ATM/CNS Tto/Ven

INTERNATIONAL CIVIL AVIATION ORGANIZATION

Trinidad and Tobago-Venezuela Bilateral ATM/CNS Meeting

FINAL REPORT

Caracas, Venezuela, 1 to 3 September 2010

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HISTORY OF THE MEETING

ii-1 PLACE AND DURATION OF THE MEETING

The Trinidad and Tobago-Venezuela Bilateral ATM/CNS Meeting was held in Caracas, Venezuela, from 1 to 3 September 2010.

ii-2 OPENING CEREMONY AND OTHER MATTERS

Mr. Rafael Sánchez, Air Navigation Assistant Director, Venezuela, welcomed the participants and highlighted the importance of large-height deviations (LHD) in the Piarco and Maiquetía Flight Information Regions (FIRs) boundaries, mainly due to operational errors between the Control Centres involved, and encouraged States to take specific and appropriate measures, in order to reduce potential impact that those events might have in safety. He also expressed his gratitude for the presence of the aeronautical authorities of Trinidad and Tobago, as well as CARSAMMA at this event.

ii-3 SCHEDULE, ORGANIZATION, WORKING METHODS, OFFICERS AND SECRETARIAT

The Meeting agreed to hold its sessions from 09:00 to 15:00 hours, with appropriate breaks. The work was done with the Meeting as a Single Committee and Ad-hoc Groups.

Mr. Rafael Sánchez, Delegate from Venezuela, was unanimously elected as Chairman of the Meeting.

Messrs. Jorge Fernández, and Víctor Hernández, RO/ATM/SAR of ICAO Regional Offices, Lima and Mexico Offices, respectively, acted as Secretaries to the Meeting.

ii-4 WORKING LANGUAGES

The working language of the Meeting was Spanish and English, and its relevant documentation was presented in Spanish and English.

ii-5 **AGENDA**

The following agenda was adopted:

Agenda Item 1:	Analysis of the results obtained at the GTE/9 Meeting at the Piarco and Maiquetia FIR Boundaries
Agenda Item 2:	Analysis of the Ground-to-Ground Communication means between ATS Units and Ground-Air Communication in the South Atlantic Area
Agenda Item 3:	Review and Updating of the Procedures and ATS Letter of Operational Agreement between Piarco and Maiquetía ACCs
Agenda Item 4:	Analysis of ATS Contingency Plans
Agenda Item 5:	Other Matters

ii-6 **ATTENDANCE**

The meeting was attended by 2 participants from Trinidad and Tobago, NACC Region, 7 participants from Venezuela, SAM Region, and one representative from CARSAMMA. The list of participants is shown in pages iii-1 to iii-3.

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Agenda Item 1: Analysis of the results obtained at the GTE/9 Meeting at the Piarco and Maiquetia FIR Boundaries

1.1 The Meeting recalled that the Scrutiny Working Group (GTE) was created within the framework of the CAR/SAM Regional Planning and Implementation Group (GREPECAS), and has the main objective to analyse 300 feet or greater large-height deviations (LHD), coordinate with the CAR/SAM Regional Monitoring Agency (CARSAMMA), LHD collection and data revision, identify LHD tendencies, and recommend corrective actions to improve safety, and inform GREPECAS, on the results through the CNS/ATM Subgroup.

1.2 The Ninth Meeting of the GTE (GTE/9) was carried out during the week of 8 to 12 March, 2010, where CARSAMMA presented LHD events reported, corresponding to the period 1 July to 31 December 2009. A total of 422 LHD reported in the CAR and SAM Regions were presented for analysis by the meeting. For the analysis, the methodology approved by the GTE, and the necessary parameter values to carry out the risk assessment in the concerned airspace, were used.

1.3 During the GTE/9 Meeting, an increase of large-height deviations (LHD) was identified in the airspace involving the Piarco and Maiquetía FIRs. This has required special attention from both States. These LHDs do not have origin in failures in the aircraft equipment, but basically in the flight coordination errors in the referred area, which considerably increases the total risk in the CAR/SAM Regions.

1.4 The GTE/9 Meeting formulated Conclusion GTE/9-1, encouraging States to take the pertinent actions to reduce coordination errors between adjacent ACCs, as shown below:

Conclusion GTE/9-1 Actions to be adopted to reduce coordination errors between adjacent ACCs

That CAR/SAM International Organizations, in addition to the error programme in the communication cycle between adjacent ACCs, take into account the following matters:

a) Develop training programmes for air traffic controllers, and to include the importance of air traffic coordination between ATC units within the curricula of basic courses;

b) Carry out a revision of letters of agreement between ACCs, so as to contemplate the inclusion of procedures and mechanisms for information exchange of coordination incidents among ATC units; and

c) Include the implementation technology that permits automatic coordination between ATS units within the development plans.

1.5 The Delegate from CARSAMMA made a presentation, where the subject of LHD was dealt with from a general concept and working philosophy applied by CARSAMMA, for the analysis of reports, up to the specific identification of LHD reported by both States during the period 2004 to 2009 and the pertinent part of 2010.

1.6 In the presentation of this matter, emphasis was made in measures proposed by ICAO and GREPECAS to mitigate and reduce LHD events, and some new specific proposals that could improve the concerned airspace safety.

1.7 Following is as a summary the measures proposed by ICAO, as well as new measures to be evaluated by States:

ACTIONS (ICAO/STATES) – 2004-2008

Actions recommended by ICAO or adopted by CAR/SAM States (2004-2009)

a) Identify the importance of LHD for the collision risk assessment process between aircraft in cruise flight;

b) Alert sources responsible for the inconsistency of most of the data sent;

c) Submit to CARSAMMA, until the tenth day of each month, LHD reports occurring in the FIR under your responsibility;

d) Provide special attention to the record of the flight time in the incorrect level, therefore being able to estimate the proportion of flight hours in incorrect levels;

e) Alert States on the need to collect data on lateral deviations for the verification of the lateral parameter of typical performance, used in vertical risk assessment;

f) Alert States on the need to implement a programme to collect performance data for altitude maintenance (TVE);

g) Give special attention to record the number of steps for a non-authorized level;

h) Remember that authorizations of ascending/descending were not executed in agreement;

i) Train ATCOs to avoid coordination errors between air traffic control units in incorrect flights and level crossings without clearance;

j) Alert States on the need to implement a programme to supervise altimetry system errors (ASE);

k) Avoid error in the ATC communication cycle (train pilots so that they do not incorrectly interpret the clearance message or the ATC executes the incorrect clearance);
l) Alert States to, due to the lack of standardization of the occurrence of operational errors (human) between FIRs, there is a great possibility that some States do not send LHD reports.

m) Encourage States to give special attention to errors due to TCAS reply;

n) Seek for unknown causes of errors;

o) Review LHD causes for identification of the most common causes;

p) Request aircraft flying in oceanic airspaces, 10 minutes in advance of the transference point, make further contact with ACC, to avoid coordination errors between air traffic control units;

q) Urgently apply a corrective actions programme, to reduce misunderstandings between pilots and ATCOs or issuing incorrect permissions by the air traffic control;

r) Review LHD causes to identify the most common cause and supervise RVSM airspace; and

s) Avoid errors due to turbulence or meteorological causes.

MITIGATING ACTIONS FOR PIARCO/MAIQUETIA (2010)

a) Verification of crossing points with no names in PIARCO;

b) Improve transference conditions between air traffic units, with emphasis in MAIQUETIA for PIARCO, taking into consideration transference points;

c) Possible error due to similar names;

d) Improvement in the English language;

e) Guide ATCOs regarding some operators flying within their FIRs with LHD

f) Guide ATCOs with respect to the difference of the LHD occurrence between day and night; AND

g) Install CPDLC (Control Pilot Data Link Communications) where ground/to/ground or ground/to/earth communications are not totally reliable.

1.8 The programme to reduce operational errors in the ATC coordination loop between adjacent ACCs, as approved by Conclusion 15/36 was assessed by the Meeting, and it considered that some measures that are shown in the programme were adopted, leaving other measures to be analysed in the Meeting, pending of implementation. For a better reference, the referred programme is shown as **Appendix A** to this part of the report (See WP/02, Appendix A).

1.9 Piarco and Maiquetía ACCs have in place a letter of operational agreement (LOA), where procedures for exchange of information between both area control centres have been established. They also have aeronautical fixed service communications, and aeronautical mobile service communications, which enable fast and safe communications between these ACCs, as well as between these facilities and aircraft operating in the airspace under analysis.

1.10 After a fruitful exchange of opinions, the Meeting agreed on the implementation of a series of measures that will solve the operational errors. For a better reference, the Table with the measures to be implemented, the responsible officers as well as the tentative dates for its implementation are shown in **Appendix B** to this part of the report.

1.11 Also, and in order to measure the impact of the actions that should be taken, the following metrics are proposed to be implemented:

a) ATS letter of agreement between ACCs, revised and updated, responding to the current air traffic requirements and safety, and if appropriate, duly equipped and applied;

b) Reduction in the number of incidents and LHD related with the lack of air traffic coordination within the Piarco and Maiquetía FIRs, as follows:

- 40% after the first year of the present bilateral coordination meeting.
- 80% during the second year; and
- 100% in the third year.

APPENDIX A

ERROR PREVENTION PROGRAMME IN THE COMMUNICATIONS BETWEEN ADJACENT ACCs

There are many initiatives that can be pursued to prevent operational errors from occurring. However, there are five primary areas, which can directly contribute to its prevention: **communications, phraseology, supervision, teamwork, and ATC proficiency**. In an effort to accomplish the goal of reducing communication errors between adjacent Area Control Centres and thus reduce or minimize the occurrence of large-height deviations, the following objectives should be included in the prevention programme:

The ATS authority shall:

a) identify individual, procedural, and/or equipment deficiencies used in air traffic services;

b) promptly correct individual, procedural, and/or equipment deficiencies which affect coordinations with adjacent and ATS units. This can be achieved through:
   - guidance on procedures to be followed;
   - implementation of read-back/hear-back programmes;
   - training in the filling of LHD forms;
   - increase and/or closer monitoring of ATCOs performance;
   - immediate coordination programme after a re-authorization or change in flight level;
   - changes in procedures and/or corrections/amendments of equipment.

c) communicate performance expectations to ATS supervisors and controllers;

d) ensure the ATS unit maintains a summary of and have information letters on operational errors, causal factors and trends, and incorporate them into training;

e) monitor and evaluate voice recordings (all ATS operational personnel);

f) take initiatives to improve communications among all ATS personnel to create an atmosphere conducive to sharing information;

g) exercise strict monitoring in ATC units;

h) ATS supervisors should:
   - communicate performance expectations to controllers, stressing the importance of operational control position discipline, awareness, teamwork, the use of proper phraseology, proper coordination procedures, control position relief briefings and utilization of a position relief checklist;
   - take prompt follow-up actions when controller performance does not meet with expectations;
   - inform on individual and team accountability, and the consequences for not meeting expectations;

- provide efficient and consistent oversight of the ATS unit operation, and use effective resource management to ensure proper and timely assignment of personnel to promote the safe, orderly, and expeditious handling of air traffic;
- ensure that distractions and noise levels in the ATS unit are kept at a minimum;
- require all personnel to maintain a high degree of professionalism, teamwork, control position discipline, and awareness at all times in the ATS unit environment; and require that each controller knows, applies, and adheres to the appropriate requirements in the performance of his/her operational duties and responsibilities;
- promote an open flow of communications with all ATS personnel, allowing them to provide input to programme;
- place emphasis on hear-back/read-back errors during team meetings.

i) ATC personnel should:

- apply read-back/hear-back procedures when carrying out ATC coordinations;
- keep ATS supervisors advised of traffic problems and equipment limitations;
- make suggestions for ATS unit improvements and/or prevention of operational errors;
- maintain situational awareness;
- extend the extra effort to assist busier control position(s);
- continuously review their own operating techniques and ATS unit procedures to effect the highest quality of performance;
- promptly report all ATS incidents to the operational supervisor or other appropriate ATS authority for proper follow-up investigation;
- utilize memory aids.

VOICE RECORDING EVALUATIONS

Voice recording reviews should be conducted to ensure proper phraseology, good operating practices, and adherence to the standards set forth in ICAO provisions, and national/local directives and practices. Voice recording reviews should be conducted as follows:

a) the ATS unit should ensure that voice recording reviews are conducted at least semi-annually on all ATS operational personnel;

b) the ATS supervisor should review the voice recording, document comments and develop an action plan for documenting performance deficiencies; and

c) the ATS supervisor and the controller should review and discuss the voice recording.

Actions suggested as short term solution

a) That States, authorities and International Organizations continue their excellent compliance with the LHD requirements to report CARSAMMA on a monthly basis, and

b) That States, authorities and International Organizations distribute a copy of category "M", Error messages in ATC unit to ATC unit in transference messages and category "N", messages ("No ATC unit transference message was received"), received from transitioning ATC-unit LHD reports only to the adjacent ACC involved in addition to CARSAMMA.

c) When a trend is identified from shared reports, the States, Territories, and International Organizations shall share information and shall meet on a bilateral basis to develop a solution to the cause of the identified LHD.

d) Since some ACCs adjoin international oceanic airspace, ICAO NACC and SAM Regional Offices are requested to advise the corresponding adjacent ICAO regional Offices (EUR/NAT, WACAF) that said LHD report will be forthcoming from the adjacent ACC and urge positive interaction with reporting CAR/SAM unit.

Supported suggested actions as a medium term solution:

a) In an effort to eliminate the largest contributing LHD error category "M", the solution is to implement a quality management programme based upon safety management concepts outlined in Annex 11 amendment 44.

b) The "*Progressive implementation of ATS interfacility data communications (AIDC)*" will enhance the safety of the airspace and would reduce category "M" error. However, it is a medium term project incurring a large expense and hereby encourages that the CAR/SAM Regions States begin arrangements to submit to the World Bank an application for sufficient monies to enhance such implementation systems. The Meeting recalled that the AIDC is seen within the Automation Task Force Program and therefore is not required another action at this point.

APPENDIX B

MEASURES TO SOLVE OPERATIONAL ERRORS

#	STEPS TO BE TAKEN	OFFICE	DATE
1	To supervise and monitor carefully and efficiently all of the operations developed in the Control Centre, where each supervisor will check air operations developed in each ACC sector, at least each two hours, by using the operational supervision position of the Airspace Control and Management System that was provided to Maiquetía ACC.	Maiquetía	11-01-2010
2	To ensure the minimum distraction and noise levels at Maiquetía ACC by using the head-set by the ATCOs.	Maiquetía	10-01-2010
3	To make aware Maiquetía ACC ATCOs about the operational risks caused by operational coordination errors, by means of SMS seminars and presentations on a monthly basis.	Maiquetía	10-01-2010
4	To restructure Maiquetía ACC Area Sector # 2 and Route Sector # 4.	Maiquetía	04-01-2011
5	To include PELMA – PERRY – PERGA Points in the ATECH System.	Maiquetía	10-01-2010
6	To exchange personnel between Piarco and Maiquetía Supervisors at least 1 day in Trinidad and Tobago/Venezuela, to watch operations in the ACC	Maiquetía/ Piarco	11-01-2010
7	To train all Maiquetía ACC ATCOs to fill-out LHD form correctly.	Maiquetía	11-01-2010
8	To create internal evaluation groups to get an own database with the purpose to make the respective analysis and to take the corrective measures in order to minimize the errors	Maiquetía	N/A
9	To send the operational personnel to ICAO meetings when LHD is addressed.	Maiquetía	N/A
10	To include in the Maiquetía ACC plan the acquisition and implementation of technology to allow automatic coordination between Flight Information Regions, in order to minimize the workload of ATCOs and at the same time the possibility of errors during the coordination cycle.	Maiquetía/ Piarco	N/A
11	To sign the Letter of Operational Agreement.	Maiquetía	10-03-2010
12	Continue with the English language training	Maiquetía	TBD
13	Listen random point-to-point recordings.	Maiquetía	
14	Any other measures considered pertinent.	Maiquetía	
15	To change PELMA to 5LNC	RO	

Agenda Item 2: Analysis of the Ground-to-Ground Communication means between ATS Units and Ground-Air Communication in the Maiquetía and Piarco FIRs areas

2.1 The ATS speech communications requirements, AFTN data, ATN applications and speech and data requirements for the aeronautical mobile service in the CAR/SAM States/Territories are found in the CAR/SAM Air Navigation Plan, Volume II – FASID, in Tables CNS 1A, CNS 1B, CNS 1C, CNS 2A and CNS 2B, respectively. The surveillance requirements are specified in FASID Table CNS 4A.

2.2 With regard to the current speech and data communications requirements for the aeronautical fixed and mobile service, as well as surveillance requirements at the Maiquetia and Piarco FIRs, we have the following:

Aeronautical fixed services

2.3 All requirements pertaining to the AFTN and ATS speech services are implemented and operating with high availability. The communications means used to transport the ATS speech and AFTN information between the Maiquetia and Piarco ACCs is the REDDIG. The Piarco REDDIG node was installed in 2007.

2.4 The meeting analysed the long period of interruption of the Maiquetía AFTN channel (Caracas) and Atlanta, United States. This communications channel had technical failures in North America for more than eight months, with breakdown which also affected Piarco AFTN Centre.

2.5 The traffic of messages of Venezuela was diverted via Lima-Atlanta, and vice-versa, and not so Piarco, which received fewer messages than Atlanta, as per List No. 6 (AFTN Routing Guide – SAM Region).

2.6 It was recalled that in case of failure between Maiquetía and Atlanta, the first alternate route must be the AFTN Centre of Piarco and vice-versa, as per List No. 6 (AFTN Routing Guide – SAM Region).

2.7 In view of the above, coordination for message traffic protection should be improved between AFTN Centres of Piarco and Maiquetía, when interruptions exist. The consequences of a simultaneous interruption of AFTN circuits Maiquetía-Atlanta and Piarco Atlanta were also assessed, as it occurred during the last 8 months.

2.8 The analysis and proposed solution was as follows:

a) On one hand message traffic Maiquetía-Piarco will continue to flow normally, by the Piarco AFTN Centre would receive fewer messages from Atlanta, if between Piarco and Atlanta, no coordination arises for routing via Lima-Maiquetía. This occurred during the first eight months of 2010.

b) It was recommended to Trinidad and Tobago that the administration should study the possibility to connect the AFTN circuit with another State, for example Curaçao (Netherlands Antilles), via MEVA network, or also study the possibility to establish a circuit with Paramaribo, Suriname, in order to avoid isolation as regards AFTN messages, in case the direct link Piarco-Atlanta is interrupted.

2.9 Finally, a copy of List No. 6 mentioned above, was delivered to the representative of Trinidad and Tobago, and a diagram of the existing AFTN links among Maiquetía, Piarco, Atlanta and Lima, and a summary of operability of the AFTN channel Maiquetía-Piarco in the period January to August 2010, which kept its operability in 99%, and e-mail addresses were exchanged to make any coordination, if necessary.

2.10 It was also noted that currently, Venezuela is installing an AMHS system, estimating its operation by the beginning of the last quarter of 2010. Currently, there is no automatic plan transfer between the Maiquetia and Piarco ACCs. It is expected that by the end of 2010, Venezuela will implement OLDI for the messages exchange.

2.11 In this connection, Trinidad and Tobago informed that the new system to be implemented by the end of 2010 will also have OLDI and AIDC, agreeing that these options will be studied for the automatic messages transference.

Aeronautical mobile service

2.12 The aeronautical mobile service channel requirements in Tables CNS 2A and 2B for the Maiquetia and Piarco ACCs are implemented and operating. The boundary zones between the Maiquetia and Piarco FIRs count with VHF coverage to support en-route operations in the indicated area.

Surveillance systems

2.13 The boundary between the Maiquetia and Piarco FIRs is also covered by radar surveillance (secondary radar). Both States have totally implemented the radar surveillance systems specified in the CAR/SAM FASID.

2.14 The meeting noted the plans of Trinidad and Tobago for the acquisition of a new radar surveillance system, as well as the plans for interconnection with other radar systems within the Piarco FIR.

Exchange of automated systems

2.15 In view of the above, and that the boundary between the Maiquetia and Piarco FIR has radar coverage and that the Maiquetia and Piarco control centres will have in a short term the facility of implementing the automatic transfer of flight plans, the Meeting agreed to initiate a technical-operational analysis for the possible implementation of radar data and flight plans exchange between both ACCs. The Venezuelan delegation delivered information on all relevant technical aspects, coverage diagrams and inter-phases, to be analysed by Trinidad and Tobago, agreeing to continue with this initiative in a bilateral manner. Some requirements for the use of the REDDIG were also delivered as a communications means for the interconnection of radar and surveillance data. These requirements are shown in **Appendix A** to this part of the report.

2.16 It was also reviewed the model of Memorandum of Understanding (MoU) which might be used, in the event that an agreement for the implementation of radar data and flight plans exchange between both ACCs is reached upon. The referred MoU is attached as **Appendix B** to this part of the report.

APPENDIX A

RADAR DATA EXCHANGE BETWEEN MAIQUETIA AND PIARCO NODES

The use of Protocol IP is recommended in the application to be transported to REDDIG via PVC frame relay circuits.

One physic port (P03 in the patch panel from the REDDIG, in which all PVC circuits will be programmed in the REDDIG for the different IP-based applications, such as Radar and AMHS, towards the different States with whom agreements for services are established. A Router will be connected to such port.

As for the Exchange of radar data with Manaus a similar programming will be made with the information to be provided for each PVC circuit in the REDDIG. Each node will be responsible for the provision and programming of the router will be responsibility.

Piarco shall also use one physical port (P03) and will follow the same scheme as indicated.

APPENDIX B

MEMORANDUM OF UNDERSTANDING FOR THE INTERCONNECTION OF THE AUTOMATED SYSTEMS OF VENEZUELA AND TRINIDAD & TOBAGO

AAA Logo	***MEMORANDUM OF UNDERSTANDING FOR THE INTERCONNECTION OF THE AUTOMATED SYSTEMS OF AAA AND BBB***	BBB Logo
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Preface

This document defines the Memorandum of Understanding that will allow AAA and BBB to interconnect their air traffic control automation systems. It is based on the documents prepared by ICAO experts on automation.

The two States can revise this document as necessary.

Approval

MEMORANDUM OF UNDERSTANDING FOR THE INTERCONNECTION OF THE AUTOMATED SYSTEMS OF AAA AND BBB

For AAA **For BBB**

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Revisions

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1. Section 1 - Introduction and Purpose

1.1. Introduction

GREPECAS/15, taking into account the impact that operational errors of the ATC loop between adjacent ACCs have on the safety of air operations, considered, in Conclusion 15/36, that "CAR/SAM States, Territories, and International Organisations should gradually implement the interface for ATC interfacility data communication (AIDC);" and that "ICAO should coordinate, provide assistance for, and do the follow-up on, the implementation of such corrective measures."

The analysis of the problem led to the conclusion that the solution involved an intense use of CNS/ATM technologies, in keeping with ICAO recommendations, especially those concerning the interconnection of automated systems, as described in Document 4444-PANS/ATM, in Section 8.1.6: "*States should, on the basis of regional air navigation agreements, provide for the automated exchange of coordination data relevant to aircraft being provided with ATS surveillance services, and establish automated coordination procedures"*.

In this regard, studies were conducted under Projects RLA/98/003 and RLA /06/901 with a view to having an overview of this issue, including obstacles and required action, as well as of the implementation strategy.

The resulting documents are described in Annexes 1, 2 and 3 to the Appendix to this Memorandum.

The main body of this document consists of ten (10) sections and one (1) appendix. The contents of the sections and appendix are summarised below:

a) Section 1 - Presents a brief overview and a statement of purpose;
b) Section 2 – Describes the basic principles guiding the development of this document;
c) Section 3 – Considers the cases in which this Memorandum applies;
d) Section 4 – Describes the version control process;
e) Section 5 – Lists the relevant legislation;

f) Section 6 – Establishes criteria and restrictions for the use of the information shared by two countries;

g) Section 7 – Presents the operational aspects that must be considered for the interconnection of the automated systems;

h) Section 8 - Presents the technical aspects that must be taken into account for the interconnection of the automated systems;

i) Section 9 - Presents the administrative aspects that must be taken into account for the interconnection of the automated systems;

j) Section 10 - Presents the financial aspects that must be taken into account for the interconnection of the automated systems;

k) Appendix 1 – Technical-Operational Agreement

1.2. Purpose

The goal of this MoU is to provide the planning for the interconnection of the automated systems of the XXXXX ACC in AAA, and the YYYY ACC in BBB, establishing standard procedures covering the respective operational, technical, administrative, and financial aspects.

2. Section 2 - Principles

The following aspects have been taken into account when preparing this document:

1. This Memorandum is a guide for States to enter into bilateral agreements; and

2. This document takes into account the aspects contained in the automated system interconnection documents prepared by Projects RLA/98/003 and RLA 06/901, as well as GREPECAS recommendations.

3. Section 3 - Application

This document applies only to the interconnection of the automated systems of AAA and BBB.

4. Section – Organisation

This is a document through which the participating States will agree, as necessary, to revise or modify its details.

The revision to this Memorandum, or changes to its paragraphs will be coordinated by the participating States.

5. Section 5 - References

This Memorandum follows ICAO recommendations contained in the following documents:

a) Annex 11 to the Convention on International Civil Aviation
b) Doc 4444
c) Doc 7030
d) Doc 9426
e) Doc 9694
f) Doc 9880 part IIa (AIDC)
g) RLA/98/003 project document
h) RLA/06/901 project document
i) Final reports of the SAM/IG/1 and SAM/IG/2 meetings

6. Section 6 - Confidentiality

Each participating State must take all the necessary measures to ensure the safety, integrity, and confidentiality of the information.

Disclosure of these data to organisations other than those contemplated in this Memorandum may proceed only if previously authorised by the participating States.

7. Section 7 - Operational Aspects

The implementation of this Memorandum may require adjustments to the Operational Agreements that exist between the States.

The Administrations undertake to instruct the staff of the ACCs involved, on the appropriate sections of this MoU.

Priority will be given to automatic hand-off, through the transmission of the required data between automated systems, according to the specifications contained in the Appendix to this MoU.

However, other means of communication can be used for the transfer when automatic hand-off is not possible.

8. Section 8 - Technical Aspects

The technical aspects to be taken into account by States for the establishment of the interconnection scenarios, the implementation strategy, the implementation of the solution, the supervision of the operation, and the personnel training aspects that will best meet their requirements are shown in Section 6 of the Appendix to this Memorandum.

9. Section 9 - Administrative Aspects

For the orderly implementation of the interconnection solution adopted, the participating States agree to the creation of an administrative structure based on an Interconnection Management Committee, whose functions, detailed composition, and activities are described in Section 7 of the Appendix to this Memorandum.

The States must designate their representatives, members of their respective groups, to make up the basic structure of the aforementioned Committee.

The States must select a forum for discussing cases of non-compliance and for resolving conflicts.

This is an ongoing Memorandum that can be interrupted at any time by common agreement of the parties involved.

10. Section 10 - Financial Aspects

The participating States, as individual administrations, will be responsible for any financial obligation to cover direct or indirect expenditures related to the implementation of this Memorandum, including those associated with the acquisition of equipment, spare parts, training of technical and operational personnel, lines of communication, and others.

Each State will be responsible for its respective portion of expenditures concerning upgrades to the REDDIG to address traffic increases, according to the guidance provided by the REDDIG Administration.

The parties to this Memorandum understand that they will not commit to any action that could result in a financial obligation for the other parties, without first obtaining the written consent by all the other parties involved.

The States can establish financial mechanisms to carry out the interconnection, for example, through ICAO Technical Cooperation Projects.

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APPENDIX TO THE MEMORANDUM OF UNDERSTANDING

TECHNICAL-OPERATIONAL AGREEMENT FOR THE INTERCONNECTION OF THE AUTOMATED SYSTEMS OF AAA AND BBB

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11. Purpose

To provide a detailed description of the technical, operational, and administrative aspects of the Memorandum of Understanding required for the interconnection of the automated systems of AAA and BBB.

12. Summary

ICAO Projects RLA/98/003 and RLA/06/901 identified resources for the conduction of studies, in order to have a full vision of the interconnection of automated systems, including obstacles, required action, and implementation strategy.

The work carried out included:

- Drafting of the Initial Action Plan – July 2006;
- Concept Test – BBB Trial -Venezuela – September 2006;
- Data collection – Phase 1 – survey of countries – current interfaces;
- Data collection – Phase 2 – missions to the States – details of the interfaces – 2007
  - ✓ 1st mission: Peru, Ecuador, and Venezuela – September 2007;
  - ✓ 2nd mission: Colombia, Panama, and COCESNA – October 2007;
  - ✓ 3rd mission: Chile, AAA, and Uruguay - November 2007
- Drafting of the Interconnection Plan – February 2008;
- Drafting of the SICD document (System Interface Control Document) – March 2008;
- Drafting of the SSS document (System Subsystem Specification) – September 2008

The generated products cover, in summary, the following aspects:

1. SICD: contains all the data collected from the SAM States that have automated systems, as well as a description of their interfaces, providing an overview of the current situation and recommendations for the adoption of the necessary measures for their interconnection.

2. Interconnection plan: contains the objectives, concepts, strategies, and the action required to meet the operational requirements for the hand-off between adjacent ACCs in the SAM Region.

3. SSS: contains the requirements--especially those that are mandatory--for ACC automation systems, to be used as a reference for future implementations of new air traffic control automated systems and their upgrades, as necessary.

The SICD, the Interconnection Plan, and the SSS documents were submitted for analysis and approval at the following events:

- Interconnection Plan and SICD:
  - ✓ Project RLA 06/901 - First meeting of the SAM Implementation Group (SAM/IG/1),
  - ✓ Sixth meeting of the GREPECAS ATM/CNS Subgroup; and
  - ✓ Seminar/Workshop on ATM Automation – Rio – BBB;
- SSS:
  - ✓ Project RLA/06/901 - Second meeting of the SAM Implementation Group (SAM/IG/2)

13. Reference

This Agreement follows ICAO recommendations contained in the following documents:

a) Annex 11 to the Convention on International Civil Aviation
b) Doc 4444
c) Doc 7030
d) Doc 9426
e) Doc 9694
f) Doc 9880 part IIa (AIDC)
g) RLA/98/003 project document
h) RLA/06/901 project document
i) Final reports of the SAM/IG/1 and SAM/IG/2 meetings

14. Security

Each State must ensure that its communication networks involved in the interconnection have the protection required for this type of service, taking into account, at least, the following aspects:

- Protection from invasion by unauthorised individuals and/or systems;
- Protection from the attack of computer viruses; and
- Use of the equipment exclusively for the interconnection of the automated systems.

15. Operational Aspects

The Administrations undertake, within their respective jurisdiction, to directly inform the staff of the ACCs involved about the contents of this Memorandum of Understanding.

Priority will be given to automatic hand-off and the provision of radar control service through the transmission of the required data between the automated systems, as specified in this Agreement.

However, other means of communication can be used for the transfer when automatic hand-off is not possible.

Likewise, through the respective operational agreements, the provision of non-radar control services should be coordinated for hand-off between adjacent ACCs when the signals of the radars involved in this Agreement are not available.

The interconnection option chosen implies that the States will have to establish specific operational procedures, taking into account the functionalities available in each automated system, selecting the message set to be used, but complying with the specifications and requirements contained in the documents associated to the solution adopted.

The States agree to jointly define the transition area for the exchange of surveillance data between adjacent ACCs, considering a distance of 55 NM from the boundary of the FIRs involved, for both States.

Special attention must be given to the training of controllers in the use of the tools available in the automated systems concerning automatic hand-off between adjacent FIRs.

16. Technical Aspects

The interconnection must meet the following requirements:

- It should allow for the automatic transfer of flight plans between adjacent ACCs;
- It should allow for surveillance data sharing in areas of common interest.

The main aspects are:

1) Analysis of the current scenario

According to the information contained in the reference documents, the current status in BBB and AAA is as follows:

1) AAA

a) Automated System

The XXXXXX ACC uses an extension of the XXXX system, installed in XXX, which has the functionality required for the provision of radar surveillance services throughout the XXX FIR, and for the automated processing of flight plans, as described in the SICD.

The XXXX system has automatic flight plan “hand-off” capability, using the messages of ICAO Doc 4444, and can process OLDI and AIDC protocols. It is expected to have Asterix 62/63 capability by XXXX.

b) Radar Display

Radar coverage is currently available in the XXX FIR.

c) Data Network

The XXXXX ACC has access to the REDDIG for oral communication with adjacent ACCs.

Radars will transmit data through the Ethernet and the domestic network, using the Asterix protocol.

The AMHS system has been/will be installed at domestic level and has been operating since/will operate starting in 20xx.

2) BBB

a) Automated System

The XXXXXX ACC uses an extension of the XXXX system, installed in XXX, which has the functionalities required for the provision of radar surveillance services throughout the XXX FIR, and for automated processing of flight plans, as described in the SICD.

The XXXX system has the automatic flight plan hand-off capability, using the messages of ICAO Doc 4444, and can process the OLDI and AIDC protocols. It is expected to have Asterix 62/63 capability by XXXX.

b) Radar Display

Radar coverage is currently available in the XXX FIR.

c) Data Network

The XXXXX ACC has access to the REDDIG for oral communication with adjacent ACCs.

Radars will transmit data through the Ethernet and the domestic network, using the Asterix protocol.

The AMHS system has been/will be installed at domestic level and has been operating since/will operate starting in 20xx.

2) Selection of the exchange scenario

Based on the interconnection levels that exist in the XXXX ACC and XXXX ACC facilities, AAA and BBB agree to adopt the following interconnection possibilities in the short and medium term:

1) Short term: Automatic exchange of surveillance data only;

2) Medium term: Automatic exchange of surveillance data and flight plan data.

The States agree to adopt flight plan transfer based on the ICAO OLDI/AIDC, as foreseen in Section 5 (Concepts for Automated ATC Systems Interconnection) of Annex 2 to this Appendix.

The States also agree to adopt the exchange of surveillance data based on the Asterix protocol, according to Section 5 (Concepts for Automated ATC Systems Interconnection) of Annex 2 to this Appendix.

3) Implementation Strategy

The interconnection will be carried out in (two) phases:

- Short term: Exchange of radar data using the Asterix protocol, around XXX; and
- Medium term: Automatic flight plan hand-off using the AIDC protocol, and exchange of radar data using the Asterix protocol, around XXXX.

The implementation strategy adopted by the 2 (two) States must take into account the following aspects:

1.1. Analysis of the impact on existing systems;

1.2. Definition of interfaces and means of communication;

1.3. Configuration of logical and physical connections;

1.4. Hardware and software adjustments; and

1.5. Interconnection tests

These aspects will be analysed by the technicians of the Interconnection Management Committee, as established in this Memorandum, and will be described in the corresponding document.

For the short-term phase, the following radars will be used:

- XXXX secondary radar, as described in paragraph 6.1.1.b of this document; and
- Secondary radars of XXXX.

The radar data contained in the transition area described in Appendix “A” to this document will be transmitted.

The States undertake to provide the necessary technical details for the transmission and reception of the radar signals in each automated system.

Communication between the States will be through the REDDIG.

The medium-term phase will be established by XXX, once the States have the operational capability of using AIDC for automatic hand-off of flight plans.

4) Implementation

The Interconnection Management Committee will carry out the implementation, based on the guidelines issued by common agreement by the States, defining implementation dates, the outsourcing of services, and the distribution of responsibilities, among other relevant matters.

5) Supervision of the Operation

Each State must supervise the operation of its systems, including the maintenance of its equipment and systems, ensuring the required availability, performance, safety, and efficiency.

All the problems of uncertain origin will be jointly analysed by the States through the Interconnection Management Committee, which will coordinate the actions required for their resolution.

However, each State must take all possible steps to implement the actions for which it is responsible, reporting their implementation to the Interconnection Management Committee.

In all cases, the Interconnection Management Committee must be informed at all times about anomalies, regardless of their origin.

6) Training

The participating States must draft training plans for the technical teams responsible for system maintenance, taking into account length, frequency, and technological evolution.

7) Maintenance

Teams must be prepared to face contingencies and be technically capable of analysing anomalies.

Each State must draft its Action Plan that defines the technical information required for the interconnection with adjacent ACCs, covering, at least, the following:

- the topology of the networks involved, with the technical details about the required bandwidth, availability, latency, and redundancy;
- the specification of the equipment used;
- the maintenance requirements;
- the maintenance procedures--preventive, predictive, and corrective---; and
- all of the related technical documents;

The States agree that the means of communication for the implementation of the interconnection will be the REDDIG.

17. Administrative Aspects

This Agreement is a dynamic document that can be revised at any moment, based on the technological evolution of the automated systems and of the communication networks of the participating States.

The Interconnection Management Committee created by the two (2) States will manage the interconnection, based the following:

1. Organisational Structure

In order to carry out its activities, the Committee will be organised as follows:

1. Coordinator

The names of the coordinators of the interconnection between the systems of AAA and BBB are shown in Annex A.

Coordinators will be responsible for the general coordination of all the activities of the technical and operational groups, as well as for the contacts with other organisations to address matters related to the interconnection.

2. Technical Group

Made up by technicians designated by the two States, with proven skills in their respective areas, especially in communication networks and computer automation systems.

It will be responsible for the implementation and/or coordination, in their respective countries, of the technical activities required for the implementation, maintenance, and support of automated systems, communication networks, and interconnection equipment.

3. Operational Group

Made up by personnel specialised in air traffic control, designated by the two States, with proven skills in their respective areas, especially in the automated systems used in the ACCs.

2. Faculties

The Committee is responsible for coordinating the planning, implementation, maintenance, and support of the operation of the systems and equipment involved in the interconnection of the automated systems.

It must guarantee the safety of the information exchanged between the automated systems involved in the interconnection.

Its faculties include the control and updating of all the technical and operational documentation.

It is also responsible for proposing the network topology to be used in the interconnection, which shall be approved by the two (2) States.

The implementation of the interconnection shall be coordinated and controlled by the Committee, based on action plans previously approved by the two (2) States.

The Committee must advise the States about the need for the technological evolution of the equipment and systems involved in the interconnection, taking into account, *inter alia*, the technical requirements contained in Annex 3 – SSS, to this Appendix.

Its teams must monitor the performance, stability, reliability, and integrity parameters of the equipment and systems involved in the interconnection, and propose and supervise the corrective action. To this end, it must use tools for analysing anomalies, such as radar protocol and communication line analysers.

The Committee shall establish the necessary procedures for correcting failures.

It shall also provide, together with the participating States, for the resolution of the problems encountered.

3. Management Process

In order to carry out its activities, the Interconnection Management Committee will apply the following system:

1. Periodical meetings and discussions to identify requirements and preferred technical solution(s), alternatives, and options for the interconnection of the automated systems;
2. The exchange of technical reports and documents, plans and programmes to ensure the successful and timely culmination of these efforts.
3. Joint planning, technical coordination, and development of activities between the two (2) States.

18. Financial Aspects

With respect to financial aspects, the States agree to the following:

1. Acquisition of equipment, components and systems

The equipment required for the interconnection will be acquired by each State, in keeping with the technical specifications approved by the Interconnection Management Committee;

2. Acquisition of spare parts

Spare parts for the equipment used in the interconnection will be acquired by each State, according to its specific needs, but in keeping with the maintenance guidelines issued by the Interconnection Management Committee.

3. Acquisition of services from third parties

Each State agrees to cover the expenditures involved in the hiring of third-party services, such as software adaptations, projects, and implementation of communication networks.

Each State will be responsible for its respective portion of any expenditure concerning upgrades to the REDDIG to support traffic growth, according to the guidelines of the REDDIG Administration.

19. Attachments

1. Preliminary System Interface Control Document for the Interconnection of ACC Centres of the CAR/SAM Regions – SICD;

2. CAR/SAM Automated ACC Interconnection Plan;

3. Preliminary Reference System/Subsystem Specification SSS for the Air Traffic Control Automation System.

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ANNEX A

AUTOMATED SYSTEM INTERCONNECTION MANAGEMENT COMMITTEE

AAA

BBB

ANNEX B

RADAR DATA TRANSITION AREA BETWEEN THE XXX AND THE YYY ACCs

Agenda Item 3: Review and Updating of the Procedures and ATS Letter of Operational Agreement between Piarco and Maiquetía ACCs

3.1 The Meeting recalled that the PANS/ATM (Doc 4444), in Chapter 10, *"Coordination"*, defines a series of states for coordination and control transference of a flight between ATC units and successive control sectors. These procedures have the objective to establish and apply standardized procedures, in order to reduce, among other things, the need for speech coordination. Such procedures must be specified in letters of agreement and local instructions, as appropriate.

3.2 An Ad-hoc Group was created, in order to deal with the specific revision, modification and harmonization of the operational agreements detailing procedures related to air traffic routing between Flight Information Regions (FIRs), the transference points for responsibilities and air-ground communications, and coordination procedures applicable between the respective ATC units. These procedures supplement or point of the procedures subscribed by ICAO in the pertinent documents. It is expected that all these measures will help to reduce operational errors in the data transference of flights operating in the Region under analysis.

3.3 Letters of Operational Agreement duly agreed will become effective as of **1 October 2010** and are included as **Appendix A** to this part of the report.

APPENDIX A

REPUBLICA BOLIVARIANA DE VENEZUELA
INSTITUTO NACIONAL DE AERONAUTICA CIVIL
SERVICIO A LA NAVEGACIÓN AÉREA
SERVICIO DE INFORMACION AERONAUTICA
TEL: (58)212 3551920. FAX: (58) 3551518.
AFTN: SVMIYOYX.
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AIC
A09/04
03 SEP 10

AERONAUTICAL INFORMATION CIRCULAR

OPERATIONAL LETTER OF AGREEMENT BETWEEN PIARCO AREA CONTROL CENTRE (ACC) AND MAIQUETIA AREA CONTROL CENTRE (ACC)

SUBJECT: Procedures relating to the Coordination of Air Traffic between Piarco ACC and Maiquetía ACC.

1. INTRODUCTION

1.1 **Effective Date:** October 1st, 2010 at 0901 UTC

1.2 Objective:

1.2.1 The objective of this Letter of Agreement is to establish operating procedures for the coordination and control air traffic between the Piarco and Maiquetia ACCs.

1.3 Scope:

1.3.1 The procedures contained in this Letter of Agreement supplement or detail, when so required, the procedures prescribed in ICAO documents and shall be applied to all air traffic that crosses the common boundary of the Piarco and Maiquetia CTA/UTA/FIRs.

1.4 Distribution:

1.4.1 Piarco ACC, Maiquetia ACC, ICAO NACC Regional Office, ICAO SAM Regional Office, Trinidad and Tobago CAA Head Office, Venezuela. INAC SNA (Air Navigation Services)

2. CONTROL PROCEDURES

2.1 Routing of IFR Air Traffic:

2.1.1 Except for prior coordination effected individually for each flight off ATS Routes, the IFR air traffic between the Maiquetia UTA/CTA/FIR and the Piarco UTA/CTA/FIR shall be routed along ATS Routes defined in the respective AIPs.

2.2 Assignment of Flight Levels:

2.2.1 Non-RVSM approved State aircraft, lifeguard/humanitarian flights, maintenance, and ferry/delivery aircraft are to be accommodated within RVSM airspace, workload permitting. A Vertical separation minimum of two thousand feet (2000 ft) shall be applied between such aircraft and any other aircraft, as specified in Appendix 1.

2.2.2 Except for prior coordination, Piarco ACC and Maiquetia ACC shall assign Flight Levels corresponding to the magnetic tracks shown in the table of cruising levels contained in ICAO Annex 2, Appendix 3, paragraph a.

2.3 Separation

2.3.1 Vertical

2.3.1.1 Vertical separation shall be as follows:

<table>
<tr><th rowspan="2">AIRCRAFT</th><th colspan="3">SEPARATION</th></tr>
<tr><th>FL290 AND BELOW</th><th>FL290-FL410</th><th>FL410 AND ABOVE</th></tr>
<tr><td>RVSM Approved</td><td rowspan="2">1000 Feet</td><td>1000 Feet</td><td rowspan="2">2000 Feet</td></tr>
<tr><td>Non-RVSM Approved</td><td>2000 Feet*</td></tr>
</table>

*Note: When Non-RVSM approved aircraft (State, lifeguard/humanitarian, maintenance, and ferry/delivery flights) intend to operate in RVSM airspace, the transferring ATS Unit/controller shall coordinate at least sixty (60) minutes prior to the estimated boundary crossing time. In the case of Non-RVSM approved traffic, which will depart from locations where the flying time for the particular aircraft will be less than sixty (60) minutes from the common UTA/CTA boundary, prior coordination must be effected between the respective ATS Units.

2.3.2 Longitudinal

2.3.2.1 Applicable separation shall be a ten (10) minute longitudinal separation minimum and/or 80 NM RNAV distance based separation minimum with the utilisation of the Mach number technique (MNT) at FL 250 and above between turbojet aircraft at the same flight level, on the same route, crossing the common boundary.

2.3.2.2 A ten (10) minute longitudinal separation minimum shall be applied between non-turbojet aircraft and aircraft not capable of utilising the MNT operating at FL 250 and above on the same route at the same flight level

crossing the common boundary if the aircraft are cleared to maintain the same Indicated Air Speed (IAS).

2.3.2.3 At FL 240 and below the applicable minimum longitudinal separation shall be fifteen (15) minutes between aircraft at the same Flight Level (FL) and on the same route crossing the common boundary. However, a reduced longitudinal separation minimum of ten (10) minutes may be applied when prior coordination has been effected.

2.4 Transfer of Responsibility for Air Traffic Services:

2.4.1 Except for prior coordination, the transfer of responsibility for aircraft operating between the Piarco UTA/CTA/FIR and the Maiquetia UTA/CTA/FIR shall be the common FIR boundary, or established Transfer of Control Points, as specified in Appendix "1".

2.4.2 Maiquetia ACC has temporarily delegated the responsibility for the provision of Air Traffic Control Services on that segment of ATS routes A324/UA324, between the Entry/Exit Coordinates (0921N06029W) of the route at the Piarco/Maiquetia FIR boundary and MINDA, to Piarco ACC, until further advised.

3. COORDINATION PROCEDURES

3.1 General:

3.1.1 Coordination between the Piarco ACC and Maiquetia ACC shall be effected in accordance with standards, recommended practices, and procedures prescribed by ICAO (PANS ATM Doc 4444).

3.1.2 The Piarco/Maiquetia ATS direct speech circuit shall be used as the primary means of coordination for all air traffic.

3.1.3 All coordination/approval shall be effected with the appropriate ATS Units at least fifteen (15) minutes, but not more than sixty (60) minutes prior to the aircraft's estimate for the position serving as the coordination point for the ATS route or the common UTA/CTA/FIR boundary involved.

3.1.3.1 In the case of traffic which will depart from locations where the flying time for the particular aircraft will be less than fifteen (15) minutes from the common UTA/CTA/FIR boundary, prior coordination must be effected between the respective ATS Units.

3.1.4 Departure and arrival messages shall not be required for IFR flights originating and terminating at airports located within the Piarco and Maiquetia FIR boundaries.

3.1.5 Coordination shall be effected on all traffic that will operate less than one half the applicable lateral separation from the respective airspace boundary.

3.1.6 Coordination of **NON-RVSM** approved aircraft shall be effected at least sixty (60) minutes prior to the aircraft's estimate for the position serving as the coordination point for the ATS route or the common UTA/CTA/FIR boundary involved and shall include the phrase **"NEGATIVE RVSM"** and the reason for exemption, **(i.e.** ***STATE AIRCRAFT, LIFEGUARD/HUMANITARIAN, MAINTENANCE, AND FERRY/FIRST DELIVERY FLIGHT*****)** and shall be effected in accordance with the Note on Para. 2.3.1.1.

3.1.7 Piarco and Maiquetia ATS Units shall instruct all transponder-equipped aircraft to squawk the SSR code previously assigned and coordinated by the respective ATS Units.

3.2 Information to be forwarded on air traffic by ATC Units:

3.2.1 Piarco ACC and Maiquetia ACC shall forward information in accordance with PANS ATM DOC 4444.

3.2.1.1 Piarco and Maiquetia ACCs shall forward revised estimates, whenever there is a variation of plus or minus three (+/- 3) minutes.

3.2.2 There shall be an interchange of pertinent information relating to VFR flights crossing the common boundary of the Piarco and Maiquetia FIRs.

3.2.3 In the event that the relevant ATS Units and/or appropriate airline operators flight planning agencies are unable to forward Flight Plan information via AFTN within sufficient time to permit preparation and analysis, all such reasonable efforts shall be made to copy same on any appropriate communication facility, e.g.

(a) Piarco: (ACC) Facsimile: 001 868-669-1716 (AIS) / 4259

Telephone: 001-868-669-6181 (ACC) / 4852 (ACC)

001-868-669-6180. (ACC).

(b) Maiquetia: Facsimile: 011-58-212-355-2216

Telephone: 011-58-212-355-2216 or 2898

011-58-416-623-6427 (Cellular)

3.3 Communications:

3.3.1 *Transfer of Air-Ground Communications*

3.3.1.1 The transfer of air-ground communications of an aircraft from the transferring ATS Unit to the receiving ATS Unit shall be made five (5) minutes before entering the airspace of the receiving ATS Unit, except where, with the concurrence of both ATS Units, the requirement for separation determines otherwise, as specified in Appendix "1".

3.3.1.2 When requested, the receiving ATS Unit shall notify the transferring ATS Unit that the traffic is in communication with the receiving ATS Unit and has crossed the common boundary.

3.4 Communications Failure Procedures: *SEE ATTACHMENT* – E/CAR Contingency Procedures

3.4.1 In the event of the failure of the Piarco/Maiquetia ATS direct speech circuit, all means of alternate communications shall be exhausted for the coordination of all IFR air traffic (e.g. Relay through another ATS Unit; Commercial Telephone; AFTN) provided aircraft are held completely within the lateral limits of the transferring ATS Unit's airspace until an acceptance message is received.

3.4.2 All alternate methods of communications require acknowledgement from the receiving ATS Unit.

3.4.3 If the aforementioned means of communication cannot be effected, IFR aircraft shall only be cleared to a point completely within the lateral limits of the transferring ATS Unit's airspace, level at an appropriate Flight Level for direction of flight, and instructed to contact the receiving ATS Unit to obtain onward clearance prior to entering the adjacent airspace.

3.4.4 The receiving ATS Unit shall clear the aircraft into its area and shall not authorise Flight Level changes until the aircraft is well beyond the lateral limits of the common boundary, unless the aircraft advises that the transferring ATS Unit has no control restrictions regarding descent/climb. Furthermore, the receiving ATS Unit shall instruct the aircraft to advise the transferring ATS Unit when crossing the common boundary.

Note: *Self-Transfer will be the preferred initial means of notification by Piarco ACC if the aircraft is airborne*.

3.5 THE CONTINGENCY PLANS/PROCEDURES

E/CAR Contingency Procedures

Piarco Contingency Plan ***ATTACHMENT "A"***

Venezuelan Contingency Plan ***ATTACHMENT "B"***

3.6 SUSPENSION OF RVSM OPERATIONS.

3.6.1 Maiquetia and Piarco ACCs shall notify each other when RVSM is suspended. Vertical separation shall revert to 2000 feet between FL290 and FL410 inclusive.

4. ALERTING SERVICE

4.1 Alerting coordination shall be the responsibility of Piarco ACC and Maiquetia ACC for aircraft operating within their respective CTA/UTA/FIRs.

4.2 Both Units shall provide each other with whatever information is available and provide assistance in order to comply with 4.1.

5. REVISIONS

5.1 This Agreement shall be subject to revision whenever modifications of standards, recommended methods, or supplementary regional procedures of ICAO occur which might affect the procedures contained in this Agreement or when new communication facilities, or new Air Traffic Services, which might affect these procedures are commissioned. In the case of changes in ICAO regulations, Piarco ACC or Maiquetia ACC shall initiate the amendment of this Agreement, and in the case of new installations or modification of existing installations, the ATS Unit concerned shall initiate the modification procedure. For any other matter, which might make it advisable to change this Agreement, the interested ATS Unit shall propose the pertinent revision.

6. PUBLICATION

6.1 The dissemination of this Agreement and any subsequent modification shall be made as required.

6.2 The respective ATS Units shall include in their AIPs, Section ENR, those parts of this Agreement of interest to users.

7. CANCELLATION

7.1 This Letter of Agreement cancels and replaces all previous Letters of Agreement between the ATS Units of Trinidad and Tobago (Piarco ACC) and Venezuela (Maiquetia ACC).

CANCEL AIC A09/04 of date Dec 17, 2004.

8. MISCELLANEOUS

8.1 Deviation from procedures established in this Letter of Agreement should be effected only after prior coordination is accomplished which completely defines responsibilities in each case.

9. SIGNATURES

9.1 For Maiquetia ACC
Civil Aviation Authority

Jose Ochoa Martinez
Manager ATS

Junel Martinez Duarte
Maiquetia ACC Chief
Venezuela

9.2 For Piarco ACC
Civil Aviation Authority

Samuel M. Lampkin
Manager ATS
Trinidad and Tobago
2010 SEPTEMBER 03

APPENDIX '1'

OPERATIONAL LETTER OF AGREEMENT BETWEEN PIARCO AREA CONTROL CENTRE (ACC) AND MAIQUETIA AREA CONTROL CENTRE (ACC)

ATS ROUTES	LEVELS ASSIGNED BY ACC			TRANSFER POINTS	MINIMUMS USED IN LONGITUDINAL SEPARATION		
	MEA	PIARCO	MAIQUETIA		TIME MIN	DIST NM	REMARKS
		FL	FL				
1	2	3	4	5	6	7	8
UA/A511	FL250 FL050	1	2	BOGSI 13°53'45"N/064°17'58"W	10	80	a-) Longitudinal separation between turbojet aircrafts may be reduced when entering Maiquetia and Piarco FIRs via UA550, UA551, UA561,UL337,UA511,UA552. The longitudinal separation in time between turbojet aircrafts shall be ten minutes by using the Mach Number Technique where the leading aircraft maintains the same or a faster Mach speed than the aircraft which is following. Nine minutes where the Mach speed of the leading aircraft is 0.02 faster than the aircraft which is following Ten minutes if the mach speed of the aircraft ahead is the same or faster than aircraft behind Nine minutes where the Mach speed of the leading aircraft is 0.02 faster than the aircraft which is following Eight minutes where the Mach speed of the leading aircraft is 0.03 faster than the aircraft which is following Seven minutes where the Mach speed of the leading aircraft is 0.04 faster than the aircraft which is following. Six minutes where the Mach speed of the leading aircraft is 0.05 faster than the aircraft which is following Five minutes where the Mach speed of the leading aircraft is 0.06 faster than the aircraft which is following. b. Longitudinal Separation between aircraft crossing the Piarco/Maiquetía FIR's may be reduced to 40 miles DME where both aircrafts utilize DME equipment to provide frequent determination of position and speed.
UA/A561	FL250 FL050	1	2	DAREK 11°29'53"N/062°48'25"W	10	80	
UA/A550	FL250 FL 030	1	2	ITEGO 13°37'21"N/064°07'40"W	10	80	
UA/A552 UA/A563	FL250 FL 070	1	2	MEGIR 10°31'05"N/061°52'31"W	10	80	
UA/A551	FL250 FL030	1	2	ONGAL 12°51'15"N/063°38'46"W	10	80	
UA/A562	FL250 FL050	1	2	PARIA 10°13'17"N/062°00'01"W	10	80	
UL337	FL250	1	2	VUDAL 12°27'13"N/063°24'26"W	10	80	

APPENDIX '1'

OPERATIONAL LETTER OF AGREEMENT BETWEEN PIARCO AREA CONTROL CENTRE (ACC) AND MAIQUETIA AREA CONTROL CENTRE (ACC)

De 000° a 179°***						De 180° a 359°***					
Vuelos IFR			Vuelos VFR			Vuelos IFR			Vuelos VFR		
	Altitud			Altitud			Altitud			Altitud	
Nivel de vuelo	Metros	Pies	Nivel de vuelo	Metros	Pies	Nivel de vuelo	Metros	Pies	Nivel de vuelo	Metros	Pies
–90			–	–	–	0			–	–	–
10	300	1 000	–	–	–	20	600	2 000	–	–	–
30	900	3 000	35	1 050	3 500	40	1 200	4 000	45	1 350	4 500
50	1 500	5 000	55	1 700	5 500	60	1 850	6 000	65	2 000	6 500
70	2 150	7 000	75	2 300	7 500	80	2 450	8 000	85	2 600	8 500
90	2 750	9 000	95	2 900	9 500	100	3 050	10 000	105	3 200	10 500
110	3 350	11 000	115	3 500	11 500	120	3 650	12 000	125	3 800	12 500
130	3 950	13 000	135	4 100	13 500	140	4 250	14 000	145	4 400	14 500
150	4 550	15 000	155	4 700	15 500	160	4 900	16 000	165	5 050	16 500
170	5 200	17 000	175	5 350	17 500	180	5 500	18 000	185	5 650	18 500
190	5 800	19 000	195	5 950	19 500	200	6 100	20 000	205	6 250	20 500
210	6 400	21 000	215	6 550	21 500	220	6 700	22 000	225	6 850	22 500
230	7 000	23 000	235	7 150	23 500	240	7 300	24 000	245	7 450	24 500
250	7 600	25 000	255	7 750	25 500	260	7 900	26 000	265	8 100	26 500
270	8 250	27 000	275	8 400	27 500	280	8 550	28 000	285	8 700	28 500
290	8 850	29 000				300	9 150	30 000			
310	9 450	31 000				320	9 750	32 000			
330	10 050	33 000				340	10 350	34 000			
350	10 650	35 000				360	10 950	36 000			
370	11 300	37 000				380	11 600	38 000			
390	11 900	39 000				400	12 200	40 000			
410	12 500	41 000				430	13 100	43 000			
450	13 700	45 000				470	14 350	47 000			
490	14 950	49 000				510	15 550	51 000			
etc.	etc.	etc.				etc.	etc.	etc.			

APPENDIX '1'

OPERATIONAL LETTER OF AGREEMENT BETWEEN PIARCO AREA CONTROL CENTRE (ACC) AND MAIQUETIA AREA CONTROL CENTRE (ACC)

TRANSFERS TO ACC MAIQUETIA

POSITION	PRIMARY	SECUNDARY	REMARKS
BOGSI, ITEGO, ONGAL, VUDAL	125,2 MHz	126,0 MHz	125,2 MHZ Sector 2 and 126,0 MHz Sector 4 of Maiquetía
DAREK, MEGIR, PARIA	126,0 MHz	125,2 MHZ	126,0 MHz Sector 4 and 125,2 MHz Sector 2 of Maiquetía

TRANSFERS TO ACC PIARCO

POSITION	PRIMARY	REMARKS
BOGSI, ITEGO, ONGAL, VUDAL DAREK, MEGIR, PARIA	123,7 MHz	Piarco Combined Sector 123,7 MHz, between 0200UTC – 1530 UTC
BOGSI, ITEGO, ONGAL, VUDAL	123,7 MHz	Piarco Sector North 123.7 MHz between 1530 UTC -0200 UTC
DAREK, MEGIR, PARIA	125,4 MHz	Piarco Sector South 125.4, MHz between 1530 UTC -0200 UTC.

Agenda Item 4: Analysis of ATS Contingency Plans

4.1 Under this agenda item, the Meeting analysed Annex 11, Chapter 2, Section 2.29, and its Attachment D, as well as Doc 4444 – PANS-ATM.

4.2 These guidelines establish responsibilities inherent to States and ICAO, as regards the organization of contingency plans and the measures to be taken in preparing, executing and finalising the application of such plans.

4.3 In view of the above, the meeting considered that, in general, contingency plans should ensure the safe and orderly air traffic flow, in case of interruption of ATS services and the corresponding supporting services, and as far as possible, without temporary interruptions so that, in such circumstances, the main international air routes continue to be available not to affect air transport.

4.4 Another aspect taken into account by the meeting is that contingency arrangements are provisional and will be valid only up to the moment in which services and facilities from the Regional ANP reinitiate their activities, and consequently are not amendments to the regional plan. However, in cases in which the contingency plan is temporarily diverted from the Regional plan approved, such deviations must be approved by the ICAO President of the Council, on behalf of such organisation.

4.5 Keeping in mind the above, the meeting agreed on the following Conclusion:

Conclusion TT/VEN/01 Application of Contingency Plans

That the Administrations of Trinidad and Tobago and Venezuela adopt the corresponding actions for the application of their respective contingency plans, harmonized, and shown in **Appendices A and B**, respectively, of this part of the report.

NOTAM Model

4.6 The meeting analysed NOTAM models presented by the Secretariat, which could serve as guidance material for States that have the need to report the foreseen or real interruption of ATS, as well as the reporting the contingency measures have stopped from being applied and another type of situations that might arise.

4.7 The meeting agreed to adopt such models as reference material, and agreed to include them as **Appendix C** to this part of the report.

Contingency plans catalogue

4.8 The meeting also reviewed and updated the information contained in the contingency plans catalogue, and the pertinent information is attached as **Appendix D** to this part of the report.

APPENDIX A

APPENDIX B

REPÚBLICA BOLIVARIANA DE VENEZUELA
MINISTERIO DEL PODER POPULAR PARA LA INFRAESTRUCTURA
INSTITUTO NACIONAL DE AERONÁUTICA CIVIL

PLAN DE CONTINGENCIA
SERVICIOS DE TRÁNSITO AÉREO
FIR MAIQUETÍA

PLAN DE CONTINGENCIA PARA LA FIR MAIQUETÍA

Fecha de entrada en vigencia: (día) (mes) (año)

Exposición de motivos

El presente Plan de Contingencia ha sido elaborado basándose en las directivas aprobadas por el Consejo de la OACI, contenidas en el Manual de Planificación de los Servicios de Tránsito Aéreo (Do. 9426, Primer Parte, Parte II, Sección I, Capítulo 1, numeral 1.3).

El objetivo de este Plan de Contingencia es facilitar y mantener el movimiento ordenado y seguro de la aviación civil internacional a través del espacio aéreo de la FIR Maiquetía en caso de una interrupción parcial de los servicios de tránsito aéreo y/o establecer rutas de contingencia para encaminar el flujo de tránsito entre las FIRs Amazónico / Brasil, Georgetown / Guyana, Piarco / Trinidad y Tobago, Curazao / Antillas Holandesas, San Juan / Puerto Rico, Bogotá / Colombia, Barranquilla / Colombia, en caso de una interrupción total de los servicios.

Este Plan de Contingencia ha sido elaborado por Venezuela, asistido por la Oficina Regional Sudamericana y aprobado por el Presidente del Consejo.

La efectiva aplicación del presente plan presupone una estrecha cooperación, colaboración y aceptación de las autoridades aeronáuticas de las FIR involucradas, así como de los usuarios del espacio aéreo mencionado.

1. Ámbito de Aplicación (FIRs afectadas)

1.1 Las FIRs directamente afectadas por el presente Plan de contingencia son:
Amazónico / Brasil; Georgetown / Guyana; Piarco / Trinidad y Tobago; Curazao / Antillas Holandesas; San Juan / Puerto Rico; Bogotá / Colombia; Barranquilla / Colombia y Maiquetía / Venezuela.

2. Aspectos Generales

2.1 Las medidas de contingencia que figuran en el presente plan, deben ser aplicadas en casos de acontecimientos previsibles, ocasionados por paros, conflictos laborales o de interrupción imprevista de los servicios de tránsito aéreo u otras circunstancias, que de alguna manera puedan afectar los mismos.

2.2 Para asegurar que las operaciones de la aviación civil internacional continúen desarrollándose en forma segura y ordenada, se establece lo siguiente:

2.2.1 Para aquellos casos en que la situación de contingencia sea completamente previsible, con una anticipación de 48 horas, la autoridad aeronáutica designará una Comisión de Contingencia del Instituto Nacional de Aeronáutica Civil integrado por los Gerentes Generales, Jefes de: Centro de Control de Área Maiquetía, División de Comunicaciones Aeronáuticas, Oficina de Búsqueda y Salvamento, Divisiones de los Servicios de Tránsito Aéreo y División de Información Aeronáutica, que tendrá como misión evaluar, planificar, y ejecutar las medidas de contingencia necesarias a objeto de regularizar las operaciones aéreas.

2.2.2 La Comisión de Contingencia estará dirigida por el Presidente del Instituto Nacional de Aeronáutica Civil (INAC), quién tendrá la misión de planificar e impartir las directrices necesarias durante la situación de contingencia parcial o total, Así mismo, este delegará en el Gerente General de los Servicios a la Navegación Aérea, la misión de coordinar y dirigir con las distintas Gerencias Generales, Personal Técnico y Especialistas requeridos, las acciones para la ejecución del plan.

3. La misión de ésta Comisión será la siguiente:

a) Velar por la correcta aplicación del presente plan,
b) Revisar y actualizar periódicamente el mismo,
b) Vigilancia continua y supervisión permanente,
c) Organizar equipos de contingencia en cada una de las áreas especializadas,
d) Mantener enlace con las líneas aéreas, IATA, IFALPA y OACI,
e) Intercambiar información actualizada con (Brasil, Curazao, Guyana, Trinidad y Tobago, San Juan, Bogotá y Barranquilla y coordinar las actividades de contingencia con dichos Estados,
f) Dar aviso de la situación de contingencia con suficiente antelación y/o tan pronto como sea posible a las siguientes organizaciones:
ACC's responsables de las FIRs adyacentes y otros que pudieran verse involucrados por las medidas de contingencia.
OACI. (Oficina regional SAM).
IATA. (Oficina regional)
IFALPA. (Representante regional).
Representantes de las empresas de transporte aéreo regulares,
g) Tomar las acciones necesarias para emitir el NOTAM correspondiente, de acuerdo a la situación de contingencia. Si la situación es previsible, se emitirá el NOTAM, por lo menos con 48 horas de antelación.

Del Plan de Contingencia Internacional parcial

(Aeronaves que despegan de la FIR Maiquetía y aterrizan en Estado extranjero, o viceversa)

4. Disposiciones aplicables en caso de una falla parcial del suministro de los servicios de tránsito aéreo.

4.1 Si durante la contingencia fuera posible suministrar los Servicios de Información de Vuelo (FIS), Alerta y Control de Aeródromo en los Aeropuerto (Maiquetía, Maracaibo, Margarita, Barcelona, se utilizará un sistema simplificado de rutas ATS que conforman la estructura de la red de rutas de la FIR (Curazao, Amazónico, Georgetown, Piarco, San Juan, Bogotá y Barranquilla), de acuerdo a lo siguiente:

FIR Amazónico

4.1.1 Aeronaves que se dirigen al Área Terminal Maiquetía, desde la FIR AMAZÓNICO.

Utilizarán las siguientes Rutas:
UA300 hasta el VOR/DME MUN, UG443 hasta el VOR/DME CBC, W18 JUREL, VOR/DME MIQ.

4.1.2 Aeronaves que se dirigen desde el Área Terminal Maiquetía, a la FIR AMAZÓNICO.

Utilizarán las siguientes Rutas
W19 OSMAR- W20 VOR/DME CBC, UW42 KAMUT, sigue UA315 - VAGAN

4.1.3 Aeronaves que se dirigen al Área Terminal Margarita, desde la FIR AMAZÓNICO.

Utilizarán las siguientes Rutas:
UA300 hasta el VOR/DME MUN, A300 VOR/DME MTA.

4.1.4 Aeronaves que se dirigen desde el Área Terminal Margarita, a la FIR AMAZÓNICO.

Utilizarán las siguientes Rutas:
A563, NDB CUP, W10, VOR/DME MUN, UA300 - PAKON

4.1.5 Aeronaves que se dirigen al Área Terminal Maracaibo, desde la FIR AMAZÓNICO.

Utilizarán las siguientes Rutas:
UA315 –ALBOG –UW7 – BNS – W7 hasta VOR/DME MAR

4.1.6 Aeronaves que se dirigen desde el Área Terminal Maracaibo, a la FIR AMAZÓNICO.

Utilizarán las siguientes Rutas:
W7 hasta el VOR/DME BNS – UR640 - NEBIL.

4.1.7 Aeronaves que se dirigen al Área Terminal, Barcelona desde la FIR AMAZÓNICO.

Utilizarán las siguientes Rutas:
UA300 hasta el VOR/DME MUN, sigue G443 VOR/DME BNA.

4.1.8 Aeronaves que se dirigen desde el Área Terminal Barcelona, a la FIR AMAZÓNICO.

Utilizarán las siguientes Rutas:
W14/UW14 hasta KAMUT, sigue UA315 - VAGAN.

FIR Curazao

4.1.9 Aeronaves que se dirigen al Área Terminal Maiquetía, desde la FIR CURAZAO.

Utilizarán las siguientes Rutas:
G446 VOR/DME PNA. TORIM VOR/DME MIQ.

4.1.10 Aeronaves que se dirigen desde el Área Terminal Maiquetía, a la FIR CURAZAO.

Utilizarán las siguientes Rutas:
A315/UA315 AVELO, VOR/DME PJG.

4.1.11 Aeronaves que se dirigen al Área Terminal Margarita, desde la FIR CURAZAO.

Utilizarán las siguientes Rutas:
A563/UA563 – KOMPU, A563 VOR/DME MTA.

4.1.12 Aeronaves que se dirigen desde el Área Terminal Margarita, a la FIR CURAZAO.

Utilizarán las siguientes Rutas:
A563, KOMPU, UA563/A563, BONAX - VOR/DME PJG

4.1.13 Aeronaves que se dirigen al Área Terminal Maracaibo, desde la FIR CURAZAO.

Utilizarán las siguientes Rutas:
G431 VOR/DME CRO, VOR/DME MAU, sigue DAKAS VOR/DME MAR.

4.1.14 Aeronaves que se dirigen desde el Área Terminal Maracaibo, a la FIR CURAZAO.

Utilizarán las siguientes Rutas:
A522 VOR/MAU, sigue A567/UA567 VOR/DME ABA.

4.1.15 Aeronaves que se dirigen al Área Terminal Barcelona, desde la FIR CURAZAO.

Utilizarán las siguientes Rutas:
G446/UG446 VOR/DME MIQ, sigue UG443 VOR/DME CBC, continua A552 MEXOT, sigue W2 VOR/DME BNA.

4.1.16 Aeronaves que se dirigen desde el Área Terminal Barcelona, a la FIR CURAZAO.

Utilizarán las siguientes Rutas:
G443 VOR/DME CBC - UG443 VOR/DME MIQ, sigue A315/UA315 AVELO – VOR/DME PJG.

FIR Piarco

4.1.17 Aeronaves que se dirigen al Área Terminal Maiquetía, desde la FIR PIARCO.

Utilizarán las siguientes Rutas:
A552/UA552 VOR/DME CBC, W18 JUREL

4.1.18 Aeronaves que se dirigen desde el Área Terminal Maiquetía, a la FIR PIARCO.

Utilizarán las siguientes Rutas:
W19/UW19 DOSRA VOR/DME MTA, sigue A563/UA563 NDB CUP, MEGIR VOR/DME POS.

4.1.19 Aeronaves que se dirigen al Área Terminal Margarita, desde la FIR PIARCO.

Utilizarán las siguientes Rutas:
A563/A552 NDB CUP, A563 VOR/DME MTA.

4.1.20 Aeronaves que se dirigen desde el Área Terminal Margarita, a la FIR PIARCO.

Utilizarán las siguientes Rutas:
A563/UA563 NDB CUP, MEGIR VOR/DME POS.

4.1.21 Aeronaves que se dirigen al Área Terminal Maracaibo, desde la FIR PIARCO.

Utilizarán las siguientes Rutas:
A552/UA552 VOR/DME CBC, VOR/DME NOL, VOR/DME PBL, VOR/DME MAU, sigue B553 DAKAS, W1B.

4.1.22 Aeronaves que se dirigen desde el Área Terminal Maracaibo, a la FIR PIARCO.
Utilizarán las siguientes Rutas:

W5/UW5 VOR/DME BRM, sigue W14/UW14 VOR/DME BNA, sigue W2 VOR/DME MUN, sigue A562/UA562, PARIA.

4.1.23 Aeronaves que se dirigen al Área Terminal Barcelona, desde la FIR PIARCO.

Utilizarán las siguientes Rutas:
A562/UA562 VOR/DME MUN, sigue G443/UG443 VOR/DME BNA.

4.1.24 Aeronaves que se dirigen desde el Área Terminal Barcelona, a la FIR PIARCO.

Utilizarán las siguientes Rutas:
W2 VOR/DME MUN, sigue A562/UA562.

4.1.25 Aeronaves que se dirigen desde el Área Terminal Maiquetía, a la FIR de PIARCO (Vía EUROPA).

Utilizarán las siguientes Rutas:
G432 IRIBE – W44 TOROP - UA550 ITEGO.

4.1.26 Aeronaves que se dirigen al Área Terminal Maiquetía, desde la FIR de PIARCO (procedente de EUROPA)

Utilizarán las siguientes Rutas:
ONGAL - UA551 MARPI – W47A JUREL.

FIR Georgetown

4.1.27 Aeronaves que se dirigen al Área Terminal Maiquetía, desde la FIR GEORGETOWN

Utilizarán las siguientes Rutas:
G443/UG443 VOR/DME CBC, sigue W18 JUREL.

4.1.28 Aeronaves que se dirigen desde el Área Terminal Maiquetía, a la FIR GEORGETOWN.

Utilizarán las siguientes Rutas:
W19, OSMAR, W20 VOR/DME CBC, sigue A552/UA552 MEXOT, sigue W2 VOR/DME MUN, sigue G443/UG443

4.1.29 Aeronaves que se dirigen al Área Terminal Margarita, desde la FIR GEORGETOWN.

Utilizarán las siguientes Rutas
G443/UG443 VOR/DME MUN, A300/UA300 VOR/DME MTA.

4.1.30 Aeronaves que se dirigen desde el Área Terminal Margarita, a la FIR GEORGETOWN.

Utilizarán las siguientes Rutas
A563, NDB CUP, sigue W10 VOR/DME MUN, continua G443/UG443

4.1.31 Aeronaves que se dirigen al Área Terminal Maracaibo, desde la FIR GEORGETOWN.

Utilizarán las siguientes Rutas:
G443/UG443, VOR/DME BNA, sigue W14/UW14 VOR/DME BRM, W24 MADNO, A552/UA552 VOR/DME MAU, sigue B553 DAKAS, W1B.

4.1.32 Aeronaves que se dirigen desde el Área Terminal Maracaibo, a la FIR GEORGETOWN.

Utilizarán las siguientes Rutas:
W5/UW5 VOR/DME BRM, sigue W14/UW14 VOR/DME BNA, G443/UG443.

4.1.33 Aeronaves que se dirigen al Área Terminal Barcelona, desde la FIR GEORGETOWN.

Utilizarán las siguientes Rutas:
G443/UG443, VOR/DME BNA.

4.1.34 Aeronaves que se dirigen desde el Área Terminal Barcelona, a la FIR GEORGETOWN.

Utilizarán las siguientes Rutas:
W2 VOR/DME MUN, G443/UG443.

FIR Bogotá

4.1.35 Aeronaves que se dirigen al Área Terminal Maiquetía, desde la FIR BOGOTÁ

Utilizarán las siguientes Rutas:
UA550 hasta el VOR/DME PBL, sigue W5 TORIM, continua G446 VOR/DME MIQ.

4.1.36 Aeronaves que se dirigen desde el Área Terminal Maiquetía, a la FIR BOGOTÁ.

Utilizarán las siguientes Rutas:
A315 hasta ATONO, sigue G427 VOR/DME PBL, sigue UA553 VOR/DME BRM, sigue UW8 VOR/DME LFA, sigue UW34 VOR/DME CUC.

4.1.37 Aeronaves que se dirigen al Área Terminal Margarita, desde la FIR BOGOTÁ.

Utilizarán las siguientes Rutas:
UA550 VOR/DME PBL, VOR/DME NOL, VOR/DME MIQ, sigue W19 VOR/DME MTA.

4.1.38 Aeronaves que se dirigen desde el Área Terminal Margarita, a la FIR BOGOTÁ.

Utilizarán las siguientes Rutas:
UA563, KOMPU, UA551, VOR/DME MIQ, VOR/DME NOL, VOR/DME PBL, sigue UA553, VOR/DME BRM sigue UW8, VOR/DME LFA, sigue UW34 VOR/DME CUC

4.1.39 Aeronaves que se dirigen al Área Terminal Maracaibo, desde la FIR BOGOTÁ.

Utilizarán las siguientes Rutas:
UA567 / UG431 VOR/DME STB, sigue UA567, TEJER, W7, VOR/DME MAR.

4.1.40 Aeronaves que se dirigen desde el Área Terminal Maracaibo, a la FIR BOGOTÁ.

Utilizarán las siguientes Rutas:
W1A, OJEDA, BOBAT, W1/UW1 VOR/DME STB continua UA567 VOR/DME CUC

4.1.41 Aeronaves que se dirigen al Área Terminal Barcelona, desde la FIR BOGOTÁ.

Utilizarán las siguientes Rutas:
UA550 NEDEX, sigue UW14 GEMAP, W14 VOR/DME BNA.

4.1.42 Aeronaves que se dirigen desde el Área Terminal Barcelona, a la FIR BOGOTÁ.

Utilizarán las siguientes Rutas:
W14/UW14 VOR/DME BRM, sigue UW8 VOR/DME LFA, sigue UW34 VOR/DME CUC.

FIR Barranquilla

4.1.43 Aeronaves que se dirigen al Área Terminal Maiquetía, desde la FIR BARRANQUILLA.

Utilizarán las siguientes Rutas:
ORTIZ UA552 VOR/DME PBL, sigue W5 TORIM, continua G446 VOR/DME MIQ.

4.1.44 Aeronaves que se dirigen desde el Área Terminal Maiquetía, a la FIR BARRANQUILLA.

Utilizarán las siguientes Rutas:
A315 ATONO, sigue G427 VOR/DME PBL, continua UA552 ORTIZ.

4.1.45 Aeronaves que se dirigen al Área Terminal Margarita, desde la FIR BARRANQUILLA.

Utilizarán las siguientes Rutas:
ORTIZ UA552 VOR/DME PBL, VOR/DME NOL, VOR/DME MIQ, UW19/W19 VOR/DME MTA.

4.1.46 Aeronaves que se dirigen desde el Área Terminal Margarita, a la FIR BARRANQUILLA

Utilizarán las siguientes Rutas:
A563 KOMPU, directo VOR/DME MIQ, VOR/DME NOL, VOR/DME PBL sigue UA552 ORTIZ.

4.1.47 Aeronaves que se dirigen al Área Terminal Maracaibo, desde la FIR BARRANQUILLA.

Utilizarán las siguientes Rutas:
W43 ORTIZ, GAVIS, VOR/DME MAR.

4.1.48 Aeronaves que se dirigen desde el Área Terminal Maracaibo, a la FIR BARRANQUILLA.

Utilizarán las siguientes Rutas:
W46 MAICA, OSOKA, NDB RHC

4.1.49 Aeronaves que se dirigen al Área Terminal Barcelona, desde la FIR BARRANQUILLA.

Utilizarán las siguientes Rutas:
UA552 VOR/DME PBL, VOR/DME, VOR/DME CBC, A552 MEXOT, sigue W2 VOR/DME BNA.

4.1.50 Aeronaves que se dirigen desde el Área Terminal Barcelona, a la FIR BARRANQUILLA.

Utilizarán las siguientes Rutas:
G443/UG443 VOR/DME CBC, VOR/DME NOL, VOR/DME PBL, sigue UA552 ORTIZ.

FIR San Juan

4.1.51 Aeronaves que se dirigen al Área Terminal Maiquetia, desde la FIR SAN JUAN.

Utilizarán las siguientes Rutas:
ARMUR UG432/G432 VOR/DME LRS – W45 JUREL.

4.1.52 Aeronaves que se dirigen desde el Área Terminal Maiquetia, a la FIR SAN JUAN

Utilizarán las siguientes Rutas
G432/ VOR/DME LRS - UG432 ARMUR.

4.1.53 Aeronaves que se dirigen al Área Terminal Margarita, desde la FIR SAN JUAN.

Utilizarán las siguientes Rutas:
KIKER - UA300/A300 BAHIA, VOR/DME MTA.

4.1.54 Aeronaves que se dirigen desde el Área Terminal Margarita, a la FIR SAN JUAN.

Utilizarán las siguientes Rutas:
A300 / UA300,BAHIA - KIKER.

4.1.55 Aeronaves que se dirigen al Área Terminal Barcelona, desde la FIR SAN JUAN.

Utilizarán las siguientes Rutas:
A300/UA300, VOR/DME MTA, W12, CUM, VOR/DME BNA

4.1.56 Aeronaves que se dirigen desde el Área Terminal Barcelona, a la FIR SAN JUAN.

Utilizarán las siguientes Rutas:
W14, VOR/DME MTA, sigue A300/UA300, KIKER

DEL PLAN DE CONTINGENCIA INTERNACIONAL TOTAL

(Aeronaves que sobrevuelan la FIR Maiquetía)

5. **Disposiciones aplicables en caso de una interrupción total del suministro de los servicios de tránsito aéreo.**

5.1 En el caso de una interrupción total del suministro de los servicios de tránsito aéreo y se determine que las operaciones de la aviación civil internacional no pueden tener lugar en el espacio aéreo de la FIR Maiquetía, se procederá a encaminar el tránsito aéreo internacional que resulte afectado por las siguientes rutas:

5.2 **Aeronaves que sobrevuelan la FIR Maiquetía se ajustaran a lo siguiente:**

5.2.1 **Aeronaves que sobrevuelen la FIR Maiquetía desde la FIR Curazao a la FIR Amazónico.**

A. Utilizarán la red de rutas ATS, **UG446** con **FL370/390** desde REPIS hasta VOR/DME MIQ, sigue **UA315**, KAMUT, continua VAGAN **FL370/390**, con 15 MIN de separación longitudinal de tiempo.

B. Utilizarán la red de rutas ATS, **UL795** desde ESIPO hasta VUMPI **FL370/FL390/FL410**, con 15 MIN de separación longitudinal de tiempo.

5.2.2 **Aeronaves que sobrevuelen la FIR Maiquetía desde la FIR Amazónico a la FIR Curazao.**

A. Utilizarán la red de rutas ATS, **UL-795** desde VUMPI hasta ESIPO **FL360/FL380/FL400** con 15 MIN de separación longitudinal de tiempo.

B. Utilizarán la red de rutas ATS, **UL-304** desde ISANI hasta VOR/DME CBC sigue ILKIT **FL360/FL380** con 15 MIN de separación longitudinal de tiempo.

RED SIMPLIFICADA DE RUTAS EN CASO DE CONTINGENCIA EN LA FIR MAIQUETIA

PROCEDIMIENTOS DE CONTINGENCIA ENTRE LOS ACCs DE MAIQUETIA Y AMAZONICA				
CONTINGENCIA TOTAL EN LA FIR MAIQUETIA				
ORIGEN	**DESTINO**	**RUTA/TRAMO**	**TRANSFERENCIA/ AUTO TRANSFERENCIA**	
			FIJO	**FL DE VUELO**
FIR AMAZONICA	FIR SAN JUAN	PAKON UA300 KIKER	PAKON	FL360Y FL380
FIR SAN JUAN	FIR AMAZONICA	**KIKER UA300 PAKON**	PAKON	FL370 Y FL390
FIR CURAZAO	FIR AMAZONICA	REPIS **UG446** VOR **MIQ** UA315 VAGAN	VAGAN	FL370 Y FL 390
		ESIPO UL795 VUMPI	VUMPI	FL370 FL390, FL410
FIR AMAZONICA	FIR CURAZAO	ISANI UL304 ILKIT	ISANI	FL360 Y FL 380
		VUMPI UL795 ESIPO	VUMPI	FL360 FL380 FL400

5.2.3 **Aeronaves que sobrevuelen la FIR Maiquetía desde la FIR Curazao a la FIR Georgetown.**

Utilizarán la red de rutas ATS, **UG-446** con **FL310** desde REPIS hasta VOR/DME MIQ, sigue **UG-443** VOR/DME CBC hasta AKROK **FL310,** con 15 MIN de separación longitudinal de tiempo.

5.2.4 **Aeronaves que sobrevuelen la FIR Maiquetía desde la FIR Georgetown a la FIR Curazao.**

Utilizarán la red de rutas ATS, **UG-443** con **FL320** desde AKROK hasta VOR/DME CBC, sigue VOR/DME MIQ, luego **UA-315** hasta AVELO **FL320,** con 15 MIN de separación longitudinal de tiempo.

RED SIMPLIFICADA DE RUTAS EN CASO DE CONTINGENCIA EN LA FIR MAIQUETIA

PROCEDIMIENTOS DE CONTINGENCIA ENTRE LOS ACCs DE MAIQUETIA Y GEORGETOWN				
CONTINGENCIA TOTAL EN LA FIR MAIQUETIA				
ORIGEN	DESTINO	RUTA/TRAMO	TRANSFERENCIA/ AUTO TRANSFERENCIA	
			FIJO	FL DE VUELO
FIR CURAZAO	FIR GEORGETOWN	REPIS UG446-MIQ-UG443-AKROK	AKROK	FL310
FIR GEORGETOWN	FIR CURAZAO	AKROK-UG443-MIQ-UA315-AVELO	AKROK	FL320

5.2.5 **Aeronaves que sobrevuelen la FIR Maiquetía desde la FIR Curazao a la FIR Piarco.** Utilizarán la red de rutas ATS, **UA563** desde, BONAX, VOR/DME LRS, VOR/DME MTA, NDB CUP hasta MEGIR, **FL290** con **15** MIN de separación longitudinal de tiempo.

5.2.6 **Aeronaves que sobrevuelen la FIR Maiquetía desde la FIR Piarco a la FIR Curazao.** Utilizarán la red de rutas ATS, **UA-563** desde MEGIR NDB CUP, VOR/DME MTA, VOR DME LRS hasta BONAX, **FL300** con 15 MIN de separación longitudinal de tiempo

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5.2.7 **Aeronaves que sobrevuelen la FIR Maiquetía desde la FIR Curazao a la FIR Bogotá** Utilizarán la red de rutas ATS, **UG431,** desde ALCOT, VOR/DME STB, ENPUT, **FL320,** con **15** MIN de separación longitudinal de tiempo.

5.2.8 **Aeronaves que sobrevuelen la FIR Maiquetía desde la FIR Bogotá a la FIR Curazao** Utilizarán la red de rutas ATS, **UA-567,** desde, ENPUT sigue VOR/DME STB, sigue NOREX, **FL310,** con **15** MIN de separación longitudinal de tiempo.

5.2.9 **Aeronaves que sobrevuelen la FIR Maiquetía desde la FIR Piarco a la FIR Bogotá.** Procedentes de EUROPA utilizarán la red de rutas ATS, **UA551** desde ONGAL hasta VOR/DME MIQ, VOR/DME PBL, sigue **UA553,** VOR/DME BRM sigue **UW8** VOR/DME LFA Directo a VOR/DME CUC, **FL340** con **15** MIN de separación longitudinal de tiempo.

5.2.10 **Aeronaves que sobrevuelen la FIR Maiquetía desde la FIR Bogotá a la FIR Piarco.**

Utilizarán la red de rutas ATS, **UA550** KIKAS VOR/DME PBL, VOR/DME NOL, VOR/DME MIQ, sigue **UA550** ITEGO, **FL350**, con **15** MIN de separación longitudinal de tiempo.

RED SIMPLIFICADA DE RUTAS EN CASO DE CONTINGENCIA EN LA FIR MAIQUETIA

PROCEDIMIENTOS DE CONTINGENCIA ENTRE LOS ACCs DE MAIQUETIA Y BOGOTA				
CONTINGENCIA TOTAL EN LA FIR MAIQUETIA				
ORIGEN	**DESTINO**	**RUTA/TRAMO**	**TRANSFERENCIA/ AUTO TRANSFERENCIA**	
			FIJO	**FL DE VUELO**
FIR PIARCO	FIR BOGOTA	ONGAL-UA551-MIQ-UA550-NOL-PBL-UA553-BRM-UW8-LFA-CUC	CUC	FL340
		ONGAL-UA551-MIQ-UA550-PBL-UG427-KOVEX-UM414-OPRUS-	KOVEX-OPRUS	FL340
FIR BOGOTA	FIR PIARCO	KIKAS-UA550-PBL-NOL-MIQ-UA550-ITEGO	KIKAS	FL350
		OPRUS-UM414.-KOVEX-UG427-PBL-UA550-NOL-MIQ-ONGAL	OPRUS-KOVEX	FL310
FIR CURAZAO	FIR BOGOTA	ALCOT UG431-STB-CUC	CUC	FL320
FIR BOGOTA	FIR CURAZAO	CUC-STB-UA567-NOREX	CUC	FL310

5.2.11 **Aeronaves que sobrevuelen la FIR Maiquetía desde la FIR Amazónico a la FIR San Juan.**

Utilizarán la red de rutas ATS, **UA 300** PAKON / KIKER, **FL360 / FL380**, con **15** MIN de separación longitudinal de tiempo.

5.2.12 **Aeronaves que sobrevuelen la FIR Maiquetía desde la FIR San Juan a la FIR Amazónico.**

Utilizarán la red de rutas ATS, **UA 300** KIKER / PAKON, **FL370/FL390**, con **15** MIN de separación longitudinal de tiempo.

5.2.13 **Aeronaves que sobrevuelen la FIR Maiquetía desde la FIR Barranquilla a la FIR Piarco.**

Utilizarán la red de rutas ATS, **UA552** ORTIZ, VOR/DME PBL, VOR/DME NOL, VOR/DME CBC hasta MEGIR
FL330, con 15 MIN de separación longitudinal de tiempo.

5.2.14 **Aeronaves que sobrevuelen la FIR Maiquetía desde la FIR Piarco a la FIR Barranquilla.**

Utilizarán la red de rutas ATS, **UA552** desde MEGIR VOR/DME MIQ, ORTIZ **FL300**, con 15 MIN de separación longitudinal de tiempo.

RED SIMPLIFICADA DE RUTAS EN CASO DE CONTINGENCIA EN LA FIR MAIQUETIA

PROCEDIMIENTOS DE CONTINGENCIA ENTRE LOS ACCs DE MAIQUETIA Y BARRANQUILLA				
CONTINGENCIA TOTAL EN LA FIR MAIQUETIA				
ORIGEN	**DESTINO**	**RUTA/TRAMO**	**TRANSFERENCIA/ AUTO TRANSFERENCIA**	
			FIJO	**FL DE VUELO**
FIR BARRANQUILLA	FIR PIARCO	ORTIZ-UA552-MEGIR	ORTIZ AKNIL	FL330
		AKNIL-ORTIZ-MISMO-PUNTO		
		ORTIZ = AKNIL		
FIR PIARCO	FIR BARRANQUILLA	MEGIR-UA552-ORTIZ	ORTIZ	FL300

5.2.15 **Aeronaves que sobrevuelen la FIR Maiquetía desde la FIR Curazao a la FIR San Juan.**

Serán encaminadas por la red de rutas ATS existentes entre las FIRs de Curazao y San Juan.

5.2.16 **Aeronaves que sobrevuelen la FIR Maiquetía desde la FIR San Juan a la FIR Curazao.**

Serán encaminadas por la red de rutas ATS existentes entre las FIRs de San Juan y Curazao.

5.2.17 **Aeronaves que sobrevuelen la FIR Maiquetía desde la FIR Piarco a la FIR San Juan.**

Serán encaminadas por la red de rutas ATS existentes entre las FIRs de Piarco y San Juan.

5.2.18 **Aeronaves que sobrevuelen la FIR Maiquetía desde la FIR San Juan a la FIR Piarco.**

Serán encaminadas por la red de rutas ATS existentes entre las FIRs entre San Juan y Piarco.

5.2.19 **Aeronaves que sobrevuelen la FIR Maiquetía desde la FIR Amazónico a la FIR Georgetown.**

Serán encaminadas por la red de rutas ATS existentes entre las FIRs Amazónico/ Georgetown

5.2 20 **Aeronaves que sobrevuelen la FIR Maiquetía desde la FIR Georgetown a la FIR Amazónico.**

Serán encaminadas por la red de rutas ATS existentes entre las FIRs de Georgetown / Amazónico.

5.2.21 **Aeronaves que sobrevuelen la FIR Maiquetía desde la FIR Amazónico a la FIR Piarco.**
Serán encaminadas por la red de rutas ATS existentes entre las FIRs Amazónico / Georgetown /Piarco.

5.2.22 **Aeronaves que sobrevuelen la FIR Maiquetía desde la FIR Piarco a la FIR Amazónico.**
Serán encaminadas por la red de rutas ATS existentes entre las FIRs de Piarco / Georgetown / Amazónico.

5.2.23 **Aeronaves que sobrevuelen la FIR Maiquetía desde la FIR Amazónico a la FIR Bogotá.**
Serán encaminadas por la red de rutas ATS existentes entre las FIRs Amazónico / Bogotá.

5.2.24 **Aeronaves que sobrevuelen la FIR Maiquetía desde la FIR Bogotá a la FIR Amazónico.**
Serán encaminadas por la red de rutas ATS existentes entre las FIRs de Bogotá / Amazónico.

5.2.25 **Aeronaves que sobrevuelen la FIR Maiquetía desde la FIR Amazónico a la FIR Barranquilla.**
Serán encaminadas por la red de rutas ATS existentes entre las FIRs Amazónico / Bogotá /Barranquilla.

5.2.26 **Aeronaves que sobrevuelen la FIR Maiquetía desde la FIR Barranquilla a la FIR Amazónico**
Serán encaminadas por la red de rutas ATS existentes entre las FIRs de Barranquilla/ Bogotá/ Amazónico.

5.2.27 **Aeronaves que sobrevuelen la FIR Maiquetía desde la FIR Barranquilla a la FIR Curazao.**
Serán encaminadas por la red de rutas ATS existentes entre las FIRs de Barranquilla/ Curazao.

5.2.28 **Aeronaves que sobrevuelen la FIR Maiquetía desde la FIR Curazao a la FIR Barranquilla.**
Serán encaminadas por la red de rutas ATS existentes entre las FIRs de Curazao/ Barranquilla.

NOTA: Las aeronaves que entren y salgan de la FIR Maiquetía lo harán por las rutas ATS, con el nivel de vuelo (FL) mantenido descrito en este Plan de Contingencia para cada ruta, ver apéndice A.

Los **FL's 270/280** serán asignados a las aeronaves civiles y de estado que no tengan aprobacion RVSM.

6. DISPOSICIONES GENERALES

Las dependencias ATS involucradas deben cumplir las siguientes normas:

a) Los mensajes de Plan de Vuelo se deben transmitir al ACC Maiquetía a través de la AFTN de acuerdo a los procedimientos normales.

b) Autorizar el ingreso a la FIR Maiquetía de una aeronave cada 15 minutos, tanto en el espacio aéreo superior como en el inferior, independientemente del nivel de vuelo utilizados.

c) Comunicar a través de los circuitos de coordinación ATS, las horas estimadas sobre los puntos de transferencias de control a las FIRs adyacentes de conformidad con el tiempo establecido en las cartas de acuerdo.

d) Instruir a los pilotos al mando de las aeronaves a mantener el último nivel y velocidad asignados mientras sobrevuele la FIR Maiquetía.

e) No autorizar ningún cambio de nivel o de velocidad dentro de los 10 minutos anteriores que la aeronave ingrese a la FIR Maiquetía

f) El ACC Maiquetía y/o la Dependencia responsable indicará a las aeronaves que deberán comunicar con las dependencias ATC adyacentes 5 minutos antes de la hora prevista de ingreso a la FIR correspondiente.

g) En caso de una falla parcial de comunicaciones (entre treinta minutos y no mayor a tres horas), la autoridad ATS competente evaluará la magnitud de la misma, aplicará el mejor criterio y decidirá si restringe o suspende las operaciones dentro de la FIR Maiquetía.

h) En caso de una falla total de comunicaciones (mayor a tres horas), se suspenderá el Tránsito Aéreo en la FIR Maiquetía hasta tanto sea implementado el Plan de Contingencia.

i) Publicar los siguientes Notam
   i. De falla parcial del servicio (indicando el Aeródromo y tipo de falla).
   ii. De falla total, del servicio no se aceptaran arribos en la fir de maiquetia

7 NORMAS APLICABLES A LAS AERONAVES.

Las aeronaves que sobrevuelen la FIR Maiquetía o que procedan desde o hacia el Área Terminal (Maiquetía, Maracaibo, Margarita, Barcelona), deben cumplir con lo siguientes:

a) Ajustarse a las reglas de vuelo por instrumentos (IFR) y se le asignará un nivel de vuelo de acuerdo a la tabla de niveles de crucero que figura en el Anexo 2, Apéndice 3.

b) Volar en la ruta o lo más cerca posible del eje de ruta de contingencia asignada.

c) Las tripulaciones al mando de las aeronaves deben mantenerse a la escucha en la frecuencia VHF asignada que ha sido transferida, y/o frecuencia HF 8855 o 6810 Khz. de no ser posible lo hará en la frecuencia 126.9 Mhz, y transmitir, preferentemente en inglés en dicha frecuencia la posición real o estimada a los puntos de notificación.

d) Reportar en la frecuencia VHF u otra asignada (correspondiente al sector de vuelo) cualquier maniobra de ascenso o descenso que las circunstancias así lo exigieran, de ser posible, con un mínimo de 5 minutos de antelación. Las maniobras de ascenso y descenso deberán realizarse claramente a la derecha del eje de la ruta. El mensaje deberá contener: identificación de la aeronave, posición, nivel abandonado, nivel que se cruza, etc.

e) Mantener las luces de navegación y de anticolisión continuamente encendidas mientras se sobrevuele la FIR Maiquetía.

f) Mantener último código SSR asignado y si no se le ha asignado, seleccionar código 2000.

g) Uso obligatorio del ACAS.

8 DISPOSICIONES FINALES.

a) El Presente Plan de Contingencia entrará en vigencia a partir de la Fecha de su publicación AIRAC.

b) El contenido que se describe en el presente Plan de Contingencia solo puede ser modificado por la División de Información Aeronáutica del Instituto Nacional de Aviación Civil de Venezuela, previa autorización de la Gerencia de Servicios de Navegación Aérea.

c) Las observaciones a que hubiere lugar deberán ser canalizadas a través de la Gerencia de Servicios de Navegación Aérea del Instituto Nacional de Aeronáutica Civil de Venezuela, Aeropuerto Internacional "Simón Bolívar" de Maiquetía, Edificio ATC, Piso 1, Maiquetía, Municipio Vargas, Estado Vargas, Teléfonos: +58-212-3552912. También puede hacerse a través de los correos electrónicos r.torres@inac.gov.ve y r.sanchez@inac.gov.ve.

TCNEL (AVB) RAFAEL TORRES AGUIRRECHE

GERENTE DE SERVICIOS DE NAVEGACIÓN AÉREA DEL INAC - VENEZUELA

MTH (AVB) RAFAEL SANCHEZ GREINER

JEFE DE LA DIVISIÓN DE LOS SERVICIOS DE TRÁNSITO AÉREO DEL INAC - VENEZUELA

LISTA DE APENDICES

APÉNDICE A

RUTA ATS	PTC/ENT	PTC/SAL	NIVEL DE VUELO	SEP/ LONG
UG446/UA315	REPIS	VAGAN	FL370/390	15''
UL795	ESIPO VUMPI	VUMPI ESIPO	FL370/390/410 FL360/380/400	15''
UL304	ISANI	ILKIT	FL360/380	15''
UA563	BONAX MEGIR	MEGIR BONAX	FL290 FL300	15''
UG431	ALCOT	ENPUT	FL320	15''
UA567	ENPUT	NOREX	FL310	15''
UA551/UA553/ UW8	ONGAL	CUC	FL340	15''
UA550	KIKAS	ITEGO	FL350	15''
UA300	PAKON KIKER	KIKER PAKON	FL360/380 FL370/390	15''
UA552	AKNIL ORTIZ MEGIR	MEGIR ORTIZ	FL330 FL300	15''
UG446/UG443 UG443/UA315	REPIS AKROK	AKROK AVELO	FL310 FL320	15''
UM414-UG427 UA550-UA551	OPRUS KOVEX	ONGAL	FL310	15
UA551-UA550 UG427-UM414	ONGAL	KOVEX OPRUS	FL340	15

Nota: Las aeronaves sin aprobacion RVSM operaran dentro de la Fir Maiquetía con **FL270 o FL280** según su derrota y se aplicara separación longitudinal de 15'' entre ellas.

APÉNDICE B

EN CASO DE FALLAS DE COMUNICACIONES

1 Al ocurrir una interrupción en las comunicaciones aeroterrestre, la tripulación de vuelo debe tratar de determinar el origen del problema, y utilizar todos los medios de comunicación auxiliares disponibles y siguiendo el siguiente procedimiento:

a) Intentar establecer contacto con el ATC en la frecuencia asignada.
b) Intentar establecer contacto con otra aeronave en la frecuencia ATC asignada.
c) Intentar establecer contacto con el ATC u otra aeronave en las frecuencias ATC adyacentes

2 Si todos los intentos de contacto que figuran en el párrafo 1 fueren infructuosos, se puede deducir que el problema tiene su origen en la aeronave y:

a) Se deberá aplicar los Procedimientos en casos de falla de las comunicaciones aire-tierra del Doc. 4444 de la OACI.
b) En las aeronaves debidamente equipadas, los pilotos deberán volar a 1 NM a la derecha del eje de la aerovía.
c) Se debería repetir periódicamente el procedimiento que figura en el párrafo 1 para tratar de restablecer la comunicación.

3 Si se establece la comunicación con otra aeronave, se puede deducir que el problema de comunicaciones se origina en la instalación ATC. En cuyo caso debe aplicarse el siguiente procedimiento para tratar de restablecer la comunicación:

a) Intentar establecer comunicación pidiendo a otra aeronave que retransmita información al ATC en el siguiente orden de preferencia:

- La frecuencia ATC asignada.
- Las frecuencias de sectores / instalaciones ATC adyacentes.
- En la fase de ruta si la aeronave no puede establecer comunicación con el ATC debe:

- Proceder de conformidad con la ruta del plan de vuelo actualizado.
- Mantener la última velocidad y nivel asignados.
- Aplicar los procedimientos de preferencia en el idioma inglés, utilizando las frecuencias ATC correspondientes.
- Volar a 1 NM a la derecha del EJE de las aerovías.
- Intentar periódicamente restablecer la comunicación.

4 En la fase de aproximación si la aeronave no puede establecer comunicación con el ATC debe:

- Lo publicado Aplicar los procedimientos utilizando las frecuencias ATC apropiadas, según en este anexo.
- Efectuar coordinaciones con otras aeronaves en los alrededores, utilizando la frecuencia principal para una determinada área terminal

APÉNDICE C

ORDEN DE PRELACIÓN DE USO DE LAS AYUDAS A LA NAVEGACIÒN

Ante la falla de los sistemas:

- VOR, se alternará al uso de los NDB disponibles para la navegación en ruta.
- Uso del GPS como medio de navegación suplementario.
- Uso de los sistemas de navegación autónomos

APÉNDICE "D"

FRECUENCIAS DE CONTINGENCIA EN CASO DE FALLA DEL SISTEMA DE COMUNICACIONES ORALES ATS.

1 Ante la falla de las comunicaciones orales ATS los servicios se apoyarán con las frecuencias VHF disponible en el Centro de Control de Área Maiquetía

2 Utilización de las frecuencias VHF

- Sector 1 Frecuencia 128.5 Mhz(Occidente)
- Sector 2 Frecuencia 125.2 Mhz (Oriente)
- Sector 3 Frecuencia 126.6 Mhz(Occidente)
- Sector 4 Frecuencia 126.0 Mhz (Oriente)
- Sector 5 Frecuencia 128.7 Mhz(Occidente)
- Sector 6 Frecuencia 127.95 Mhz (Oriente)

3 Utilización de las frecuencias HF

- Occidente: Principal 8855 Khz, Secundarias 3725, 4045, 5360, 7710 Khz
- Oriente: Principal 6810 Khz, Secundarias 2580, 4015, 5280 Khz

4 Las frecuencias HF estarán disponibles a través del Servicio Móvil Aeronáutico

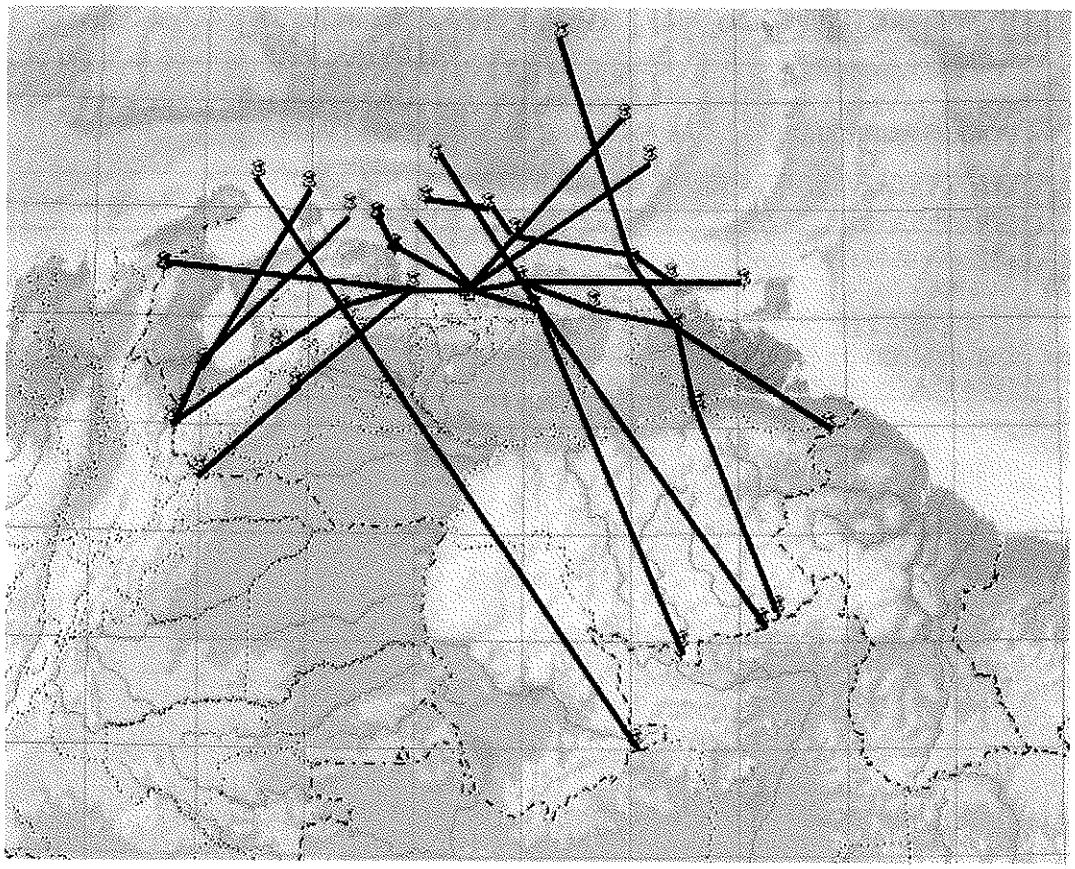
APÉNDICE "E"

CONTACTOS, NUMEROS TELEFÓNICOS Y DIRECCIONES DE CORREO ELECTRÓNICO EN CASO DE ACTIVACIÓN DEL PLAN DE CONTINGENCIA

	NOMBRE Y APELLIDO	CARGO	NUMERO TELEFÓNICO	E - MAIL
01	TCNEL. (AVB) RAFAEL TORRES AGUIRRECHE	GERENTE DE SERVICIOS DE NAVEGACION AÉREA	+58-212-3552912 +58-414-1403931	r.torres@inac.gov.ve
02	MT1(AVB) RAFAEL SANCHEZ GREINER	JEFE DE LA DIVISIÓN ATS	+58-212-3552912 +58-414-2322768	r.sanchez@inac.gov.ve
03	MT2 (AVB) FELIPE CHIRINOS GOMEZ	JEFE DE LOS SERVICIOS ATM MAIQUETÍA	+58-212-3552898 +58-412-9533875	felchiri@gmail.com
04	SUPERVISOR DE GUARDIA DEL CENTRO DE CONTROL DE ÁREA DE MAIQUETÍA	----------	+58-212-3552216 +58-414-1403951	----------

APENDICE "F"

RUTAS INTERNACIONALES DEL PLAN DE CONTINGENCIA



APENDICE C / APPENDIX C

MODELO DE NOTAM PARA CASOS DE CONTINGENCIA

En caso de que no puedan proveerse servicios ATS dentro de la CTA/UTA/FIR (XXX), la Autoridad competente de la FIR en CONTINGENCIA, deberá publicar un NOTAM indicando lo siguiente:

a) Hora y fecha de inicio, y tiempo de duración previsto, de las medidas de contingencia;
b) Se aplicará el plan de contingencia de la República XXXX, FIR afectadas XXXX;
c) Instalaciones y/o servicios no disponibles;
d) Procedimientos a seguir por las dependencias ATS adyacentes;
e) Procedimientos a seguir por los pilotos, quienes deberán mantener en escucha la frecuencia principal del sector que se está volando, si estuviera disponible, así como también la frecuencia aire/aire **123,45 MHz** aplicando los procedimientos de radiodifusión en vuelo**.**
f) Cualquier otro detalle relacionado con las contingencias que requiera ser de conocimiento inmediato de los usuarios.

NOTAM DE INICIO DE LA CONTINGENCIA

NOTAM A XXXX/XX DEBIDO A LA INTERRUPCION DE LOS ATS, SE ACTIVA EL PLAN DE CONTINGENCIA DEL ESTADO XXX, EN LA FIR XXX , A PARTIR DE LA HORA XX, FECHA XX, HASTA (TIEMPO ESTIMADO: XX). MAYOR INFORMACION REMITIRSE AL PLAN DE CONTINGENCIA DE LA REPUBLICA XXX, PUBLICADO EN (AIP, AIC, ETC.).

Opcionalmente se podría incluir en el NOTAM otros aspectos relevantes del plan de contingencia como ser:

- NO SE DISPONE DE SERVICIO MOVIL AERONÁUTICO.
- SE PREVEEN DEMORAS AL TRÁNSITO AÉREO.
- SOLAMENTE SE ACEPTARA TRANSITO AEREO QUE SE ENCAMINE POR LA RED SIMPLIFICADA DE RUTAS ATS Y NIVELES DE VUELO DESCRITOS EN EL PLAN DE CONTINGENCIA ACTIVADO.
- LOS PILOTOS MANTENDRAN ESCUCHA EN LA FRECUENCIA PRINCIPAL ASIGNADA AL SECTOR EN QUE VUELEN Y EN LA FRECUENCIA AIRE/AIRE 123,45 MHZ APLICANDO LOS PROCEDIMIENTOS DE RADIODIFUSIÓN EN VUELO .
- SE AUTORIZAN PROCEDIMIENTOS DE AUTOTRANSFERENCIA
- NO SE AUTORIZAN PLANES DE VUELO REPETITIVOS
- EN EL CASO QUE LOS VUELOS NO PUEDAN CUMPLIR CON LAS ESPECIFICACIONES ESTABLECIDAS EN EL PLAN DE CONTINGENCIA, DEBERAN PLANIFICARSE O REENRUTARSE LOS VUELOS, EVITANDO LA FIR AFECTADA.

NOTAM DE CANCELACION

NOTAMC XXXX/XX A PARTIR DE XXX FECHA/HORA EL PLAN DE CONTINGENCIA HA SIDO DESACTIVADO STOP PRESTACIÓN DE SERVICIOS ATS NORMAL.

NOTAM GROUP AD-HOC

NOTAM MODEL FOR CONTINGENCY CASES

In case no ATS services may be provided within the CTA/UTA/FIR (XXX), the competent authority of the FIR in CONTINGENCY, shall publish a NOTAM indicating the following:

a) Starting date and hour and foreseen duration time of contingency measures.
b) The Contingency Plan of the Republic of XXX shall be applied, affected FIRS,
c) Facilities and/or services NOT available
d) Procedures to be followed by adjacent ATS units
e) Procedures to be followed by pilots, who shall maintain in listening the main frequency of the sector being flown and air/air frequency **123,45 MHz,** applying in-flight radio dissemination procedures.
f) Any other detail related with contingencies which requires for immediate knowledge of users.

TRIGGER CONTINGENCY NOTAM

NOTAM A XXXX DUE TO ATS INTERRUPTION THE …-STATE-…. CONTINGENCY PLAN HAS BEEN ACTIVATED WITHIN ……FIR SINCE ……DATE AND TIME…..UNTIL …….DATE AND TIME ….. STOP FOR FURTHER INFORMATION SUBMIT TO THE …-STATE-….CONTINGENCY PLAN PUBLISHED IN …..AIP …OR AIC No. … ETC.

As an option the NOTAM may include other relevant aspects from the contingency plan such as….

- AERONAUTICAL MOBILE SERVICE IS NOT AVAILABLE.
- DELAYS IN AIR TRAFFIC ARE FORESEEN.
- ONLY TRAFFIC PROCEEDING VIA SIMPLIFIED ATS ROUTE NET AND FLIGHT LEVELS SPECIFIED IN THE ACTIVATED CONTINGENCY PLAN WILL BE ACCEPTED.
- PILOTS WILL MAINTAIN LISTENING IN THE MAIN FREQUENCY ASSIGNED TO THE SECTOR THEY ARE FLYING AND ALSO THE AIR/AIR FREQUENCY 123,45 MHZ, APPLYING IN-FLIGHT RADIO DISSEMINATION PROCEDURES.
- AUTO-TRANSFERENCES PROCEDURES ARE AUTHORIZED
- REPETITIVE FLIGHT PLANS ARE NOT AUTHORIZED
- IN THE EVENT THAT FLIGHTS CAN NOT COMPLY WITH THE SPECIFICATIONS ESTABLISHED IN THE CONTINGENCY PLAN THEY MUST BE PLANNED OR ROUTED TO AVOID THE AFFECTED FIR

CANCELLATION NOTAM

NOTAMC XXXX/XX SINCE XXXX DATE / TIME THE CONTINGENCY PLAN HAS BEEN DE-ACTIVATED STOP ATS SERVICES PROVISION NORMAL.

APPENDIX D

M O D E L

ATM REGIONAL CONTINGENCY PLAN FOR ….. CTA/UTA/FIR

OBJECTIVE: This contingency plan contains arrangements to ensure the continued safety of air navigation in the event of partially or total disruption of air traffic services (ATS) and is related to ICAO Annex 11- *Air Traffic Services* Chapter 2, paragraph 2.28. The contingency plan should be designed to provide alternative routes, using existing airways in most cases, which will allow aircraft operators to fly trough or avoid airspace within the (*XXX*) CTA/UTA/FIR.

AIR TRAFFIC MANAGEMENT

ATS Responsibilities

Tactical ATC considerations during periods of overloading may require re-assignment of routes or portions thereof.

Alternative routes should be designed to maximize the use of existing ATS route structures and communication, navigation and surveillance services.

In the event that ATS cannot be provided within the (*XXX*) CTA/UTA/FIR, the Civil Aviation Authority shall publish the corresponding NOTAM indicating the following:

a) Time and date of the beginning of the contingency measures;
b) Airspace available for landing and overflying traffic and airspace to be avoided;
c) Details of the facilities and services available or not available and any limits on ATS provision (e.g., ACC, APP, TWR and FIS), including an expected date of restoration of services if available;
d) Information on the provisions made for alternative services;
e) ATS contingency routes;
f) Procedures to be followed by adjacent ATS units;
g) Procedures to be followed by pilots; and
h) Any other details with respect to the disruption and actions being taken that aircraft operators may find useful.

In the event that the CAA is unable to issue the NOTAM, the (alternate) CTA/UTA/FIR will take action to issue the NOTAM of closure airspace upon notification by corresponding CAA or the ICAO Regional Office.

Separation

Separation criteria will be applied in accordance with the *Procedures for Air Navigation Services-Air Traffic Management* (PANS-ATM, Doc 4444) and the *Regional Supplementary Procedures* (Doc 7030).

Level Restrictions

Where possible, aircraft on long-haul international flights shall be given priority with respect to cruising levels.

Other measures

Other measures related to the closure of airspace and the implementation of the contingency scheme in the (*XXX*) CTA/UTA/FIR may be taken as follows:

a) Suspension of all VFR operations;
b) Delay or suspension of general aviation IFR operations; and
c) Delay or suspension of commercial IFR operations.

TRANSITION TO CONTINGENCY SCHEME

During times of uncertainty when airspace closures seem possible, aircraft operators should be prepared for a possible change in routing while en-route, familiarization of the alternative routes outlined in the contingency scheme as well as what may be promulgated by a State via NOTAM or AIP.

In the event of airspace closure that has not been promulgated, ATC should, if possible, broadcast to all aircraft in their airspace, what airspace is being closed and to stand by for further instructions.

ATS providers should recognize that when closures of airspace or airports are promulgated, individual airlines might have different company requirements as to their alternative routings. ATC should be alert to respond to any request by aircraft and react commensurate with safety.

TRANSFER OF CONTROL AND COORDINATION

The transfer of control and communication between ATS units should be at the common FIR boundary unless there is mutual agreement between adjacent ATS units. ATS providers should also review current coordination requirements in light of contingency operations or short notice of airspace closure.

PILOTS AND OPERATOR PROCEDURES

Pilots need to be aware that in light of current international circumstances, a contingency routing requiring aircraft to operate off of normal traffic flows, could result in an intercept by military aircraft. Aircraft operators must therefore be familiar with international intercept procedures contained in ICAO Annex 2 –*Rules of the Air*, paragraph 3.8 and Appendix 2, Sections 2 and 3.

Pilots need to continuously guard the VHF emergency frequency 121.5 MHz and should operate their transponder at all times during flight, regardless of whether the aircraft is within or outside airspace where secondary surveillance radar (SSR) is used for ATS purposes. Transponders should be set on a discrete code assigned by ATC or select code 2000 if ATC has not assigned a code.

If an aircraft is intercepted by another aircraft, the pilot shall immediately:

a) Follow the instructions given by the intercepting aircraft, interpreting and responding to visual signals in accordance with international procedures;
b) Notify, if possible, the appropriate ATS unit;
c) Attempt to establish radio communication with the intercepting aircraft by making a general call on the emergency frequency 121.5 MHz and 243 MHz if equipped; and
d) Set transponder to code 7700, unless otherwise instructed by the appropriate ATS unit.

If any instructions received by radio from any source conflict with those given by the intercepting aircraft, the intercepted aircraft shall request immediate clarification while continuing to comply with the instructions given by the intercepting aircraft.

OVERFLIGHT APPROVAL

Aircraft operators should obtain overflight approval from States/Territories/International Organizations for flights operating through their jurisdiction of airspace, where required. In a contingency situation, flights may be rerouted at short notice and it may not be possible for operators to give the required advanced notice in a timely manner to obtain approval. States/Territories/International Organizations responsible for the airspace in which contingency routes are established should consider making special arrangements to expedite flight approvals in these contingency situations.

CONTINGENCY UNIT

The ATM national contingency unit assigned the responsibility of monitoring developments that may dictate the enforcement of the contingency plan and coordination of contingency arrangements is:

Name of Agency:
Contact Person:
Telephone:
Fax:
Email:

During a contingency situation, the National Contingency Unit will liase with the adjacent ATS units through the ICAO Regional Office.

The ICAO Regional Office will:

a) closely oversight the situation and coordinate with all affected States/Territories/International Organizations and the IATA Regional Office, so as to ensure air navigation services are provided to international aircraft operations in the CAR Region;

b) take note of any incidents reported and take appropriate action;

c) provide assistance as required on any issue with the Civil Aviation Administrations involved in the contingency plan; and

d) keep the President of the Council of ICAO, the Secretary General, C/RAO, D/ANB and C/ATM continuously informed on developments, including activation of the contingency plan.

CONTINGENCY ROUTING SCHEME

Aircraft operators should file their flight plans using the alternative contingency routes listed in the scheme below in order to operate in the airspace under the jurisdiction of (XXX).

Present ATS ROUTE	**CONTINGENCY ROUTINGS**	**FIRs INVOLVED**
In lieu of:	**(ATS unit)** provides ATC on the following routings: ***CR1:*** ***CR2:*** ***CR3:***	**XXX**: In coordination with **XXX**
In lieu of:	**(ATS unit)** provides ATC on the following routing: ***CR4:***	**XXX**: In coordination with **XXX**

All aircraft should establish and maintain contact on published VHF or HF frequencies with the (*XXX*) ATS unit (APP/ACC/FIC) responsible for the airspace being traversed.

List of points of contact of all concerned States/Territories/International Organizations, IATA and ICAO Regional Office.

State/ International Organization	Point of contact	Telephone/Fax	E-mail
		Tel. Fax.	
		Tel. Fax.	
		Tel. Fax.	
IATA		Tel. Fax:	
ICAO (Regional Office)		Tel.: Fax:	

Agenda Item 5: Other Matters

Application of TEM and NOSS

5.1 The Meeting considered that, on the basis of ICAO Circular 314, the matter of training should be improved upon, including subjects on threats and error management (TEM) and normal operations safety surveys (NOSS) for the improvement of operational safety. The above, with the aim of obtaining data on threats, error and unwanted status for the people responsible of operational safety in Trinidad & Tobago and Venezuela.

Familiarization visits

5.2 The Meeting agreed in improving the communications between the Maiquetia and Trinidad and Tobago ACC specialists. Among the actions agreed, were to promote familiarization visits of both units' ATC controllers and supervisors, and plan bilateral meetings at least every two years, to review letters of agreement (LOA) and other operational aspects of common interest.

Meetings to analyze matters of common interest

5.3 Venezuela also took note of the need to promote the review of bilateral ATS agreements with the San Juan FIR and Curacao FIR. The Meeting noted that the initial exchange of information could take place at the latest on December 2010, with the support of ICAO. Trinidad & Tobago agreed upon these types of meetings, which could also be carried out with other adjacent States, such as Guyana, Suriname and French Guiana (France), recalling that in the past, multilateral meetings were held that involved all of the above mentioned FIRs, requesting the Secretariat to analyze the possibility of re-starting with these meetings.

Amendments to the CAR/SAM ATS routes network

5.4 In order to improve the air traffic flow, the Meeting agreed to promoting improvements to the ATS routes among the Curacao, Piarco, Maiquetia and San Juan FIRs, for the benefit of air transport. The ICAO Lima and Mexico Regional Offices will provide initial information on proposals for amendment to RNAV routes in the CAR/SAM ANP, no later tan 30 September 2010.

SAR agreements

5.5 The participants noted that the SAR agreement between both States is under the reviewing state, for which they agreed to give follow-up for its completion no later tan January 2011.