP-L TWR	1(1) 1 (1)							
SARR RESISTENCIA	ACC-U GP	3 (4) 1 (1)	1 (06/06)	SAM-1 (3)	X (06/06)				
SARE RESISTENCIA/ Resistencia	APP-SR-I TWR ATIS	1 (1) 1 (1) 1							Implementation by 2002 Mise en œuvre en 2002 Implantación prevista en 2002
SAWG RIO GALLEGOS/ Piloto Civil N. Fernández	APP-L TWR ATIS GP	1 (1) 1 (1) 1 (1) 1(2)							
SAWE RIO GRANDE/ Rio Grande	APP TWR	1 1 (2)							
SAAR ROSARIO/Rosario	APP-L TWR ATIS	1 1 (2) 1							Implementation by 2002 Mise en œuvre en 2002 Implantación prevista en 2002
SASA SALTA/Salta	APP-L TWR GP	1(1) 1 (1) 1 (1)							

Country and location Pays et emplacement País y localidad	Service or function Service ou fonction Servicio o función	VHF voice Voix VHF Voz VHF	VHF data Données VHF Datos VHF	HF voice Voix HF Voz HF	HF data Données HF Datos HF	Satellite voice Voix satellite Voz por satélite	Satellite data Données satellite Datos por satélite	Mode S Modo S	Remarks Remarques Observaciones
1	2	3	4	5	6	7	8	9	10
SAZS SAN CARLOS DE BARILOCHE/San Carlos de Bariloche	APP-SR-I TWR ATIS	1 1 (1) 1 (1)							
SANT TUCUMAN/Tte. Benjamin Matienzo	APP-L TWR GP	1(1) 1 (2) 1 (1)							
SAWH USHUAIA/Malvinas Argentinas	APP-L TWR GP	1 1 (1) 1 (1)							
ARUBA (Netherlands)									
TNCA ORANJESTAD/ Reina Beatriz, Aruba I.	APP-SR-L APP-L TWR SMC D-ATIS	1 (1) 1 (1) 1 (1) 1 (1) 1 (1)							
BAHAMAS									
MYBS ALICE TOWN/ South Bimini, Bimini I.	TWR	1							
MYSM COCKBURN TOWN/ San Salvador I.	TWR	1							
MYGF FREEPORT/Intl., Grand Bahama I.	APP-U APP-L TWR SMC	1 1 1 1							
MYEG GEORGETOWN/ Georgetown, Exuma Intl.	APP-L TWR	1 1							
MYEM GOVERNOR'S HARBOUR/ Governor's Harbour, Eleuthera I.	APP-L TWR	1 1							
MYNA NASSAU	ACC-U GP ACC-L	3 1 1							
MYNN NASSAU/Intl., New Providence I.	APP-I TWR SMC APP-SR-I D-ATIS	1 1 1 1 1							
MYEH NORTH ELEUTHERA/ New Providence I.	TWR	1 1							
MYLS STELLA MARIS/Long Island I.	TWR	1							
MYAT TREASURE CAY/ Treasure Cay, Abaco I.	TWR APP-L	1 1							
MYGW WEST END/West End, Grand Bahama I.	TWR	1							

Country and location Pays et emplacement País y localidad	Service or function Service ou fonction Servicio o función	VHF voice Voix VHF Voz VHF	VHF data Données VHF Datos VHF	HF voice Voix HF Voz HF	HF data Données HF Datos HF	Satellite voice Voix satellite Voz por satélite	Satellite data Données satellite Datos por satélite	Mode S Modo S	Remarks Remarques Observaciones
1	2	3	4	5	6	7	8	9	10
BARBADOS									
TBPB BRIDGETOWN/ Grantley Adams Intl.	APP-U APP-I TWR SMC APP-SR-U D-ATIS	1 5 1 1 1 1							
BELIZE									
MZBZ BELIZE/Intl.	APP-I APP-I TWR SMC D-ATIS	1 1 1 1 1							
BOLIVIA									
SLCB COCHABAMBA/Jorge Wilsterman	TWR APP-I SMC	1 (1) 2 (1) 1 (1)							
SLLP LA PAZ	ACC-U ACC-U ~~GP~~ ACC-L	1 1 (1)-ER ~~1~~ 1 (1)	1 (06/06)	SAM-1 (3) SAM-2 (3)	X (06/06)				
SLLP LA PAZ/El Alto Intl.	APP-I TWR SMC ~~ATIS~~	3 1 (1) 1 (1) ~~1~~							
SLVR SANTA CRUZ/Viru-Viru Intl.	APP-I TWR SMC ~~ATIS~~	3 (1) 1 (1) 1 (1) ~~1~~							
SLTJ TARIJA/Oriel Lea Plaza	APP-I TWR	1 (1) 1 (1)							
SLTR TRINIDAD/Tte. Av. Jorge Henrich Arauz	APP-I TWR SMC	2 (1) 1 (1) 1							
BRAZIL									
SB.. AMAZONICA	ACC-SR-U GP	24 (24) 1	2 (06/08)	SAM-2 (4)	X (06/08)				
SB.. ATLANTICA	ACC-U			SAM-2 (4) SAT-1 SAT-2	X (06/08)	X (06/08)	X (06/68)		
SBBE BELEM/Val de Câes Intl.	APP-SR-I TWR SMC	4 (4) 1 (1) 1 (1)							

Country and location Pays et emplacement País y localidad	Service or function Service ou fonction Servicio o función	VHF voice Voix VHF Voz VHF	VHF data Données VHF Datos VHF	HF voice Voix HF Voz HF	HF data Données HF Datos HF	Satellite voice Voix satellite Voz por satélite	Satellite data Données satellite Datos por satélite	Mode S Modo S	Remarks Remarques Observaciones
1	2	3	4	5	6	7	8	9	10
SBCF BELO HORIZONTE/	APP-SR-I	4 (4)							
Tancredo Neves Intl.	TWR	1 (1)	1 (06/01)						
	SMC	1 (1)							
	CLRD	1 (1)							
	ATIS	1 (1)							
SBBS BRASILIA	ACC-SR-U	16 (16)	8 (06/0~~85~~)	SAM-2 (4)	X (06/08)				
SBBR BRASILIA/Brasilia Intl.	APP-SR-I	4 (3)							
	TWR	1 (1)							
	SMC	1 (1)							
	CLRD	1 (1)	1 (06/01)						
	ATIS	1 (1)							
SBBV BOA VISTA/	APP-I	1 (1)							
Boa Vista Intl.	TWR	2 (2)							
	SMC	1							
SBKP CAMPINAS/Viracopos	APP-SR-I	1 (1)							
Intl.	TWR	1 (1)							
	SMC	1							
SBCG CAMPO GRANDE/	APP-SR-I	1 (1)							
Campo Grande Intl.	TWR	1 (1)							
	ATIS	1							
SBCR CORUMBA/	AFIS	1 (1)							
Corumba Intl.									
SBCZ CRUZEIRO DO SUL/	AFIS	1 (1)							
Cruzeiro do Sul Intl.									
SBCY CUIABA/Marechal	APP-SR-I	1 (1)							
Rondon Intl.	TWR	1 (1)							
SBCW CURITIBA	ACC-SR-U	10 (10)	2 (06/0~~85~~)	SAM-2 (4)	X (06/08)				
SBCT CURITIBA/	APP-SR-I	3 (3)							
Afonso Peña Intl.	TWR	2 (2)							
	ATIS	1							
	SMC	1 (1)							
	CLRD	1 (1)							
SBFL FLORIANÓPOLIS/	APP-SR-I	3 (3)							
Hercílio Luz Intl.	TWR	2 (2)							
	SMC	1							
SBFZ FORTALEZA/	APP–SR-I	2 (2)							
Pinto Martins Intl.	TWR	1 (1)							
	SMC	1 (1)							
	CLRD	1 (1)							
SBFI FOZ DO IGUACU/	APP-SR-I	2 (2)							
Cataratas Intl.	TWR	1 (1)							
SBMQ MACAPA/	APP-I	1							
Macapa Intl.	TWR	1							

Country and location Pays et emplacement País y localidad	Service or function Service ou fonction Servicio o función	VHF voice Voix VHF Voz VHF	VHF data Données VHF Datos VHF	HF voice Voix HF Voz HF	HF data Données HF Datos HF	Satellite voice Voix satellite Voz por satélite	Satellite data Données satellite Datos por satélite	Mode S Modo S	Remarks Remarques Observaciones
1	2	3	4	5	6	7	8	9	10
SBEG MANAUS/Eduardo Gomes Intl.	APP-SR-I TWR SMC	4 (4) 1 (1) 1 (1)							
SBNT NATAL/Augusto Severo Intl.	APP-SR-I TWR SMC CLRD	4 (4) 2 (2) 1 (1) 1							
SBPP PONTA PORÃ/ Ponta Porã Intl.	AFIS	1 (1)							
SBPA PORTO ALEGRE/ Salgado Filho Intl	APP-SR-I TWR SMC CLRD ATIS	4 (4) 1 (1) 1 (1) 1 1							
SBRE RECIFE	ACC-SR-U GP	16 (16) 1	5 (06/08)	SAT-2 (4)	X (06/08)				
SBRF RECIFE/Guararapes Intl.	APP-SR-I TWR SMC ATIS CLRD	4 (4) 1 (1) 1 (1) 1 1							
SBGL RIO DE JANEIRO/ Galeão Antonio Carlos Jobim Intl.	APP-SR-I TWR SMC CLRD ATIS	6 (6) 2 (2) 1 (1) 1 (1) 1 (1)	1 (06/01)						
SBSV SALVADOR/Deputado Luis Eduardo Magalhães Intl.	APP-SR-I TWR SMC GP ATIS	4 (4) 1 (1) 1 (1) 1 1							
SBSN SANTAREM/ Santarem Intl.	APP-I TWR	2 (2) 1 (1)							
SBSL SÃO LUIS/Marechal Cunha Machado Intl.	APP-I TWR	1 (1) 1 (1)							
SBGR SÃO PAULO/ Guarulhos Intl.	TWR SMC CLRD ATIS	3 (3) 1 (1) 1 (1) 1 (1)	1 (06/01)						
SBTT TABATINGA/ Tabatinga Intl.	AFIS	1 (1)							
SBUG URUGUAIANA/ Rubem Berta Intl.	AFIS	1 (1)							
CAPE VERDE									
GVSC SAL I.	ACC-U ACC-L	2-ER 1		SAT-1 SAT-2					

Country and location Pays et emplacement País y localidad	Service or function Service ou fonction Servicio o función	VHF voice Voix VHF Voz VHF	VHF data Données VHF Datos VHF	HF voice Voix HF Voz HF	HF data Données HF Datos HF	Satellite voice Voix satellite Voz por satélite	Satellite data Données satellite Datos por satélite	Mode S Modo S	Remarks Remarques Observaciones
1	2	3	4	5	6	7	8	9	10
CAYMAN ISLANDS (United Kingdom)									
MWCB CAYMAN BRAC/ Gerrard Smith Intl.	TWR SMC	1 (1) 1							
MWCR GEORGETOWN/ Owen Roberts Intl.	APP-I TWR SMC D-ATIS	1 -1 1 1 (1)							
CHILE									
SCFA ANTOFAGASTA/ Cerro Moreno	APP-SR-I TWR SMC ~~ATIS~~ GP	2 (2) 1 (1) 1 (1) ~~1~~ 1 (1)-ER	2 (06/08)	SAM-1 (4)	X (06/08)	X (06/08)	X (06/08)		
SCAR ARICA/Chacalluta	APP-I TWR SMC	1 (1) 1 (1) 1 (1)							
SCIE CONCEPCION/ Carriel Sur	APP-I TWR SMC	1 (1) 1 (1) 1 (1)							
SCDA IQUIQUE/Gral. Diego Aracena	APP-SR-I TWR SMC GP	1 (1) 1 (1) 1 (1) 1(1)-ER							
SCTZ PUERTO MONTT Tepual	ACC-U ACC-U GP ~~APP-SR-I~~	2 (1) 1 (1)-ER 1 (1)-ER ~~2 (1)~~	2 (06/08)	SAM-1 (4)	X (06/08)	X (06/08)	X (06/08)		
SCTE PUERTO MONTT/ ~~E~~l Tepual	TWR SMC ~~ATIS~~	1 (1) 1 (1) ~~1~~							
SCCZ PUNTA ARENAS	ACC-U GP-ER APP-SR-I	3 (2) 1 (2) 2 (1)	2 (06/08)	SAM-1 (3)	X (06/08)	X (06/08)	X (06/08)		
SCCI PUNTA ARENAS/ Pdte. C. Ibáñez del Campo	TWR SMC ~~ATIS~~	1 (1) 1 (1) ~~1~~							
SCEZ SANTIAGO	ACC-U GP APP-SR-I	4 (4)-ER 2 (2)-ER 4 (4)	2 (06/0~~8~~6)	SAM-1 (3)	X (06/08)	X (06/08)	X (06/08)		
SCEL SANTIAGO/ Arturo Merino Benitez	CLRD TWR SMC ATIS	1 (1) 2 (1) 2(1) 1 (1)	1 (06/08)						
SCTC TEMUCO/Manquehue	APP-L TWR SMC	1 (1) 1 (1) 1 (1)							

Country and location Pays et emplacement País y localidad	Service or function Service ou fonction Servicio o función	VHF voice Voix VHF Voz VHF	VHF data Données VHF Datos VHF	HF voice Voix HF Voz HF	HF data Données HF Datos HF	Satellite voice Voix satellite Voz por satélite	Satellite data Données satellite Datos por satélite	Mode S Modo S	Remarks Remarques Observaciones
1	2	3	4	5	6	7	8	9	10
COLOMBIA									
SKEC BARRANQUILLA	ACC-U GP	2 (2) 1 (1)	2 (06/0~~8~~6)	CAR-A (2)	X (06/06)				
SKBQ BARRANQUILLA/ Ernesto Cortissoz	APP-SR-I TWR SMC ATIS CLRD	2 (2) 1 (1) 1 (1) 1 1	 1 (06/01)						
SKED BOGOTA	ACC-U GP	5 (5) 1 (1)-ER	4 (06/0~~8~~6)	SAM-2 (2)	X (06/06)	X (06/06)			
SKCL CALI	ACC-SR-I GP	1 (1) 1 (1)		 SAM-1	 X (06/06)				
SKCL CALI/Alfonso Bonilla Aragón	APP-SR-I TWR SMC ATIS	1 (1) 1 (1) 1 (1) 1							
SKCG CARTAGENA/ Rafael Núñez	TWR	1 (1)							
SKCC CUCUTA/Camilo Daza	APP-I TWR	1 (1) 1 (1)							
SLLT LETICIA/Alfredo Vásquez Cobo	APP-SR-I TWR	1 (1) 1 (1)							
SKRG RIO NEGRO/ José María Córdova	APP-SR-I TWR SMC ATIS	1 (1) 1 (1) 1 (1) 1 (1)							
SKSP SAN ANDRES I./ Sesquicentenario	APP-SR-I APP-I TWR SMC	1 (1) 1 (1) 1 (1) 1							
SKBO SANTA FE DE BOGOTA/Eldorado	APP-SR-I TWR SMC ATIS CLRD	3 (3) 2 (2) 2 (2) 1 (1) 1 (1)	 1 (06/01)						
COSTA RICA									
MROC ALAJUELA/ Juan Santamaria Intl.	APP-SR-I TWR SMC D-ATIS GP	2 (1) 1 (1) 1 (1) 1 (1) 1 (1)							
MRLB LIBERIA/Tomás Guardia Intl.	APP-I TWR SMC	1 (1) 1 (1) 1 (1)							
MRLM LIMON/Limón Intl.	AFIS	1 (1)							

Country and location Pays et emplacement País y localidad	Service or function Service ou fonction Servicio o función	VHF voice Voix VHF Voz VHF	VHF data Données VHF Datos VHF	HF voice Voix HF Voz HF	HF data Données HF Datos HF	Satellite voice Voix satellite Voz por satélite	Satellite data Données satellite Datos por satélite	Mode S Modo S	Remarks Remarques Observaciones
1	2	3	4	5	6	7	8	9	10
MRPV PAVAS/Tobías Bolaños Intl.	TWR SMC	1 (1) 1 (1)							
CUBA									
MUCM CAMAGUEY/ Ignacio Agramonte	APP-SR-L TWR	1 1 (1)							
MUCL CAYO LARGO DEL SUR/Vilo Acuña	APP-L TWR	1 (1) 1 (1)							
MUCA CIEGO DE AVILA/ Máximo Gómez	APP-L TWR	1 1 (1)							
MUHA HABANA	ACC-SR-U ACC-SR-I GP-U	5 (4)-ER 3 (1)-ER 2 (1)	2 (06/08)	CAR-A (6)	X (06/08)				
MUHA HABANA/José Martí	APP-SR-L APP-SR-I TWR SMC D-ATIS	1 1 (1) 1 (1) 1 (1) 1 (1)							2008
MUHG HOLGUIN/Frank País	APP-SR-L TWR	1 1(1)							
MUCU SANTIAGO DE CUBA/ Antonio Maceo	APP-SR-I TWR SMC	1 (1) 1 (1) 1							
MUVR VARADERO/Juan Gualberto Gomez	APP-SR-L TWR SMC D-ATIS	1 1 (1) 1 1							2008
DOMINICA									
TDPB MELVILLE HALL/ Dominica	TWR	1 (1)							
TDPR ROSEAU/Canefield	TWR	1 (1)							
DOMINICAN REPUBLIC									
MDBH BARAHONA/ Maria Montes Intl.	TWR	1 (1)							
MDCY EL CATEY/ El Catey Intl.	TWR APP SMC D-ATIS	2 1 1 1							
~~MDHE HERRERA/ Herrera Intl.~~	~~TWR~~	~~1 (1)~~							
MDEH EL HIGÜERO/ Dr. Joaquín Balaguer Intl.	TWR APP SMC	2 1 1							

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1	2	3	4	5	6	7	8	9	10
MDLR LA ROMANA/ La Romana Intl.	APP-L TWR	1 (1) 1 (1)							
MDPP PUERTO PLATA/ Gregorio Luperon	APP-SR-I TWR SMC	1 (1) 1 (1) 1 (1)							
MDPC PUNTA CANA/Punta Cana Intl.	APP-L TWR	1 1 (1)							
MDST SANTIAGO/Cibao Santiago Intl.	APP-L TWR	1 1 (1)							
MDCS SANTO DOMINGO	ACC-U ACC-SR-U GP	4 1 (1) 1	1 (06/08)						
MDSD SANTO DOMINGO/ De las Américas Intl.	APP-SR-I TWR SMC D-ATIS CLRD	2 (1) 1 (1) 1 (1) 1 (1) 1							
ECUADOR									
SEGU GUAYAQUIL	ACC-U ACC-U GP	2 (2) 1-ER 1 (1)	~~1 (06/08)~~	SAM-1 (4)	~~X (06/06)~~	~~X (06/06)~~	~~X (06/06)~~		
SEGU GUAYAQUIL/ Simón Bolívar	APP-SR-I APP-I TWR SMC ATIS	1 (1) 2 (1) 1 (1) 1 (1) 1							
SELT LATACUNGA/Cotopaxi	APP-I TWR	1 (1) 1 (1)							
SEMT MANTA/Eloy Alfaro	APP-I TWR	1 (1) 1 (1)							
SEQU QUITO/Mcal. Sucre	APP-SR-I TWR SMC ATIS	1 (1) 1 (1) 1 (1) 1 (1)							
EL SALVADOR									
MSLP SAN SALVADOR/ El Salvador Intl.	APP-I APP-I APP-SR-I TWR SMC GP D-ATIS	1 1 1 (1) 1 (1) 1 (1) 1 (1) 1 (1)							
MSSS SAN SALVADOR/ Ilopango Intl.	APP-I TWR	1 (1) 1 (1)							

Country and location Pays et emplacement País y localidad	Service or function Service ou fonction Servicio o función	VHF voice Voix VHF Voz VHF	VHF data Données VHF Datos VHF	HF voice Voix HF Voz HF	HF data Données HF Datos HF	Satellite voice Voix satellite Voz por satélite	Satellite data Données satellite Datos por satélite	Mode S Modo S	Remarks Remarques Observaciones
1	2	3	4	5	6	7	8	9	10
	TWR SMC	1 (1) 1 (1)							
FRENCH ANTILLES (France)									
TFFF FORT-DE-FRANCE Le Lamentin, Martinique	APP-U APP-I TWR APP-SR-I D-ATIS SMC	1 1 1 (1) 1 (1) 1 (1) 1 (1)							
TFFR POINTE-A-PITRE/ Le Raizet, Guadeloupe	APP-U APP-I TWR APP-SR-I D-ATIS SMC	1 2 1 (1) 1 (1) 1 (1) 1							
TFFJ SAINT-BARTHELEMY/ Saint-Barthelemy	AFIS	1							
TFFG SAINT MARTIN/ Grand Case, Guadeloupe	AFIS	1							
FRENCH GUIANA (France)									
SOOO CAYENNE	ACC-U GP	2 (1) 1		CAR-A (1) SAM-2 (1) SAT-2 (1)					
SOCA CAYENNE/ Rochambeau	APP-SR-I TWR SMC ATIS	1 (1) 1 (1) 1 1							
GRENADA									
TGPZ LAURISTON/ Carriacou	TWR	1							
TGPY SAINT GEORGES/ Point Salines	APP-L TWR SMC	1 (1) 1 (1) 1 (1)							
GUATEMALA									
MGFL FLORES/Flores	APP-L TWR	1 1							
MGGT GUATEMALA/ La Aurora	APP-SR-I TWR SMC D-ATIS GP	1 1 1 1 1							
MGPB PUERTO BARRIOS/	TWR	1 (1)							

Country and location Pays et emplacement País y localidad	Service or function Service ou fonction Servicio o función	VHF voice Voix VHF Voz VHF	VHF data Données VHF Datos VHF	HF voice Voix HF Voz HF	HF data Données HF Datos HF	Satellite voice Voix satellite Voz por satélite	Satellite data Données satellite Datos por satélite	Mode S Modo S	Remarks Remarques Observaciones
1	2	3	4	5	6	7	8	9	10
Puerto Barrios									
MGSJ SAN JOSE/San José	TWR	1 (1)							
GUYANA									
SYGC GEORGETOWN	ACC-U	1(1)	1 (06/08)	CAR-A SAM-2	X (06/08)				
	ACC-U GPS ACC-L	1-ER 1 (1) 1							
SYCJ TIMEHRI/ Cheddi Jagan Intl.	APP-L TWR SMC	1 1 (1) 1 (1)							
HAITI									
MTCH CAP HAITIEN/Intl.	APP-L TWR	1 1 (1)							
MTEG PORT-AU-PRINCE	ACC-SR-U GP	~~1~~ 2(1) 1	1 (06/08)						
MTPP PORT-AU-PRINCE/Intl.	APP-SR-I APP-I TWR SMC D-ATIS	1 1 (1) 1 (1) 1 1							
HONDURAS									
MHLC LA CEIBA/ Golosón Intl.	APP-L TWR SMC	1 1 (1) 1							
MHRO COXEN HOLE/Juan Manuel Gálvez Intl.	TWR SMC	1 (1) 1 (1)							
MHLM SAN PEDRO SULA/ La Mesa Intl.	APP-I TWR SMC GP D-ATIS	1 (1) 1 (1) 1 (1) 1 (1) 1 (1)							
MHTG TEGUCIGALPA (CENAMER)	ACC-SR-U GP	7 (4) 1	3 (06/08)	CAR-A (6) SAM-1 (2)	X (06/08)	X (06/08)	X (06/08)		
MHTG TEGUCIGALPA/ Toncontin	APP-I TWR SMC GP D-ATIS	1 (1) 1 (1) 1 (1) 1 (1) 1 (1)							
JAMAICA									
MKJK KINGSTON	ACC-SR-U	1	2 (06/~~08~~)		X (06/0~~8~~)	X (06/0~~8~~)	X (06/0~~8~~)		

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

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1	2	3	4	5	6	7	8	9	10
MMGL GUADALAJARA/ Don Miguel Hidalgo y Costilla Intl.	APP-SR-I APP-SR-L D-ATIS SMC TWR CLRD GP	1 (1) 1 (1) 1 (1) 1 (1) 1 (1) 1 1							
MMGM GUAYMAS/Gral. José María Yáñez Intl.	TWR	1 (1)							
MMHO HERMOSILLO/Gral. Ignacio Pesqueira Garcia Intl.	APP-I D-ATIS TWR SMC	1 (1) 1 (1) 1 (1) 1							
MMZH IXTAPA- ZIHUATANEJO/ Ixtapa-Zihuatanejo Intl.	APP-I TWR	1 (1) 1 (1)							
MMLP LA PAZ/Gral. Manuel Márquez de León Intl.	APP-I TWR	1 (1) 1 (1)							
MMLO LEON/Guanajuato	APP-L TWR	1 1 (1)							
MMLT LORETO/Loreto Intl.	TWR	1 (1)							
MMZO MANZANILLO/Playa de Oro Intl.	APP-L TWR	1 1 (1)							
MMMA MATAMOROS/Gral. Servando Canales	APP-L TWR	1 1 (1)							
MMMZ MAZATLAN/Gral. Rafael Buelna Intl.	ACC-SR-L ACC-SR-U APP-I SMC TWR D-ATIS GP	4 4 (5) 1 (1) 1 1 (1) 1 (1) 1	5 (06/08)		X (06/08)	X (06/08)	X (06/08)		
MM~~MO~~IDMERIDA/Lic. Manuel Crescencio Rejón Intl.	ACC-SR-L ACC-SR-U APP-I D-ATIS GP TWR	3 4 (4) 1 (1) 1 1 (1) 1 (1)	3 (06/08)	CAR-A (5)	X (06/08)	X (06/08)	X (06/08)		
MMML MEXICALI/Gral. Rodolfo Sánchez Taboada Intl.	APP-I TWR	1 1 (1)							
MMMX MEXICO/Lic. Benito Juárez Intl.	ACC-SR-L ACC-SR-U APP-SR-I APP-SR-L D-ATIS GP SMC TWR	5 5 (7) 1 (1) 1 (1) 1 (1) 1 (1) 1 (1) 1 (1)	3 (06/08)		X (06/08)	X (06/08)	X (06/08)		

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

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1	2	3	4	5	6	7	8	9	10
Lopez Mateos	GP	1							
MMTC TORREON/Torreón	APP-L	1 (1)							
Intl.	TWR	1 (1)							
MMVR VERACRUZ/Gral.	APP-L	1 (1)							
Heriberto Jara Intl.	TWR	1 (1)							
MMVA VILLAHERMOSA/	APP-L	1							
C.P.A. Carlos Rovirosa	TWR	1 (1)							
MMZC ZACATECAS/Gral.	APP-I	1							
Leobardo Ruíz Intl.	TWR	1 (1)							
MONTSERRAT (United Kingdom)									
TRPM PLYMOUTH/	APP-L	1							
Blackburne, Montserrat I.	TWR	1							
NETHERLANDS ANTILLES (Netherlands)									
TNCF CURACAO	ACC-U	3 (2)-ER	2 (06/08)		X (06/08)	X (06/08)	X (06/08)		
	GP	1 (1)							
TNCB KRALENDIJK/	APP-I	1							
Flamingo, Bonaire I.	TWR	1 (1)							
TNCE ORANJESTAD/	TWR	1							
F.D. Rossevelt, St. Eustacius I.									
TNCM PHILIPSBURG/Prinses	APP-I	1							
Juliana, St. Maarten I.	TWR	1							
	SMC	1							
TNCC WILLEMSTAD/Hato,	APP-I	1							
Curacao I.	TWR	1 (1)							
	SMC	1							
	APP-SR-I	1 (1)							
	D-ATIS	1							
NICARAGUA									
MNMG MANAGUA/Augusto	APP-I	1 (1)							
César Sandino Intl.	TWR	1 (1)							
	SMC	1 (1)							
	GP	1 (1)							
	D-ATIS	1							
MNPC PUERTO CABEZAS/	TWR	1							
Puerto Cabezas									
PANAMA									
MPBO BOCAS DEL TORO/	AFIS	1 (1)							
Bocas del Toro									
MMPCH CHANGUINOLA/	TWR	1 (1)							
Cap. Manuel Niño									
MPDA DAVID/Enrique Malek	TWR	1 (1)							
	SMC	1 (1)							

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1	2	3	4	5	6	7	8	9	10
MPMG PANAMA/Marcos A. Gelabert	TWR SMC CLRD	1 (1) 1 (1) 1 (1)							
MPZL PANAMA	ACC-U ACC-SR-U APP-SR-I GP	2 (1) 1 (1) 3 (3) 1 (1)	1 (06/08)	CAR-A (3) SAM-1 (2)	X (06/08)	X (06/08)	X (06/08)		
MPTO PANAMA/Tocumen	TWR SMC ATIS-D CLRD	1 (1) 1 (1) 1 1							
PARAGUAY									
SGFA ASUNCION	ACC-U ACC-U GP	1 (1) 1 (1)-ER 1 (1)	1 (06/08)	SAM-1 (3) SAM-2 (3)	X (06/08)				
SGAS ASUNCION/ Silvio Pettirossi	APP-SR-I APP-I TWR SMC	1 (1) 2 (2) 1 (1) 1 (1)							
SGES CIUDAD DEL ESTE/ Guarani	APP-SR-I TWR	1 (1) 1 (1)							
PERU									
SPQU AREQUIPA/ Rodríguez Ballón Intl.	APP-SR-U TWR	1 (1) 1 (1)							
SPHI CHICLAYO/ Cap. José Quiñones Gonzáles	APP-SR-I TWR	1 (1) 1 (1)							
SPZO CUZCO/Velazco Astete	APP-SR-U TWR ATIS	1 1 (1) 1 (1)							
SPQT IQUITOS/Cnel. FAP Francisco Secada Vignetta	APP-SR-I TWR	1 (1) 1 (1)							
SPIM LIMA	ACC-SR-U GP	3 (3)-ER 1 (1)	2 (06/06)	SAM-1 (2)	X (06/06)	X (06/06)	X (06/06)		
SPIM LIMA-CALLAO/Jorge Chávez Intl.	APP-SR-I APP-SR-U TWR SMC CLRD ATIS	1 (1) 2 1 (1) 1 (1) 1 (1) 1(1)	1 (06/01)						
SPSO PISCO/Pisco	APP-I TWR SMC	1 1 (1) 1 (1)							
SPTN TACNA/Cnel. FAP Carlos Ciriani Santa Rosa	APP-I TWR	1 1 (1)							

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1	2	3	4	5	6	7	8	9	10
SPRU TRUJILLO/Cap. Carlos Martínez de Pinillos	APP-I TWR	1 (1) 1 (1)							
PUERTO RICO (United States)									
TJBQ AGUADILLA/Rafael Hernández Intl.	TWR	1 (1)							
TJFA FAJARDO/Diego Jiménez Torres	TWR	1 (1)							
TJMZ MAYAGUEZ/Mayaguez	SMC TWR	1 1							
TJPS PONCE/Mercedita	TWR SMC APP-L	1 1							
TJZS SAN JUAN	ACC-U GP-U	11	4 (06/08)	CAR-A (6) CAR-B (1) NAT-A (5)	X (06/08)	X (06/08)	X (06/08)		
TJSJ SAN JUAN, PUERTO RICO/Luis Muñóz Marin Intl.	D-ATIS TWR SMC APP-SR-I	1 (1) 2 (1) 1 (1) 2 (2)							
TJVQ VIEQUES/Antonio Rivera	TWR	1 (1)							
SAINT KITTS AND NEVIS									
TKPK BASSETERRE/Golden Rock, Saint Kitts I.	APP-L TWR	1 (1) 1 (1)							
TKPN CHARLESTOWN/ Newcastle, Nevis I.	TWR	1							
SAINT LUCIA									
TLPC CASTRIES/Vigie	TWR SMC	1 (1) 1 (1)							
TLPL VIEUX-FORT/ Hewanorra Intl.	APP-L TWR SMC	1 (1) 1 (1) 1 (1)							
SAINT VINCENT AND THE GRENADINES									
TVSV BEQUIA/J. F. Mitchel	TWR	1 (1)							
TVSC CANOUAN/Canouan	TWR	1 (1)							
TVSV KINGSTOWNE/ E.T. Joshua	APP-L TWR	1 (1) 1 (1)							
TVSM MUSTIQUE/Mustique	TWR	1 (1)							
TVSU UNION ISLAND/ Union Island	TWR	1							

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1	2	3	4	5	6	7	8	9	10
SENEGAL									
GOOO DAKAR	ACC-U	1 (1)-ER		SAT-1 SAT-2	X (06/08)	X (06/08)	X (06/08)		
SURINAME									
SMNI NEW NICKERIE/ Maj. Fernandes	TWR SMC	1 (1) 1							
SMPM PARAMARIBO	ACC-U GP	1 (1)-ER 1							
SMZO PARAMARIBO/ Zorg en Hoop	TWR SMC	1 (1) 1 (1)							
SMJP ZANDERY/Johan A. Pengel	APP-I TWR SMC	1 (1) 1 (1) 1 (1)							
TRINIDAD AND TOBAGO									
TTZP PIARCO	ACC-SR-U ACC-U GP	3 4 (2) 1 (1)	2 (06/08)	CAR-A (3) CAR-B (1) SAM-2 (2)	X (06/08)	X (06/08)	X (06/08)		
TTPP PORT OF SPAIN/ Piarco Intl., Trinidad I.	APP-I APP-SR-I TWR SMC ATIS	1 2 (1) 1 (1) 1 (1) 1 (1)							
TTCP SCARBOROUGH/ Crown Point, Tobago I.	APP-I TWR SMC	1 (1) 1 (1) 1 (1)							
TURKS AND CAICOS ISLANDS (United Kingdom)									
MBGT GRAND TURK/ Grand Turk Intl.	APP-L TWR	1 1 (1)							
MBPV PROVIDENCIALES/ Intl.	APP-L TWR	1 (1) 1 (1)							
MBSC SOUTH CAICOS/Intl.	APP-L TWR	1 1 (1)							
UNITED STATES									
KZWY NEW YORK	GP-U	1-ER	1 (06/08)	CAR-A CAR-B	X (06/08)	X (06/08)	X (06/08)		

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1	2	3	4	5	6	7	8	9	10
URUGUAY									
SUCA COLONIA/ Departamental de Colonia	TWR	1 (1')							
SULS MALDONADO C/C Carlos A. Curbelo Intl Laguna del Sauce	TWR SMC ATIS	1 (1) 1 1							
SUAA MONTEVIDEO/Angel S. Adami Intl.	TWR	1 (1)							
SUEO MONTEVIDEO	ACC-U	3 (2)	1 (06/0~~85~~)	SAM-1 (3) SAM-2 (5) SAT-X*	X (06/08)	X (06/08)	X (06/08)		*Frequency to be designated *Fréquence à déterminer *Frecuencia por designar
SUMU MONTEVIDEO/ Carrasco Intl. Gral. Cesareo Berisso	APP-SR-I APP-I SMC TWR ATIS	1 (1) 1 (1) 1 (1) 1 (1) 1							
SURV RIVERA/Cerro Chapeau Intl.	TWR	1 (1)							
SUSO SALTO/Intl. Nueva Hesperides	TWR	1 (1)							
VENEZUELA									
SVBC BARCELONA/Gral. José Antonio Anzoátegui Intl.	APP-SR-I TWR SMC ATIS	2 (2) 1 (1) 1 (1) 1 (1)							
SVZM MAIQUETIA	ACC-SR-U GP	5 (6) 1 (2)	3 (06/08)	CAR-A (4) SAM-2 (3)	X (06/08)	X (06/08)	X (06/08)		
SVMI CARACAS/Maiquetía, Simón Bolívar	APP-SR-L TWR SMC ATIS CLRD	2 (2) 2 (2) 2 (2) 1 (1) 1	~~1 (06/01)~~						
SVMC MARACAIBO/ La Chinita Intl.	APP-SR-I TWR SMC ATIS GP	2 (2) 1 (1) 1 (1) 1 (1) 1 (1)							
SVMG MARGARITA/Intl. Del Caribe, General Santiago Marino	APP-SR-I TWR SMC ATIS	1 (1) 1 (1) 1 (1) 1 (1)							
SVJC PARAGUANA/Josefa	APP								

Country and location Pays et emplacement País y localidad	Service or function Service ou fonction Servicio o función	VHF voice Voix VHF Voz VHF	VHF data Données VHF Datos VHF	HF voice Voix HF Voz HF	HF data Données HF Datos HF	Satellite voice Voix satellite Voz por satélite	Satellite data Données satellite Datos por satélite	Mode S Modo S	Remarks Remarques Observaciones
1	2	3	4	5	6	7	8	9	10
Camejo	TWR (1)								
SVSA SAN ANTONIO DEL TACHIRA/San Antonio del Tachira	APP TWR (1)								
SVVA VALENCIA/Zim Valencia	APP TWR	 1 (1)							
VIRGIN ISLANDS (United Kingdom)									
TUPJ ROADTOWN/ Beef Island	APP-L TWR	1 1 (1)							
TUPW VIRGIN GORDA/ Virgin Gorda	TWR	1							
VIRGIN ISLANDS (United States)									
TISX SAINT CROIX/Henry E. Rohlsen, St. Croix	APP-I TWR SMC	1 (1) 1 (1) 1 (1)							
TIST SAINT THOMAS/ Cyril E. King	APP-I TWR SMC D-ATIS	1 (1) 1 (1) 1 (1) 1 (1)							

APPENDIX B

TABLE CNS 1BB – ATN GROUND-GROUND APPLICATIONS PLAN / TABLA CNS1 BB – PLAN DE APLICACIONES TIERRA-TIERRA ATN (CAR REGION / REGIÓN CAR)

ATN GROUND-GROUND APPLICATIONS PLAN / PLAN DE APLICACIONES TIERRA-TIERRA					
Administration and Location/ Administración y localidad	**Application Type/ Tipo de Aplicación**	**Conneted with Administration & Location of/ Conectada con Administración y Localidad de**	**Used Standard / Norma usada**	**Implementation Date/ Fecha de Implementación**	**Remarks/ Observaciones**
1	2	3	4	5	6
ARUBA, Aruba	AMHS	FAA-Atlanta	ATN	TBD/Por determinar	
BAHAMAS, Nassau,	AMHS	FAA-Atlanta	ATN	TBD/Por determinar	
CAYMAN ISLANDS, Grand Cayman ISLAS CAIMANES , Gran Caimán	AMHS	FAA-Atlanta	ATN	TBD/Por determinar	
CUBA, Havana CUBA, La Habana	AMHS	FAA-Atlanta	ATN	2008	
	AIDC	TBD/Por determinar	ATN	TBD/Por determinar	
DOMINICAN REPUBLIC, Santo Domingo/ REPÚBLICA DOMINICANA, Santo Domingo	AMHS	FAA-Atlanta	ATN	2008	
	AIDC	TBD/Por determinar	ATN	TBD/Por determinar	
HAITI, Port-au-Prince/ HAITÍ, Puerto Príncipe,	AMHS	FAA-Atlanta	ATN	2008	
HONDURAS, Tegucigalpa (COCESNA)	AMHS	FAA-Atlanta	ATN	2007	
	AIDC	TBD/Por determinar	ATN	TBD/Por determinar	
JAMAICA, Kingston	AMHS	FAA-Atlanta	ATN	2008	
	AIDC	TBD/Por determinar	ATN	TBD/Por determinar	

ATN GROUND-GROUND APPLICATIONS PLAN / PLAN DE APLICACIONES TIERRA-TIERRA					
Administration and Location/ Administración y localidad	**Application Type/ Tipo de Aplicación**	**Conneted with Administration & Location of/ Conectada con Administración y Localidad de**	**Used Standard / Norma usada**	**Implementation Date/ Fecha de Implementación**	**Remarks/ Observaciones**
1	2	3	4	5	6
MEXICO, Mexico City MÉXICO, Ciudad de México	AMHS	FAA-Atlanta	ATN	TBD/Por determinar	
	AIDC	FAA- TBD/Por determinar	ATN	TBD/Por determinar	
	AIDC	TBD/Por determinar	ATN	TBD/Por determinar	
NETHERLANDS ANTILLES (Curacao) / ANTILLAS NEERLANDESAS (Curazao)	AMHS	FAA-Atlanta	ATN	TBD/Por determinar	
PANAMA, Panama City/ PANAMÁ, Ciudad de Panamá	AMHS	FAA-Atlanta	ATN	TBD/Por determinar	
TRINIDAD AND TOBAGO, Piarco	AMHS	FAA-Atlanta	ATN	TBD/Por determinar	
	AIDC	TBD/Por determinar	ATN	TBD/Por determinar	
UNITED STATES, Atlanta ESTADOS UNIDOS, Atlanta	AMHS	Aruba	ATN	TBD/Por determinar	03 2007 - USA Availability to connect to the CAR/SAM Regions/ Disponibilidad de conectar con las Regiones CAR/SAM
	AMHS	Bahamas Nassau,		TBD/Por determinar	
	AMHS	Cayman Islands, Grand Cayman Islas Caimanes , Gran Caimán		TBD/Por determinar	
	AMHS	Cuba, Havana Cuba, La Habana		2008	
	AMHS	Dominican Republic, Santo Domingo/ República Dominicana, Santo Domingo		2008	
	AMHS	Haiti, Port-au-Prince/ Haití, Puerto Príncipe,		2008	

ATN GROUND-GROUND APPLICATIONS PLAN / PLAN DE APLICACIONES TIERRA-TIERRA					
Administration and Location/ Administración y localidad	**Application Type/ Tipo de Aplicación**	**Conneted with Administration & Location of/ Conectada con Administración y Localidad de**	**Used Standard / Norma usada**	**Implementation Date/ Fecha de Implementación**	**Remarks/ Observaciones**
1	2	3	4	5	6
	AMHS	Honduras, Tegucigalpa (COCESNA)		2007	
	AMHS	Jamaica, Kingston		2008	
	AMHS	Mexico, Mexico		TBD/Por determinar	
	AMHS	Netherlands Antilles (Curacao) / Antillas Neerlandesas (Curazao)		TBD/Por determinar	
	AMHS	Panama, Panama City/ Panamá, Ciudad de Panamá		TBD/Por determinar	
	AMHS	Peru, Lima		TBD/Por determinar	
	AMHS	Trinidad and Tobago, Piarco		TBD/Por determinar	
	AMHS	Venezuela, Maiquetía		2009	
UNITED STATES, TBD ESTADOS UNIDOS, Por determinar	AIDC	MEXICO, Por determinar		TBD/Por determinar	
	AIDC	TBD/Por determinar		TBD/Por determinar	

APPENDIX C

TABLE CNS 1BB – ATN GROUND-GROUND APPLICATIONS PLAN / TABLA CNS1 BB – PLAN DE APLICACIONES TIERRA-TIERRA ATN (SAM REGION / REGIÓN SAM)

ATN GROUND-GROUND APPLICATIONS PLAN / PLAN DE APLICACIONES TIERRA-TIERRA					
Administration and Location/ Administración y localidad	**Application Type/ Tipo de Aplicación**	**Conneted with Administration & Location of/ Conectada con Administración y Localidad de.**	**Used Standard / Norma usada**	**Implementation Date/ Fecha de Implementación**	**Remarks/ Observaciones**
1	2	3	4	5	6
Argentina, Buenos Aires	AMHS	Bolivia, Brasil, Chile, Paraguay Perú, Uruguay y AFI	ATN	2005	
	AIDC	Bolivia, Brasil, Chile, Paraguay Perú, Uruguay y AFI	ATN	TBD /Por determinar	
Bolivia , La Paz	AMHS	Argentina , Perú	ATN	2008	
	AIDC	Argentina , Perú	ATN	TBD /Por determinar	
Brasil, Brasilia	AMHS	Argentina, Guyana Francesa,Paraguay, Peru,Uruguay, NAM,EUR,AFI	ATN	2008	
	AIDC	Argentina, Guyana Francesa,Paraguay, Peru,Uruguay, NAM,EUR,AFI	ATN	TBD/ Por determinar	
Chile, Santiago	AMHS	Argentina,Perú y PAC.	ATN	2007	
	AIDC	Argentina,Perú y PAC.	ATN	TBD/Por determinar	
Colombia , Bogotá	AMHS	Ecuador,Perú y Venezuela	ATN	2008	
	AIDC	Ecuador,Perú y Venezuela	ATN	TBD/Por determinar	
Ecuador,Quito	AMHS	Colombia y Perú	ATN	2009	
	AIDC	Colombia y Perú	ATN	TBD/Por determinar	
French Guyana ,Cayenne	AMHS	Brasil, Surinam	ATN	2009	
	AIDC	Brasil, Surinam	ATN	TBD/Por determinar	
Guyana,Georgetown	AMHS	Brasil, Trinidad Tobago y Venezuela	ATN	2009	
	AIDC	Brasil, Trinidad Tobago y Venezuela	ATN	TBD/Por determinar	
Paraguay,Asunción	AMHS	Argentina, Brasil	ATN	2007	
	AIDC	Argentina, Brasil	ATN	TBD/Por determinar	
Perú	AMHS	Argentina,Bolivia,Brasil,Chile Colombia,Ecuador,Venezuela y NAM	ATN	2007	
	AIDC	Argentina,Bolivia,Brasil,Chile Colombia,Ecuador,Venezuela y NAM	ATN	TBD/Por determinar	
Surinam	AMHS	Brasil,French Guyana y Venezuela	ATN	2009	
	AIDC	Brasil,French Guyana y Venezuela	ATN	TBD/Por determinar	
Uruguay	AMHS	Argentina, Brasil	ATN	2008	
	AIDC	Argentina, Brasil	ATN	TBD/Por determinar	
Venezuela	AMHS	Brasil,Colombia,Perú,Suriname,NAM,CAR y EUR	ATN	2008	
	AIDC	Brasil,Colombia,Perú,Suriname,NAM,CAR y EUR	ATN	TBD/Por determinar	

APPENDIX D

AMHS ADDRESSING PLAN OF THE SAM REGION

AMHS Addressing scheme

The AMHS addressing scheme is presented in two formats: XF (transfer addressing) and CAAS (AMHS common addressing). Both formats identify the manager domain (MD) and the AMHS user identifier (UI).

The domain identifier (MD) specifies the name of the State, the name of the manager domain and the name of the private domain (PMRD). The AMHS user identifier specifies the name of the organization (O), the name of the organizational unit (OUI) and the common name (CN).

In the XF addressing, in the domain identifier (MD), the name of the State is XX, the name for the administration of the domain is ICAO, and the PRMD name is represented with the two nationality identification letters specified in ICAO Doc. 7910 (SA, SB, SC, SE, SO, SK, SM, SO, SF, SU, SY, SV, MP). For the AMHS user identifier, the name of the organization (O) is AFTN, the name for the OUI is represented by the same 8-letter address used in the AFTN. The XS mode does not use the CN.

In the CAAS addressing, in the domain identifier (MD), the name of the Sate is XX, the name for the administration of the domain is ICAO and the name of the PRMD takes a value declared by the State. It can use the same as that indicated in the XS addressing, two letters different to those indicated in 7910, or the full name of the State (Argentina, Bolivia, Brazil, etc.). For the AMHS user identifier, the slot for the organization (O) is to be filled with the name of the organization or a geographical unit in alphanumeric characters it is composed of four letter , the name for the Organization Unit (OUI) is represented by four AFTN alphanumeric characters associated with the organization or geographical unit and which can have any value, for the CN (Common Name or user name) the same AFTN addresses can be used (8 AFTN letter).

Appendix 1 presents the AMHS addressing registered in ICAO as result of the survey sent to Status through the ICAO Secretary General letter SP 54/1-03/39 of May 2003. Seven SAM States answered this survey; two of these, Argentina and Brazil, indicated that their AMHS addressing will be CAAS. Bolivia, Chile, Panama and Uruguay indicated that theirs would be XF. Colombia indicated that the information would be sent at a later date. ICAO assigned XF to all Status who did not reply the letter, as indicated therein.

Appendix 2 presents a CAAS AHMS addressing proposal for the SAM Region for the identifier of the administrator of the domain and AMHS user identifier.

APPENDIX 1

NAMES REGISTERED AT ICAO OF CAR/SAM AMHS MD PRD

STATE	AMHS ADDRESSING SPECIFICATIONS			
	NATIONALITY DESIGNATORS	NAME STATES	NAME ADM	NAME PRMD*
ARGENTINA	**SA**	**XX**	**ICAO**	**Argentina**
BOLIVIA	SL	XX	ICAO	SL
BRAZIL	*SB*	*AX*	*ICA 0*	*BR*
CHILE	SC	XX	ICAO	SC
COLOMBIA	SK	XX	ICAO	SK
ECUADOR	SE	XX	ICAO	SE
FRENCH GUIANA	SO	XX	ICAO	SO
GUYANA	SY	XX	ICAO	SY
PANAMA	MP	XX	ICAO	MP
PARAGUAY	SO	XX	ICAO	SO
PERU	SP	XX	ICAO	SP
SURINAME	SM	XX	ICAO	SM
URUGUAY	SU	XX	ICAO	SU
VENEZUELA	SV	XX	ICAO	SV

* **Note:**

The items in **bold** identify the values specified by SAM States which are different to the nationality indicators.
The items in ***italic*** identify the values specified by SAM States which are equal to the nationality indicators.
The remaining items for States were assigned by ICAO.

(Information taken from ACP Panel Work Group N (Networking) WP/11

APPENDIX 2
AMHS CAAS ADDRESSING SUGGESTED VALUES, TAKING INTO CONSIDERATION ONLY ONE MTA PER STATE

STATE	AMHS ADDRESSING SPECIFICATIONS					
	ATTRIBUTION NAME STATES (C)	**ATTRIBUTION NAME ADM (A)**	**NAME PRMD (P)**	**ORGANIZATION NAME (O) ***	**ORGANIZATIONAL UNIT NAME (OUI)**	**COMMON NAME (CN)**
ARGENTINA	XX	ICAO	ARGENTINA	SAEZ	All four letters indicated in ICAO Doc 7910	AFTN address 8 letter
BOLIVIA	XX	ICAO	BOLIVIA	SLLF	Id	Id
BRAZIL	XX	ICAO	BRAZIL	SBBF	Id	Id
CHILE	XX	ICAO	CHILE	SCEZ	Id	Id
COLOMBIA	XX	ICAO	COLOMBIA	SKED	Id	Id
ECUADOR	XX	ICAO	ECUADOR	SEGU	Id	Id
FRENCH GUIANA	XX	ICAO	FRENCH GUIANA	SOCA	Id	Id
GUYANA	XX	ICAO	GUYANA	SYCJ	Id	Id
PANAMA	XX	ICAO	PANAMA	MPTO	Id	Id
PARAGUAY	XX	ICAO	PARAGUAY	SGAS	Id	Id
PERU	XX	ICAO	PERU	SPLI	Id	Id
SURINAME	XX	ICAO	SURINAME	SMPM	Id	Id
URUGUAY	XX	ICAO	URUGUAY	SUEO	Id	Id
VENEZUELA	XX	ICAO	VENEZUELA	SVZM	Id	

* Can be more than one four letters address for an Organization unit (O). For each assigned Organization name address (O), there is associated various four letters addresses for the Organization Unit (OUI)

Example of an AMHS CAAS address for an Argentinean unit (CN) that is part of Ezeiza Organization or Region:

C = XX
A = ICAO
P = ARGENTINA
O = SAEZ

OUI = SAAA
CN = SAAAZPZX

The complete address will be: **XXICAOARGENTINASAEZSAAASAAAZPZX**

APPENDIX E

Table CNS 1Ba – ATN AIR-GROUND APPLICATIONS PLAN / Tabla CNS1 Ba – PLAN DE APLICACIONES AIRE-TIERRA ATN

ATN AIR-GROUND APPLICATIONS PLAN / PLAN DE APLICACIONES AIRE-TIERRA						
Administration and Center/ Administración y Centro	Application Type/ Tipo de Aplicación	Served air space / Espacio aéreo servidos	COM Infrastructure / Infraestructura COM	Used Standard / Norma usada	Implementation Date/ Fecha de Implementación	Remarks/ Observaciones
1	2	3	4	5	6	7

APPENDIX F

AMHS IMPLEMENTATION PLANS IN THE CAR AND SAM REGIONS

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

AMHS Implementation Plans in the SAM Region	
Date	**Management**
Implemented	Argentina
2007	Chile, Paraguay and Peru
2008	Bolivia, Brazil, Colombia, Uruguay y Venezuela
2009	Ecuador, Guyana, French Guiana, Suriname, Uruguay and Panama

APPENDIX G

REGIONAL PLAN OF DEACTIVATION OF NDB STATIONS
PLAN REGIONAL DE DESACTIVACIÓN DE ESTACIONES NDB

Administration/ Location Administración/ Lugar	Identification Identificación	Function Función	Deactivation date / Fecha de desactivación	Remarks Observaciones
1	2	3	4	5

APPENDIX H

DRAFT ELEMENTS FOR A REGIONAL STRATEGY FOR SURVEILLANCE SYSTEMS

- **Short term: (until 2011)**

Installation of surveillance systems on ground

- Implementation of SSR radars Mode S only in high-traffic-density approach, en route, and terminal areas,
- Implementation of monopulse SSR, adaptable to Mode S, in medium- and high-traffic en route and terminal areas.
- Begin ground implementation for ADS-B (ES Mode S receivers) for en route and terminal areas not covered with radar, and strengthen surveillance in areas covered with SSR Modes A/C and S.
- Begin the implementation of multilateration, where aircraft respond to SSR Mode A/C or SSR Mode S queries for aerodrome surface movement surveillance

Aircraft

- Assignment of *24-bit addressing for unique aircraft identification*
- Complete the implementation of ACAS II systems throughout commercial and general aviation. Use of basic Mode S transponder
- Begin the update of Mode S transponder so that it can operate in ADS-B and multilateration environments

- **Medium term: (2011 – 2015)**

Installation of surveillance systems on ground

- Implementation of Mode S in those monopulse SSRs that have Mode S capabilities, in areas with coverage and increased air traffic.
- SSR Mode A/C and SSR Mode S continue to be the main surveillance elements for approach, en route, and terminal areas.
- Increase ADS-B installations on ground (ES Mode S receivers) for en route and terminal areas not covered by radar, and strengthen surveillance in areas covered by SSR Mode A/C and SSR Mode S.
- Increase the implementation of multilateration, where aircraft respond to SSR Modes A/C and S queries for surveillance of aerodrome surface movements, and begin the implementation of surveillance applications in approach, en route and terminal areas (wide area multilateration, WAM) in areas that are not covered by radar surveillance and to strengthen radar surveillance

Aircraft

- Increase updating of Mode S transponder for ADS-B and multilateration operations

- **Long term: (2015 - 2025)**

Installation of surveillance systems on ground

- Begin the non-replacement of SSR Mode A/C radars that have completed their life cycle.
- Implement ADS-B or multilateration systems to replace the SSRs that have completed their life cycle
- Begin the implementation of new ICAO-approved surveillance systems

Aircraft

- New updates of Mode S transponder to support new ADS-B functions, such as improved information transmission capability, more information on board to give the pilot the capability to make decisions on separation.

APPENDIX I

CAR/SAM Regional Strategy for the ADS-C and ADS-B Systems Implementation

Near-Term (until 2011)

1. The ADS-C surveillance implementation is used in oceanic and remote airspace associated with FANS capacities. The ADS-B surveillance implementation should be prioritize in the continental airspaces where there is no radar surveillance available, taking into consideration the density of traffic, the operational requirements and aircrafts capability. Also, consideration should be given to the potentialities to complement or replace the SSR in a scarcely to medium traffic density area, for route surveillance, in terminal areas, for surface movement control (ADS-B) and other applications.
2. Each State/Territory/International Organization needs to evaluate the: maximum density traffic nowadays and expected for the year 2015. The useful life of their radars and the potentiality for their replacement with ADS-B, the locations of potential ADS-C or ADS-B ground station sites, and the capabilities of existing and planned ATC automation systems to support the ADS-C or ADS-B.
3. The proportions of equipped aircrafts are also critical for the ADS-C and ADS-B deployment, for which it is required to periodically provide, al least, the following information: number of equipped aircrafts operating in the concern airspace, number and name of the airlines that have equipped aircrafts for ADS-C and ADS-B, type of equipped aircrafts, categorization of the accuracy/integrity data available in the aircrafts.
4. The ADS-B deployment should be associated at early stages in coordination with the States/Territory/International Organizations responsible for the control of adjacent areas, and the correspondent ICAO Regional Office, establishing a plan in the potential areas of ADS-B data sharing, aimed at a coordinated, harmonious and interoperable implementation.
5. Each State/Territory/Organization should investigate and report their own Administration's policy in respect to the ADS-B data sharing with their neighbours and from cooperative goals.
6. The ADS-B data sharing plan should be based selecting centres by pairs and analyzing the benefits and formulating proposals for the ADS-B use for each pair of centre/city with the purpose to improve the surveillance capacity.
7. Likewise, it is necessary to consider implementing surveillance solutions for surface movement control by the implementation of ADS-B.
8. To support the ADS-C and ADS-B regional plan, the States/Territories/International organizations, as well as the entity representing the airspace users, should organized and provide the following information; a focal point of contact, its respective implementation plan, including a time-table, and information on its air-ground communications and automation systems.
9. The ADS-B data links technology that will be use for the Mode S 1,090 MHz extended squitter to (1090 ES). Likewise, al the end of the medium term the introduction of ADS-B data sharing could be initiated and be approved by ICAO for its use in a long-term to satisfy the new requirements of the global ATM system.
10. The implementation would be in conformity with the SARPs, ICAO guidelines and the GREPECAS conclusions.

Medium-Term (2011 – 2015)

11. Continuation of the ADS-B use with the 1090 ES technique and the planning initiation for the ADS-B implementation by new data links to satisfy the ATM global system requirements.

Longer-Term (From 2015 to 2025)

12. The planning and implementation would be carried out according to the ADS and ADS-B evolution, with the associated technology developments, in conformity with the global ATM systems, with the new SARPs and ICAO guidance.

APPENDIX J

POTENTIAL AIR SPACE TO IMPLEMENT ADS-C AND ADS-B CONSIDERED BY CAR/SAM STATES, TERRITORIES, AND INTL. ORGANIZATIONS / ESPACIOS AÉREOS POTENCIALES PARA IMPLANTAR ADS Y ADS-D CONSIDERADOS POR LOS ESTADOS/ TERRITORIOS/ORGANIZACIONES DE LAS REGIONES CAR/SAM

No.	State or Oganization/ Estado u Organización/ Center/Centro	Air Space/ Espacio aéreo	ADS Type/ Tipo	Status/ Estado	ADS-B data sharing with/ Intercambio de datos ADS-B con	Impl. Date Fecha de Impl.	Remarks/ Observaciones
1	2	3	4	5	6	7	8
	CAR						
1.	**Bahamas**/ Nassau ACC	**Nassau FIR**	**ADS-B**	**S**			There are being carried out studies./Se están realizando estudios.
2.	**Cuba/** Habana ACC	**Havana FIR** (South East Zone)					
3.	**Haiti**/ Port au Prince ACC	**Port au Prince FIR**	**ADS-B**	**S**			There are being carried out studies./Se están realizando estudios.
4.	**Mexico**/ Mérida ACC Monterrey ACC	**Golf of Mexico** (Central zone between Houston Oceanic and Mexico FIRs / Zona central entre las FIRS Houston Oceanic y México)	**ADS-B**	**P**	**Houston ARTCC**		Based on an agreement Mexico - USA/ Basado en acuerdo México - Estados Unidos.
5.	**Trinidad and Tobago/** Piarco ACC	**Piarco FIR**	**ADS-B** **ADS-C***	**P**			There are being carried out more studies./Se están realizando más estudios. * Oceanic East Sector/Sector Este oceánico
6.	**United States**/ Houston ARTCC	**Golf of Mexico** (Central zone between Houston Oceanic and Mexico FIRs / Zona central entre las FIRS Houston Oceanic y México)	**ADS-B**	**P**			Based on an agreement Mexico - USA/ Basado en acuerdo México - Estados Unidos.
	Miami ARTCC	**Miami Oceanic FIR (Domestic zone)**	**ADS-B**	**P**			

No.	State or Organization/ Estado u Organización/ Center/Centro	Air Space/ Espacio aéreo	ADS Type/ Tipo	Status/ Estado	ADS-B data sharing with/ Intercambio de datos ADS-B con	Impl. Date Fecha de Impl.	Remarks/ Observaciones
1	2	3	4	5	6	7	8
7.	**COCESNA/** Cenamer ACC	**Cenamer FIR** (Caribbean and Pacific Oceanic sectors / Sectores oceánicos Caribe y Pacífico)	**ADS-B**	**S**			There are being carried out studies./ Se están realizando estudios.
8.		**Other air spaces./ Otros espacios aéreos**					Pending of the studies/ Pendiente de estudios.
	SAM						
9.	**Argentina**	**Ezeiza FIR Oceanic Zone / Zona Oceánica**	**ADS-C**	**P**			Planned to be implemented at the end of the first trimester of 2007 / Planificado para ser instalado a finales del primer trimestre de 2007
10.	**Brasil/** Atlántico ACC	**Atlántico FIR**	**ADS-C**	**P**			Trials have been carried out and It has an installation plan in the EUR/SAM corridor / Se han realizado ensayos y existe un plan de implantación en el corredor EUR/SAM.
11.	**Chile/** Chile´s ACC/ ACCs de Chile	**Chile FIRs (Continental and Oceanic air space./ Espacios aéreos continental y oceánicos)**	**ADS-C**	**S**			In the 2005 tests will be begun to implement ADS./ En el 2005 se comenzarán pruebas para implementar ADS.
12.		**Other air spaces./ Otros espacios aéreos**					Pending of the studies/ Pendiente de estudios.

P – Planned/Planificado S – Study/Estudio

APPENDIX/APENDICE K

Table CNS 4A - SURVEILLANCE SYSTEMS (Updated)
Tabla CNS 4A - SISTEMAS DE VIGILANCIA (Actualizada)

State(Territory)/Location Estado(Territorio)/Ubicación	ATS Unite Served Unidad ATS Servida	PSR			SSR				ADS		Remarks Observaciones
		Funtion Función	Coverage Cobertura (NM)	Status Impl. Estado	Funtion Función	Modes Modos (A,C& S)	Coverage Cobertura (NM)	Status Impl. Estado	Type Tipo	Status Impl. Estado	
1	3	4	5	6	7	8	9	10	11	12	13
ANGUILA (UK)								NP			
ANTIGUA & BARBUDA											
Airport (4 NM North)	V.C. Bird APP				T	A/C	180	I*			* MSSR
ARGENTINA											
~~Aeroparque Jorge Newbery~~	~~Ezeiza ACC~~ ~~Aeroparque APP~~	~~T~~	~~60~~	~~P~~	~~E~~	~~A/C~~	~~220~~	~~P*~~			~~* MSSR~~
~~Bahía Blanca, Airport~~	~~Ezeiza ACC~~ ~~Bahía Blanca APP~~	~~T~~	~~60~~	~~P~~	~~E~~	~~A/C~~	~~220~~	~~P*~~			~~* MSSR~~
Bolívar, Airport	Ezeiza ACC				E	A/C/S	220	P*			* MSSR
~~Colonia Catriel, Airport~~	~~Ezeiza ACC~~				~~E~~	~~A/C~~	~~220~~	~~P*~~			~~* MSSR~~
Córdoba, Airport	Córdoba ACC Ezeiza ACC Córdoba APP	T	60	I	E/T	A/C	180	I/P*	C y B	P	* MSSR
Ezeiza, Airport	Ezeiza ACC Buenos Aires APP	T	90	I	E	A/C	220	I*	C y B	P	* MSSR
Jujuy, Airport	Córdoba ACC				E	A/C/S	220	p*			* MSSR
~~La Rioja, Airport~~	~~Córdoba ACC~~				~~E~~	~~A/C~~	~~220~~	~~p*~~			~~* MSSR~~
~~Las Lomitas, Airport~~	~~Ezeiza ACC~~ Córdoba ACC				~~E~~	~~A/C~~	~~220~~	~~p*~~			~~* MSSR~~
Mar de Plata, Airport	Ezeiza ACC Mar del Plata APP	T	60	I	E	A/C	220	I*			* MSSR
Monte Quemado , Santiago del Estero	Ezeiza ACC Cordoba ACC				E	A/C/S	220	P*			* MSSR
Mendoza, Airport	Cordoba ACC Mendoza APP	T	60	I	E	A/C	180	I*			* MSSR
Merlo (Buenos Aires)	Ezeiza ACC	T	220	P	E	A/C/S	220	P*			* MSSR
Paraná, Airport	Ezeiza ACC Córdoba ACC				E	A/C	220	I*			* MSSR
Posadas Airport	Ezeiza ACC				E	A/C	220	P*			* MSSR
~~Reconquista Airport~~	~~Ezeiza ACC~~ Córdoba ACC				~~E~~	~~A/C~~	~~220~~	~~P*~~			~~* MSSR~~
Resistencia, Airport	Ezeiza ACC Córdoba APP Resistencia APP	T	60	P	E	A/C	220	P*			* MSSR
Neuquen Airport	Ezeiza ACC Neuquen TMA APP				E	A/C/S	220	P*			* MSSR
Las Lomitas Airport	Ezeiza ACC Cordoba ACC	E	220	P	E	A/C/S	220	P*			* MSSR
La Boulaye Airport	Ezeiza ACC Cordoba ACC				E	A/C/S	220	P*			* MSSR
San Carlos de Bariloche,	Ezeiza ACC	T	60	P	E/T	A/C	220	P*			* MSSR

State(Territory)/Location Estado(Territorio)/Ubicación	ATS Unite Served Unidad ATS Servida	PSR			SSR				ADS		Remarks Observaciones
		Funtion Función	Coverage Cobertura (NM)	Status Impl. Estado	Funtion Función	Modes Modos (A,C& S)	Coverage Cobertura (NM)	Status Impl. Estado	Type Tipo	Status Impl. Estado	
1	3	4	5	6	7	8	9	10	11	12	13
Airport	Bariloche APP										
~~San Luis, Airport~~	~~Córdoba APP~~				~~E~~	~~A/C~~	~~220~~	~~P*~~			~~* MSSR~~
	~~Ezeiza ACC~~										
~~Santa Rosa, Airport~~	~~Ezeiza ACC~~				~~E~~	~~A/C~~	~~220~~	~~P*~~			~~* MSSR~~
	~~Ezeiza ACC~~										
~~Tartagal, Airport~~	~~Córdoba APP~~				~~E~~	~~A/C~~	~~220~~	~~P*~~			~~* MSSR~~
Tucumán, Airport	Córdoba APP Ezeiza ACC				E	A/C	220	P*			* MSSR
Comodoro Rivadavia	Ezeiza ACC								C y B	P	
ARUBA (Kingdom of the Netherlands)	Reina Beatrix APP	T	80	I	T	A/C	256	I*			*MSSR
BAHAMAS Nassau	Miami ACC Nassau APP	E/T		I	E/T	A/C		I			
BARBADOS Aiport	Adams APP				T	A/C	250	I*			*MSSR
BELIZE	Belize APP							NP			
BOLIVIA											
La Paz	La Paz ACC				E	A/C		I/P*			*It is recomended to widen widen coverage and replacem to MSSR/ Se
La Paz	La Paz APP	T		P*	T	A/C		I/P**			*Recommended/ Recomendado **Replacem ent recommended to MSSR / Recomendado reemplazo por MSSR
Cochabamba	Cochabamba APP				E/T	A/C		I			MSSR
BRASIL											
Barra do Carcas	Brasilia ACC	E		I	E	A/C		I			
Belém	Belem ACC	E		I	E	A/C		I			
Belém	Belem APP	T		I	T	A/C		I			
Boa Vista	Manaus ACC	E		I	E	A/C		I			
Bom Jesus da Lapa	Recife ACC				E	A/C		I			*MSSR <-2000
Brasilia (Gama)	Brasilia ACC	E		I	E	A/C		I			
Brasilia	Brasilia APP	T		I	T	A/C		I			
Cachimbo					E	A/C		I			*MSSR
Campinas	Campinas APP	T		P	T	A/C		I			*MSSR
Cangucu	Curitiba ACC	E		I	E	A/C		I			
Catanduvas	Curitiba ACC	E		I	E	A/C		I			
Chapada Dos Guimaraes	Brasilia ACC	E		I	E	A/C		I			
Confins	Belo Horizonte APP	T		I	T	A/C		I			

State(Territory)/Location Estado(Territorio)/Ubicación	ATS Unite Served Unidad ATS Servida	PSR			SSR				ADS		Remarks Observaciones
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1	3	4	5	6	7	8	9	10	11	12	13
Conceicao do Araguia		E		P	E	A/C		I			*MSSR
Cruzeiro do Sul		E		P	E	A/C		I			*MSSR
Curitiba (Morro da Igreja)	Curitiba ACC	E		I	E	A/C		I			
Curitiba	Curitiba APP	T		I	T	A/C		I			
~~Dianopolis~~					~~E~~	~~A/C~~		~~P*~~			~~*MSSR~~
Eirunepe		E		P	E	A/C		P*			*MSSR
Fernando Noronha	Recife ACC				E	A/C		I			
Fortaleza	Recife ACC	E		I	E	A/C		I			
Fortaleza	Fotaleza APP	T		I	T	A/C		I			
Foz do Iguazu	Foz do Iguacu APP	T		I	T	A/C		I			
Guajara - Mirim		E		P	E	A/C		P*			*MSSR
Guarulhos	Sao Paulo APP	T		I	T	A/C		I			
Imperatriz					E	A/C		I			*MSSR
Jacarcacanga					E	A/C		I			*MSSR
Jaraguari	Curitiba ACC	E		I	E	A/C		I			
Macapa		E		P	E	A/C		I			*MSSR
Maceió	Recife ACC	E		I	E	A/C		I			
Manaus (E. Gomes)	Manaus ACC	E		I	E	A/C		I			
Manaus (E. Gomes)	Manaus APP	T		I	T	A/C		I			
Natal	Recife ACC	E		I	E	A/C		I			
Natal	Natal APP	T		I	T	A/C		I			
Petrolina	Recife ACC				E	A/C		I			*MSSR <-1999
Pico do Couto	Brasilia ACC	E		I	E	A/C		I			
Porto Alegre	Porto Alegre APP	T		I	T	A/C		I			
Porto Espiridiao		E		P	E	A/C		I			*MSSR
Porto Seguro	Recife ACC	E		P	E	A/C		I			*MSSR <-2000
Porto Velho		E		P	E	A/C		I			*MSSR
Recife	Recife ACC	E		I	E	A/C		I			
Recife	Recife APP	T		I	T	A/C		I	ADS-C		
Río Branco		E		P	E	A/C		I			*MSSR
Río de Janeiro (Galeao)	Río APP	T		I	T	A/C		I			*MSSR
Salvador	Recife ACC	E		I	E	A/C		I			
Salvador	Salvador APP	T		I	T	A/C		I			
Sabtarém		E		P	E	A/C		I			*MSSR
Santiago	Curitiba ACC	E		I	E	A/C		I			
Sao Felix do Aragunia					E	A/C		I			*MSSR
S.Feliz do Xingu					E	A/C		I			*MSSR
Sao Gabriel Cachoeira	Manaus ACC	E		I	E	A/C		I			
Sao Luis		E		P	E	A/C		I			*MSSR
Sao Paulo	Sao Paulo APP	T		I	T	A/C		I			
Sao Roque	Brasilia ACC	E		I	E	A/C		I			
Sinop	Brasilia ACC	E		P	E	A/C		I			*MSSR
Tabatinga	Manaus ACC	E		I	E	A/C		I			
Tanabi	Brasilia ACC	E		I	E	A/C		I			
Tefé		E		P	E	A/C		I			*MSSR
Tirios					E	A/C		P*			*MSSR
Tres Marias	Brasilia ACC	E		I	E	A/C		I			
Vilhena		E		P	E	A/C		I			*MSSR
CHILE											

State(Territory)/Location Estado(Territorio)/Ubicación	ATS Unite Served Unidad ATS Servida	PSR			SSR				ADS		Remarks Observaciones
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1	3	4	5	6	7	8	9	10	11	12	13
Antofagasta	Santiago ACC	T		I	E/T	A/C		I*			*MSSR
	Antofagasta APP										
Cerrillos	Santiago ACC				T	A/C		I*			*MSSR
Iquique	Santigo ACC	T		I	T	A/C		I			
	Iquique APP										
Los Angeles	Santiago APP				E	A/C		I*			*MSSR
Puerto Montt	Puerto Montt APP	T		I	T	A/C		I			
Punta Arena	Punta Arena ACC	E/T		I	E/T	A/C		I			
	Punta Arena APP										
Santiago	Santiago ACC	T		I	T	A/C		I*	ADS-C	P	*MSSR
	Santiago APP										
Vallenar					E	A/C		I*			*MSSR
COLOMBIA											
Araraguara	Bogotá ACC				E/T	A/C	250	I*			*MSSR
	Villavicencio APP										
Bucaramanga	Barranquilla ACC				E/T	A/C	250	P			<2005
	Bogotá ACC										
	Bucaramanga APP										
	Cúcuta APP										
Cali	Bogotá ACC	T	80	P	T	A/C	250	I*			*MSSR
	Cali APP										
Carepa	Barranquilla ACC	E/T	80	I	E/T	A/C/S	250	I*			*MSSR, <2004
	Bogotá ACC										Used SAC-
	Rio Negro APP										ASTERIX Code
Carimagua	Bogotá ACC	E/T	200	I	E/T	A/C	200	I			
	Villavicencio APP										
Cerro Maco	Barranquilla ACC	E/T	165	I	E/T	A/C	250	I*			*MSSR
	Bogotá ACC										
	Barranquilla APP										
	Cartagena TWR										
	Rio Negro APP										
Cerro Verde	Barranquilla ACC	E/T	60	I	E	A/C	200	I*			*MSSR
	Bogotá ACC										
	Barranquilla APP										
	Cali APP										
	Pereira APP										
	Rio Negro APP										
El Dorado	Bogotá ACC	E/T	60	I	E/T	A/C	200	I*			*MSSR
	Bogotá APP										
	Villacencio APP										
Espinal	Bogotá ACC				E/T	A/C	250	P			<2005
	Bogotá APP										
Leticia	Bogotá ACC	E/T	200	I	E/T	A/C	250	I			*MSSR
	Leticia APP										<2004
	Villavicencio APP										
Leticia (MIL)	Villavicencio APP	T	240	P	T	A/C	240	P			
Marandúa	Bogotá ACC	E/T	240	I	E/T	A/C	240	I			
	Villavicencio APP										
Pereira	Bogotá ACC				E/T	A/C	250	P			<2005

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1	3	4	5	6	7	8	9	10	11	12	13
	Bogotá APP										
	Cali APP										
	Pereira APP										
	Rio Negro APP										
Ríohacha	Barranquilla ACC	E	240	I	E	A/C	240	I			
S. J. Guaviare	Bogotá ACC	E/T	240	I	E/T	A/C	240	I			
	Villavicencio APP										
San Andrés (MIL)	Barranquilla ACC	E/T	240	I	E/T	A/C	240	I			
	San Andrés APP										
San Andrés	Barranquilla ACC				E/T	A/C	250	I*			*MSSR, <2007
	San Andrés APP										
Santa Ana	Bogotá ACC	E/T	165	I	E/T	A/C	250	I*			*MSSR
	Cali ACC/APP										
	Pereira APP										
Tablazo	Bogotá ACC	E/T	80	P	E/T	A/C	250	I/P*			*MSSR, <2004
	Bogotá APP										
	Cali APP										
	Pereira APP										
	Rio Negro APP										
	Villavicencio APP										
Tubará (Barranquilla)	Barranquilla ACC	E/T	80	I	E/T	A/C	250	I*			*MSSR
	Barranquilla APP										
	San Andrés APP										
Villavicencio	Villavicencio APP	T	80	I	E	A/C	150	I			
COSTA RICA											
El Coco	El Coco APP	E/T		I	E/T	A/C	245	I*			*MSSR
CUBA											
Camagüey	Habana ACC				E/T	A/C	200	I/P*			*MSSR
	Camagüey APP										
Habana	Habana TMA	T		P	T	A/C	200	I/P*			*MSSR
	Habana APP										
Holguín	Habana ACC				E/T	A/C	200	I/P*			*MSSR
	Santiago de Cuba TMA										
	Holguín APP										
Menocal	Habana ACC				E/T	A/C	200	I*			*MSSR
	Habana TMA										
	Habana APP										
	Varadero APP										
San Julián	Habana ACC				E	A/C	200	I/P*			*MSSR
Sta. Clara	Habana ACC				E	A/C	200	I/P*			*MSSR
DOMINICA				NP				NP			
DOMINICAN REPUBLIC											

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1	3	4	5	6	7	8	9	10	11	12	13
Barahona	Barahona APP	T	70	I							
Puerto Plata	Puerto Plata APP	T	70	I							
Punta Cana	Santo Domingo ACC	T	70	P	E/T	A/C	250	P*			*MSSR
	Punta Cana APP										
Santo Domingo	Santo Domingo ACC	E/T	70	I	E/T	A/C	250	I*			*MSSR
	Santo Domingo APP										
ECUADOR											
Guayaquil	Guayaquil ACC	E/T			E	A/C	200	I*			
	Guayaquil APP										
Quito APP	Quito APP	T		I	T	A/C		I/P*			* 2000
EL SALVADOR											
El Salvador	El Salvador APP	T		I	T	A/C	200	I*			*MSSR
FRENCH ANTILLES											
Fort-de-France	Fort-de-France APP				T	A/C	250	I*			*MSSR
Point-à-Pitre	Point-à-Pitre APP				T	A/C	250	I*			*MSSR
GRENADA											
	Point Salines APP							N/P			
GUATEMALA											
C. Guatemala	La Aurora APP	T		I	T	A/C	250	I*			*MSSR
GUYANA											
	Georgetown ACC							N/P			
HAITI											
	Port-au-Prince ACC				E/T	A/C		P*			*MSSR
	Port-au-Prince APP				T	A/C		P*			*MSSR
HONDURAS											
San Pedro Sula	La Mesa APP	T		I	T	A/C	250	I*			*MSSR
JAMAICA											
Kingston	Kingston APP	T	60	I	E/T	A/C	250	I*			*MSSR
Montego Bay	Montego Bay APP	T	60	I	T	A/C	250	I*			*MSSR
Mount Denham	Kingston ACC	E	120	I	E	A/C	250	I*			*MSSR
MEXICO											
Acapulco	Acapulco APP	T		I	T	A/C	240	I*			*MSSR
Bajio Gto	México ACC				E/T	A/C, S	240	I*			*MSSR
	Bajio APP										
Cancún	Mérida ACC	E/T	60	I	E/T	A/C	240	I*			*MSSR
	Cancún APP										
Cerro Potosi	Monterrey ACC				E	A/C	240	I*			*MSSR
	México ACC										
Cerro Rusias	Mazatlán ACC				E	A/C	240	I*			*MSSR
	México ACC										
	Monterrey ACC										

State(Territory)/Location Estado(Territorio)/Ubicación	ATS Unite Served Unidad ATS Servida	PSR			SSR				ADS		Remarks Observaciones
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1	3	4	5	6	7	8	9	10	11	12	13
Cerro Los Gallos	Mazatlán ACC				E	A/C	240	I*			*MSSR
	México ACC										
	Monterrey ACC										
Cerro Santa Eulalia	Monterrey ACC				E/T	A/C	240	I*			*MSSR
	Chihuaha APP										
Guadalajara	Guadalajara APP	T	80	I	T	A/C	240	I*			*MSSR
Hermosillo	Mazatlán ACC				E/T	A/C	240	I*			*MSSR
	Hermosillo APP										
	Tijuana APP										
Los Mochis	Mazatlán ACC				E	A/C	240	I*			*MSSR
Mazatlán	Mazatlán ACC				E	A/C	240	I*			*MSSR
Mérida	Mérida ACC	E/T		I	E/T	A/C	240	I*			*MSSR
	Mérida APP										
Cerro Sordo	México ACC				E	A/C	240	I*			*MSSR
	Monterrey ACC										
Monterrey	Monterrey ACC	E/T	80	I	E/T	A/C	240	I*			*MSSR
	Monterrey APP										
Peñón	México APP				E	A/C	240	I*			*MSSR
Puerto Peñasco	Mazatlán ACC				E	A/C	240	I*			*MSSR
Puerto Vallarta	Puerto Vallarta APP				T	A/C	240	I*			*MSSR
San José del Cabo	Mazatlán ACC				E	A/C, S	240	I*			*MSSR
Tampico	México ACC				E	A/C, S	240	I*			*MSSR
	Mérida ACC										
	Monterrey ACC										
Tijuana	Tijuana APP				T	A/C	240	I*			*MSSR
Toluca	México ACC	E/T	80	I	E/T	A/C	240	I*			*MSSR
	Toluca APP										
Veracruz	México ACC				E	A/C	240	I*			*MSSR
	Mérida ACC										
Villahermosa	México ACC				E	A/C, S	240	I*			*MSSR
	Mérida ACC										
MONTSERRAT (United Kingdom)								N/P			
NETHERLANDS ANTILLES (Netherlands)											
Willemstad	Curaçao ACC	E/T	120	I	E/T	A/C	256	I*			*MSSR
	Curaçao APP										
Saint Maarten	Juliana APP	T	60	I	T	A/C	256	I*			*MSSR
NICARAGUA											
Managua	Managua APP	T		P	T	A/C	250	P*			*MSSR
Bluefields	Bluefields TWR				T	A/C	250	N/I			
PANAMA											
Panamá	Panamá ACC	T	60	I	E/T	A/C		I*			*MSSR
	Panamá APP										
PARAGUAY											

State(Territory)/Location Estado(Territorio)/Ubicación	ATS Unite Served Unidad ATS Servida	PSR			SSR				ADS		Remarks Observaciones
		Funtion Función	Coverage Cobertura (NM)	Status Impl. Estado	Funtion Función	Modes Modos (A,C& S)	Coverage Cobertura (NM)	Status Impl. Estado	Type Tipo	Status Impl. Estado	
1	3	4	5	6	7	8	9	10	11	12	13
Asunción	Asunción ACC	T	60	I	E/T	A/C		I			Sistema PSR y SSR necesita remplazo
Ciudad del Este	Ciudad del Este APP	T	60	I	E/T	A/C		I			
PERU											
Arequipa	Lima ACC / Arequipa APP	~~T~~		~~P~~	E/T			P ~~R~~			
Ayacucho	Lima ACC				E			P			
Cajamarca	Lima ACC				E			P			
Cusco	Lima ACC / Cusco APP	~~T~~		~~P~~	E/T			P ~~R~~			
Iquitos	Lima ACC / Iquitos APP	~~T~~		~~P~~	E/T			P ~~R~~			
Talara	Lima ACC / Talara APP				E/T			P			
Lima	Lima ACC / Lima APP	T		I*	E/T	A/C		I*			*MSSR, Se recomienda ampliar la cobertura de la FIR
Lima	Lima ACC / Lima APP	~~T~~		~~I~~	E/T	S ~~A/C~~		P ~~I*~~			
Pucallpa	Lima ACC / Pucallpa APP				E/T			P			
PUERTO RICO (United States)											
Pico del Este	San Juan ACC	E/T		I	E	A/C		I			
San Juan	San Juan APP				T	A/C		I			
SAINT KITTS AND NEVIS								NP			
SAINT LUCIA	Santa Lucia APP							NP*			* Radar data sharing with Martinica planned/ Proyecta compartir datos radar con Martinica.
SAINT VINCENT & THE GRENADINES	E.T.Joshua APP							NP			
SURINAME											
Zandery (Johan Pengel)	Zandery APP	E/T		P	E/T			P			
TRINIDAD & TOBAGO											
Piarco (15 NM north)	Piarco ACC Piarco APP	E/T		I	E/T	A/C	230	I*			*MSSR
TURKS & CAICOS IS. (United Kingdom)											
Grand Turks	Miami ACC				E	A/C		I			
URUGUAY											
Carrasco	Montevideo ACC Carrasco APP	E/T	80	I	E/T	A/C	180	I*			MSSR MSSR
Durazno	Montevideo ACC				E/T	A/C	256	P			

State(Territory)/Location Estado(Territorio)/Ubicación	ATS Unite Served Unidad ATS Servida	PSR			SSR				ADS		Remarks Observaciones
		Funtion Función	Coverage Cobertura (NM)	Status Impl. Estado	Funtion Función	Modes Modos (A,C& S)	Coverage Cobertura (NM)	Status Impl. Estado	Type Tipo	Status Impl. Estado	
1	3	4	5	6	7	8	9	10	11	12	13
	Carrasco APP										
VENEZUELA											
Barquisimeto	Baruisimeto APP	T	60	I	T	A/C	200	I/P*			*MSSR
Isla Margarita	Margarita APP	T	60	I	T	A/C	200	I/P*			*MSSR
Maiquetía	Maiquetía ACC	E/T	60	I	E/T	A/C	200	I*			*MSSR
	Maiquetía APP										
Maracaibo	Maracaibo APP	T	60	I	T	A/C	200	I*/P*			*MSSR
Pto Ayacucho	Maiquetía ACC	E/T	60	P	E/T	A/C	200	P*			* MSSR
Cerro San Jacinto Puerto Ordaz	Maiquetía ACC	E/T	60	P	E/T	A/C	200	P*			* MSSR
Paramo La Negra , Edo Merida	Maiquetía ACC				E	A/C	200	P*			* MSSR
San Carlos de Rio Negro	Maiquetía ACC				E	A/C	200	P*			* MSSR
Santa Elena de Uairen	Maiquetia ACC				E	A/C	200	P*			* MSSR
VIRGIN IS. **(United Kingdom)**								NP			
VIRGIN IS. **(United States)**											
Saint Thomas	San Juan ACC San Juan APP	E/T		I	E/T	A/C		I			
COCESNA											
Cerro Santiago, Guatemala	CENAMER ACC				E	A/C*	245	I*			*MSSR-Modo S
Costa Rica	CENAMER ACC				E	A/C*	245	I*			*MSSR-Modo S
Grand Cayman, Cayman I.	CENAMER ACC				E	A/C*	245	I*			*MSSR-Modo S
Guatemala	CENAMER ACC				E	A/C*	245	I*			*MSSR-Modo S
Mata de Caña, Costa Rica	CENAMER ACC				E	A/C*	245	I*			*MSSR-Modo S
Puero Cabezas, Nicaragua	CENAMER ACC				E	A/C*	245	I*			*MSSR-Modo S
Dixon Hill, Honduras	CENAMER ACC				E	A/C*	245	I*			*MSSR-Modo S
Monte Crudo, Honduras	CENAMER ACC				E	A/C*	245	I*			*MSSR-Modo S