INTERNATIONAL CIVIL AVIATION ORGANIZATION

CAR/SAM REGIONAL PLANNING AND IMPLEMENTATION GROUP

(GREPECAS)

REPORT OF THE FIRST MEETING OF THE TASK FORCE ON INSTITUTIONAL ASPECTS

(TF-IA/1)

(Rio de Janeiro, Brazil, 12 to 14 May 2004)

INTERNATIONAL CIVIL AVIATION ORGANIZATION

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Prepared by the Secretariat May 2004

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History of the Meeting

ii.1 Place and Duration

The First Meeting of the GREPECAS Task Force on Institutional Aspects was held in Excelsior Copacabana Hotel of Rio de Janeiro, Brazil, from 12 to 14 May 2004.

ii.2 Opening ceremony and other matters

Mr. Carlos Stehli, acting Deputy Regional Director of the ICAO SAM Office, welcomed the participants to this Meeting and emphasized the importance of the work of this Task Force, as well as the scope of its tasks for this Meeting, and the need to consolidate with the results of the Task Force, the results of the Second Seminar on Institutional Aspects, held in this city from 10 to 11 May 2004. Brig. do Ar R/R Alvaro Moreira Pequeno from DECEA, on behalf of the Government of Brazil, welcomed the participants and officially inaugurated the Meeting.

ii.3 Organization, Officer and Secretariat

The Meeting designated Mr. Eduardo Rodino from Argentina as Rapporteur and Mr. Angel Arango from Cuba as alternate Rapporteur. Mr. Carlos Stehli acted as Secretary, assisted by Mr. Bernal Mesen, Regional Officer AIS/MAP of the ICAO NACC Office, Mr. Chaouki Mustapha from ICAO Headquarters in Montreal and Mr. Paulo Imre Hegedus, Institutional Aspects Consultant of RLA/98/003 Project.

ii.4 Working languages

The working language of the Meeting and its documentation were in Spanish. The Meeting Report was edited in Spanish and English.

ii.5 Agenda

The following Agenda was adopted:

Agenda Item 1: Analysis of the actions adopted by various planning/implementation mechanisms (RAAC, CAR/SAM/3 RAN, GREPECAS Meetings, etc.) on institutional aspects, in the CAR/SAM Regions.

Agenda Item 2: Examine the current status of institutional arrangements developed in the CAR/SAM Regions (REDDIG, CARSAMMA, COCESNA, MEVA, SRVSOP).

Agenda Item 3: Economic aspects of the transition and implementation of the CNS/ATM Systems in the CAR/SAM Regions – Planning and Evaluation Tools (PET).

Agenda Item 4: Definition of systems capable of being implemented by institutional agreements and election of the most suitable arrangement.

Agenda Item 5: Development of institutional arrangements' proposals for consideration by the GREPECAS/12.

Agenda Item 6: Other matters

ii.6 **Schedule and Working Method**

The Meeting carried out its sessions as Plenary from Wednesday 12 May to Friday 14 May 2004, with appropriate breaks.

ii.7 **Attendance**

The Meeting was attended by 19 delegates from 7 States, from which five are members of the Institutional Aspects Task Force, and 1 International Organization, COCESNA, member of the Institutional Aspects Task Force.

ii.8 **Conclusions and Decisions**

The Task Force on Institutional Aspects recorded its activities in the form of Draft Conclusions, Draft Decisions and Draft Decisions, as follows:

***Draft Conclusion**:* *Conclusions that require GREPECAS approval prior to their implementation.*

***Draft Decision**:* *Decisions that require GREPECAS approval prior to their implementation.*

Decisions: *Decisions dealing with matters of interest to the Task Force.*

ii. 9 **List of Draft Conclusions**

ii.10 **List of Draft Decisions**

ii.11 **List of Decisions**

List of Documentation

WORKING PAPERS

N°	Agenda Item	Title	Prepared by
WP/01	-	Agenda, Schedule and Working Methods	Secretariat
WP/02	1	Analysis of the actions adopted by various planning/implementation mechanisms (RAAC, CAR/SAM/3 RAN, GREPECAS Meetings, etc.) on institutional aspects, in the CAR/SAM Regions.	Secretariat
WP/03	2	Examine the current status of institutional arrangements developed in the CAR/SAM Regions (REDDIG, CARSAMMA, COCESNA, MEVA, SRVSOP).	Secretariat
WP/04	4	Definition of systems capable of being implemented by institutional agreements and election of the most suitable arrangement.	Secretariat
WP/05	6	Other matters - Terms of Reference, Work Programme of the Task Force on Institutional Aspects and comments to guide the Group's work.	Secretariat
WP/06	3	Economic aspects of the transition and implementation of the CNS/ATM Systems in the CAR/SAM Regions – Planning and Evaluation Tools (PET).	Secretariat

INFORMATION PAPERS

IP/01	-	General Information	Secretariat
IP/02	3	Economic aspects of the transition and implementation of the CNS/ATM Systems in the CAR/SAM Regions – Planning and Evaluation Tools (PET).	Secretariat
IP/03	-	List of working and information papers.	Secretariat

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Agenda Item 1: Analysis of the actions adopted by various Planning/Implementation mechanisms (RAAC, RAN CAR/SAM/3, GREPECAS, CAR Meetings, etc.) on institutional aspects, in the CAR/SAM Regions

1.1 The Meeting took note that, since the Tenth Air Navigation Conference, an intense work had been done in the Region regarding the development of institutional aspects for the implementation of CNS/ATM systems. However, it also noted that time was needed to study these issues and to establish a work schedule in order to advance in the development of this matter.

1.2 In this sense, the Meeting was informed that the Eleventh Air Navigation Conference in supporting the new air traffic management operational concept had also included amendments to the Statement on ICAO Policy on CNS/ATM Systems Implementation and Operations and that these amendments referred to the global navigation satellite system (GNSS).

1.3 In reviewing the work developed in the CAR/SAM Regions concerning institutional aspects, detailed information on the treatment given by GREPECAS to this issue was provided, as well as to the actual situation of the Task Force within such mechanism and the situation of its terms of reference and work programme. On the other hand, the Meeting took note that the RLA/98/003 project, which is strongly supporting GREPECAS with technical assistance, had restructured its objectives to include in one of them activities for the development of institutional aspects to support the tasks that will need to be developed according to the schedule of the Task Force on Institutional Aspects. It was observed that the project had the following results:

a) development, within the Guidance Material towards the Global ATM Evolution in the CAR/SAM Regions, Chapter 16 – Institutional Aspects, which was available for the analysis of the Meeting;
b) development of the Planning and Evaluation Tools of CNS/ATM Systems (PET);
c) convening of the First and Second Seminars on Institutional Aspects.

1.3.1 The Meeting was informed that the project has foreseen to develop studies on multinational facilities and services until 2006, to support the GREPECAS mechanism, so that they could be implemented with the economic and financial viability demonstrated through cost-benefit studies.

1.4 Likewise, the Meeting took note of the work on institutional aspects developed during the sixth, seventh and eighth meetings of civil aviation authorities (RAAC/6, RAAC/7 y RAAC/8) and that, under such scheme, a Regional Group of High Level Experts was established for the SAM Region in order to consider, based on the results of GREPECAS studies, the implementation of multinational facilities/services.

1.5 Concerning the Second CAR/SAM Seminar on Institutional Aspects, carried out in Rio de Janeiro from 10 to 11 May 2004, the Task Force reviewed the results obtained during the Seminar and agreed that such results were very useful to promote the development of CNS/ATM systems implementation and, particularly, this implementation based on the establishment of multinational facilities/services. A summary of the results of the Second Seminar is attached as **Appendix A** to this part of the Report. Considering these results, the Task Force agreed that the same should be taken to the attention of GREPECAS in order to inform the Regional Group. In this respect, the Task Force formulated the following decision:

DECISION 1/1 RESULTS OF THE SECOND SEMINAR ON INSTITUTIONAL ASPECTS

That ICAO Secretariat, in documenting for GREPECAS/12 Meeting the results of the First Meeting of the Task Force, includes in the corresponding Working Paper an attachment presenting the results of the Second Seminar on Institutional Aspects.

1.6 The Meeting took note that the guidance material on the planning and establishment of a multinational air navigation facility/service in the CAR/SAM Regions, contained in the Air Navigation Plan FASID, was the main reference material that the Task Force, as well as the RLA/98/003 project, should use to develop the tasks on this matter. For reference of the Meeting, a copy of this guidance material was provided to the participants. Additionally, the Meeting when reviewing the definition given to a multinational facility/service in this guidance material agreed that it was totally appropriate and does not require any amendment.

APPENDIX A

SUMMARY OF THE RESULTS REACHED DURING THE SECOND CAR/SAM SEMINAR ON INSTITUTIONAL ASPECTS

(Rio de Janeiro, 10 and 11 May 2004)

The results indicated below have been reached based on three discussion panels opened during the seminar and agreed by all the participants.

1. General issues on the development of multinational facilities and services in the CAR/SAM Regions

1.1 During the Seminar detailed information concerning the development of CNS/ATM Systems in the CAR/SAM Regions was presented, as well as of the projects for the implementation of multinational facilities/services under different schemes, including the ICAO technical cooperation mechanism. Information was also presented regarding several systems of multinational nature implemented in the CAR/SAM Regions, such as the South American Digital Network, the MEVA Digital Network, the Regional Monitoring Agency CARSAMMA, the Regional Safety Oversight Cooperation System, the Regional Aviation Safety Oversight System RASOS, IACL and COCESNA as International Organization. As a result of the work of the RLA/98/003 project, the Seminar received information on work programme of this project related to institutional aspects and a methodology to select the most appropriate organization to manage the functioning of multinational facilities/services. The Seminar took note of the work related to the identification of facilities/services in the CAR/SAM Regions that could be subject to the application of the guidance material on the establishment of multinational facilities/services contained in the CAR/SAM FASID.

2. Particular characteristics of the CAR/SAM Regions

2.1 The Seminar, considering the above indicated matters concerning general aspects on the development of multinational facilities and services in the CAR/SAM Regions, could clearly notice that multinational facilities and services in the CAR and SAM Regions have particular and different characteristics that could suggest the treatment of institutional, economic/financial and legal aspects in a different way for each one of the Regions, but, nevertheless and in consideration to operational safety, it was noted that when implementing multinational facilities/services, the continuity of air navigation services should be ensured and not affected by any type of discontinuity that may occur in the interphase of both Regions. In this sense, it was indicated that duly attention should be given to the systems interoperability and seamless airspace, according to the concepts formulated by the Eleventh Air Navigation Conference. The Seminar also noted that this concept should be applied to any other Region adjacent to the CAR/SAM Regions.

3. Legal Aspects

3.1 The Seminar observed that the legal aspects should not prevent the development of multinational facilities/services established by operational requirements and that they should be duly studied in order to make possible the implementation of the identified multinational facilities/services based on the elements of the Air Navigation Plan.

3.2 The Seminar noted that there was enough legal base within the Convention on International Civil Aviation (Chicago, 1944) to conduct the implementation of CNS/ATM systems and that there was no legal impediment for such implementation, as these systems are not incompatible with the Chicago Convention.

3.3 Based on the Chicago Convention, the GREPECAS should study the institutional, economic/financial aspects of the multinational systems. The viability of the implementation of the systems studied will be made based on the legal considerations and on the political decision to be taken by the civil aviation authorities.

3.4 The Seminar reviewed the basic principles of the GNSS legal framework and took note that they were sufficient for their implementation in the CAR/SAM Regions and that could be applied to other CNS elements. Additionally, the Seminar was informed on the work of the Secretariat Study Group on CNS/ATM systems Legal Aspects.

4. Economic/financial Aspects

4.1 When considering the presentation on the CNS/ATM Planning and Evaluation Tool (PET), developed by RLA/98/003 project, its great usefulness was appreciated and it was requested that the project could finalize it as soon as possible in order to distribute it among the States of the CAR/SAM Regions as a beneficial product of this project to facilitate the planning and implementation of CNS/ATM systems in the CAR/SAM Regions.

5. Organizations for the Management of Multinational Systems functioning

5.1 The Seminar took note that there were various possibilities to define the organizations that could manage the functioning of multinational facilities/services. In this respect, it observed that there were several solutions, from an organization as COCESNA formed by the decision of Central American States under a Multilateral Agreement, up to agreements for the composition of the Regional Monitoring Agency (CARSAMMA), which was established by a GREPECAS recommendation (Conclusion 11/34), assigning Brazil the responsibility of its functioning.

Agenda Item 2: Examine the current status of institutional arrangements developed in the CAR/SAM Regions (REDDIG, CARSAMMA, COCESNA, MEVA, SRVSOP)

2.1 During the Meeting, detailed information on the development of CNS/ATM systems in the CAR/SAM Regions was presented. In this sense, the documentation related to multinational facilities/services implemented and in operation in the CAR/SAM Regions was examined, as well as that from the organizations in charge of the management and functioning of these facilities/services.

2.1.1 In this respect, institutional aspects related to the following were examined:

a) The South American Digital Network (REDDIG) (SAM Region)
b) The Regional Safety Oversight Cooperation System (SRVSOP or "The System") (CAR/SAM Regions)
c) The CAR/SAM Regional Monitoring Agency (CARSAMMA) (CAR/SAM Regions)
d) Corporación Centroamericana de Servicios a la Navegación Aérea (COCESNA) (CAR Region)
e) Digital Network (MEVA) (Improvement to ATS Voice Links) (CAR Region)
f) Regional Aviation Safety Oversight System (RASOS) (CAR Region)
g) Intercaribbean Aeronautical Communications LTD (IACL) (CAR Region)

2.1.2 Concerning the above, documentation on some of these organizations and facilities/services was available, which for the benefit of future works are included as **Appendices A, B, C, D, E and F** to this part of the Report.

2.1.3 As a result of the analysis carried out on institutional aspects of the different multinational facilities/services in the CAR/SAM Regions, it could be observed that in those Regions agreements of multinational nature are being established for the implementation of these facilities and services. However, it was also observed that in the future there could be a proliferation of multinational facilities/services individually developed, which could create, in a given moment, some difficult situation that could not necessarily obey to cost-benefit aspects adequate for the implementation of CNS/ATM systems. Considering this matter, the Meeting agreed that in a long term these individual multinational facilities/services should start to consolidate with more general agreements in order to provide regional air navigation services. As a result of this analysis, the Task Force formulated, for GREPECAS/12 consideration, the following Draft Conclusion:

DRAFT
CONCLUSION 1/2 INTEGRATION IN A LONG TERM OF MULTINATIOAL FACILITIES/SERVICES

In reviewing the institutional and legal aspects for the implementation of CAR/SAM Multinational Regional Systems and in order to:

a) cost/efficiently integrate resources that enable its functioning and management; and

b) consolidate the multinational facilities/services individually developed within general nature systems;

the States should consider the need to orient multinational solutions through general nature mechanisms for the provision of air navigation services.

APPENDIX A

REGULATIONS OF THE REGIONAL SAFETY OVERSIGHT COOPERATION SYSTEM

Article 1
MISSION

The Regional Safety Oversight Cooperation System, hereinafter called "the System", created by virtue of the Memorandum of Understanding signed by the Latin American Civil Aviation Commission and the International Civil Aviation Organization, has the mission of technically assisting participating States to overcome common problems encountered with relation to effective compliance of their responsibilities for safety oversight, according with the standards and recommended practices, and corresponding procedures included in the annexes of the International Civil Aviation Convention and related documents and with the results of evaluation conducted by the ICAO universal safety oversight audit programme.

Article 2
HEADQUARTERS AND DURATION

The System shall have as its headquarters the ICAO Regional Office in Lima; it shall be governed by the provisions of these Regulations and its duration shall be indefinite.

Article 3
PARTICIPANTS

Participation in the System shall be open to States that are members of the Latin American Civil Aviation Commission and to other States of North America, Central America, South America and the Caribbean that wish to adhere through their respective authorities, as well as to public and/or private enterprises interested in safety oversight, which may express their will to form part as special observers and may be accepted in the System.

Article 4
FUNCTIONS

The functions of the System shall be:

a) To establish and implement a safety oversight technical support programme in the participating States in close co-ordination with the ICAO universal safety oversight audit programme, with a view to maintaining and/or ensuring fulfillment of their responsibilities emanating from the Convention on International Civil Aviation and its respective Annexes. Initially, it will consider the Standards and Recommended Practices of Annexes 1, 6 and 8

to the Convention, the associated ICAO procedures and guidance material, and the regulations and procedures that are adopted by the System for implementation by its members in compliance with the said ICAO rules;

b) To propose uniform rules and procedures in the areas of Personnel Licensing, Aircraft Operations and Airworthiness, compatible with relevant ICAO Standards and Recommended Practices, associated procedures and guidance material, leading to the harmonization and adoption of such rules and procedures by the participating States;

c) To promote the provision of advice and assistance required by participating States to implement and apply ICAO Standards and Recommended Practices, associated procedures and guidance material in a co-ordinated and uniform manner;

d) To participate in the conduct of audit missions under the leadership of ICAO by making the required experts available through LACAC. These experts must have been trained by ICAO and selected under this Organization's criteria;

e) To recommend the necessary measures to overcome the problems that may be detected as a result of the audits, and assist in their implementation;

f) To develop other related activities as may be required and that are within its capacity.

Article 5
STRUCTURE

System functions shall be performed by a General Board, a General Co-ordinator and a Technical Committee.

Article 6
GENERAL BOARD

a) The General Board shall be comprised of a representative from each participating State, preferably who has the responsibility of managing the civil aviation safety in his/her respective State. It shall meet at least once a year in ordinary meetings, called by its President, who will be elected from its members for a period of one year. The President could be re-elected for equal and succeeding periods.

b) Notwithstanding the above, the General Board may hold extraordinary meetings, duly called by its President on his/her own initiative, or as requested by a single majority of its members or by the General Coordinator.

c) The public and private enterprises authorized to form part of the System by decision of the majority of the participating States which at the time of the meeting of the General Board

have paid the corresponding contribution for the current year, can participate in the meetings of the General Board, as specials observers, with no right to vote.

Article 7
FUNCTIONS OF THE GENERAL BOARD

The functions of the General Board shall be:

a) Render advice to participating States which may request so for the compliance of their obligations related with safety oversight and with the recommendations resulting from the mandatory, regular and harmonized audits undertaken the ICAO universal safety oversight audit programme, including facilitation and adoption of corrective measures, and the adequate dissemination of the corresponding information;

b) To establish the number of experts required to integrate the Technical Committee and approve the terms and conditions for such assignments;

c) To provide experts from the System to be trained by ICAO in accordance with Article 4 d) of these Regulations;

d) To approve the annual programme of activities of the System;

e) To examine and approve the annual budget and the financial regime;

f) To examine and approve the expenditures and accounts;

g) To examine and approve the annual reports of the Technical Committee and the annual report on the activities of the System;

h) To propose amendments to these Regulations, when necessary;

i) To agree on the withdrawal of one or more States from the System based on the analysis that shall be developed by the Technical Committee for such cases;

j) To agree on the liquidation of goods and assets of the System, in the event of the termination of the System;

k) To consider any other matter within the scope of the System that has not been specifically assigned to any of its other bodies.

Article 8
GENERAL CO-ORDINATOR

The Regional Director of the ICAO Lima Office, headquarters of the System, will be in charge of the general co-ordination of the System, and shall receive the technical and logistic support from the ICAO Regional Offices concerned (Lima and Mexico) and from the Technical Committee as needed, in accordance with relevant ICAO procedures and guidelines, as well as with these Regulations and other procedures of the System.

Article 9
FUNCTIONS OF THE GENERAL CO-ORDINATOR

The functions of the General Co-ordinator shall be:

a) To co-ordinate with the participating States the implementation of the annual programme of activities;

b) To co-ordinate with the President the meetings of the General Board and act as Secretary of such meetings;

c) To provide guidance to the experts assigned to serve on the Technical Committee;

d) To co-ordinate and direct the Technical Committee meetings and the implementation of its programme of activities;

e) To exchange such information as is necessary with the participating States and bodies concerned;

f) To prepare an annual report of the activities of the System and submit it to the General Board;

g) To co-ordinate with the States the designation of experts and their participation, as requested by the ICAO universal safety oversight audit programme;

h) To keep updated the lists of Civil Aviation Authorities, of the candidates nominated to serve on the Technical Committee, and of the available experts;

i) To perform such other functions within the scope of the activities of the System as are entrusted to him/her.

Article 10
TECHNICAL COMMITTEE

The Technical Committee shall be composed of experts complying with ICAO requirements in Personnel Licensing, Aircraft Operations and Airworthiness in a number to be determined by the General Board and selected in consultation with ICAO and in accordance with Article 4 d) of these Regulations. The duration of their contracts shall be one year, renewable, of which the first three months will be a probationary period.

Article 11
FUNCTIONS OF THE TECHNICAL COMMITTEE

The Technical Committee shall have the following functions:

a) To plan and develop a permanent technical cooperation programme for safety oversight in participating States, with the purpose of verifying compliance with their safety related obligations;

b) To propose rules and procedures as may be needed with regard to personnel licensing, aircraft operations and airworthiness, as mentioned in Article 4 b) of these Regulations, with a view to achieving their harmonization;

c) To participate in audits of States in the System, as requested by the IACO universal safety oversight audit programme;

d) To recommend to participating States the uniform adoption and application of the harmonized rules and procedures;

e) To facilitate the dissemination of the harmonized rules and procedures;

f) To determine the assistance required by Civil Aviation Administrations regarding safety;

g) To prepare on a yearly basis the programme of activities and the budget of the System for approval by the General Board;

h) To set up such groups of experts as deemed necessary;

i) To examine the reports of the groups of experts that have been set up, and to decide on the issues submitted for its consideration;

j) To analyze the audit reports that participating States may submit for consideration;

k) To give its opinion with respect to amendments to these Regulations, when requested by the General Board;

l) To analyze and report to the General Board on the consequences of the withdrawal of one or more States from the System;

m) To propose to the General Board the liquidation of System's goods and assets in the event of the termination of the System.

Article 12
ICAO SUPPORT

a) The System shall be managed by ICAO through a trust fund agreement to be entered into by the participating States and ICAO, as provided for in the third paragraph of the Memorandum of Understanding;

b) ICAO shall give the System technical and logistic support and such information and documents as it may need, and shall monitor its activities using the regular means available to it;

c) At the request of LACAC or of any of the participating States, ICAO shall propose the most appropriate course of action for those activities required which the System is not able to implement;

d) ICAO shall arrange for the review by its auditors of the financial statements of the System as of December 31 of each year, and forward their reports to the General Board through the General Co-ordinator;

e) Any expenses incurred by ICAO from the activities described above and which exceed normal ICAO support to its Contracting States, shall be covered in accordance with the relevant provisions of the complementary trust fund agreement, the details of which will be arranged by the Parties.

Article 13
FINANCIAL STRUCTURE

The System shall be financed with the contributions from the participating States and the contributions convened from the special observers, as established in an agreement between such States for the implementation of the System, on the basis of an annual budget of its operating costs, to be approved by the General Board no later than September 30 of the year immediately prior to the year of its application. The budget shall also include the annual amount (in US dollars) of the contributions set for the participating States, which are to be deposited into a trust fund account that ICAO shall open in the name of the System.

The minimum limit for the contribution of special observer enterprises admitted according to paragraph c) of Article 6 will be that which applies for participation of States.

Article 14
CONCILIATION

Any difference or dispute concerning the interpretation or the application of these Regulations shall be resolved by negotiation between the parties concerned.

Article 15
AMENDMENTS

a) Either Party, ICAO or LACAC, may propose amendments to these Regulations.

b) As far as LACAC is concerned, any State member of the General Board may propose amendments to these Regulations. All amendments shall be examined by the General Board and approved by an expanded meeting of the LACAC Executive Committee, which could be attended by all States forming part of the System.

c) Any amendment proposed by ICAO or LACAC shall require approval by both Parties to enter into effect.

Article 16
ENTRY INTO FORCE

These Regulations shall enter into force once formally approved by the Parties and once the System is established.

APPENDIX B

CONCLUSION 11/34 OF GREPECAS/11 MEETING

CONCLUSION 11/34 MAIN RVSM DUTIES AND RESPONSIBILITIES OF CARSAMMA

That the main RVSM duties and responsibilities of the CAR/SAM Monitoring Agency (CARSAMMA) are as follows:

a) establish and maintain a central registry of RVSM-approved operators and aircraft of each State/Territory that use the CAR/SAM RVSM airspace;

b) facilitate the transfer of approved data to and from other RVSM regional monitoring agencies;

c) establish and maintain a database containing the results of height-keeping performance monitoring and height deviations of 300 ft or more within CAR/SAM airspace, and to include in the database the results of CARSAMMA requests to operators and States for information on the causes of large height deviations observed;

d) provide timely information to State authorities and operators on changes or monitoring status of aircraft type classifications;

e) administer the GPS monitoring system (GMS);

f) assess compliance with RVSM height-keeping performance requirements by operators and aircraft, and introduction of RVSM in the CAR/SAM Regions;

g) provide the means for identifying non-RVSM approved operators using CAR/SAM RVSM airspace and to notify the appropriate State authority accordingly;

h) develop the means for summarizing and communicating the content of relevant databases to RVSM Task Force decision makers, so that it can be used to decide when and to what extent RVSM will be applied I the airspace under their responsibility; and

i) conduct the CAR/SAM airspace safety assessment.

APPENDIX C

CONVENIO CONSTITUTIVO

de la
Corporación Centroamericana de
Servicios de Navegación Aérea

"Organismo Internacional de Integración Centroamericana"

CONVENIO CONSTITUTIVO Y ESTADOS SIGNATARIOS

La Corporación Centroamericana de Servicios de Navegación Aérea COCESNA, es un organismo internacional de integración, sin fines de lucro y de servicio público, con status legal y autonomía financiera, creado por un convenio firmado el 26 de febrero de 1960.

Los Estados Contratantes del Convenio Constitutivo de COCESNA son seis: Guatemala, El Salvador, Costa Rica, Honduras, Nicaragua y Belice, Estado último recientemente adherido a COCESNA.

De acuerdo con el Artículo 2 del Convenio Constitutivo, COCESNA tiene los derechos exclusivos para prestar los servicios de Tránsito Aéreo, Telecomunicaciones Aeronáuticas y Radioayudas a la Navegación Aérea en la Región de Vuelo (FIR) Centroamericana.

Las actividades en cada Estado Centroamericano son manejadas por Estaciones Regionales, en una constante y directa coordinación con la Oficina Central cuya sede está en Tegucigalpa, Honduras, C.A.

COCESNA proporciona servicios aeronáuticos estipulados en el Plan Regional de Navegación Aérea de la OACI en concordancia con los Estados Miembros.

RATIFICACIONES AL CONVENIO CONSTITUTIVO

HONDURAS	17 de mayo de 1960
NICARAGUA	30 de junio de 1960
GUATEMALA	18 de junio de 1961
EL SALVADOR	14 de septiembre de 1961
COSTA RICA	20 de noviembre de 1963
BELICE	1 de octubre de 1996

El Convenio Constitutivo se registró el 1 de febrero de 1961 en la Organización de Aviación Civil Internacional, y el 2 de enero de 1962 en la Organización de las Naciones Unidades (ONU).

**CONFERENCIA DIPLOMATICA PARA
LA CREACIÓN DE LA CORPORACIÓN CENTROAMERICANA DE SERVICIOS
DE NAVEGACIÓN AÉREA**

**A C T A
Tegucigalpa, D.C. HONDURAS, C.A.
22 al 26 de febrero de 1960**

La Conferencia de Directores de Aeronáutica Civil de Centroamérica, celebrada en Guatemala, del 4 al 5 de Noviembre de 1959 recomendó, entre otras cosas, la convocatoria de una "Conferencia Diplomática para Establecer una Corporación Intergubernamental Centroamericana de Comunicaciones Aeronáuticas".

A este efecto el Gobierno de la República de Honduras convocó dicha Conferencia para que se celebrase en Tegucigalpa, a partir del 22 de Febrero de 1960.

1. INAUGURACIÓN DE LA CONFERENCIA.

El Excelentísimo Señor Presidente de la República de Honduras, Doctor José Ramón Villeda Morales, acompañado del Excelentísimo Señor Ministro de Relaciones Exteriores, Licenciado Andrés Alvarado Puerto y del Excelentísimo Señor Ministro de Comunicaciones y Obras Públicas Ingeniero Juan Milla Bermúdez, inauguró la Conferencia el 22 de Febrero de 1960, a las 5:00 p.m., en el Salón del Edificio del Banco Central de Honduras. Asistieron también a la inauguración de la Conferencia los Señores Miembros del Gabinete de Ministros, así como el Cuerpo Diplomático.

Al discurso de inauguración pronunciado por el excelentísimo Señor Presidente de la República, siguieron el del Señor Lisandro Rosales Abella, Jefe de la Delegación de Honduras dando la bienvenida a los delegados presentes, del Doctor Carlos Castillo Meléndez, Delegado de El Salvador, quien dirigió la palabra en nombre de las Delegaciones centroamericanas, y el Señor E.R. Marlin, Director de Asistencia Técnica de la Organización de Aviación Internacional.

2. LISTA DE ASISTENTES:

Asistieron a la Conferencia como Representantes y Observadores de las Delegaciones siguientes. Los Jefes de Delegaciones de las Repúblicas Centroamericanas, asistieron en calidad de Representantes Plenipotenciarios.

ESTADOS PARTICIPANTES:

COSTA RICA

Sr. Guillermo Salazar Roldán	Jefe de Delegación
Sr. Enrique Granados Beer	Delegados

EL SALVADOR

Cnel. Jorge Roviera	Jefe de Delegación
Dr. Guillermo Chacón Castillo	Delegado
Dr. Moisés Alfonso Beatriz	Delegado
Dr. Juan José Sánchez	Delegado

Dr. Carlos Castillo Meléndez	Delegado
Sr. Luis Oscar Chávez	Delegado
Ing. José Pino León	Asesor

GUATEMALA

Cnel. Rodolfo C. Mendoza Azurdia	Jefe de Delegación
Sr. Carlos Paiz Estévez	Alterno

HONDURAS

Sr. Lisandro Rosales Abella	Jefe de Delegación
Lic. Dario Humberto Montes	Delegado
Ing. José Angel Bobadilla	Delegado
Sr. Luis Fernando Catocho	Delegado

NICARAGUA

Sr. Alfonso Ortega Urbina	Jefe de Delegación
Capitán Segundo J. Montoya	Delegado
Sr. Harold E. Robinsón	Asesor
Sr. Pablo R. Hernández	Asesor

OBSERVACIONES

ANHSA

Sr. Raúl Zelaya Medina

ASA INTERNACIONAL

Sr. Francisco Flores

FAA (FEDERAL AVIATION AGENCY)

Sr. Harry Arnold
Sr. Henry O. Parker

KLM

Sr. Fernando Cevallos

NACIONES UNIDAS

Sr. Alfred Mackensie

OACI (ORGANIZACIÓN DE AVIACIÓN CIVIL INTERNACIONAL)

Sr. E. R. Marlin
Sr. Kevin MacAleavy

PAN AMERICAN AIRWAYS

Sr. Jeoffree Warren

TACA INTERNACIONAL TAN AIRLINES

Capitán Armando San Martín

SAHSA (SERVICIO AEREO DE HONDURAS)

Sr. Isidoro Acosta Bonilla

3. MESA DIRECTIVA

Por aclaración, fue elegido Presidente de la Conferencia el Señor Lisandro Rosales Abella, Jefe de la delegación de Honduras. El Jefe de la Delegación de El Salvador, Coronel Jorge Rovira, fue elegido Vice-Presidente de la Conferencia.

El señor Luis Fernando Catocho, Sub-Director General de Aeronáutica Civil de Honduras, actuó como Secretario General de la Conferencia.

4. SESIONES PLENARIAS

Durante la primera sesión plenaria, la Conferencia acordó aprobar su Reglamento Interno y asimismo, adoptar como punto único en su orden del día el examen detallado del Proyecto de Convenio que se había circulado con anterioridad. Se discutieron los Artículos 1, 2, 5, 21, 22, 23, y se acordó establecer los comités siguientes:

COMITÉ DE CREDENCIALES

El Comité de Credenciales, integrado por cada uno de los países participantes, se reunió el 24 de febrero de 1960, y después de examinar las credenciales presentadas a la Secretaría y hallarlas en debida forma, leyó una Acta en la cual dio fe de lo anterior.

COMITÉ JURÍDICO

El comité Jurídico, encargado del examen de los artículos 3, 4, 6, 11, 15, 16, 18, 19, 20, 24, 26, 27, 29, 30, 31, 32, y 33, celebró tres reuniones el 24 y 25 de febrero de 1960, bajo la Presidencia del Lic. Dario Humberto Montes, y estuvo integrado por representantes de los Países participantes. Durante sus deliberaciones, el Comité contó con el valioso asesoramiento del Licenciado Amado H. Núñez, Sub-Secretario de Trabajo y Previsión Social de Honduras.

COMITÉ TÉCNICO

El Comité Técnico, encargado del examen de los Artículos 7, 8, 9, 10, 12, 13, 14, 17, así como el inciso 2) del artículo 21, celebró dos reuniones el 24 de Febrero de 1960, bajo la presidencia del Señor Lisandro Rosales Abella y estuvo integrado por representantes de los países participantes.

COMITÉ DE ESTILO

El Comité de Estilo, encargado de la redacción del convenio, se reunió el 25 de Febrero de 1960 y estuvo integrado por Representantes de los países participantes.

La sesión de clausura, celebrada el 26 de Febrero de 1960, a las 5:00 p.m., en el Salón de Actos del Edificio del banco central de Honduras, puso a la firma el convenio Constitutivo de la Corporación Centroamericana de Servicios de Navegación Aérea, el cual quedó debidamente firmado y sellado por los plenipotenciarios de los países participantes.

**LA CONFERENCIA DIPLOMATICA PARA
ESTABLECER UNA CORPORACIÓN INTERGUBERNAMENTAL CENTROAMERICANA
DE COMUNICACIONES AERONÁUTICAS CONSIDERANDO:**

Que la cooperación de los Estados centroamericanos en la esfera de aviación civil, especialmente después de la creación del Centro de Información de Vuelo de Tegucigalpa, en Octubre de 1957, ha mejorado ya la seguridad de la aviación civil en esta área;

Que la entrada en servicio de los aviones de transporte de reacción requiere reforzar profundamente la organización de los servicios de tránsito aéreo y de telecomunicaciones y las radioayudas para la navegación aérea;

Que con el fin de asegurar la eficacia de dichos servicios, sin imponer al mismo tiempo cargas excesivas a los recursos económicos de los Estados, conviene evitar la duplicación de aquellos y conseguir su integración racional a fin de que las Partes Contratantes estén en condiciones de cumplir sus compromisos internacionales.

POR TANTO,

RESUELVE:

Adoptar el siguiente:

**"CONVENIO CONSTITUTIVO DE LA CORPORACIÓN
CENTROAMERICANA DE SERVICIOS DE
NAVEGACIÓN AÉREA"**

ARTÍCULO 1

Créase un Organismo de Servicio Público que se denominará "Corporación Centroamericana de Servicios de Navegación Aérea", en lo sucesivo denominada "La Corporación" y cuyas finalidades se determinan en este instrumento. La sede se fijará en el mismo lugar en que se halle el Centro de información de vuelo que presta servicio al territorio de las partes contratantes, y que actualmente se encuentra en Tegucigalpa, Distrito Central, Honduras.

ARTÍCULO 2

1) La Corporación tendrá derechos exclusivos sobre la prestación de los servicios de tránsito aéreo, de telecomunicaciones aeronáuticas y de radioayudas para la navegación aérea en los territorios de las Partes Contratantes:

   a) Proporcionará los servicios y ayudas antedichos, previstos en el plan regional de la Organización de Aviación Civil Internacional, en los territorios de las Partes contratantes y en aquellas otras áreas que se les hayan confiado en virtud de un acuerdo internacional.
   b) Podrá proporcionar a otros Estados, mediante convenio, los antedichos servicios y ayudas previstos en el plan regional de la Organización de Aviación Civil Internacional.
   c) Podrá proporcionar dentro de los territorios de las partes contratantes, por medio de contratos con entidades públicas o privadas, los servicios y ayudas antedichos que no estén previstos en el plan regional de la Organización de Aviación Civil Internacional.

2) La Corporación podrá proporcionar servicios aeronáuticos estipulados en el plan regional de la Organización de Aviación Civil Internacional, distintos de los antedichos, previa autorización escrita de las autoridades competentes de todas las partes contratantes.

3) La Corporación tendrá las atribuciones siguientes:

a) Estudiar y proponer a las partes contratantes, en base de las normas y métodos recomendados de la Organización de Aviación Civil Internacional, la uniformidad de las normas nacionales que regulan el tránsito aéreo y de las medidas que adopten los servicios encargados de organizarlo y de lograr su seguridad.
b) Tomar todas las medidas necesarias para la capacitación adecuada del personal.
c) Fomentar y coordinar los estudios concernientes a los servicios e instalaciones de navegación aérea, teniendo en cuenta la evolución técnica y, dado el caso, proponer a las partes contratantes las enmiendas al plan regional de navegación aérea que hayan de someterse a la Organización de Aviación Civil Internacional, respecto a las atribuciones a que este artículo se refiere.

ARTÍCULO 3

La Corporación gozará de personalidad jurídica; podrá ejercer derechos, contraer obligaciones y ser representada judicial y extrajudicialmente, para llenar sus fines, tendrá el carácter de institución de utilidad pública.

ARTÍCULO 4

La Corporación estará administrada por un Consejo Directivo integrado por un miembro representante de cada parte contratante, a razón de un representante por parte contratante. Cada miembro tendrá un suplente que le reemplazará en su ausencia. Los miembros y sus suplentes preferentemente serán autoridades competentes de aeronáutica designadas por la parte contratante que representen.

Para que el Consejo se considere válidamente reunido, se requerirá la presencia de todos sus miembros y sus decisiones se adoptarán por mayoría de votos. El Consejo establecerá, por decisión unánime de sus miembros, su reglamento interno y aquellos otros que sean necesarios para el funcionamiento de la Corporación.

ARTÍCULO 5

Desde el momento que inicie sus actividades, la Corporación deberá cubrirse respecto a los riesgos resultantes de la responsabilidad civil frente a terceros y de los daños sobrevenidos a las instalaciones necesarias para su funcionamiento, mediante la contratación, con una o varias compañías aprobadas por el Consejo Directivo de la Corporación, de seguros apropiados.

ARTÍCULO 6

Las partes contratantes concederán a la Corporación, respecto a las obras que efectúe y servicios que establezca en sus correspondientes territorios, las facilidades y privilegios necesarios para el desempeño de sus funciones, otorgados a organismos internacionales, autónomos y entidades oficiales.

ARTÍCULO 7

Las partes contratantes tomarán las medidas necesarias para que la Corporación pueda efectuar cuantas operaciones precise para la realización de sus funciones, inclusive la asignación de frecuencias radioeléctricas.

ARTÍCULO 8

La Corporación establecerá con los Estados y organismos internacionales, los enlaces necesarios para el desempeño de sus funciones y mantendrá las demás relaciones para el buen funcionamiento de sus servicios.

ARTÍCULO 9

Para la realización de las funciones previstas en el párrafo 1) del artículo 2, la Corporación aplicará, en el control del tránsito aéreo los reglamentos vigentes en los territorios de las partes contratantes y en todo el espacio aéreo donde los servicios de tránsito aéreo les hayan sido confiados.
Si surge alguna dificultad en la aplicación de las disposiciones de este artículo, la Corporación, de conformidad con el artículo 2, párrafo 3), incisos a) y c) propondrá a las partes contratantes las medidas que estime oportunas.

ARTÍCULO 10

Para la realización de sus funciones de control de tránsito aéreo, la Corporación impartirá todas las instrucciones necesarias a los comandantes de las aeronaves, quienes estarán obligados a cumplirlas.

ARTÍCULO 11

Las autoridades competentes de las partes contratantes conocerán de las infracciones previstas en el Artículo 10, cometidas en los límites de su territorio.

ARTÍCULO 12

La Corporación comunicará a las autoridades nacionales competentes, las infracciones de las normas que regulan el tránsito aéreo, cometidas dentro de la jurisdicción que se les haya confiado.

ARTÍCULO 13

En el ejercicio de sus funciones, la Corporación respetará las leyes y reglamentos nacionales y los acuerdos internacionales relativos al acceso, sobrevuelo y seguridad de los territorios de las partes contratantes.

ARTÍCULO 14

Para que las partes contratantes puedan velar por la aplicación de las leyes y reglamentos nacionales y los acuerdos internacionales, la Corporación les suministrará la información que soliciten relativa a las aeronaves y toda aquella de la que tenga conocimiento en relación con el caso consultado, aunque no hubiese sido solicitada.

ARTÍCULO 15

La Corporación colaborará en todo momento con las autoridades competentes de las partes contratantes para facilitar la buena administración de la justicia, asegurar la observancia de los reglamentos de policía y evitar todo abuso a que pudieran dar lugar los privilegios, inmunidades, exenciones y facilidades previstas en el presente Convenio.

ARTÍCULO 16

Para la realización de sus funciones, la Corporación estará facultada para construir las instalaciones y edificios que requiera.

Con objeto de reducir los gastos de inversión de capital y de administración, la Corporación hará uso, en la mayor medida posible, de los servicios e instalaciones públicos y privados existentes.

ARTÍCULO 17

La Corporación, su patrimonio e ingresos, así como los actos, las operaciones y transacciones autorizadas por el presente Convenio, estarán exentos de todo impuesto, derechos y demás contribuciones, en la medida que lo permitan las respectivas legislaciones.

La Corporación estará igualmente exenta de toda obligación relativa a la percepción o el pago de todo impuesto o derecho. Estará exenta, además de toda prohibición o restricción de importación y exportación de lo necesario para su funcionamiento.

ARTÍCULO 18

La Corporación podrá poseer toda clase de divisas y abrir cuentas bancarias en la medida que sea necesario para el desempeño de sus funciones. Gozará del tipo de cambio más favorable.

Las partes contratantes se comprometen a conceder a la Corporación las autorizaciones necesarias, de conformidad con los procedimientos previstos en las leyes nacionales y en los convenios internacionales aplicables, para efectuar todos los movimientos de fondos a que den lugar el establecimiento y las actividades de la Corporación, comprendiendo la contratación de empréstitos y el pago de los intereses correspondientes.

ARTÍCULO 19

El personal de la Corporación se constituirá a base de trabajadores centroamericanos.

En circunstancias especiales que el Consejo Directivo calificará, podrán emplearse personas de otras nacionalidades para prestar servicios técnicos, siempre que éstos, además, por los conocimientos especiales que se requieran, sean de difícil o imposible desempeño por centroamericanos, quedando obligadas aquellas a capacitar personal de nacionalidad de las partes contratantes, en un plazo prudencial y bajo la vigilancia de las mismas.

ARTÍCULO 20

Para efectos del artículo anterior, la Corporación se obliga a procurar la contratación de los trabajadores actualmente al servicio del Estado, de instituciones autónomas y de empresas privadas que están prestando los servicios que por este Convenio se confieren a la Corporación, quienes, sin que se afecte sus contratos de trabajo existentes, gozarán de los mismos derechos establecidos por las leyes respectivas,

reglamentos internos de trabajo o contratos y convenciones colectivas de trabajo, sin perjuicio de mayores beneficios que la Corporación otorgue al trabajador. En estos casos, las prestaciones laborales se cubrirán de manera proporcional y solidaria entre el patrono sustituido y la Corporación.

Es entendido que cuando no fuere posible la contratación de los referidos trabajadores, por motivos inimputables a éstos, produciéndose así su cesantía y siempre que no pudieren obtener, con base en el régimen jurídico laboral respectivo, la indemnización y demás prestaciones por la terminación del contrato sin responsabilidad para las partes, la Corporación estará obligada a cubrir al trabajador cesante éstos y cualesquiera otros derechos de conformidad con la ley nacional correspondiente.

ARTÍCULO 21

Las partes contratantes darán al personal extranjero que contrate la Corporación, las facilidades de inmigración que se conceden a los técnicos extranjeros en misiones internacionales.

Se acordarán facilidades para la admisión en franquicia de los efectos personales y del mobiliario de las personas empleadas por la Corporación, así como a sus esposas y a los miembros de su familia que vivan a su cargo, cuando la Corporación los contrate, traslade o dé por terminado su contrato.

ARTÍCULO 22

Para el establecimiento de la Corporación, las partes contratantes acuerdan:

1) Aportar, a prorrata, un capital circulante por valor de cien mil dólares de los Estados Unidos de América (US$100,000.00).
2) Adquirir, si es necesario, y ceder el uso y goce sin costo alguno a la Corporación, del equipo enumerado en el Anexo al presente convenio, quedando cada una de las partes contratantes, obligada a hacerlo respecto del equipo descrito para su propio territorio.
3) Proporcionar el uso y goce sin costo alguno a la Corporación, de los edificios e instalaciones y de los terrenos en que se hallen emplazados así como el uso y goce de los demás muebles e inmuebles que directamente se relacionen con el desempeño de sus funciones.

ARTÍCULO 23

La Corporación deberá conseguir su equilibrio financiero por medio de sus propios recursos, con excepción de las aportaciones de las partes contratantes que se citan en el Artículo 22 y de los préstamos que se mencionan en este artículo y en el Artículo 24.

Con el anterior objeto fijará las tarifas y condiciones de los derechos que han de pagar los usuarios, e impondrá y percibirá tales derechos. A solicitud de la Corporación, las partes contratantes le ayudarán a hacer efectivo el pago de tales derechos. Los derechos quedarán supeditados a las disposiciones del Artículo 15 del Convenio de Aviación Civil Internacional.

ARTÍCULO 24

La Corporación podrá conseguir, mediante préstamos obtenidos en los mercados financieros nacionales e internacionales, los recursos necesarios para la realización de sus fines.

Las partes contratantes, cuando así lo acuerden por unanimidad, garantizarán por partes iguales los préstamos que contraiga la Corporación.

ARTÍCULO 25

Toda controversia entre las partes contratantes o entre una o varias partes contratantes y la Corporación, relativa a la interpretación o aplicación del presente Convenio, relativa a la interpretación o aplicación del presente Convenio que no pueda resolverse mediante negociaciones directas, se resolverá por un Tribunal Arbitral, integrado de la siguiente manera: cada una de las partes contratantes establecerá y tendrá al día una lista de tres magistrados pertenecientes a su propia Corte Suprema de Justicia. En un plazo de seis meses, a partir de la entrada en vigencia del presente Convenio, dicha lista se notificará al secretario general de la Organización de Estados Centroamericanos.

El secretario general de la Organización de Estados Centroamericanos sorteará para cada litigio, mediante incautación, de la lista completa de candidatos, los árbitros respectivos de diferente nacionalidad que compondrán el tribunal.

La sentencia se pronunciará por mayoría y tendrá fuerza de cosa juzgada para todas las partes en litigio.

ARTÍCULO 26

La Corporación elaborará sus propios estatutos y los someterá a la aprobación de cada una de las partes contratantes por los conductos correspondientes.

ARTÍCULO 27

Toda modificación del presente Convenio o de los Estatutos estará subordinada al acuerdo unánime de las partes contratantes.

ARTÍCULO 28

El presente Convenio tendrá una duración de quince años. Se prorrogará automáticamente por períodos sucesivos de cinco años.

Cualesquiera de las partes contratantes podrá denunciar este Convenio cinco años después que haya entrado en vigencia, dirigiendo una notificación a la Organización de Aviación Civil Internacional, con copia a la Organización de Estados Centroamericanos. La Organización de Aviación Civil Internacional lo participará inmediatamente a las demás partes contratantes. La denuncia surtirá efecto un año después de la fecha en que se reciba la notificación.

ARTÍCULO 29

En caso de disolución, se considerará que la Corporación continúa existiendo hasta su liquidación total.

Esta se llevará a cabo por liquidadores designados por el Consejo Directivo. Los liquidadores tendrán las facultades más amplias posibles para realizar el activo de la Corporación. Después de que se haya liquidado el pasivo, el saldo remanente se repartirá entre los Estados participantes en el convenio, de conformidad con una decisión unánime del Consejo Directivo.

Después de hecha la liquidación se llegará a un acuerdo con el Estado de la sede y con los Estados en los cuales estén enclavadas las instalaciones de la Corporación, respecto a la posible transferencia de todas o partes de las instalaciones para continuar proporcionando los servicios.

ARTÍCULO 30

En caso de emergencia, los gobiernos interesados se consultarán respecto a las medidas que hayan de tomarse, teniendo en cuenta las dificultades que presente la aplicación de todas o parte de las disposiciones del presente Convenio.

ARTÍCULO 31

El presente Convenio, después de haberse firmado, se enviará a la Organización de Aviación Civil Internacional, la cual remitirá una copia certificada a cada uno de los Países Signatarios y a la Organización de Estados Centroamericanos.

ARTÍCULO 32

El presente Convenio será ratificado y entrará en vigencia el primer día del mes siguiente al de depósito del instrumento de ratificación de la cuarta parte contratante que cumpla esta formalidad.

Los instrumentos de ratificación se depositarán en la Organización de Aviación Civil Internacional, la cual notificará a las partes interesadas.

ARTÍCULO 33

Este Convenio, al entrar en vigencia, se registrará en la Organización de Aviación Civil Internacional, la cual, a su vez, lo hará registrar en las Naciones Unidas.

ARTÍCULO 34

Todo Estado no signatario podrá adherirse al presente Convenio una vez haya entrado en vigencia, depositando un instrumento de adhesión en la Organización de Aviación Civil Internacional. La adhesión de todo Estado no signatario al presente Convenio estará condicionada al consentimiento unánime de las partes contratantes y a la conclusión de un acuerdo financiero previo entre el Estado no signatario y la Corporación, cuyo consentimiento y acuerdo serán notificados por cada una de las partes contratantes y la Corporación a la Organización de Aviación Civil Internacional.

Una vez cumplidos los requisitos anteriores, la Organización de Aviación Civil Internacional notificará a las partes interesadas y la adhesión entrará en vigencia el primer día del mes siguiente a dicho cumplimiento.

En testimonio de lo cual, los Plenipotenciarios de Costa Rica, El Salvador, Guatemala, Honduras y Nicaragua, debidamente autorizados al efecto suscriben el presente Convenio en Tegucigalpa, Distrito Central, Honduras el día veintiséis de febrero de mil novecientos sesenta.

POR COSTA RICA
Guillermo Salazar Roldán

POR EL SALVADOR
Jorge Rovira

POR GUATEMALA
Rodolfo Mendoza Azurdia

POR HONDURAS
Lisandro Rosales Abella

POR NICARAGUA
Alfonso Ortega Urbina

APPENDIX D

Transición a MEVA II para modernizar la red y facilitar la creación de una plataforma digital CAR/SAM

a) la Red MEVA II debería basarse en arquitectura de red TDMA/FR, sin estación central (hub), completamente de malla, con plataforma de comunicaciones de salto única;

b) todos los Estados/Organismos Miembros realicen la transición simultáneamente;

c) se provea una arquitectura de red de sistema abierto, con interoperabilidad e interfuncionamiento entre los usuarios de MEVA II y REDDIG. Esto representa la mejor solución para una red de servicios de comunicación de voz y datos CAR/SAM continua y completamente integrada;

a) se exploren ahorros de costos para todos los usuarios de MEVA II y REDDIG a través de complejidad de estaciones terrestres reducida, el uso combinado de un respondedor común y la posibilidad de compartir ancho de banda entre MEVA y REDDIG para apoyar las operaciones de estas dos Redes Virtuales Privadas;

b) establecer un sistema regional VSAT verdaderamente homogéneo capaz de cubrir la totalidad de las Regiones CAR/SAM con una única huella satelital de alta potencia utilizando un único satélite, PAS-1R;

c) se proporcione conectividad de un solo salto para circuitos de voz y datos (incluyendo compartición de ATN y radar) entre cualquier par o mayor cantidad de estaciones terrestres VSAT tanto en la red MEVA como en la REDDIG a través de un satélite común en el satélite PAS-1R;

d) el TMG MEVA prepare una RFP formal y especificaciones técnicas para la adquisición del contrato de servicio de MEVA II incorporando el enfoque TDMA recomendado;

e) se redacte un Memorando de Acuerdo entre los Estados/Organización Internacional/Territorios MEVA y los Estados REDDIG identificando un modus operandi para la integración;

i) el TMG estudie la posibilidad de reutilizar el equipamiento que ya está instalado;

j) el Grupo de Tarea del TMG finalice sus investigaciones y estudio técnicos de la solución recomendada TDMA para la futura Red MEVA II tomando en cuenta los requisitos de AFTN, ATN, y planes de circuitos orales en el FASID, y presente sus hallazgos al TMG MEVA para su posterior consideración;

k) el Grupo de Tarea TMG elabore un Plan de Proyecto de Trabajo y Cronograma de Transición a seguir para lograr la transición hacia la Red MEVA II y lo presente para consideración del TMG MEVA;

l) el Grupo de Tarea TMG prepare un análisis costo-beneficio (CBA) de la solución TDMA propuesta para MEVA II tomando en cuenta varias alternativas técnicas y opciones que necesitan ser consideradas por el TMG, y lo presente al TMG MEVA para su consideración; y

m) el Grupo de Tarea TMG prepare un Plan de Programa y Cronograma de Transición MEVA II actualizado tomando en consideración el enfoque de transición TDM.

APPENDIX E

ORGANIZACIÓN DE AVIACIÓN CIVIL INTERNACIONAL

DOCUMENTO DE ACUERDO

SOBRE LA PARTICIPACIÓN, ADMINISTRACIÓN Y PROVISIÓN CONJUNTAS DE SERVICIOS DE LA RED DE TELECOMUNICACIONES (MEVA) DE SERVICIOS AERONÁUTICOS FIJOS POR SATÉLITE VSAT

M E V A

ORGANIZACIÓN DE AVIACIÓN CIVIL INTERNACIONAL

OFICINA PARA NORTEAMÉRICA, CENTROAMÉRICA
Y EL CARIBE

DOCUMENTO DE ACUERDO
SOBRE LA PARTICIPACIÓN, ADMINISTRACIÓN Y PROVISIÓN CONJUNTAS DE SERVICIOS DE LA RED DE TELECOMUNICACIONES (MEVA) DE SERVICIOS AERONÁUTICOS FIJOS POR SATÉLITE VSAT.

Habiendo reconocido la necesidad existente de mejorar la confiabilidad de la Red del Servicio de Telecomunicaciones AFS, las Partes referidas a continuación están de acuerdo en emplear la nueva tecnología para incrementar el nivel de seguridad y regularidad de las aeronaves a través de toda el área; y

Habiendo determinado que es deseable que un proveedor de servicios brinde un alto nivel de prioridad a la Red MEVA, tomando en consideración que la Red maneja servicios de tráfico de comunicaciones de seguridad para la aviación civil internacional; por lo tanto,

Las Autoridades de la Aviación Civil de los Gobiernos de las Islas Caimanes, de la Comunidad de las Bahamas, Cuba, República Dominicana, Haití, Jamaica, Antillas Neerlandesas, Estados Unidos, y la organización COCESNA, (en lo adelante denominadas colectivamente como las Partes o individualmente como Parte);

Han acordado lo siguiente:

Artículo I - Definiciones

Para los objetivos del presente Acuerdo:

a) AFS significa Servicios Aeronáuticos Fijos,

b) El Coordinador significa la *Oficina Regional para Norteamérica, Centroamérica y el Caribe (NACC) de la Organización de la Aviación Civil Internacional*,

c) La Autoridad de la Aviación Civil o CAA significa la entidad que tiene la responsabilidad por el suministro y/o la administración de los servicios de navegación aérea dentro de los Estados/Organizaciones interesados; cualquier referencia a las Islas Caimanes, la Comunidad de las Bahamas, Cuba, República Dominicana, Haití, Jamaica, Antillas Neerlandesas, Estados Unidos y COCESNA o cualquier otro Estado/Organización que pueda llegar a formar parte de los Servicios de Telecomunicaciones AFS, se interpretará como las Autoridades de la Aviación Civil de estos países,

d) La Organización significa las entidades responsables de la provisión del Servicio Aeronáutico,

e) COCESNA significa Corporación Centroamericana de Servicios de Navegación Aérea (Central American Organization of Air Navigation Services). Organización no lucrativa que incluye los siguientes Estados Centroamericanos: Belice, Guatemala, Honduras, El Salvador, Nicaragua y Costa Rica, la cual está a cargo de los siguientes servicios: Comunicaciones Aeronáuticas, Sistemas de Navegación Aérea, Control de Tránsito Aéreo.

f) MEVA significa Mejoras al Enlace de Voz del ATS, (Improvements to ATS Voice Link),

g) Red significa la red de telecomunicaciones definida por el Proyecto y cualquier ampliación de la misma,

h) Proveedor de Servicio significa el Sistema de Comunicaciones por vía Satélite Inc., (Satellite

Communication Systems, Incorporated),

i) CAPS significa el Servicio de Adquisiciones para la Aviación Civil de la OACI,

j) Estado/Organización Miembro significa un Estado/Organización que haya firmado este Documento de Acuerdo, haya hecho acuerdos contractuales con el Proveedor de Servicio y sea un participante que funcione completamente en la Red y en consecuencia, participa de los Servicios de Telecomunicaciones AFS correspondientes.

Artículo II - Tecnología y Configuración de la Red Básica

1. Las Partes proporcionarán, mantendrán y operarán los servicios en correspondencia con los parámetros técnicos generales, la tecnología de la red básica y la configuración de la Red, como se establece en el Anexo I del presente Acuerdo y proporcionarán, operarán y mantendrán dichos servicios adicionales como quede mutuamente acordado entre dichas Partes.

Artículo III - Derechos y Condiciones para Participar en la Red

1. Contrato de Equipamiento y de Servicio: Las Partes habrán de firmar un contrato de equipamiento y de servicio con el Proveedor de Servicio, para la adquisición, instalación, prueba, operación y mantenimiento del equipamiento requerido para la participación en la red. Este contrato deberá estar en conformidad con el Documento de Acuerdo y habrá de ser, en la medida de lo posible, uniforme para todas las Partes; sin embargo, pueden ser requeridas algunas diferencias para acomodar las variaciones en los equipos existentes, competencia y capacidades que se pueden encontrar entre las diferentes Partes.

2. Modificación de la Configuración: En caso de que una Parte desee modificar la configuración, deberá, antes de hacerlo, notificar por escrito al Coordinador acerca de sus intenciones y entrar, previo acuerdo por escrito con el Coordinador, en ulteriores acuerdos contractuales que se requieran con el Proveedor de Servicio.

3. Adición de Nuevas Partes a la Red: a) Todas las Nuevas Partes con un requisito, recomendado por la OACI y dentro del área de cobertura del satélite, tienen el derecho de participar en la red MEVA sin discriminación. b) Si una Nueva Parte desea unirse a la red establecida, deberá hacer una solicitud por escrito al Coordinador. El Coordinador habrá de notificar a la Nueva Parte acerca de los requerimientos técnicos mínimos de la red, como está establecido en el criterio de diseño de la red en el Anexo 1. Una vez aceptado el criterio de diseño por parte de la Nueva Parte, ésta informará al Coordinador y solicitará que éste continúe la coordinación de la solicitud de la red. Una vez culminada la coordinación, el Coordinador informará la conclusión a la Nueva Parte solicitante.

4. Retiro de las Partes de la Red: Si cualquier Parte deseara retirarse de la red, deberá dar notificación por escrito al Coordinador con 90 dias de antelación. Por su parte, el Coordinador notificará por escrito a las Partes restantes, con la mayor rapidez posible, acerca del retiro y cualquier cambio en los niveles de servicio que puedan resultar de esto. En caso en que un retiro de como resultado una derogación del servicio, el Coordinador llamará a una reunión especial con las Partes restantes para discutir las acciones necesarias a fin de mantener un nivel de servicio aceptable.

Nota: El retiro de una Parte no implica en modo alguno una derogación de la responsabilidad de dicha Parte con respecto al período de tiempo de los términos del acuerdo contenido en el contrato de servicio/venta con el Proveedor de Servicio.

5) Costo de Participación : Cada Parte será responsable de pagar todos los costos relacionados con su participación en este Acuerdo y en la Red; o que resulten dentro de su contrato con el Proveedor de Servicio.

Artículo IV - Reuniones

1. Reuniones Bienales: El Coordinador citará a una reunión bienal de todas las Partes para discutir la operación y administración de la Red, cuya fecha habrá de coincidir aproximadamente con el aniversario del inicio del servicio. La duración, lugar y orden del día provisional de la reunión serán determinados por el Coordinador.

2. Reuniones Adicionales: En caso de que el Coordinador determine la necesidad de reuniones más frecuentes, el mismo programará dichas reuniones como corresponda. En caso de que una o varias Partes, o el Proveedor de Servicio requieran una reunión adicional a la reunión bienal, entonces deberá hacerse una solicitud por escrito al Coordinador, el cual, de ser procedente la solicitud, programará una reunión.

Artículo V - Función de la OACI Relativa a la Red

1. Funciones de Coordinador : El Coordinador debe manejar todas las preguntas y solicitudes de enmiendas a este Acuerdo. El Coordinador es el punto focal de procesar y mantener este Acuerdo.

2. Programa CAPS: Una Parte podrá solicitar que la OACI actúe como su gerente de proyecto a través del programa CAPS de la OACI. Este acuerdo contractual permitiría a la OACI dirigir la adquisición, instalación y comisión del equipamiento. Este contrato sería completamente aparte del contrato entre la Parte y el Proveedor de Servicio. Las solicitudes para la participación en este programa serán hechas por escrito al Coordinador.

Artículo VI - Mantenimiento de la Red

1. Las responsabilidades de una Parte y del Proveedor de Servicio para el mantenimiento de la Red deben estar de acuerdo con el Anexo 1, Sección 4, Sección 5 párrafo 5.5 y Sección 6 párrafo 6.5

Artículo VII - Enmiendas y Término

1. El presente Acuerdo puede ser enmendado por acuerdo mutuo escrito de la mayoría de las Partes. Sin embargo, la modificación de ciertas disposiciones que no afecten los derechos y obligaciones de todos los participantes, podrán ser efectuadas por acuerdo mutuo entre las Partes interesadas, previa notificación de sus intenciones a todas las Partes.
2. Este Acuerdo puede ser terminado por mutuo acuerdo entre todas las Partes.

3. Ningún Estado/Organización que forme parte de este Acuerdo será responsable de actos u omisiones realizadas por cualquier otro Estado/Organización que forme parte de dicho Acuerdo y que tenga lugar en el transcurso de cualquier servicio proporcionado por dicho otro Estado/Organización.

****** (Nota 1: los Estados Unidos no están de acuerdo con que este párrafo forme parte del Documento de Acuerdo).

****** (Nota 2: Cuba no será responsable de actos u omisiones realizadas por cualquier otro Estado/Organización, incluyendo aquellos Estados/Organizaciones que han tenido reservas sobre este párrafo del Documento de Acuerdo).

Artículo VIII - Procedimientos para las Disputas

1. Cualquier disputa relacionada con la interpretación o aplicación del presente Acuerdo que no sea solucionada mediante negociación, será, a solicitud de cualquiera de las Partes involucradas en la disputa, remitida a la entidad correspondiente de la OACI para su recomendación de una posible solución a la disputa.

Nota: Este Artículo no implica en modo alguno una derogación del acuerdo para manipular disputas entre una de las Partes y el Proveedor de Servicio, como está contenido en el Contrato de Servicio/Venta.

Artículo IX - Ratificación del Documento

1. El presente Acuerdo y sus Anexos, los cuales forman parte integrante del mismo, entró en vigor en el momento de la recepción de la firma por todas las Partes, el 16 de julio de 1997.

APPENDIX F

**MEMORANDUM OF UNDERSTANDING
BETWEEN CIVIL AVAITION AUTHORITIES OF
THE CARIBBEAN COMMUNITY (CARICOM)**

**CONCERNING THE ESTABLISHMENT AND OPERATION
OF AN ASSOCIATION OF CIVIL AVIATION
AUTHORITIES OF THE CARIBBEAN**

The parties to the Memorandum are the Civil Aviation Authorities which sign this Memorandum.

Whereas the International Civil Aviation Organisation (ICAO) is the international body created by the Chicago Convention of 1944 (the Convention) having as its main objectives, the safe and orderly development of international civil aviation, the implementation and adoption of the principles and provisions of the Convention; of standards, recommended practices and international procedures concerning personnel licensing, flight operations, airworthiness and any other matters connected with the safety and efficiency of air navigation;

And whereas the Contracting States of CARICOM who are Members of the International Civil Aviation Organisation share a common goal-committed to the orderly and safe development of aviation in the Region; and in recognising the need for a harmonised approach, the Civil Aviation Authorities of CARICOM have agreed to collaborate and create an Association of Civil Aviation Authorities of the Caribbean (ACAAC) to promote regional aviation safety oversight.

And whereas the objectives of ACAAC are as follows:-

(1) To provide the Civil Aviation Authorities of Member States with an appropriate structure within which they will discuss and plan measures required for achieving Cupertino in and co-ordinate of aviation safety oversight activities;

(2) To give effect to the objectives of ICAO by promoting agreements among the Civil Aviation Authorities of the Region, that will contribute to the timely Implementation of ICAO regional plans and the adoption of ICAO Standards and Recommended Practices regarding airworthiness, aircraft operation and personnel licensing; and

(3) To maintain close relations with ICAO to ensure that the Region's aviation safety oversight activities are in line with the ICAO objectives, plans and proposal:

IT IS AGREED:

To sign the present Memorandum of Understanding for the creation of the Association of Civil Aviation Authorities of the Caribbean (ACAAC) to promote the establishment of a Regional Aviation Safety Oversight System in the Caribbean, based on the following:

First: The Regional System will conform to the provisions of safety of the Convention on International Civil Aviation and with the standards and recommended practices in Annexes 1, 6 and 8 to the Convention, with the related ICAO guidelines and with the standards, regulations and procedures that are adopted for the Region.

Second: The Regional System will have the following objectives:

2.1 To attain a uniform degree of aviation at the highest internationally agreed standards.

2.2 To become the main forum for harmonizing and updating safety standards and regulations for civil aviation for its participating States.

2.3 To promote the sound, safe and efficient development of civil aviation in the Region.

Third: It shall be the responsibility of the ACAAC:

3.1 To foster an agreement among Member States for their participation in a Regional Aviation Safety Oversight System.

3.2 To inform the participating States about the status of aviation safety in the Region.

3.3 To assist the participating States which do not satisfy the aviation safety levels establishing in the standards and regulations in force, in completing the necessary corrective steps as soon as possible.

3.4 To facilitate the sharing of regional technical expertise and to mobilise resources from multilateral and bilateral sources to complement and supplement the resources available to the Region.

Fourth: General provisions:

4.1 The Agreement may be opened to acceptance by Civil Aviation Authorities of CARICOM and non-CARICOM Member States of the Caribbean with common interest.

4.2 Regulations will be formulated and read as one with this Memorandum of Understanding

4.3 The Memorandum of Understanding shall enter into effect on signature.

4.4 The terms of this Memorandum of Understanding may be modified by mutual agreement of the parties.

4.5 Any of the parties may terminate its Association with the ACAAC through notice given to the other parties at least one year in advance.

Signed by the following representatives on behalf of their Civil Aviation Authorities

……	……..……	…….
The Bahamas	Name	Date
……	……...	……
Barbados	Name	Date
…….	……...	…….
Belize	Name	Date
…….	……	……
Guyana	Name	Date
……	……	……
Haiti	Name	Date
……	…….	…….
Jamaica	Name	Date
……	…….	…….
OECS	Name	Date
…….	…….	……
Suriname	Name	Date
…….	……	……
Trinidad and Tobago	Name	Date

Agenda Item 3: Economic aspects of the transition and implementation of the CNS/ATM Systems in the CAR/SAM Regions – Planning and Evaluation Tools (PET)

3.1 Regarding the economic and financial aspects related to institutional arrangements for the implementation of CNS/ATM systems in the CAR/SAM Regions, particularly those concerning multinational installations/services, the Meeting reviewed a guidance material related to the development of business cases for multinational arrangements. In this respect, it was noted that for the decision making there were several quantitative as well as qualitative parameters and criteria.

3.2 The Meeting agreed that this guidance material of general nature could be used by the Task Force and the RLA/98/003 project to develop the cost-benefit studies, financial analysis and other related to the economic and financial aspects of multinational facilities/services. In this sense, the following decision was formulated:

DECISION 1/3 GUIDANCE MATERIAL FOR THE DEVELOPMENT OF BUSINESS CASES

That the Task Force and the RLA/98/003 project use for the development of business cases of multinational facilities/services the guidance material presented in **Appendix A** to this part of the Report.

3.3 The Meeting, during the revision of the above mentioned guidance material, discussed the possibility of establishing a list of the different risks and their nature that may arise during the implementation of multinational facilities/services in order to assist in the corresponding development of projects. After discussing this matter, the Meeting agreed that, in principle, it was better to have, at least, the profile of each project so that the corresponding risks could be estimated, for which it was not necessary at this time to make a list of the probable risks that may affect the implementation of CNS/ATM systems.

APPENDIX A

GUIDANCE MATERIAL ON ECONOMIC AND FINANCIAL ASPECTS RELATED TO INSTITUTIONAL ARRANGEMENTS FOR THE IMPLEMENTATION OF CNS/ATM SYSTEMS

1. Introduction

1.1 The communications, navigation, surveillance and air traffic management (CNS/ATM) systems offer the multinational dimension in the planning and implementation of air navigation services a strong emphasis. In fact, many components of the new systems have a wider coverage than the airspace of a single State and high implementation costs. Features of this nature make multinational cooperation (arrangements) highly desirable if not mandatory. But the multinational dimension involves multiple stakeholders and partners and implies new complexities and challenges. The various stakeholders would need to be convinced of the benefit of such multinational cooperation (arrangements) on the system as a whole and on them individually. The implied cost savings will need to be weighed against the legal aspects to be discussed for the system implementation. The sharing of the implementation costs and the funding requirements and possibilities will also have to be analyzed. A thorough analysis and evaluation work is therefore required to bring the various stakeholders/partners into consensus.

1.2 The development of business cases for the multinational arrangements will help to convince the decision makers of the States involved, that the benefits of such arrangements exceed their costs. A multitude of quantitative as well as qualitative decision parameters/criteria could be identified and estimated in a business case study.

1.3 This working paper presents a summary of the economic and financial aspects related to the institutional arrangements for the implementation the CNS/ATM Systems in the CAR/SAM Regions. In addition, it analyses from an economic and financial perspectives, the possibilities of establishing and providing multinational facilities and services in the CAR/SAM Regions.

2. Business case

2.1 Definition and content of a business case

2.1.1 A business case is a substantiated argument for a project, a policy or a program proposal requiring a resource allocation and/or investment, often including a financial commitment.

2.1.2 It is a tool supporting planning and decision-making. In addressing a problem or a situation, the decision maker is often faced with a multiplicity of alternative options. The business case helps in the identification and selection of the "best" option, which would constitute “a proposal”.

2.1.3 It sets out the context of the problem or situation being addressed and provides a thorough description of the proposal, including the rationale for its selection among other alternative options and a comprehensive assessment of the associated benefits, costs and risks. The scope of the analysis covers all the stakeholders and partners involved in and/or affected by the proposal. It is desirable to analyze the alternative options, not retained by the proposal and to outline their associated benefits, costs and risks.

2.1.4 In the case of a new project, the business case may provide information and analysis on many aspects such as products and services offered, markets, staff, technologies, facilities, equipment, capital, revenues, expenditures, profitability and financing. Critical success factors are identified and analyzed so that they can be managed successfully by decision makers.

2.1.5 It serves as a justification for the required investment, acts as a borrowing document, provides requisite information for potential investors, and may provide support in budgeting and control.

2.1.6 The business case document generally includes among other sections an identification of the stakeholders/partners, a cost-benefit analysis, a financial analysis, a funding requirements and a risk management section.

2.1.7 During the Second Seminar on Institutional Aspects, the PET tool was demonstrated, which was developed by the RLA/98/003 technical cooperation project and would serve as a tool for the development of business cases for different kind of arrangements leading to the establishment of multinational facilities and services.

2.2 Cost-Benefit Analysis

2.2.1 A cost benefit analysis should be performed and included in the business case document. Cost benefit analysis is usually performed by policy makers when contemplating a new project or policy. A cost benefit analysis gives an indication of the total economic welfare effects of a project by comparing all costs and benefits and provides a logical and consistent framework for assessing a particular project. A credible assessment must cover all costs and benefits, both quantitative and qualitative as well as external, where possible. The cost benefit analysis may also serve as a starting point for the financial analysis. Guidance material for the development of cost benefit analysis for the implementation of CNS/ATM systems is provided in ICAO Circular 257 “Economics of satellite based air navigation services”.

2.3 Financial Analysis

2.3.1 The financial analysis section of a business case shows the expected cash flow implications of the project proposal and includes the assumptions, methods and rationales used for estimating revenues and expenditures. It should include estimates of the costs (facilities and equipment, operation and maintenance, etc.) of each distinct part of the over-all project, the funds required to make disbursements at various stages, the currencies in which payments are to be made and the sources from which funds are to be generated. The financial analysis should illustrate how revenues are affected by the implementation of the project. For example, if the project entails increased capacity, the forecast of the resulting projected traffic growth would provide an idea about how revenues would increase; if the goal is to improve quality of service, an increase in user charges might be contemplated in order to recover costs.

2.3.2 Several techniques are available to perform the financial analysis including the payback period, the accounting rate of return, the internal rate of return and the net present value. The latter is most widely used. Each technique would require the making of several assumptions and the provision of certain parameters. Given the uncertainty associated with the assumptions and parameters used, a sensitivity analysis is required.

2.4 Funding requirements

2.4.1 The cash flow analysis of the project provides an excellent forecast of when funding is needed. Typically, cash disbursements would start with the project but cash receipts will not take place

until the services are provided on a continuous and reliable basis. The main outcomes of the business case analysis are the statement of financing needed and the sources and application of funds. The statement of financing needed states the funds needed and their timing. Depending, on the characteristics of each financial need, the business case associates a financial source. These sources can be shareholder equity, bonds, loans, etc.

2.4.2 In the case of loans, collaterals/guaranties have to be provided and described in full detail. Also to be emphasized is the importance of the availability of data showing the trend in the financial situation of the air navigation services provider concerned over recent years, as well as anticipated developments over the period of debt repayment.

2.5 **Risk management**

2.5.1 Risk can be defined as the likelihood of occurrence of an undesirable event combined to the magnitude of its impact.

2.5.2 Since the implementation of CNS/ATM systems involves new concepts that might lead to significant changes in the way air navigation services are provided, several risks of technical, operational, political, economic, financial or managerial nature may be present. Risks such as a lower traffic growth than forecast (implying lower revenues), an extended transition period leading to higher costs, a failure in integrating existing systems with new systems and reluctance – or more likely resistance - to change from the employees can significantly affect the outcome of the project. For this reason, a good business case must include a risk management section.

2.5.3 The objective of risk management is not to eliminate risks but to identify and evaluate them in a comprehensive manner in order to improve the awareness of decision makers of such risks and help them reduce their effects through the development and implementation of appropriate mitigation plans. Risk management encompasses risk analysis and evaluation and the development of risk mitigation plans. Risk analysis involves the identification of risks, the estimation of their likelihood and the determination of their possible causes and potential impacts. Risk evaluation aims at ranking risks according to their potential impact on the project and the likelihood of their occurrence. Judgment has to be made in order to decide which risks need to be managed. Typically risks with significant potential impact and high probability of occurrence are considered major risks, whereas risks with significant potential impact and low probability or those with less significant potential impact and high probability are considered moderate risks. Both major and moderate risks require some form of treatment. The outcome of risk analysis and evaluation is a risk profile that includes a description of the risk, its possible causes, its probability of occurrence and its potential impact on the project. Mitigation plans are designed based on this profile.

3. **Application of business case analysis to multinational arrangements**

3.1 Multinational arrangements can take several forms. They might consist in a multinational facility or service, an international exploitation organization, a collective financing agreement, a joint collection agency, etc. The appropriateness of each form would depend on the project concerned and the objectives of the States involved. The selection of the appropriate form for a specific project has to be based on a broad and thorough analysis of the advantages and disadvantages of each form. Such analysis should be complemented by a business case analysis.

3.2 The main benefits of multinational arrangements can be identified as follows:

- The sharing of costs and elimination of redundancies, including:
  - the cost savings associated with the possible reduction of personnel at the national level;
  - the avoided costs resulting from the non replacement of old facilities and equipment at the national level;
- The provision of services otherwise impossible to provide by a single State;
- The provision of a better service to the airspace users which might lead them to make additional cost savings through more efficient routings;
- The more effective collection of user charges.

3.3 The main costs of multinational arrangements can be identified as follows:

- Costs of the study of the various multinational arrangements (legal, technical, organizational, financial, etc.) to allow for a substantiated selection;
- Implementation costs (acquisition and installation of facilities and equipment);
- Recruitment and training costs for the new personnel;
- Operations costs of the multinational system;
- Maintenance costs for the new facilities and equipment;
- Possible restructuring costs for the national provider;
- Possible additional coordination work with partner States;
- Decommissioning of old facilities and equipment at the national level.

3.4 The main economic and financial issues for multinational arrangement can be identified as follows:

- The financial viability of the multinational venture;
- The choice of the currency to be used for the budgeting and accounting of the multinational venture;
- The provision of funds to set up the multinational arrangement and the cost sharing scheme;
- The use of loans and other financing alternatives to fund the implementation of the multinational venture.
- Loans might be more difficult to obtain if the borrower is a multinational venture (institution or organization) in its initial phases;
- The cost recovery policy and the sharing of revenues when their generation through user charges is initiated;
- The possible loss of direct revenues to the State;
- The handling of possible future cash deficits of the multinational venture and the guaranties to the continued provision of services.

Agenda Item 4: Definition of systems capable of being implemented by institutional agreements and election of the most suitable arrangement

4.1 The Meeting, considering the matters dealt with in other agenda items, noted that future CNS/ATM scenarios contemplated service areas widely extended and that, as such, would need institutional arrangements different to those developed for the actual air navigation systems, which were generally established and operated individually by the States or through bilateral agreements. In this sense, it was considered that regional planning processes of the new ATM systems supported by CNS/ATM technology would require, in certain cases, the centralized control and that its functioning under this scheme would not only be operational, technical and financially beneficial, but also, in some cases, even necessary.

4.2 Regarding the above and considering the new ATM operational concept approved by the Eleventh Air Navigation Conference, it was agreed that it would be necessary in the CAR and SAM Regions that a number of functions as part of the future ATM systems be regionally or at least sub-regionally provided, through multinational facilities/services to be established in accordance with the guidance material contained in the CAR/SAM Air Navigation Plan.

4.3 The Meeting considered a list of multinational facilities/services and noted that this list was also considered by RLA/98/003 project. In this respect and after analyzing it, the Meeting agreed that the facilities/services indicated below could be considered, in accordance with the guidance material contained in the CAR/SAM Air Navigation Plan (Doc. FASID), as multinational systems. These facilities/services were:

a) Multi-service/multi-protocol voice and data digital networks (REDDIG, MEVA, etc.) used as communication platforms to support cost-efficient implementation of current and future communications requirements.

b) ATM automation for centralized functions such as the implementation of a Regional Air Traffic Flow Management (ATFM) Unit.

c) SBAS augmentation in keeping with the results of the planning of regional augmentation based on the regional needs.

d) AIS/database automation systems to facilitate implementation of the integrated automated AIS system, as recommended in the CAR/SAM Air Navigation Plan.

e) A regional programme for the implementation of Flight Tests for conventional and satellite-based navaids that would facilitate the cost-efficient application of the ICAO SARPs in this area through agreements for regional collaboration and sharing of the resources of the flight testing units.

f) Aeronautical Mobile-Satellite System (AMSS) and/or High Frequency data link (HFDL) that would facilitate the implementation of data-links for ADS/CPDLC in remote areas (oceanic and continental).

g) Airspace Safety Monitoring and Management Agency that would make it possible to ensure fulfillment of the necessary requirements for RVSM and RNP implementation

in the CAR/SAM Regions (Conclusions 10/12, 10/13 and 10/14 of the GREPECAS/10 Meeting).

4.3.1 However, the Meeting did not discard the possibility of identifying, during the studies to be carried out by the Task Force, other type of multinational systems that, without necessarily being identified as part of the Air Navigation Plan, could be subject to a similar treatment with a view to be implemented to support the functioning of multinational facilities/services. In this sense, it was indicated that such systems could be the Joint Charge Collection Agency and the Training Facilities/Services.

4.4 As a continuation to the Seminar, the work carried out by RLA/98/003 project in relation to a methodology for the decision process regarding the most appropriate implementation options for the management and functioning of multinational facilities/services was presented to the Task Force. It was noted that it in this document the definition of multinational organization was not clearly defined and the Task Force worked on this matter and developed a text that gives more clarity to this matter. The text for the definition of multinational organization was as follows:

Definition of Multinational Organization

International Organization of regional/sub-regional scope created by an agreement among interested States to operate a multinational facility/service, with appropriate legal body, management and financial autonomy to contract, acquire, litigate and dispose of goods and services of the Organization.

4.4.1 The Meeting recommended that RLA/98/003 project amends the text of Chapter 16 of the Guidance Material towards an ICAO Global ATM Evolution in the CAR/SAM Regions, considering this definition and uses its scope for the development of the relevant studies.

4.4.2 Regarding the indicated methodology, contained in the mentioned Chapter 16, the Task Force agreed that it enables the development, with beneficial results, of a comparative study of the options and combination of options related with institutional, economic and financial issues for the implementation of multinational facilities/services, but that it requires to be adjusted in some parts of its scope. Chapter 16 is enclosed as **Appendix A** to this part of the Report.

4.5 The Task Force, at the end of the analysis of this matter, agreed that the transition from the present air navigation system to the new ATM system implemented with the support of available CNS/ATM technologies should be gradual and evolutionary and based in clear operational requirements identified in the regional planning process. Additionally, it was noted that definitive multinational arrangements will be reached in a long term, however, there are multinational facilities/services such as REDDIG, MEVA and CARSAMMA, that are already in an advanced implementation stage. In this sense, it was recognized that it would be important to urgently establish a strategy and methodology to analyze this situation, so that, in the future, the possibility of including these multinational facilities/services in a multinational regional/sub-regional system for the provision of air navigation services could be considered.

4.6 Taking into account the afore mentioned, the Meeting formulated the following draft decision for GREPECAS/12 Meeting consideration:

DRAFT
DECISIÓN 1/4 FACILITIES/SERVICES TO BE IMPLEMENTED USING MULTINATIONAL ARRANGEMENTS

GREPECAS approved the systems indicated in the list presented in **Appendix XX** to this part of the Report, as systems capable to be implemented, gradually and in an evolutionary way, as multinational facilities/services in the CAR/SAM Regions; and

1. Requests the Task Force on Institutional Aspects to:

   a) analyze and, if necessary, carry out the modifications and validations of the comparative study of the options and combination of options presented in **Appendix YY**;

   b) carry out a study using the CAR/SAM FASID guidelines for the establishment of multinational facilities/services in order to:

      i) establish and validate regional/sub-regional scenarios for the implementation of the above mentioned systems;
      ii) study the institutional aspects required for their implementation;
      iii) regarding the corresponding cost-benefit studies, develop proposals for the most appropriate organization for their implementation, functioning and management; and
      iv) carry out subsequent studies to develop principles that lead to the establishment of a regional/sub-regional framework under which multinational facilities/services could be managed as part of a regional/sub-regional system for the provision of air navigation services.

   c) establish a strategy and methodology for the implementation of the identified multinational facilities/services.

2. Generate reports of the above mentioned studies for the approval and decision of the States involved.

Chapter 16

Institutional Aspects

16.1 Introduction

16.1.1 The ICAO CNS/ATM systems received the support of the Tenth Air Navigation Conference held in 1991 at the ICAO Headquarters in Montreal, Canada. During the same year, the South American/Caribbean Regional Planning and Implementation Group (GREPECAS) started working on the regional application of this new concept of air navigation services.

16.1.2 In keeping with the guidelines established by the ICAO Council concerning the facilitation of inter-regional harmonization, the regional plans for the implementation of the CNS/ATM Systems in the Regions had to be developed following the general outlines provided through the Global Air Navigation Plan for CNS/ATM Systems. GREPECAS, after carefully analyzing the guidelines, adopted them incorporating characteristics peculiar to the CAR/SAM regions and took as its basis the definitions of Homogeneous Areas and Main Traffic Flows. Homogeneous areas are understood as those portions of airspaces having similar ATM requirements and degrees of complexity. On the other hand, main international traffic flows consist of airspaces where there is significant traffic using the same routing area or proximate traffic trajectories.

16.1.3 This chapter shall analyze institutional aspects for the implementation of the CNS/ATM systems in the CAR/SAM Regions. Initially, the different kinds of managerial structures of the air navigation services are described stressing, as necessary, their specific aspects. Subsequently, a summarized discussion of the "General Guide on the establishment and provision of facilities/services in the CAR/SAM Regions" is presented. Finally, the possibilities for the establishment and provision of multinational facilities/services in the CAR/SAM Regions are explored.

16.2 General Principles

16.2.1 The following are the general principles established in the CAR/SAM Regional Plan for implementation of the CNS/ATM systems:

a) All States in the CAR/SAM Regions should be guaranteed without restriction the possibility of access to the provision of the air navigation services covered in the plans,

b) There is an acknowledged need for the States in the CAR/SAM Regions to complete their national plans, as well as the provisions that govern the use of the new systems.

c) The States must accept the global nature of the new CNS/ATM systems and the determined intention of facilitating the integration mechanism for their timely implementation.

d) The communications, navigation and surveillance services must be carefully planned in keeping with the requirements identified for an appropriate level of air traffic management in the CAR/SAM Regions.

e) The new CNS elements must be introduced progressively, bearing in mind the benefits they will yield for ATM and the savings for both the users and providers of the systems.

16.3 Regional Implementation Strategy

16.3.1 The Regional Implementation Strategy defined by GREPECAS is expressed as ATM improvements and resulting needs for supporting services (communications, navigation and surveillance) on the main international traffic flows identified in homogeneous areas. Nine homogeneous areas and 18 main flows have been taken as the basis for planning in the CAR/SAM Regions. The most significant air traffic flows in the CAR/SAM Regions involve both regions and many of them extend to adjacent regions such as the AFI, EUR, NAM, NAT and PAC Regions.

16.3.2 The organizational aspects related to the implementation of the CNS/ATM Systems are of special importance. Advanced communications, navigation and surveillance technology offers the possibility of expanding the capacities of individual air traffic facilities. As a result, it will be possible, and technically and economically viable, to provide services over large geographical areas and, consequently, reduce the quantity of air traffic facilities and services required.

16.3.3 Taking into account the above, future CNS/ATM scenarios contemplate greatly expanded service areas and as such will require institutional arrangements different from those developed in the course of years for the present decentralized air navigation systems which were generally provided, owned and operated by the individual States. Consequently it is felt that in the regional planning processes, centralized control for some of the CNS/ATM facilities and services would be operationally and financially beneficial.

16.3.4 Concerning the afore mentioned and, also, the GLOBAL ATM OPERATIONAL CONCEPT, which calls for a seamless airspace management with the objective of achieving a single airspace continuum, we can perceive that, at the strategic level, in the CAR/SAM Regions a number of ATM functions will need to be provided by regional or at least sub regional installations and/or services.

16.4 Specific aspects of some ANS structures

16.4.1 Given the diversity of circumstances and aspects which must be considered in the study and in the decision-making process regarding the operational, technical, economic and institutional options for the implementation of the CNS/ATM systems in the CAR/SAM Regions, a summary description of some pertinent aspects of the different organizational structures recommended in ICAO documents (Manual on ANS Economics - Doc. 9161-AT\724) is presented bellow.

16.4.2 It would be worthwhile stressing that, independently of the organizational structure used to provide the air navigation services, whether locally or regionally, as stipulated in Article 28 of the Chicago Convention, the States bear the final responsibility for providing and operating air navigation facilities and services.

16.4.3 Basic characteristics of the organization to provide ANS

16.4.3.1 Aeronautical infrastructure is made up by the following three major facilities and services:

- air navigation services
- airports
- aircraft operations.

16.4.3.2 The basic characteristic of ANS operations, as opposed to airport operations, is that the air navigation facilities and services provided by a State extend throughout the national territory or even beyond, and frequently depend on the facilities and services of some other State. Furthermore, in a significant number of States not all air navigation services are managed by one sole agency (e.g. Aeronautical Meteorological Services, SAR, Mapping Services).

16.4.4 Organizational structures of Air Navigation Services

16.4.4.1 The main objective of all air navigation services providers in the regional and sub-regional sphere is to plan and operate safe and efficient services within the national airspace under the jurisdiction of one State or a group of States. These services must focus, primarily, on meeting user needs.

a) **At the national level -** There are three basic forms of organization to provide air navigation services at the national level:

   i. Government department
   ii. Autonomous agency
   iii. Private sector organization

b) **At the regional or sub-regional level** - Air navigation services at the regional or sub-regional level may be provided through the options described below, or through a combination of them.

i. International exploitation organizations

These are agencies charged with providing air navigation services, mainly en-route services and/or facilities, within a given area and on behalf of two or more sovereign States.

Experience shows that international exploitation organizations have frequently made a significant contribution to a higher efficiency in the supply of air navigation facilities and services, and at a lower cost for both the users and suppliers. In addition, it provided for a more efficient use of human resources, facilities and services and research and development, by avoiding/reducing duplication of efforts.

Furthermore, given the wider geographical covered, the collection mechanisms of these organizations are usually more effective and show a higher cost/benefit ratio. In addition, the fact that these organizations represent several States places them in a strong position in negotiations and in financial and commercial transactions, making it possible for them to get more advantageous conditions.

The organization charts of such operating agencies vary with each case. There are, however, certain common basic characteristics, such as:

- The general criteria regarding the operations and economic affairs of the organization on basic concerns such as capital investments and the appointment of key personnel, representatives of the member States.
- Similarly, the Chief Executive usually reports to the Board of directors, which would have the final say concerning the general management of the organization.
- Solid and well defined financial and economic criteria and methods have to be established with regard to recovering costs and controlling finances, including accounting and budgetary controls.
- The hiring of staff also demands special care.

ii. Joint charge collection agency

An efficient but less encompassing method for the States to benefit from international cooperation in supplying air navigation services involves resorting to a user-charge collection agency.

By these means, a group of States could benefit by setting up some joint agency to collect facility charges derived from en-route air navigation services on behalf of all participating States, including the over-flown States. The agency would subsequently, as per the agreement, transfer to each participating State portions of the revenues. Setting up this type of agency would also benefit the users (or aircraft operators) since the cost of collection should be lower than if each and every State proceeded separately.

The setting up such agencies is relatively less complex from the point of view of equipment, staff and involves rather low implementation and operating costs.

iii. Multinational facilities and services

For many years now, and for purposes of implementing the services/facilities recommended in the ICAO Air Navigation Plan, many States have provided diverse bilateral services to each other with benefits for both parties. Even though bilateral agreements continues to be the common practice in the implementation of the Air Navigation Plan, technological advances, high cost, and the multinational nature of the ICAO CNS/ATM systems make it necessary to consider different organizational arrangements for the financing, implementation and future administration of air navigation and airport systems.

In line with the above, a viable alternative to the implementation of the CNS/ATM Systems could be a multinational agency. An ICAO multinational facility or navigation service could be defined as that facility or service, included in an ICAO ANP, whose purpose is to serve international air navigation in an airspace beyond the airspace managed by a single State, in keeping with the aforementioned plan.

An aspect that must be carefully considered has to do with equitability in pro-rating costs of a multinational facility or service and recovering the costs by levying charges on the users.

The share of the costs to be assigned to international civil aviation and to other uses of the facilities and services must be determined in such a way that no user is affected by costs not corresponding to it.

iv. Collective financing agreements

Collective financing of air navigation services is contemplated in Chapter XV of the Chicago Convention. At present there are two of this kind of agreements between Iceland and Denmark, which ICAO manages on behalf of the 2 contracting governments.

The services required are periodically reviewed and amended if necessary. All capital outlays have to be authorized by the ICAO Council.

The agreements themselves basically stipulate the manner in which the services are to be financed and the costs shared by the participating governments.

The charges levied on the users are based on the forecast costs authorized by the Council and only include those costs necessary for civil aviation purposes.

Another application of the collective negotiation concept is being negotiated between ICAO and the six States providing air navigation services in the North Atlantic. Those States have requested ICAO to accept the responsibility for managing the altitude monitoring system used for RVSM.

v. Delegation

This type of agreement is usually between two States, where one State, under special condition, accepts to provide facilities and services to another State. In some cases, because of the limited traffic or size of the airspace, it might be more efficient and economic to simply delegate, under well-defined conditions, the provision of air navigation services to an adjacent State.

vi. State-owned

This has been the traditional way of providing facilities and services. Some parts of the facilities/services may be leased from public services (i.e. communications) or vendors (computer systems) but the end-product (air navigation services) is provided by the State.

16.5 General Guidelines on the establishment and provision of multinational facilities and services in the CAR/SAM Regions

16.5.1 In keeping with Recommendation ANSEP/2-3 approved by the ICAO Council during the 6th meeting of its 146th session, the RAN CAR/SAM/3 (1999) Meeting prepared the guidelines

(Recommendation13/2), which were subsequently amended at the 10th meeting of GREPECAS as per Conclusion 10/5.

16.5.2 These guidelines contain the relevant ICAO provisions as well as the established criteria that govern the regional planning of the Organization and the implementation of the facilities/services required for air navigation in the CAR/SAM Region. The guidelines similarly acknowledged the principles approved by the Council for recovery of costs corresponding to facilities and services provided in keeping with the CAR/SAM Regional Plan, as well as with the principles and criteria stipulated in the Declarations by the Council of contracting States regarding charges for the use of airports and air navigation services (Doc 9082, para. 34 ii).

16.5.3 In keeping with Article 28 of the Convention and with ICAO criteria regarding formulation of regional plans and their implementation, all multinational facilities/services will appear in the regional plan as determined by the Council. Similarly, the principles approved by the Council to determine the basic costs that justify the charges for the use of en-route facilities and services must be applied. That is, the costs to be taken into account shall be those determined for the facilities and services provided and implemented in keeping with the CAR/SAM Regional Plan.

16.5.4 Steps to be followed in the process of setting up a multinational air navigation facility/service.

16.5.4.1 The following guidelines give a step by step description of the process to set up a multinational air navigation facility/service in the CAR/SAM Regions. The different stages are commented in the paragraphs below.

a) The proposal to set up a multinational air navigation facility/service can originate from:

   i. the CAR/SAM (GREPECAS) regional planning and implementation group; or
   ii. a State or group of States.

b) The facility/service proposals must be supported by documentation regarding the following aspects:

   i. purpose of the proposal and operational and technical justifications;
   ii. financial implications and cost/benefits ratio;
   iii. management implications; and
   iv. alternative solutions.

c) The proposal shall be evaluated by GREPECAS, particularly as regards to its justification, acceptability and cost/benefits ratio.

d) If some preliminary agreement has been reached within GREPECAS the latter, through the mediation of the ICAO Caribbean and South American Offices, shall take the following steps:

   i. consult those directly interested States as to the possibility of providing them with multinational facility/services, as well as to the States that would use them; and

ii. re-evaluate the proposal based on the comments made by such States and decide whether to continue or not.

e) Having consulted all the interested parties, GREPECAS prepares a comprehensive draft amendment to the CAR/SAM Regional Plan, which shall be processed in keeping with the procedure approved by the Council.

16.5.5 Financial, managerial and other contractual aspects

16.5.5.1 State participation in providing a multinational facility or service is based on the assumption that any State that has given its support and has agreed to the implementation of that facility/service and makes use of them, should bear its corresponding share of the costs involved. It would be necessary for the participating States to formalize, through an agreement, the terms under which such multinational facility/service shall be provided. One of the essential objectives of the agreement should be that of making sure that the corresponding costs are shared, in a fair and equitable manner, among the participating States.

16.5.6 Types of agreements

16.5.6.1 An agreement involving the creation, implementation, management and maintenance of a multinational facility/service may take the form of a formal international treaty or that of an "administrative agreement". Both forms establish an international obligation, but the treaty requires the signature of the Head of State or of Government and also demands ratification or approval by the national Legislative Assembly, which constitutes a rather lengthy regulatory process. An "administrative agreement", on the other hand, ranks at a lower level with regards to formalities and procedures, since a minister or director of civil aviation can sign it or some other authorized person, and could be finalized through an exchange of letters or notes.

16.5.6.2 The recommendation is, that whenever possible, the "administrative agreement" and not the formal international treaty be chosen, since the former can come into effect within a minimum term and is more flexible with regards to incorporating any subsequent amendment. It is recognized, however, that in some States constitutional or juridical stipulations may mandate approval by the Legislative Assembly for the State to commit itself to any financial obligation, particularly if large sum of moneys are involved or the agreement extends beyond a given period of time. Whatever the form used, the agreements should be drafted in such a way that any subsequent amendment demanded by circumstances be easily incorporated. To this end, the more detailed texts which may be more susceptible to amendments and which do not affect the agreement's basic provisions should be included as annexes or appendices.

16.5.6.3 It is, furthermore, recommended that whenever possible a sole general agreement (treaty or "administrative agreement") be adopted which covers all aspects of the facility/service in question through all its phases. It may happen, however, that all of this may not always be possible. In some circumstances it may be necessary or preferable to have more than one agreement (treaty or "administrative agreement") of different scopes and content. The objective must then be that of covering as many aspects as possible in the "administrative agreement" and to limit the use of the treaty to those aspects for which this kind of agreement is essential for the States involved. Having admitted this, an agreement may, for example, cover formalities, including the pre-financing, which must be implemented by the States accepting the responsibility of taking the facility/service up to the operational phase, while

another agreement will be concluded among all the States (including the aforementioned first group of States) which are going to use, or benefit from, the facility once it comes into operation. In such a case, the first agreement shall be important since the first Group of States will have to guarantee the financing (with their own resources) of the implementation of the facility/service, since there will be no income from user charges (aircraft operators) until the facility/service comes into operation.

16.6 Institutional aspects anticipated in the CAR/SAM regions

16.6.1 The decentralized nature of the present CNS system, whose facilities and services are generally provided, owned and operated by individual States, contrasts significantly with the need to have centralized control for some CNS/ATM facilities and services due to the extremely large service zones and a series of other characteristics of the new CNS/ATM system.

16.6.2 The treatment of the Institutional Aspects of CNS/ATM system implementation and operation acquires special importance due to the fact that the global nature of the new systems requires institutional arrangements different from those, which have been developed in the course of the years for the present air navigation systems.

16.6.3 In this sense, there have been many attempts to establish guidelines and principles which would make such arrangements possible without affecting the sovereignty of the States, while concurrently complying with the provisions of the Chicago Convention and its Annexes as regards the provision of air navigation services.

16.6.4 Considering all the above, the Council has adopted an ICAO policy statement regarding the implementation and operation of CNS/ATM systems, which must be complied for purposes of guaranteeing the safe, orderly and efficient growth of international civil aviation, in terms of cost.

16.6.5 Similarly, the FANS Committee drafted a series of institutional guidance principles to be used by the States, suppliers of services and users, to help them set up institutional arrangements suitable for these systems. Considering that these arrangements may take many forms, it would be convenient that their economic, institutional and political implications be evaluated through the use of scenarios, so that the States can be pro-active in designing implementation, administration and operation programs, instead of reacting, generally too late, to a situation which is already beyond control.

16.6.6 Some of the topics discussed over and over again are those of sovereignty, national security, harmonization, duplication of equipment and services, coordination and planning, availability and application of standards, technical assistance, requirements as to the financing of costs, and training.

16.6.7 The way of solving these institutional problems should be, in their final phase, that ICAO, through its Regional Offices, promote meetings of DGCAs of the CNS/ATM Regions, assemble members from the ministerial, political and technical areas in a forum for open discussion of these topics and, if necessary, refer those matters requiring further study to GREPECAS. It is indispensable for the organizations involved to have political support, if not, there will not be any political willingness or commitment for the implementation of the CNS/ATM systems. The following paragraphs briefly describe the major topics associated with the development of institutional arrangements.

16.7 Sovereignty and political willingness

16.7.1 In the process of planning for the implementation of the CNS/ATM systems, the discussions have frequently bogged down on problems of sovereignty. These problems, whether explicit or not, mostly had to do with a potential operational dependence, a threat to profits and to employment, and control over the airspace and the systems. Consequently, it is important to tackle these concerns at a very early stage and to develop possible formulas or mechanisms for their solution. The concerns regarding sovereignty differ significantly from one region to the next and from one State to the next, making it necessary to use a regional approach to overcome them. Only if scenarios are available will it be possible to mitigate, or even solve, these problems, specially those related to the sharing of systems or facilities and services. Furthermore, it would be worth recalling that the ICAO General Policy Statement regarding the implementation and operation of CNS/ATM systems, as well as the Chicago Convention, in its Article No. 1, clearly establishes the rights of the States.

16.7.1.1 However, taking into account the political implications of many of the institutional aspects and future implementation options, it would be extremely important for the States to express their political willingness to go ahead with the migration process toward the new systems.

16.7.2 National security

16.7.2.1 Some States are afraid that, once the provision of services, that is, satellite navigation and communications systems, is taken over by third parties, whether private or public, their level of authority and control over their airspace will be reduced. National security aspects have to be carefully considered and discussed, clearly and transparently. There can be no doubt that this is a critical requirement on which the States have to be sure that the implementation and operation of the systems will include safeguards to make sure that their peaceful operation does not affect the individual national security of the States and that, in certain contingencies, direct control of the system's operation in one or more States, can revert to the States involved.

16.7.3 Coordination and planning

16.7.3.1 To get all the benefits which the CNS/ATM technologies offer, it is important that the States, through GREPECAS, set up links with their neighbors and coordinate their implementation plans so as to integrate the systems to the extent possible or, at least, rationalize them. This approach does, somehow, reduce autonomy, but also offers substantial technical, operational and economic benefits by reducing duplication and simplifying coordination.

16.7.4 Harmonization

16.7.4.1 To be able to enjoy all the benefits, which the CNS/ATM technologies offer, it is indispensable that the States of the Regions harmonize the capacities of their systems, their implementation programs and the application of the ICAO SARPs so as to create a transparent operational environment for the users. This means that for the sake of efficiency and continuity of a given traffic flow, or that of a region or a sub-region, some States might have to replace their systems, even if their service life has not expired, or who could have to implement systems which would have been different or less complex if they only had had to meet their national requirements.

16.7.4.2 One of the best examples of the efficiencies obtained through special arrangements are the airlines, which have been able to reduce their costs of operation through arrangements for the shared

use of facilities and services, while concurrently guaranteeing protection of their interests, their survival and even their continuous growth.

16.7.4.3 The same can be achieved with ATS providers, either by sharing certain functions, systems or, even, delegating airspaces. Furthermore, in some cases the implementation of certain CNS facilities and services would be technically and physically impossible without a multinational arrangement. Such is the case of SBAS where, in addition to the astronomical cost of installing master stations in every State, the available frequency spectrum would not be sufficient to meet world demand. Hence, for the suppliers of ATS services to be able to enjoy all of the economic, technical and operational benefits, it would be logical to duly take into account the study of the institutional arrangements to permit more efficient implementation, administration and operation, in terms of costs, of the CNS/ATM systems.

16.7.4.4 The planning process would in the first place describe the way in which the CNS/ATM systems, or parts of them, would integrate with the facilities and services provided by the States, civil aviation administrations, international organizations, service providers and aircraft operators. Secondly, scenarios would be developed to determine conditions under which these systems would be managed and operated. Some good examples of these arrangements are: ASECNA, COCESNA, EUROCONTROL and, with a slight different bent, the joint financing agreements of Iceland and Denmark. All of these arrangements, at different levels, make for the provision of air navigation facilities and services.

16.7.4.5 It should also be considered that the present ANS could include components, which could be administered with greater operational and economical efficiencies through multinational mechanisms or joint financing/operation arrangements.

16.8 Comments on operational and technical organization aspects

16.8.1 Implementation of the CNS/ATM systems will demand considerable investment in the ATM area as well as in the communications and navigation infrastructures. The size of the investments involved, the capabilities of the systems, the operational advantages and the economies of scale that CNS/ATM system facilities and services can generate are such that it would not be wise or practical for one State to implement such systems solely for its own exclusive use.

16.8.2 To fulfill the complete ANS requirements (ATS, MET, AIS, etc.) of the CNS/ATM systems using satellite-based communications systems, a major network of ground installations will be required.

16.8.3 As for the organizational aspects, implementation of the CNS/ATM systems is of special importance for ATM since the advanced communications, navigation and surveillance technology offers the possibility of expanding the capacity of air traffic services. The result will be that it shall be possible to supply ATS in broad areas and as such, reduce the number of air traffic facilities and services.

16.8.4 Based on the above, we can conclude that while some CNS/ATM facilities and services may be individually operated by the States with their own facilities, a very significant portion, particularly with regard to the provision of ATM, databanks (MET, AIS, etc), and access to satellite services should be carried out mainly through regional agencies and service providers which provide direct access to satellites, or act as coordinators for satellite operators.

16.9 Multinational Arrangements

16.9.1 From the organizational point of view it is possible to choose among several options for implementation or to adopt a combination of implementations.

16.9.2 The following paragraphs present a listing of CNS/ATM systems and facilities and services that can be considered candidates for management and operation through a multinational mechanism.

a) Multi-service/multi-protocol voice and data digital networks (REDDIG) used as communication platforms to support cost-efficient implementation of current and future communications requirements.

b) ATM automation for centralized functions such as the implementation of a Regional Air Traffic Flow Management (ATFM) Unit.

c) SBAS augmentation in keeping with the results of the planning of regional augmentation based on the regional needs.

d) AIS/database automation systems to facilitate implementation of the integrated automated AIS system, as recommended in the CAR/SAM Air Navigation Plan.

e) A regional programme for the implementation of Flight Tests for conventional and satellite-based navaids that would facilitate the cost-efficient application of the ICAO SARPs in this area through agreements for regional collaboration and sharing of the resources of the flight testing units.

f) Aeronautical Mobile-Satellite System (AMSS) and or High Frequency data link (HFDL) that would facilitate the implementation of data-links for ADS/CPDLC in remote areas (oceanic and continental).

g) Airspace Safety Monitoring and Management Agency that would make it possible to ensure fulfillment of the necessary requirements for RVSM and RNP implementation in the CAR/SAM Regions (Conclusions 10/12, 10/13 and 10/14 of the GREPECAS/10 Meeting).

16.9.3 With a view to providing guidance for the decision-making process regarding the most suitable options for implementation and operation of the CNS/ATM Systems in the CAR/SAM Regions, a listing of the facilities whose functions and/or duties must be analyzed on the basis of their operational feasibility and viability through regional or sub-regional mechanisms.

a) COMMUNICATIONS FACILITIES

- CTRL/MGT OF MULTI-SERVICE/MULTI-PROTOCOL
  VÓICE+DATA NETWORK;
  REDDIG,
  MEVA II
  COCESNA
  E-CAR
  MEX

- CTRL./MGT AMSS
- MASTER STATION SBAS

b) ATM FACILITIES

- REGIONAL ATM CENTRE
- REGIONAL ATFM CENTRE
- CAR/SAM SAFETY ASSESMENT AND MONITORING AGENCY

c) AIS FACILITIES

- CAR/SAM REGIONAL DATA BASE [CASADAB].
- INTEGRATED AIS/MET/FPL DATABASE [PIS/DB]
- REGIONAL WGS-84 DATA BASE [WGS-84/DB]
- GEOGRAPHICAL INFORMATION SYSTEM DATA BASE [GIS/DB]
- DIGITAL TERRAIN MODELING SYSTEM DATA BASE [DTMS/DB].

d) MET FACILITIES

- OPMET REGIONAL DATA BANK
- WAFS REGIONAL MAINTENANCE SUPPORT CENTER

e) FLT CALIBRATION PROCEDURES FACILITIES

- REGIONAL MGT/CTRL. FLT CALIBRATION
- REGIONAL MGT/CTRL. GNSS NPA/PA IFR PROCEDURE

f) TRAINING FACILITIES

- REGIONAL MGT/CTRL. TRAINING CENTRES

g) SAR

- REGIONAL SARSAT MGT/CTRL.

h) JOINT CHARGES COLLECTION AGENCY

- REGIONAL JOINT CHARGES COLLECTION AGENCY.

16.9.4 From the listing established above on 16.9.2 and 16.9.3, the following comments can be made:

(1) Multi-service/multi-protocol voice and data digital networks (REDDIG) used as communication platforms to support cost-efficient implementation of current and future communications requirements. Besides the REDDIG, the following services are, already, operational or in the way to being so: MEVA II; COCESNA; E-CAR and MEXICO Systems.

With exception of the MEXICO System, which is a national operated system, the others are regional or sub-regional service providers directed to be used as communications platforms to support service/multi-protocol voice and digital networks which should support current and future communications requirements.
The differences between these communications platforms are the institutional arrangements through which they are operating.

MEVA II and E-CAR are regional private owned and operated networks, providing services, mainly, to the CARIBEAN STATES.

COCESNA (OKI) network is the communications platform of the multinational organization COCESNA, representing or providing the ANS for the 6 Central America States.

REDDIG is the SAM multi service/multi-protocol voice and data digital network and is considered de base of the future ATN platform for the Region. Presently managed on an interim basis by an ICAO RLA TC project, is planned to migrate its operational, technical and administrative management to a SAM multinational institutional arrangement on a medium term future.

(2) Although it can be foreseen that, the final goal at the regional level is to provide ATM Services through one regional or a very limited number of sub-regional ATM CENTRES, it is considered that the first ATM function which will need a supra-national institutional arrangement for its management is the ATFM for the following reasons:

- It is foreseen, by studies made on the traffic forecasts for the CAR/SAM Regions that, in the forthcoming years these Regions will present a significant increase of air traffic that will present an operational need to increase the ATFM strategic measures to be applied to these main air traffic flows. Moreover, due the geographical dimensions of the Regions and, also, the extension of the air traffic flows involving both Regions and many of them extending to adjacent regions such as the AFI, EUR, NAM, NAT and PAC Regions, we can conclude that these ATFM strategic actions can only be established through a centralized regional ATFM unit.

- It should be noted that the establishment of a Regional ATFM CENTER doesn't preclude the need and use of ATFM National and local units exercising tactical and local flow control actions that will be part of the Regional ATFM System.

(3) SBAS augmentation in keeping with the results of the planning of regional augmentation based on the regional needs.

The studies on the augmentation system to be adopted by the CAR/SAM Regions are still ongoing. Nevertheless it is considered fairly sure that the system is going to be composed, inter alia, by Reference Stations (one or more for each State) a very limited number of Master Stations per Region and a very limited number of Up-link Satellite Stations per Region. A regional centralized management of the system is going to be needed. On the other hand the system will use the ATN (REDDIG, COCESNA, MEVAII etc.) as its communications platform for the ground-ground information interchange.

(4) Aeronautical Mobile-Satellite System (AMSS) and or High Frequency data link (HFDL) that would facilitate the implementation of data-links for ADS/CPDLC in remote areas (oceanic and continental).

Most routine air-ground communications in the en-route phase of flight will be via digital data interchange. The transmission of the air-ground messages in this phase of flight will be carried out,

basically, on the AMSS radio link, using geostationary communications satellites. In the CAR/SAM Regions a reduced number of Ground Earth Stations, GES, (not more than 2 per Region), will link the voice/data messages to the satellites. The ATN, REDDIG in the case of the SAM Region, will provide the ground -air-ground communications platform for the AMSS.

As these services are going to be extensively used by the Regional ATFM Centres and, on a long term, by regional ATM Centres, under a multinational arrangement, it is expected that the GES and the AMSS be managed, as a whole, by regional multinational institutional arrangements.

(5) AIS/database automation systems to facilitate implementation of the integrated automated AIS system, as recommended in the CAR/SAM Air Navigation Plan.

- CAR/SAM REGIONAL DATA BASE (CASADAB)
- INTEGRATED AIS/MET/FPL DATABASE (PIS/DB)
- REGIONAL WGS-84 DATA BASE (WGS-84/DB)
- GEOGRAPHICAL INFORMATION SYSTEM DATA BASE (GIS/DB)
- DIGITAL TERRAIN MODELING SYSTEM DATA BASE (DTMS/DB).

In the CAR/SAM Region, it is highly needed to ensure in any moment the availability of aeronautical information with the required level of quality and integrity and updated in real time. The provision to users with all required aeronautical information/ data during the course of its operations is also required as an important planning requirement for the effective implementation of the GNSS and ATM operational systems. The implementation of the Regional Integrated Automated AIS System in the CAR/SAM (CASADAB), having as its nucleus the CAR/SAM REGIONAL DATA BASE and with all its complementary automated elements (NASCs, PIS/DB, WGS-84/DB, GIS/DB and DTMS/DB), is considered as the basic tool, through which the above referred objectives could be extensively reached, in order to effectively satisfy the operational requirements of international users.

(6) A regional programme for the implementation of Flight Tests for conventional and satellite-based navaids that would facilitate the cost-efficient application of the ICAO SARPs in this area through agreements for regional collaboration and sharing of the resources of the flight testing units.

In general the CAR/SAM Regions have a number of very well managed, equipped and fully operational national Flight Tests installations/services covering all the needs of its States. On the other hand there are many States in both Regions, which are facing difficulties, due a variety of reasons, to provide this very important safety related service.
It is perceived that some of the units referred above could even have an oversized capacity that could be used by other States of the CAR/SAM Regions, which do not have these services or have difficulties in providing the services with the current means available in their States.

A centralized planning of the means available in the afore mentioned States, made through or by the multinational institutional arrangement upon an regional agreement between the CARSAM State could enhance the actual status of the Flight Tests services in both Regions.

(7) MET FACILITIES

- OPMET REGIONAL DATA BANK
- REGIONAL WAFS MAINTENANCE SUPPORT CENTER

In the meteorological field, the Washington and the Brasilia OPMET data banks already provide the OPMET information, to the CAR/SAM Regions respectively.
Concerning the WAFS system, it is considered convenient the existence of a Regional Maintenance

Support Centre to coordinate and control the maintenance of the WAFS National nodes.

(8) TRAINING FACILITIES
- REGIONAL MGT/CTRL. TRAINING CENTRES

Both Regions have a well-structured network of national training centers as well as some regional training centers. The activity of these units are regionally coordinated and harmonized by the ICAO Regional Offices of Lima and Mexico. It is our perception that a centralized institutional unit in charge of establishing the CNS/ATM regional needs in terms of training and human resources and, in coordination with the States and ICAO Regional Offices, manage the regional training program.

(9) JOINT CHARGES COLLECTION AGENCY
- REGIONAL JOINT CHARGES COLLECTION AGENCY

An efficient but less encompassing method for the States to benefit from international cooperation in supplying air navigation services involves resorting to a user-charge collection agency.

By these means, the States and the Regions as a whole could benefit by setting up in the multinational institutional arrangement a joint agency to collect facility charges derived from en-route air navigation services on behalf of all participating States, including the over-flown States. The agency would subsequently, as per the agreement, transfer to each participating State portions of the revenues. Setting up this type of agency would also benefit the users (or aircraft operators) since the cost of collection should be lower than if each and every State proceeded separately.

The setting up such agencies is relatively less complex from the point of view of equipment, staff and involves rather low implementation and operating costs.
Finally it is considered that the establishment of a Regional Multinational ANS structure will call naturally to a Regional Joint Charges Collection Agency.

(10) SAR
- REGIONAL SARSAT MGT/CTRL

The incorporation of some kind of SAR activities management in the future CAR/SAM Regional institutional arrangement although desirable should be considered as a long term objective and will need to be the object of a specific study. The CARSAM SAR activities are basically performed by the national CAAs supported with a strong participation of the Armed Forces, mainly the Air Force, and using the information provided by the SARSAT System which is not an ICAO regulated or coordinated Organization.
At present the CAR/SAM SAR activities and installations and services structure are being revised by the States, coordinated by the ICAO Lima and Mexico Regional Offices.

(11) REGIONAL FLIGHT SAFETY COOPERATION SYSTEM
- REGIONAL FLIGHT SAFTY OVERSIGHT AGENCY

The System is, already, operational and called the CARSAMMA- the CAR/SAM SAFETY AND MONITORING AGENCY, managed by Brazil on a DELEGATION TO A STATE regional arrangement type and is, at the present, providing services to 9 Latin American States and open for participation of all States of the CAR/SAM Regions. It was created with the support of ICAO and the LACAC and is managed, by the time being, by an ICAO TC RLA. In case that the SAM Region establishes an institutional arrangement option for the management of the future regional ANS, it will advisable to

accommodate the CARSAMMA in that same arrangement. . Therefore the inclusion of the System with the establishment of a Regional Agency under the Regional Multinational Institutional arrangement has its merits and should be considered for further more in depth studies.

16.10 Comparative study of multi-regional mechanism options for the CAR/SAM Regions

The study is carried out in 3 phases:

16.10.1 Phase I

16.10.1.1 In this Phase, and through a comparative analysis methodology, we try to establish which would be the most advisable multinational organizational arrangements to be used for the administration/operation of the ANS facilities and services, individually, as a whole, or as a group of facilities/services.

a) Initially we compared the list of facilities/services included in paragraph 16.9.3 above, with the types of multinational organizational arrangements detailed in chapters 16.4 and 16.9.2.

b) By matching the CNS/ATM facilities and services with the regional arrangement options and establishing a grading for the option, the latter has been analyzed on the basis of certain criteria, such as:

INSTITUTIONAL ASPECTS CRITERIA

Legal Criteria	Operational Criteria	Technical Criteria	Economic Criteria	Administrative Criteria
National sovereignty	Safety	Management Maintenance	Profitability	Overhead
National security	Operational efficiency	System sharing	Cost Recovery	Labour cost Training
Accessibility	Gradual Implementation		Resource sharing	Staffing
	Coordination			

c) Critical criteria: **National sovereignty**
National security
System accessibility
Safety

Note: if seen that the in the matching any or all the critical criteria is (are) not applicable, the proposed option is automatically considered as not valid.

d) For purposes of a comparative analysis, the following numerical values were assigned to the criteria:

highly applicable	**3**
applies	**2**
applies with reservations	**1**
does not apply	**0**

e) Upon matching the list of CNS/ATM System facilities and services whose functions and/or powers could have a more cost/efficient use if operated by means of a regional or sub-regional mechanism with the diverse regional Air Navigation Service management and operations options, the following values were established as regards the options:

NA - non applicable option:
AWR - option applicable with reservations:
A - applicable option
HA - highly applicable option

f) In **Appendix A** to this document can be found the comparative analysis, which, initially, establishes each facility/service's score as regards its operation/administration, for each operational arrangement option. Subsequently, using the numerical grades and values of paragraph e) above, establishes the facility score with respect to the option under consideration. As an additional tool for subsequent more specific analyses, we can find in this Annex the tables that analyze the facilities and services with respect to the criteria under the different multinational organizational contexts. This analysis is, obviously, subjective and involves an individual interpretation. It is for this reason that it should be carefully evaluated and can, certainly, be refined or corrected.

In every multinational organizational option we can notice some common aspects that could be considered as a characteristic of that option with regard to facilities.

Thus, with the NATIONAL (status quo) operation/administration option, it can be seen that with reference to the critical criteria, particularly those pertaining to national sovereignty and security, these are facilities and services with a high degree of applicability. This option, however, has its weak points, *inter alia:* the requirements for operational efficiency, coordination, profitability and administrative cost. Another interesting aspect of this option is that in the traditional ANS a certain improvement can be noticed in the indexes having to do with the administration of facilities which are currently operational. E.g.: flight calibration, training, SAR, JCCR.

Even though the operation/administration through the NATIONAL DELEGATION option presents certain weakness, it also presents a more positive aspect in the operation, coordination, training and human resources areas. There are some

exceptions, such as the Agency to Manage SARSAT, where, coordination requirements are considered to offer some degree of difficulty; while in the Center of Maintenance Support of WAFS it is felt that there could be problems with the operational efficiency and cost recovery requirements.
The PRIVATE organization option seems to be more solid in the economics and operational efficiency areas. It does, however, face problems in the labor costs area (strikes, etc.) and is also rather affected by the aforementioned critical criteria.

The INTERNATIONAL ORGANISATION, MULTINATIONAL ORGANISATION and JFARR organizational options, have significantly similar characteristics and, in general, their indexes seem to be quite good. Hence, the degree of differences among them and their weak points or, better said, their not so strong points are the following:

INTERNATIONAL ORGANISATIONS – could have some weaknesses in aspects related to the critical criteria of national sovereignty and security and in labor costs.

MULTINATIONAL ORGANISATIONS - evidence a certain weakness in aspects related to overhead and, to a lesser degree, to profitability.

JFARR – the management of facilities by ICAO (e.g.: Iceland Agreement) is fully successful in specific scenarios but has truly never been tested nor considered within a context as broad as the one being discussed in this paper. The option, however, is quite valid, particularly for a situation of transition from a NATIONAL management to a multinational organizational arrangement.

g) The following chart (Table 1), presents the consolidated results of the tables and the detailed analyses in Appendix A.

TABLE 1

TYPE OF ORGANISATION						
FACILITIES	**NAT**	**NAT DELEG**	**PRIV**	**INTL**	**NAC MULTI**	**JFARR**
COM						
REDDIG	27-AWR	40-A	38-A	41-HA	44-HA	44-HA
AMSS	26-AWR	42-HA	38-A	41-HA	44-HA	44-HA
SBAS Mst	26-AWR	42-HA	36-A	41-HA	44-HA	44-HA
TOTAL COM	**79**	**124**	**112**	**123**	**132**	**132**
ATM						
Reg. ATM CENTRE	25-AWR	39-A	29-AWR	43-HA	44-HA	40-A
Reg. ATFM CENTRE	28-AWR	41-HA	30-AWR	45-HA	44-HA	42-HA
Airspace S/M CENTRE	24-AWR	43-HA	38-A	46-HA	47-HA	47-HA
TOTAL ATM	**77**	**123**	**97**	**134**	**135**	**129**
AIS						
AIS DATA BANK	27-AWR	36-A	41-HA	46-HA	46-HA	41-HA
TOTAL AIS	**27**	**36**	**41**	**46**	**46**	**41**
MET						
WAFS MTC. Supp. CENTRE	28-AWR	36-A	42-HA	46-HA	46-HA	42-HA
TOTAL MET	**28**	**36**	**42**	**46**	**46**	**42**
FLT CAL/IAP						
Reg MGT FLT. CAL	31-A	40-A	34-A	40-A	40-A	41-HA
MTC GNSS NPA/PA	35-A	38-A	40-A	45-HA	45-HA	45-HA
TOTAL FLT CAL/IAP	**66**	**78**	**74**	**85**	**85**	**86**
TRG						
Reg MGT AG	36-A	40-A	41-HA	41-HA	47-HA	41-HA
TOTAL TRG	**36**	**40**	**41**	**41**	**47**	**41**
SAR						
Reg SARSAT MGT AG	38-A	36-A	34-AWR	43-HA	41-HA	42-HA
TOTAL SAR	**38**	**36**	**34**	**43**	**41**	**42**
JCCA						
Reg JCCA	33-A	40-A	40-A	45-HA	46-HA	45-HA
TOTAL JCCA	**33**	**40**	**40**	**45**	**46**	**45**
GRAN TOTAL	**384**	**513**	**481**	**563**	**578**	**558**

Orange = AWR Yellow = A Green = HA

(1) In analyzing Table 1, let us take the values detailed in paragraph 16.9.1 e) and let us establish the range of points with their respective grades as regards each **grand total** of the score indicated in the table.

> = 260 pts.	**Non applicable**	**NA**
< = 261 > = 390 pts.	**Applicable with reservations**	**AWR**
< = 391 > = 520 pts.	**Applicable**	**A**
< = 521 > = 624pts.	**Highly Applicable**	**HA**

Matching the **grand total** figures with these parameters we could consider a ranking for the management/operation options of multinational organizational arrangements for a scenario of implementation of all, or of a set ANS facilities, whether CNC/ATM or not.

OPTION 1	**MULTINATIONAL ORGANISATIONS**	**HA**
OPTION 2	**INTERNATIONAL ORGANISATIONS**	**HA**
OPTION 3	**JFARR**	**HA**
OPTION 4	**STATE DEL.**	**A**
OPTION 5	**PRIVATE**	**A**
OPTION 6	**NATIONAL (STATUS QUO)**	**AWR**

We could also analyze sets of facilities, as well as a mix of facilities of areas of ANS complementary activities.

(2) The options for organizational arrangements more convenient for the management and operation of the aforementioned facilities on the basis of the score and grading achieved by each facility (Table 1) are given below. To this end, P1 was considered as the best option and would include the highest scoring facilities. Following, in a decreasing grade of priority sequence, we would have options P2, P3, P4, P5, P6.

h) **Table 2** provides us with a view of the implementation of each facility should the intention be to manage each of them separately, through a multinational organizational arrangement.

TABLE 2

PRIORITY OF OPTION FOR FACILITY IMPLEMENTATION						
	Types of Organizations					
FACILITIES	**NAT**	**NAT DEL**	**PRIVATE**	**INTL ORG**	**MULT ORG**	**JFARR**
COM						
REDDIG	P5	P3	P4	P2	P1	P1
AMSS	P5	P2	P4	P3	P1	P1
SBAS	P5	P2	P4	P3	P1	P1
ATM						
REG. ATM CENTRE	P6	P4	P5	P2	P3	P3
REG. ATFM CENTRE	P6	P4	P5	P1	P2	P3
REG. AIRSP.SFTY. AG.	P5	P3	P4	P2	P1	P1
AIS						
REG. AIS DATA BANK	P4	P3	P2	P1	P1	P2
MET						
WAFS REG. MTC.SUPP.AG.	P4	P3	P2	P1	P1	P2
FLT.CAL/GNSS IAP/PA						
REG. FLT.CAL. AG.	P4	P2	P3	P2	P2	P1
REG. GNSS IAP/PA AG	P4	P3	P2	P1	P1	P1
TRG						
REG TRG. MGT. AG	P4	P5	P2	P2	P1	P2
SAR						
REG.SARSAT MGT.AG.	P4	P5	P6	P1	P3	P2
JCCA						
REG.JCCA AG.	P4	P3	P3	P2	P1	P2

Conclusions or observations:

(1) It can be seen that, in general, the most advisable options follow a decreasing order of preference as regards these types of organizations: Multinational Organizations, International Organizations and JFARR.

(2) Approaching it from the opposite end, we can see that the National (status quo) option has a low degree of viability in the full implementation and operation of CNS/ATM systems.

(3) Furthermore, the NAT DEL option may be considered as one with a satisfactory degree of viability, with the exception of the REG. TRG. MGT. AG. and REG. SARSAT MGT AG.

(4) The PRIVATE option has a satisfactory degree of acceptability for the REG. AIS DB., WAFS REG. MTC. SUPP. AG., REG. FLT. CAL. AG., REG. GNSS IAP/PA AG., REG. TRG. MGT. AG and REG. JCCA AG.

16.11 Final comments

16.11.1 The analyses and comments made in the previous chapters offer a large number of options and combinations of options. What is intended is not to exhaust this process at this phase of the study. Consideration has been given to the most important or interesting proposals, with the concrete data available and taking the opinion of experts with long experience in ANS. It must be recognized that it was impossible to avoid a certain degree of subjectivity, which is very difficult to measure, in some of the aspects analyzed. It is felt that this work will require adjustments and validations, but it is also intended to establish a methodology to study the problems of the institutional aspects and of the use of administrative/operational arrangements for the ANS facilities in the CAR/SAM Regions. It can, furthermore, be an important tool and serve as guidance material for the discussion of the institutional aspects, a mandatory subject for the implementation of CNS/ATM systems in the CAR/SAM Regions.

16.11.2 With the data collected in Phase 1, the Phase 2 of this exercise must be harmonize and adapt to the ATM scenarios established as a result of the study of traffic flow profiles, State profiles and ATM transition plans. This task would produce and propose options for multinational organizational structures for the administration/operation of CNS/ATM system facilities in the CAR/SAM Regions.

16.11.3 It must always be borne in mind that the transition and implementation of facilities, both of the present ANS as well as of the CNS/ATM systems, shall be gradual, evolutionary and tailored to meet regional operational needs in keeping with the established planning. The proposal for final multinational organizational arrangements still has a long way to go but in some cases, immediate attention must be given to some facilities and services already in an advanced stage of implementation (REDDIG, CARSAMMA) to ensure that it can, at a later stage, be gracefully incorporated into the macro-regional multinational organizational proposal. Hence, the need to urgently establish a common policy and methodology to analyze interim solutions so as to make it possible to harmonize and integrate them.

16.11.4 After these options have been consolidated, they could be the subject of cost/benefit and sensitivity analyses and finally, be turned into business cases. Phase 2 of the process would thus be concluded.

16.11.5 In Phase 3, through business cases, the proposals shall be referred to decision-making levels in which political aspects will play a major role.

16.11.6 The final decision will likely be political. Notwithstanding this, it must always have major operational, technical and economic support. Failing to adequately address these issues, particularly with regards to the operational/technical aspects, would make the proposal regarding global planning of the CNS/ATM systems, incompatible and expensive.

Appendix A

Analysis of comparative tables

1. Upon matching the list of CAR/SAM system facilities, whose functions and/or powers could have a more cost-efficient use if operated by means of a regional or sub-regional mechanism, with the various regional air navigation service management and operation options, the following conditions were established as regards the options:

NA - Non-applicable;
AWR - Applicable with reservations;
A - Applicable
HA - Highly applicable

2. Likewise, when matching the CNS/ATM facilities with the regional arrangement options and establishing a grading for the option, the latter was analysed on the basis of certain criteria, namely:

Institutional criteria	Operational criteria	Technical criteria	Economic criteria	Administrative criteria
National sovereignty	Safety	Maintenance Management	Profitability	Overhead
National security	Operational efficiency	System sharing	Cost recovery	Training Labour cost
Accessibility	Evolutionary implementation		Resource sharing	Staffing
	Coordination			

3. For purposes of a comparative analysis, the following numerical values were assigned to the criteria:

Highly applicable	**3**
Applicable	**2**
Applicable with reservations	**1**
Non-applicable	**0**

4. Critical criteria:

National sovereignty
National security
System accessibility
Safety

Note: If it is seen in the matching that any or all the criteria is (are) not applicable, the proposed option is automatically considered as not valid.

5. Finally, for purposes of classifying facilities according to their score, let us consider the following ranges:

=< 48 >= 41	**HA**	**Highly applicable option**
=< 40 >= 31	**A**	**Applicable option**
=< 30 >= 21	**AWR**	**Applicable option with reservations**
=< 20	**N**	**Non-applicable option**

6. Upon analysing tables 1 to 6, we note that the behaviour of CNS facilities (REDDIG, AMSS, SBAS Mstation) and ATM facilities (REG ATM CENTRE, REG ATFM CENTRE, REG AIRSPACE SAFETY MONITORING CENTRE), is very similar. Therefore, all of the CNS facilities will be subject to an analysis similar to the one for ATM facilities.

7. National organization

7.1 CNS

7.1.1 It may be noted that the positive side of the NATIONAL operation and management of CNS facilities is that the critical requirements of national sovereignty, national security, accessibility and safety would not be affected by this type of management and operation. The weak points are in the important requirements of operational efficiency, evolutionary implementation, coordination, maintenance management, cost recovery, cost sharing, overhead and training. It is felt that the improvement of these requirements will demand great effort. It is also felt that the profitability requirement will be largely affected.

7.1.2 Therefore, in view of the above and since the score for the facilities adds up to 27/26/26, we conclude that national operation and management of CNS facilities is a viable option with reservations (AWR).

7.2 ATM

7.2.1 As in the case of CNS facilities, the positive aspect of NATIONAL management and operation of ATM facilities is that the 4 critical criteria are not affected. The weak points are outstanding. Operational efficiency, evolutionary implementation, coordination, maintenance management, system sharing, profitability, cost recovery, resource sharing and overhead are requirements whose improvement will demand great effort, and some will be very difficult to improve.

7.2.2 The score of ATM facilities is 25/27/24, respectively. Therefore, we conclude that the national operation/management option for ATM facilities is a viable option with reservations (AWR).

7.3 REG AIS DATA BANK

7.3.1 The NATIONAL management and operation of the Regional AIS Data Bank presents a viable critical criterion, but requires some safeguards: accesibility. National operation

of a Regional AIS Data Bank is feasible, pero presents a high degree of difficulty in terms of its implementation, management and operation, which affects many of the requirements, particularly operational efficiency, coordination, maintenance management, system sharing, profitability, resource sharing, overhead and labour cost.

7.3.2 The score of this option is 27 points and, therefore, we consider that this NATIONAL operation and management option of Regional AIS Data Banks is viable with reservations (AWR).

7.4 WAFS REG MTC Support CENTRE

7.4.1 NATIONAL management and operation of the WAFS maintenance support centre, while not affecting the 4 critical criteria, presents the same inconveniences as the facilities previously analysed, the solution of which will require great effort. The aspects of coordination, profitability and overhead should be especially highlighted.

7.4.2 The score of this option is 28 points and, therefore, it is considered to be viable with reservations (AWR).

7.5 REG FLT CAL MGT Agency

7.5.1 In-flight calibration management and operation does not affect the 4 critical criteria. The big problem with the NATIONAL, decentralised management of a Regional in-Flight Calibration Agency lies in the areas of operational efficiency, evolutionary implementation, coordination, profitability, overhead and training. To meet these requirements, a joint effort by the parties involved will be required.

7.5.2 The score of this option is 31 points, which makes it a viable option (A).

7.6 GNSS PA/NPA Coordination Agency

7.6.1 NATIONAL, decentralised management of a Regional GNSS NPA/PA Procedure Agency does not affect the 4 critical criteria and is feasible, but will require special attention, particularly in the areas of coordination and profitability.

7.6.2 The score of this option is 35 points, which makes it viable (A).

7.7 REG TRG MGT Agency

7.7.1 NATIONAL, decentralised management of regional training is viable, but will require intense work in the areas of coordination, profitability and resource sharing.

7.7.2 The score of this option is 36 points, making it a viable one (A).

7.8 REG SARSAT MGT Agency

7.8.1 NATIONAL management of SARSAT resources does not affect the 4 critical criteria. Its implementation and operation will require great effort in the areas of coordination, cost recovery and overhead.

7.8.2 The score of this option is 38 points, making it a viable one (A).

7.9 REG JCCR Agency

7.9.1 NATIONAL, decentralised management of JCCRs could affect the critical criterion of accessibility. Therefore, strict rules and safeguards should be established, and special attention and effort will be necessary to solve the deficiencies in the fields of evolutionary implementation, coordination, maintenance management and overhead.

7.9.2 The option has a score of 33 points, and is viable (A).

8. Delegation to States

8.1 CNS

8.1.1 With respect to critical criteria, we could say that, although national sovereignty and national security could be affected, the measures required to overcome these deficiencies correspond, mainly, to the legal sphere. There is already international jurisprudence on the matter, creating effective safeguards through agreements and legal, operational and institutional procedures to deal with this matter. As to the remaining requirements, many of these--evolutionary implementation, maintenance management, profitability and overhead--can be met with some corrective action. Likewise, there are several important requirements, such as coordination, system sharing, cost recovery, cost sharing, training, labour cost and staffing that are fully viable.

8.1.2 The score for CNS systems is 40/42/42 points, which makes them highly viable (HA) if managed and operated under the organisational modality of DELEGATION TO STATES.

8.2 ATM

8.2.1 In ATM facilities, some critical requirements could be affected. As in CNS facilities, there are some precedents that provide guidance as to the corrective action to be taken. Likewise, some of the other requirements, like operational efficiency, coordination, maintenance management, equipment sharing, profitability and overhead can be met with some corrective action. There are other requirements that are fully met.

8.2.2 The score of the facilities, 39/41/42, shows that the operation and management of a Regional ATM Centre has a lower score than the rest, and its degree of efectiveness is viable (A), while the facilities of the Regional ATFM Centre and the Regional Airspace Safety Assessment and Monitoring Agency have a score that makes their management and operation through the modality of DELEGATION TO STATES highly viable (HA).

8.3 REG AIS DATA BANK

8.3.1 Management and operation of Regional AIS Data Banks through the modality of Delegation to a State deserve the same remarks as those already expressed for CNS and ATM elements in terms of the critical criteria and, therefore, require the same corrective action. As to the other requirements, it should be noted that the evolutionary implementation and cost recovery have a lower degree of viability and will require stronger action. Likewise, there is a significant number of them that,

although viable, will require corrective measures for optimisation. The maintenance management, system sharing, resource sharing and staffing requirements are fully viable.

8.3.2 The score of the facilities is 36 points, which makes the management of this option through the modality of DELEGATION TO STATES a viable one (A).

8.4 WAFS MTC Support CENTRE

8.4.1 Full compliance with the critical requirement of accessibility could offer some degree of difficulty. Procedures and safeguards should be established. The weak areas are the operational efficiency, profitability and resource sharing requirements. Strict measures should be adopted to solve these problems. Evolutionary implementation, coordination, cost recovery, overhead and labour cost will also require some measures and special care. Finally, maintenance management, which is the main reason for this proposal, will be fully viable, just like system sharing, training and staffing.

8.4.2 In this case, the score is 36 points, which makes it viable option (A).

8.5 REG FLT CAL AG/REG GNSS IAO/PA AG

8.5.1 Both proposals present critical requirements that will demand special care. Corrective action is the same as that specified in the analysis of the previous options. In the proposal for a regional calibration agency, the maintenance management, system sharing, cost recovery, labour cost and staffing requirements are highly viable, while the strong points of the GNSS agency are the system sharing, cost recovery, resource sharing and staffing requirements. The remaining requirements for both facilities will require some corrective action.

8.5.2 In both cases, the score is 40/38 points, which makes them viable (A).

8.6 TRG

8.6.1 The situation with respect to the critical criteria is similar to that presented in the previous facilities. Therefore, the corrective action follows the same line as that suggested above. The operational efficiency, evolutionary implementation, profitability, overhead, training and labour cost requirements will demand special attention for full feasibility. The coordination, maintenance management, system sharing and staffing requirements are fully viable.

8.6.2 The score, 40 points, makes it a viable (A) proposal.

8.7 REG SARSAT AG

8.7.1 This proposal has 3 critical criteria that will require special care. The corrective action has already been explained and is valid for this facility. The weak points of this option are the evolutionary implementation and coordination, which will require strong action and safeguards by the States and bodies involved. The strong points of this option are maintenance management, system sharing, resource sharing, training and labour cost. Similarly, the operational efficiency, profitability, overhead and staffing requirements will need corrective action and monitoring for full feasibility.

8.7.2 The score of this proposal, 36 points, makes it viable (A).

8.8 REG JCC

8.8.1 Regarding critical criteria, the proposal presents the same characteristics as the facilities discussed above. Therefore, the same corrective measures need to be applied. The strengths of the proposal are the operational efficiency, system sharing, profitability, cost recovery, resource sharing, training and staffing. The evolutionary implementation, coordination, maintenance management, overhead and labour cost requirements will need some action and special attention.

8.8.2 The score of this proposal, 40 points, makes it a viable one (A).

9. Private

9.1 CNS

9.1.1 As to critical criteria, this is obviously the weakest point for CNS facility management and operation. The national sovereignty, national security and accesibility criteria will be very difficult to meet. The mechanisms for solving this situation have already been explained in previous analyses and the comments made are fully valid for the feasibility of CNS system management and operation under the PRIVATE model. It should also be noted that the labour cost requirement will demand effort and very strict safeguards; otherwise, the model could be unfeasible. The coordination, overhead, training and staffing requirements will demand the adoption of some actions and special attention. On the other hand, coordination, maintenance management, system sharing, profitability, cost recovery and resource sharing are completely feasible.

9.1.2 The score in this case is 38/38/36 points, respectively, which makes it a viable option (A).

9.2 ATM

9.2.1 The comments made regarding the critical criteria for CNS facilities are fully valid for ATM facilities. With respect to non-critical requirements, evolutionary implementation, coordination and labour cost present a high degree of difficulty. The latter requirement is particularly negative for the ATM Regional Centre management and operation option, since it is considered not applicable for this type of organisation. It is a viable option with reservations (NA).

9.2.2 According to the score, 29/30 points, the first two facilities are viable with reservations (AWR) while the Regional airspace safety assessment monitoring and assesstment agency option has some important requirements which are highly feasible: operational efficiency, maintenance management, system sharing, profitability, cost recovery and staffing.

9.2.3 Its score is 38 points, and could be a viable option (A).

9.3 REG AIS DATA BANK

9.3.1 The critical criteria present the shortcomings specified for the previous facilities, so the corrective measures are the same as for AIS Regional Data Banks. We see some strengths in the other requirements, such as operational efficiency, maintenance management, system sharing, profitability, cost recovery, resource sharing, training and staffing. The evolutionary implementation, coordination,

overhead requirements need adjustments to be fully applicable. The implementation of the labour cost requirement presents a high degree of difficulty, and will require special effort.

9.3.2 The score is 40 points, making it a viable option (A).

9.4 WAFS REG MTC SUPP CENTRE

9.4.1 The critical criteria are not affected by the PRIVATE operation of a Regional WAFS maintenance support centre. Furthermore, the operational efficiency, maintenance management, system sharing, profitability cost recovery, cost sharing, overhead and staffing requirements are fully viable. The evolutionary implementation, coordination, overhead and training requirements are viable after making some adjustments. The labour cost item has serious shortcomings and safeguards should be established in order to make it viable.

9.4.2 The score is 42 points; therefore, this option is fully viable (HA).

9.5 REG FLT CAL MGT AGENCY

9.5.1 The critical criteria of national sovereignty and national security can have serious shortcomings. To prevent this, strict regulatory, operational and institutional measures should be adopted. Furthermore, the coordination and labour cost requirements will need strong and strict action. The strengths to be highlighted are the maintenance management, system sharing, cost recovery, resource sharing and staffing requirements.

9.5.2 The score is 34 points, making it a viable option (A).

9.6 REG GNSS IAP/PA AGENCY

9.6.1 This option has no serious effects on the critical criteria that cannot be corrected. The operational efficiency, maintenance management, system sharing, profitability, cost recovery, resource sharing requirements are fully met and the evolutionary implementation, coordination, overhead and training requirements can be met after adopting some corrective action. The labour cost requirement deserves special attention and needs the establishment of strict corrective measures.

9.6.2 The score is 40 points, making it a viable option (A).

9.7 REG TRG, MGT AGENCY

9.7.1 The critical criteria present no shortcomings in this option. Likewise, the system sharing, cost recovery, overhead, training and staffing requirements are highly viable. The operational efficiency, coordination, evolutionary implementation, maintenance management requirements can be met after adopting some corrective action. As for the other facilities, the labour cost requirement in the privatisation option will need very strict corrective measures.

9.7.2 The score is 41 points, and the option is highly viable (HA).

9.8 REG SARSAT MGT AGENCY

9.8.1 The critical criteria of national soverignty and national security present serious shortcomings. To solve them, strict regulatory, operational and institutional measures need to be implemented. Likewise, the evolutionary implementation, coordination and overhead requirements are highly viable. The labour cost requirement is considered to be practically insurmountable for the private operation of this system.

9.8.2 For the reasons mentioned above, despite the score of 34 points, this option is considered to be viable with reservation (AWR).

9.9 REG JCC

9.9.1 This option has a good degree of viability for the operational efficiency, system sharing, profitability, cost recovery and staffing requirements. With the exception of the labour cost requirement, all the others are viable after adopting some corrective action. The aspects related to the labour cost requirement have been already considered in the analysis of the other facilities, and the proposed corrective action for those is also valid for the REG JCC.

9.9.2 The score of this option is 40 points, making it a viable option (A).

10. International organisation

10.1 CNS

10.1.1 In this option, the critical criteria of national sovereignty and national security may present some shortcomings, which need to be corrected through institutional arrangements and operational agreements between the parties. The other requirements, operational efficiency, coordination, maintenance management, system sharing, cost recovery, resource sharing and staffing are fully viable, and the remaining requirements are viable with the adoption of some corrective action.

10.1.2 The score for the facilities in this option is 41/41/41 points, showing that it is fully viable (HA).

10.2 ATM

10.2.1 Although two critical criteria, national sovereignty and national security, need special attention in the ATM Regional Centre facility and, as in the CNS facilities, need to be corrected through institutional arrangements and operational agreements, the critical criteria in the other facilities are fully viable. A significant number of the other requirements (7) fully comply with the viability conditions. On the other hand, some of the requirements (4) will need some corrective action to reach a full degree of viability.

10.2.1 The score of 43/45/46 confirms the full viability of this option (HA).

10.3 REG AIS DATA BANK

10.3.1 The critical criteria are not affected and there are 10 non-critical requirements that are fully viable and 2 requirements that need some corrective action.

10.3.1 The score is 46 points, so this option can be considered as highly viable (HA).

10.4 WAFS REG MTC SUPPORT AGENCY

10.4.1 The analysis of this option shows results that are very similar to those for the Regional AIS Data Bank.

10.4.2 The score is 46 points, making the option highly viable (HA).

10.5 REG GNSS IAP/NP AGENCY

10.5.1 The results are similar to those for the two previous options.

10.5.2 The score is 45 points, making the option highly viable (HA).

10.6 REG FLT CAL MGT AGENCY

10.6.1 In this option, the critical criteria of national sovereignty and national security are partially affected and corrective action needs to be taken to solve these problems. The option has 6 non-critical requirements which are fully viable and 6 requirements that need some corrective action.

10.6.2 The score for this option is 40 points, making it a viable one (A).

10.7 REG TRG MGT AGENCY

10.7.1 This option has the same characteristics for critical and non-critical criteria as the option analysed under paragraph 9.6, with the exception of maintenance management, which is fully viable.

10.7.2 The score is 41 points and the option is highly viable (HA).

10.8 REG SARSAT MGT AGENCY

10.8.1 The critical criteria have no shortcomings in this option. Also, the option has 7 non-critical requirements that are fully viable and 5 requirements that need some corrective action to be fully viable.

10.8.2 The score is 43 points, showing that this option is highly viable (HA).

10.9 REG JCC

10.9.1 This option has 3 non-critical requirements--evolutionary implementation, administrative cost and labour cost--that need some corrective action. The others are fully viable.

10.9.2 The score is 45 points, showing that this option is highly viable (HA).

11. Multinational organisation

11.1 CNS

11.2 ATM

11.3 REG AIS DATA BANK

11.4 WAFS REG MTC SUPP CENTRE

11.5 REG TRG MGT AG

11.6 REG JCCA

11.7 REG SARSAT MGT AG

These options present 14 to 15 criteria, including critical criteria, which would not be affected.

We consider that the profitability and overhead criteria could be affected if this organisation is state-owned, that is, managed by the associated States, whose financial policies could be subject to pressure by associates who might neglect the cost-benefit aspects of the option. Obviously, being a hypothesis, it can be avoided through strict administrative measures. As to overhead, a rigorous budget control and human resource management policy is highly advisable.

The scores of these facilities are: CNS 44/44; ATM 44/44/46; REG AIS DB/46; WAFS REG MTC SUPP CENTRE/46; REG TRG MGT AG 47; REG JCC 47; REG SARSAT MGT AG. 41 points. The proposals are considered to be highly viable options (HA).

11.8 REG FLT CAL MGT AG

11.8.1 The facilities of this option have 13 highly viable requirements and 3 requirements that need adjustment and correction, particularly in the areas of operational efficiency, overhead and staffing.

11.8.2 The option has a score of 40 points and the option can be considered viable (A).

12. JFARR

12.1 CNS

12.1.1 CNS facilities have 12 highly viable requirements. The operational efficiency, coordination, maintenance management and staffing requirements need corrective action and adjustments.

12.1.2 The score of these facilities is 44/44/44 points, and the option is highly viable (HA).

12.2 ATM

12.2.1 The proposal of a REG Airspace S/M CENTRE presents a very high degree of viability and only the staffing requirement will need some adjustments and corrective action. The score is 47 points, and the option is considered to be highly viable (HA).

12.2.2 The proposal of a REG ATM CENTRE, although it has 8 highly viable requirements, will need some corrective action in other 8 requirements and could present difficulties in terms of operational efficiency and coordination, among others. The score is 40 points, and the option is considered to be viable (A).

12.2.3 The proposal of a REG ATFM CENTRE presents 10 highly viable requirements and 5 viable ones which will require some corrective action. The score is 42 points, and the option is considered highly viable (HA).

12.3 REG AIS DATA BANK

12.4 WAFS REG MTC SUPP CENTRE

These proposals present 9 and 10 requirements, respectively, that are highly viable, and 7 and 6 requirements, respectively, that need some corrective action.

The score is 41/42 points, and the proposals may be considered as highly viable (HA).

12.5 REG FLT CAL MGT AG

12.6 REG TRG MGT AG

12.7 REG SARSAT MGT CENTRE

The analysis of these proposals presents similar characteristics. In general, there are 9 to 10 fully viable requirements and 7 to 6 viable ones that need some corrective action, with special emphasis on operational efficiency, maintenance management, overhead and staffing.

The score is 41/41/42 points, respectively, and the proposals may be considered as highly viable (HA).

12.8 REG JCC

12.8.1 The proposal presents 13 highly viable requirements. Three requirements need some adjustments.

12.8.2 The score is 45 points and the proposal is highly viable (HA).

Agenda Item 5: Development of institutional arrangements' proposals for consideration by the GREPECAS/12

Agenda Item 6: Other matters

5.1 Considering the progress of previous agenda items, the Meeting considered that Agenda Item 5 was completed.

5.2 The Meeting, then reviewed, under Agenda Item 6, the terms of reference and the work programme of the Task Force on Institutional Aspects. In this respect, it noted that they had not been amended since the establishment of the Task Force within the former CNS/ATM/IC Sub-Group and that, since then, several events have taken place in the international aviation community that allow to assume the need to update these terms of reference and work programme. Among these events the following could be indicated:

a) the need to study the establishment of multinational facilities/services in the CAR/SAM Regions;
b) consider the new ATM Operational Concept as a common global framework to guide the planning and implementation of ATM systems;
c) carry out, based on the ATM operational concept, transition strategies for the implementation of ATM systems;
d) consider the institutional aspects related with the application of the new ATM operational concept for the implementation of ATM systems.

5.2.1 It was noted that during GREPECAS/11 Meeting the Task Force on Institutional Aspects was entrusted to study the most appropriate way of presenting multinational facilities/services in the FASID in order to facilitate their identification, description and processing of future amendments (GREPECAS Decision 11/62).

5.2.2 Regarding the Group membership, Venezuela requested the Meeting to be member of the Task Force. There was an agreement in this sense, and Venezuela was advised to present a formal request to GREPECAS to obtain their approval.

5.3 Considering the above, the Task Force developed amendments to the terms of reference, work programme and composition, as shown in **Appendix A** to this part of the Report and formulated the following draft decision for GREPECAS:

DRAFT
DECISION 1/5 NEW TERMS OF REFERENCE AND WORK PROGRAMME FOR THE TASK FORCE ON INSTITUTIONAL ASPECTS

The terms of reference, work programme and composition of the Task Force on Institutional Aspects are approved, as shown in **Appendix ZZ** to this part of the Report.

5.4 Understanding that GREPECAS would approve Appendix A, with the necessary modifications, the Task Force discusses the way to carry out the tasks indicated in the work programme. In this respect, the following was agreed:

1. tasks a) and f) would be carried out by RLA/98/003 project, in coordination with ICAO Secretariat;

2. coordinated by RLA/98/003 project, tasks b) and e) will be carried out by Argentina, Brazil, Cuba and COCESNA, starting with task b) and following with task e), once finalized tasks c) and d);

3. tasks c) and d) will be carried out by RLA/98/003 project in coordination with the States indicated in 2. above.

5.4.1 For the development of the above mentioned tasks, the following focal points have been designated:

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5.5 Argentina, Brazil, Cuba and COCESNA held a meeting with the Secretariat and the Institutional Aspects Consultant of RLA/98/003 project to coordinate the activities of the above mentioned tasks and it was agreed that they would be initiated after GREPECAS/12 Meeting.

5.6 Regarding the working method of the Group, it was agreed that it will be carried out by correspondence, via Fax and e-mail, in preparation for the Second Meeting of the Task Force. In this respect, Venezuela proposed to host this Meeting and the Group expressed their gratitude for this proposal.

APPENDIX A

GRUPO DE TAREAS SOBRE ASPECTOS INSTITUCIONALES

1. **Terms of Reference**

a) Considering the new ATM operational concept approved by the Eleventh Air Navigation Conference as a global framework for the implementation of ATM systems, study the actions adopted by the ICAO Council, as well as by some States, on institutional aspects for the implementation of these systems in the CAR/SAM Regions.

b) Suggest methods to assist the States of the CAR and SAM Regions that so require, in the development of cost/benefit analysis, as well as in the economic, financial, legal and administrative studies relevant to their technical and operational projects for the implementation of CNS/ATM systems.

c) Analyze those aspects of the CAR/SAM Regional Air Navigation Plan that would require multinational arrangements.

2. **Work Programme**

a) Considering the new ATM operational concept, develop orientation and application proposals for the CAR/SAM Regions of the actions of global nature on the institutional aspects adopted by the ICAO Council, as well as by some States.

b) Identify, according to the CAR/SAM Air Navigation Plan, implementation scenarios with the corresponding elements that require institutional arrangements of multinational nature for their implementation.

c) Develop orientations with regional guidelines to assist CAR/SAM States in the development of cost/benefit studies for institutional arrangements of the identified multinational facilities/services.

d) Develop consensus proposals of financial and administrative arrangements and other relevant arrangements for the provision of services for the implementation of multinational ATM systems.

e) Determine the elements that require legal arrangements on the institutional aspects identified in d) above.

f) Study the most appropriate way for the presentation of multinational facilities/services in the FASID in order to facilitate their identification, description and processing of future amendments.

3. **Composition**

Argentina, Brazil, Chile, Cuba, Peru, United States, Venezuela and COCESNA.

4. **Rapporteur**

Argentina