



Agenda Item 5: Regional Technical Cooperation Activities

TECHNICAL COOPERATION PROJECT FOR THE CAR REGION (RLA/08/000)

(Presented by the Secretariat)

SUMMARY	
<p>This working paper presents information on a proposal for developing an ICAO Technical Cooperation Project that will provide a tool for States/Territories/International Organizations in the CAR Region to implement Global Air Navigation Plan Initiatives (GPIs) in compliance with the ICAO SARPs and Strategic Objectives. The project proposal is presented for consideration of the Third Meeting of North American, Central American and Caribbean Directors of Civil Aviation (NACC/DCA/3).</p>	
References:	
<ul style="list-style-type: none">• GREPECAS Meetings.• NACC/1 and NAAC/2 Meetings.• Subregional Meetings of Aeronautical Authorities in the CAR Region.• Subregional Working Groups Meetings.	
<i>Strategic Objectives:</i>	<i>This working paper is related to Strategic Objectives A, C, D, E and F.</i>

1. Introduction

1.1 To promote the safety and efficiency of international civil aviation and to foster the principles of the Convention on International Civil Aviation, ICAO established a Strategic Objective Plan for the period 2005-2010. The application of strategic objectives promotes:

- *A: Safety - Enhance global civil aviation safety*
- *C: Environmental Protection - Minimize the adverse effect of global civil aviation in the environment*
- *D: Efficiency - Enhance the efficiency of aviation operations*
- *E: Continuity - Maintain the continuity of aviation operations*
- *F: Rule of Law - Strengthen law governing international civil aviation*

1.2 These objectives are currently being met in several States through harmonious national, regional and global civil aviation system development. The Strategic Objectives are described in the Project Document (PRODOC).

1.3 In this context, ICAO established the Global Air Navigation Plan (GANP) with its related planning initiatives and tools as a strategic document providing the planning methodology, which establishes global air navigation harmonization through the development of various *Global Plan Initiatives* aimed at a uniform ATM system transition foreseen in the *Operational Concept of Global Air Traffic Management*, established at the Eleventh Air Navigation Conference (ANC/11). Thus, the GANP provides States with guidelines to comply with ICAO Standards and Recommended Practices (SARPs) for implementation of new air navigation satellite systems.

1.4 The development of new air navigation systems, as well as safety and aerodrome management design, demands a substantial investment from Administrations as long as diverse technical-administrative aspects for new infrastructure installations, and operational and human resource training exists. This situation has created varying degrees of development, requiring urgent measures to harmonize implementation as indicated in the GANP.

1.5 Taking into consideration the many challenges faced by States/Territories/International Organizations of the CAR Region, the application of the ICAO Strategic Objectives and Global Plan Initiatives become paramount. It is necessary to take actions that facilitate the implementation of such objectives and initiatives in a comprehensive manner. Improvements must advance homogeneously with other regions based on the growth of air traffic operations in the Region. However, these should be comprehensive due to the universal scope of the GANP.

1.6 Among actions to be taken is resolution of the numerous deficiencies identified in the GREPECAS Air Navigation Deficiencies Database (GANDD), the ICAO Universal Safety Oversight Audit Programme (USOAP) audits in various civil aviation areas in the Region, and require taking corrective measures as part of the improvements package to be prepared.

1.7 In order to meet the challenges that changes and implementation of new technologies represent, the First and Second Meeting of North American, Central American and Caribbean Directors of Civil Aviation (NACC/DCA/1 and NACC/DCA/2) adopted Conclusions 1/24, 1/25 and 2/31, included for ease of reference in **Appendix A** to this working paper, in which it was considered that technical cooperation projects were the; “*instruments for the effective implementation of new civil aviation system,*” urging “*States to develop regional technical cooperation projects and give the financial support to them*”..

2. Analysis

2.1 Considering the context described in the introduction to this paper for effective implementation of new systems, the main difficulties faced in the CAR Region is the considerable investment required for infrastructure, equipment, services and personnel training. Nevertheless, the main problem is the absence of decision-making policies and adoption of the most economically viable and functional alternative in a region comprised of by States with significant economical diversity.

2.2 Therefore, it is necessary to consider that economic factors vary from country to country, and although Administrations have alternatives to fulfil system implementation requirements, options can vary since the infrastructure and the execution of the systems involve technical and technological interdependence, and in some cases a group of States/Territories/International Organizations need to joint actions to achieve system developments.

2.3 In view of this situation, ICAO has urged States to consider obligating substantial funds from their budget to improve aeronautical systems and services through infrastructure installations, equipment and properly trained and qualified aeronautical personnel.

2.4 On the other hand, it should be noted that the RLA/98/003 Project entitled “*Transition to the CNS/ATM Systems in the CAR/SAM Regions*” finalized in June 2008, identified that action should be taken to implement an instrument that provides continuity for implementing air navigation satellite systems of the GANP in the CAR Region. In this sense, when finalizing the RLA/98/003 Project, the SAM Region decided to give continuity to the mentioned project by developing a new project entitled “*Assistance in the Implementation of a ATM Regional System according to the ATM Operational Concept and the corresponding Technological Support for Communications, Navigation and Surveillance (CNS) (RLA/06/901)*,” which is dedicated to the South American States.

2.5 It should be considered that with new air navigation systems and as established in the ATM Operational Global Management Concept, new inter-operational, continuous and seamless, flexibility and interoperability requirements have emerged. Therefore, it is necessary to develop a study to identify regional needs aimed at determining which Global Plan Initiatives need to be implemented in each State/Territory/International Organization and in the CAR Region.

2.6 Based on this situation, States/Territories/International Organizations need to establish a joint policy outlining the regional scenario develop an exclusive project for this region, thus progress can be made with the implementation of new civil aviation systems.

3. Conclusion

3.1 In view of the above, and the need to take effective action at a regional level considering the global characteristics of the new system on international civil aviation, it is essential to analyze, interpret, plan and promote a coordinated and cooperative approach, establishing an effective instrument to implement the Global Air Navigation Plan Initiatives.

3.2 For successful new system implementation, cooperation among the States/Territories/International Organizations in the Region is essential. The high cost for system implementation could be reduced if technical cooperation projects are promoted through cost-sharing contributions from States in order to avoid duplication of efforts. A detailed study to determine the best suitable options according to State/Territory/International Organization needs is required. This task that could be developed through a regional cooperation project as the instrument to establish policies and define, in particular, the specific requirements of each State in order to establish an implementation plan.

3.3 The purpose of the information provided to this Meeting is to present for consideration of the Third Meeting of North American, Central American and Caribbean Directors of Civil Aviation (NACC/DCA/3), a technical cooperation proposal exclusively for the CAR Region, which includes improvements and development of an action plan for air navigation system implementation that contributes to safety system implementation, and management and design strategies for aerodromes.

3.4 The project's details such as the objectives, results, activities, justification, supplies and cost-sharing contributions from States/Territories/International Organizations are included in the project document (PRODOC) attached as **Appendix B** to this working paper.

4. Suggested actions:

4.1 Based on the above-mentioned, it is recommended to adopt the following Conclusion:

DRAFT

CONCLUSION NACC/3/X TECHNICAL COOPERATION PROJECT FOR THE CAR REGION (RLA/08/000)

Based on the need to establish an effective instrument for the implementation of new systems for international civil aviation States/Territories/International Organizations agree to:

- 1) approve the Technical Cooperation Project for the CAR Region entitled "*Assistance with the Implementation of an ATM Regional System according to the ATM Operational Concept and the corresponding Technological Support for Communications, Navigation and Surveillance,*" to be developed through the ICAO Technical Cooperation Programme;
- 2) start the project by 1 January 2009, signing the Project Document by the corresponding civil aviation authorities from the States/Territories/International Organizations not later than 30 November 2008; and
- 3) establish an initial contribution of USD\$45,000.00 for each State/Territory/International Organization participating in the project, in order to develop the first phase of the project, which will determine the requirements and improvements needed in each State/Territory/International Organization.

APPENDIX A

NACC/DCA/1

CONCLUSION 1/24 INSTRUMENTS FOR THE EFFECTIVE IMPLEMENTATION OF NEW CIVIL AVIATION SYSTEMS

That, recognizing the urgent need to take effective measures for the efficient implementation of the new civil aviation systems, States/Territories/International Organizations consider taking the following actions:

- a) dedicate financial resources to provide the necessary support to the implementation of the new civil aviation systems, taking into account that infrastructure and services are high cost items and that it is necessary to plan and develop a national plan;
- b) analyse the feasibility of developing regional technical cooperation projects, involving several States/Territories/International Organizations;
- c) consider the convenience of promoting international co-operation and bilateral/multilateral agreements that facilitate mutual assistance among States/Territories/International Organizations;
- d) undertake major efforts to join and actively participate in the Regional Technical Co-operation projects, currently executed in the CAR/SAM Regions; and
- e) propose new projects as deemed necessary.

CONCLUSION 1/25 FINANCING RESOURCES TO INCREASE THE PARTICIPATION OF STATES / TERRITORIES / INTERNATIONAL ORGANIZATIONS IN REGIONAL COOPERATION PROJECTS

ICAO and States/Territories/International Organizations are urged to continue efforts to obtain financing in order to participate in regional projects for the implementation of the new civil aviation systems aimed at increasing airspace capacity, safety, efficiency and regularity of civil aviation.

NACC/DCA/2

CONCLUSION 2/31

**ACTIVITIES OF THE TECHNICAL CO-OPERATION
PROJECTS IN THE NAM/CAR REGIONS**

That States/Territories and International Organizations of the NAM and CAR Regions:

- a) participate and contribute, if not already done so, to the budget of regional projects in their area of responsibility; and
- b) analyze the importance of using ICAO technical co-operation national projects as a governmental tool to expand and facilitate the achievement of management results.

APPENDIX B

**PROYECTO DE COOPERACIÓN TÉCNICA PARA LA REGIÓN CARIBE
TECHNICAL COOPERATION PROJECT FOR THE CARIBBEAN REGION**

DOCUMENTO DE PROYECTO / PROJECT DOCUMENT

Número del project / Project number: RLA/08/000

Título / Title: Proyecto para la implantación de los sistemas modernos de la aviación civil con base en los Objetivos Estratégicos de la OACI en la Región CAR // Project for the implementation of modern civil aviation systems based on ICAO Strategic Objectives in the CAR Region

Duración / Duration: Tres años / Three years

Sector y subsector del CAC/PNUD /
CAC/UNDP sector and subsector: 0620

Transporte y Comunicaciones-Transporte
Aéreo /

Transport and Communications-Air Transport

Organismos de ejecución de los Gobiernos /

Government executing agencies:

Autoridades de Aviación Civil o
Aeroportuarias /

Civil Aviation or Airport Authorities

Organismos de ejecución / Executing
agencies:

OACI / ICAO /

Fecha estimada de inicio / Estimated starting
date:

Febrero de 2009 / February 2009

Insumos de los Gobiernos (en moneda local) /

Government inputs (in local currency):

(en especie / in kind) _____

(en efectivo / in cash) _____

Financiación / Financing

(dólares EE.UU. / US dollars)

\$

Participación de los Gobiernos en
la financiación de los gastos (inclu-
yendo los gastos administrativos) /
Governments cost sharing participation
(including overhead costs): \$

PNUD y arreglos de participación
en la financiación de los gastos /
UNDP and cost sharing arrangements:

\$ 1,125,000 US

Total: \$ 1,125,000 US

Participant States/Territories and Organization: Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, Costa Rica, Cuba, Dominican Republic, El Salvador, France (French Antilles), Grenada, Guatemala, Haiti, Honduras, Jamaica, Mexico, Netherlands Antilles, Nicaragua, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Trinidad and Tobago, United Kingdom (Anguilla, Bermuda, British Virgin Islands, Cayman Islands, Montserrat and Turks and Caicos Islands), United States and COCESNA.

Brief description: Provide assistance to States/Territories of the CAR Region to progress with implementation of modern civil aviation systems based on the ICAO Strategic Objectives, Global Air Navigation Plan, GASP (Global Aviation Safety Programme), ICAO Standards and Recommended Practices and the CAR/SAM Regional Air Navigation Plan.

Approved	Name	Signature	Position	Date
Antigua and Barbuda	_____	_____	_____	_____
Aruba	_____	_____	_____	_____
Bahamas	_____	_____	_____	_____
Barbados	_____	_____	_____	_____
Belize	_____	_____	_____	_____
Costa Rica	_____	_____	_____	_____
Cuba	_____	_____	_____	_____
El Salvador	_____	_____	_____	_____
France	_____	_____	_____	_____
Grenada	_____	_____	_____	_____
Guatemala	_____	_____	_____	_____
Haiti	_____	_____	_____	_____
Honduras	_____	_____	_____	_____
Jamaica	_____	_____	_____	_____
México	_____	_____	_____	_____
Netherlands Antilles	_____	_____	_____	_____
Nicaragua	_____	_____	_____	_____
República Dominicana	_____	_____	_____	_____
Saint Kitts and Nevis	_____	_____	_____	_____
Saint Lucia	_____	_____	_____	_____
Saint Vincent and The Grenadines	_____	_____	_____	_____
Trinidad and Tobago	_____	_____	_____	_____
United Kingdom	_____	_____	_____	_____
United States	_____	_____	_____	_____
COCESNA	_____	_____	_____	_____
ICAO	_____	_____	_____	_____

A. CONTEXT

1 Description of the sub-sector

1.1 The Chicago Convention on International Civil Aviation formed the International Civil Aviation Organization (ICAO), whose aims and objectives are to develop the principles and techniques of international air navigation and to foster the planning and development of international air transport so as to insure the safe and orderly growth of international civil aviation throughout the world.

1.2 . The responsibilities of States are based on the framework of the Chicago Convention, through which States commit themselves to provide facilities and standardized systems for the safety of air transportation, "developing in its territory, airports, radio services, meteorological services and other air navigation facilities to facilitate international air navigation, in accordance with standards and recommended practices" as well as "adopt and put into operation the appropriate standard systems of communications procedure, codes, markings, signals, lighting and other operational practices and rules which may be recommended or established from time to time."

1.3 In order to assist States with their commitment regarding civil aviation services, ICAO has produced relevant documents wherein requirements and guidelines are set forth for application by States.

1.4 To this end, and to confront the evolution experienced by civil aviation due to the changes caused by financial, commercial, social and technological factors, ICAO adopted a strategic plan to ensure that ICAO responds to the main challenges of modernization and the related needs of all its contracting States. The strategic objectives of this plan are to foster international civil aviation safety and efficiency and promote the principles included in the International Civil Aviation Convention, which are being achieved through the establishment of harmonious development of a civil aviation system on a national and regional basis. The following elements are promoted through the application of strategic objectives:

- Apply ICAO standards and recommended practices world-wide to the highest extent.
- Strengthen the legal framework and adapt it to changing needs.
- Ensure the validity, coordination and application of regional air navigation plans.
- Assist with the technical and financial strengthening of civil aviation facilities.
- Ensure the highest efficiency and degree of safety for civil aviation.

1.5 Moreover, the Eleventh Air Navigation Conference developed the ATM Global Operational Concept, which presents the ICAO vision for an integrated and harmonized ATM system, that will allow world-wide inter-functionality between all regions for all users, during all phases of flight in compliance with safety levels allowing optimum economical operations and environmentally sustainable.

1.6 The evolution of the ICAO Global Air Navigation Plan includes the ATM Global Operational Concept and establishes a strategy with initiatives to obtain benefits in the short and medium terms for a uniform transition to the ATM system foreseen in said Operational Concept. Thus, the States and the regions will be able to choose the initiatives that fulfill their performance objectives (identified through an analytical process) adapting specifically to the particular needs of a State, a region, a homogeneous ATM area or an air traffic flow. The Global Plan, with its initiatives, is a planning and implementation tool for States and regions.

1.7 Likewise, the Regional Air Navigation Plan for the CAR/SAM Regions contains basic planning principles, operational requirements and planning criteria, implementation guidelines, and the permanent text regarding air navigation services. The characteristics of facilities in compliance with basic requirements are contained in the FASID document, which indicates the commitment by States to implement such requirements.

1.8 The Standards and Recommended Practices (SARPs) concerning air navigation services and international civil aviation systems required to ensure safety, regularity and efficiency of international air transport are contained in the Annexes to the Chicago Convention.

1.9 The Convention provides the appropriate framework to identify State responsibilities regarding civil aviation administration and the methods to comply with its mandate. All States participating in this regional project are part of the Chicago Convention and members of ICAO.

2. Regional Framework for the Sub-sector

2.1 ICAO, a specialized agency of the United Nations system, has the mission to promote the application of SARPs and international procedures established in the Annexes to the Convention on International Civil Aviation and the implementation of air navigation regional plans. One of the tasks of this mission is to assist States with projects to implement new civil aviation systems safely and effectively.

2.2 To complete this mission, ICAO has with the Regional Office in Mexico City, Mexico, and the Caribbean/South America Regional Planning and Implementation Group (GREPECAS), which is the regional mechanism charged with ensuring implementation of the regional air navigation plan and determining specific problems affecting air navigation and suggesting the appropriate solutions.

2.3 Likewise, to achieve its mission ICAO has the Technical Co-operation Programme, which is an effective tool to develop projects aimed at mobilizing human, technical and financial resources to facilitate States with the execution of action plans to implement efficient civil aviation systems and services. The Technical Co-operation Bureau (TCB), at ICAO Headquarters in Montreal, Canada, is responsible for said Programme to assist States and coordinate, manage and implement projects.

2.4 Technical Co-operation Projects include performing studies, works and training, as well as knowledge transfer of technologies in the different fields of civil aviation to maintain a constant modernization and updating process of aviation systems and services.

2.5 The North American, Central American and Caribbean (NACC/DCA) Meeting forms the institutional framework where this project will be discussed and approved. Likewise, the appropriate civil aviation authorities who are the counterparts of ICAO, will frame the requirements for this subsector.

B. PROJECT JUSTIFICATION

1. Identification of the Problem: Current Situation

1.1 In the CAR Region, the modern civil aviation systems have achieved notable implementation progress, but implementation has differed country by country. In this way, homogeneous technological regional development has not been achieved, to satisfy the characteristics and performance required to comply with the services provided in the Region.

1.2 Within this unharmonized development, it should be noted that both air navigation and safety systems require additional enhancements to be in line with the progress of other regions. The development has been so uneven that ICAO has urged States through various means to assign sufficient funds in their budgets to comply with facilities, equipment and qualified personnel requirements in order to provide efficient service.

1.3 Moreover, the many existing deficiencies identified in the GANDD and ICAO USOAP audits in all the civil aviation fields in the CAR Region, which have been discussed without resolution for many years, demand that measures be taken as soon as possible in order to resolve them in an integral manner.

1.4 Bearing in mind that modern air navigation systems have emerged with new inter-functional, continuous, seamless, flexible and inter-operational requirements established by the Global ATM Operational Concept it is necessary to conduct a study on the needs of the region and the States/Territories/Organization to determine the Global Air Navigation Plan initiatives required to be applied not only in each State/Territory but also on a regional basis.

1.5 Considering the difficulties faced by States/Territories/Organization, and that time is running out to apply ICAO Strategic Objective Plan for the period 2005-2010, action is required to facilitate the harmonized implementation of said objectives, especially when the CAR Region is experiencing significant traffic growth.

1.6 Thus, based on ICAO policies on air navigation services, safety, management, and aerodrome design, and taking into consideration the existing deficiencies in the different aeronautical fields in the CAR Region and the need to implement Global Air Navigation Plan initiatives, this project includes the necessary activities to assist States/Territories/Organization participating in the project to comply with the implementation of the new system. The activities are based on the following documentation containing requirements and agreements: Global Air Navigation Plan (Doc 9750), the Air Navigation Plan - Caribbean and South American Regions (Doc 8733), ICAO SARPs and guidance material, as well as relevant GREPECAS and North American, Central American and Caribbean Civil Aviation Directors meeting conclusions.

1.7 ICAO systemic audits performed through the USOAP programme have also identified noteworthy discrepancies with the laws and rules applied in several States and civil aviation institutions, in which the regulatory-oversight body and the service provider are a single body. For this reason, it is necessary to assist States with their international civil aviation legislation so that they may comply with the strategic objective on “Rule of Law.”

1.8 Another difficulty identified in some States is setting airport and air navigation services charges and their collection. Therefore, it is necessary to assist States with establishing a financial system that allows them to yield the efforts made through the provision of these services.

1.9 Through several entities such as GREPECAS regional meetings, regional and subregional top aeronautical authority meetings, as well as working groups, seminars and other activities, States and ICAO Regional Offices have taken steps to promote the development and implementation of modern civil aviation systems. The results indicate that it is necessary to take additional steps focusing on integral action to address urgent aeronautical matters in a specific and effective manner.

2. ICAO Strategic Objectives for the Period 2005-2010

2.1 To implement the vision of safe, secure and sustainable development of civil aviation through cooperation amongst its member States, ICAO has established six Strategic Objectives for the period 2005-2010:

- A. Safety - Enhance global civil aviation safety
- B. Security - Enhance global civil aviation security
- C. Environmental Protection - Minimize the adverse effect of global civil aviation on the environment
- D. Efficiency - Enhance the efficiency of aviation operations
- E. Continuity - Maintain the continuity of aviation operations
- F. Rule of Law - Strengthen law governing international civil aviation

2.2 RLA/08/000 Project complies with ICAO Strategic Objectives in accordance with the following:

Strategic Objective A: Safety — *Enhance global civil aviation safety*

Enhance global civil aviation safety through the following measures:

1. Identify and monitor existing types of safety risks to civil aviation and develop and implement an effective and relevant global response to emerging risks.
2. Ensure the timely implementation of ICAO provisions by continuously monitoring the progress toward compliance by States.
3. Conduct aviation safety oversight audits to identify deficiencies and encourage their resolution by States.
4. Develop global remedial plans that target the root causes of deficiencies.
5. Assist States to resolve deficiencies through regional remedial plans and the establishment of safety oversight organizations at the regional or sub-regional level.
6. Encourage the exchange of information between States to promote mutual confidence in the level of aviation safety between States and accelerate the improvement of safety oversight.
7. Promote the timely resolution of safety-critical items identified by regional Planning and Implementation Groups (PIRGs).

8. Support the implementation of safety management systems across all safety-related disciplines in all States.
9. Assist States to improve safety through technical cooperation programmes and by making critical needs known to donors and financial organizations.

Strategic Objective C: Environmental Protection — *Minimize the adverse effect of global civil aviation on the environment*

Minimize the adverse environmental effects of global civil aviation activity, notably aircraft noise and aircraft engine emissions, through the following measures:

1. Develop, adopt and promote new or amended measures to:
 - limit or reduce the number of people affected by significant aircraft noise;
 - limit or reduce the impact of aircraft engine emissions on local air quality; and
 - limit or reduce the impact of aviation greenhouse gas emissions on the global climate.
2. Cooperate with other international bodies and in particular the UN Framework Convention on Climate Change (UNFCCC) in addressing aviation's contribution to global climate change.

Strategic Objective D: Efficiency — *Enhance the efficiency of aviation operations*

Enhance the efficiency of aviation operations by addressing issues that limit the efficient development of global civil aviation through the following measures:

1. Develop, coordinate and implement air navigation plans that reduce operational unit costs, facilitate increased traffic (including persons and goods), and optimize the use of existing and emerging technologies.
2. Study trends, coordinate planning and develop guidance for States that supports the sustainable development of international civil aviation.
3. Develop guidance, facilitate and assist States in the process of liberalizing the economic regulation of international air transport, with appropriate safeguards.
4. Assist States to improve efficiency of aviation operations through technical cooperation programmes.

Strategic Objective E: Continuity — *Maintain the continuity of aviation operations*

Identify and manage threats to the continuity of air navigation through the following measures:

1. Assist States to resolve disagreements that create impediments to air navigation.
2. Respond quickly and positively to mitigate the effect of natural or human events that may disrupt air navigation.
3. Cooperate with other international organizations to prevent the spread of disease by air travellers.

Strategic Objective F: Rule of Law — *Strengthen law governing international civil aviation*

Maintain, develop and update international air law in light of evolving needs of the international civil aviation community by the following measures:

1. Prepare international air law instruments that support ICAO's Strategic Objectives and provide a forum to States to negotiate such instruments.
2. Encourage States to ratify international air law instruments.
3. Provide services for registration of aeronautical agreements and depositary functions for international air law instruments.
4. Provide mechanisms for the settlement of civil aviation disputes.
5. Provide model legislation for States.

3. Strategy of ICAO Global Air Navigation Plan

3.1 RLA/08/000 Project complies with the ICAO **Global Air Navigation Plan**, through its 23 Global Plan Initiatives (GPI), which describe the global strategy to attain short, medium and long term benefits. These initiatives are presented in the following Table:

Table 1-1. Global plan initiatives and their relationships to the major groupings

GPI		<i>En-route</i>	<i>Terminal</i>	<i>Area Aerodrome</i>	<i>Supporting Infrastructure</i>
GPI-1	Flexible use of airspace	X	X		
GPI-2	Reduced vertical separation minima	X			
GPI-3	Harmonization of level systems	X			
GPI-4	Alignment of upper airspace classifications	X			
GPI-5	RNAV and RNP (Performance-based navigation)	X	X	X	
GPI-6	Air traffic flow management	X	X	X	
GPI-7	Dynamic and flexible ATS route management	X	X		
GPI-8	Collaborative airspace design and management	X	X		
GPI-9	Situational awareness	X	X	X	X
GPI-10	Terminal area design and management		X		
GPI-11	RNP and RNAV SIDs and		X		

- B9 -

GPI		<i>En-route</i>	<i>Terminal</i>	<i>Area Aerodrome</i>	<i>Supporting Infrastructure</i>
	STARs				
GPI-12	Functional integration of ground systems with airborne systems		X		X
GPI-13	Aerodrome design and management			X	
GPI-14	Runway operations			X	
GPI-15	Match IMC and VMC operating capacity		X	X	X
GPI-16	Decision support systems and alerting systems	X	X	X	X
GPI-17	Data link applications	X	X	X	X
GPI-18	Aeronautical information	X	X	X	X
GPI-19	Meteorological systems	X	X	X	X
GPI-20	WGS-84	X	X	X	X
GPI-21	Navigation systems	X	X	X	X
GPI-22	Communication infrastructure	X	X	X	X
GPI-23	Aeronautical radio spectrum	X	X	X	X

4. Need for the Project

4.1 In view of the above, it is urgent that States take measures to correct existing deficiencies and to make modern systems and aeronautical services in the CAR Region develop in line with the evolution experienced by other ICAO regions and, consequently, it may be inferred that it is urgent to take these measures to implement the 2005-2010 Strategic Objectives and the Global ATM Operational Concept, and to determine the role of air navigation systems, services, safety and aerodromes management.

4.2 To progress towards the establishment of said systems is one of the most important challenges faced by the CAR Region in view that in order to achieve modernization of infrastructure and aeronautical services, it is necessary to develop systems to facilitate inter-functionality and inter-operability on a global basis, which should lead to close coordination between air navigation services and civil aviation by their international and integral nature.

4.3 In order to achieve efficiency, achieve the aforementioned characteristics and develop modern systems, it is necessary that States implement the modern elements of the different civil aviation fields (AGA, AIM, ATM, CNS, MAP, MET and SO). This will allow States to comply with ICAO SARPs and Global and Regional Plan requirements. Therefore, it is essential that States comply individually or collectively with other States to undertake the responsibility that those plans assign.

4.4 Likewise, States must monitor compliance with the requirements of the Global Plan, which sets forth that modern systems shall ensure that all users be provided quality systems that guarantee safety during all the phases of flight. It is thus necessary that States develop a platform solid enough to allow modernization of services through the implementation of quality and universally accessible satellite and automated systems. For this reason, many cases require the development of multi-national facilities as discussed during GREPECAS/14.

4.5 In view that financial and technical resources vary from one State to another, which has been one of the main causes for uneven systems development and implementation in this Region, ICAO, in response to the States' mandate, established the Technical Co-operation Programme to ensure homogeneous implementation of the requirements of the Global and Regional Air Navigation Plans to help governments with implementation of facilities foreseen in said plans.

4.6 ICAO Strategic Objectives for the period 2005-2010 and the GPIs are the basis for the development of this technical co-operation project.

GREPECAS

4.7 The Regional Air Navigation Planning and Implementation Group for the Caribbean and South America (GREPECAS) is the regional mechanism charged with ensuring continuous implementation of the regional air navigation plan, determining specific problems affecting air navigation, and suggesting appropriate solutions. Thus, in matters concerning air navigation, GREPECAS has urged States to take the required measures to resolve existing deficiencies through the implementation of modern systems that develop and upgrade services. The following are some agreements of GREPECAS concerning different fields.

4.8 In the aerodrome field, GREPECAS has repeatedly concerned the many existing AGA deficiencies, the need for establishing and implementing action plans for their resolution, the lack of application of ICAO SARPs and guidance material, appropriate aerodromes maintenance, and the establishment of emergency plans and Emergency Operations Centres (EOC). In the most recent GREPECAS Conclusion 14/31 - *Aerodrome Certification/Safety Management Systems (SMS)*, the need for training States' personnel on the application of SARPs and performing studies on RESAS, runway strips and obstacles, was also examined resulting in the adoption of GREPECAS Conclusion 14/32. Other areas in this field referred to bird hazard/wildlife prevention, protection and prevention of runway incursions, as well as the need for implementing an environmental protection system in airports. Conclusion 14/61 - *Analysis of Runway End Safety Area (RESA) and Runway Strip Deficiencies* also identifies deficiencies in the aerodromes field.

4.9 With regard to the implementation of Safety Management Systems (SMS), GREPECAS formulated Conclusion 14/4 – *SMS Implementation and Instructor Training Courses*.

4.10 In the AIM field, GREPECAS, through Conclusion 14/36, addressed the need for implementation of a quality management system for AIM in the CAR/SAM Regions; moreover, Conclusion 14/37 addressed the establishment of a project on digital VFR aeronautical charts. Conclusion 14/39 addressed the implementation of Geographical Information Systems (GIS) in AIM services as automated support for electronic presentation of AIP information and aeronautical charts.

4.11 With regard to CNS/ATM systems, GREPECAS Conclusions 14/43 and 14/44 addressed the establishment of ATM automated systems.

4.12 In the ATM field, GREPECAS addressed the operational use of RVSM in the CAR/SAM Regions through Conclusion 14/45 – *Training on the Analysis of Large Height Deviations (LHD)* and Conclusion 14/46 on implementation of Performance-Based Navigation (PBN). In addition, GREPECAS has established RNAV and RNP training requirements, guidelines on Air Traffic Flow Management (ATFM), ATS contingency plans and other matters.

4.13 Regarding CNS systems, the latest guidelines and conclusions of GREPECAS deal with the following issues: implementation of air-ground data links (Conclusion 14/53), implementation of routers and ATN ground-ground applications, implementation of AMHS, implementation of SBAS (Decision 14/55) and GBAS, gradual deactivation of NDB stations, development of surveillance systems and studies on regional SSR in Mode S implementation, regional implementation of ADS systems and ADS-B trials, and other matters.

4.14 The GREPECAS/14 Meeting examined and adopted Conclusion 14/59 and Decision 14/60 to address the existing deficiencies in air navigation services and aerodrome design and to foster the necessary planning criteria to resolve them.

ICAO Policies on Air Navigation Services and Airports Charges

4.15 The *Convention on International Civil Aviation* (Doc 7300) sets forth in Article 15 the basic criteria established by ICAO regarding airport and air navigation services charges; signatory States are committed to adhere to this and all the Articles without exception.

4.16 With this project, States that so require will be assisted with the development of a financial system for air navigation services and airport charges.

4.17 The basic criteria established by ICAO concerning airport and air navigation services charges, included in Article 15 of the *Convention on International Civil Aviation*, (Doc 7300) are summarized in the following three principles:

1. uniform conditions shall apply to the use, by aircraft of every contracting State, of aerodromes and air navigation facilities of a determined contracting State;

2. any charges that may be imposed by a contracting State for the use of such airports or air navigation facilities by the aircraft of any other contracting State shall not be higher than those that would be paid by national aircraft of the same class engaged in similar operations, and

3. no fees, dues or other charges shall be imposed by any contracting State in respect solely of the right transit over or entry into or exit from its territory of any aircraft of a contracting State or persons or property thereon.

4.18 Based on the third principle, all States have the right to recover, through charges, the costs which they incurred regarding services provided by aircraft operators. The essence of this principle is that a State shall not impose charges exclusively for the right of transit over or entry into or exit from its territory of any aircraft.

4.19 Article 15 also addresses two other aspects. The first is that States shall publish all of their airport and air navigation services charges and communicate them to ICAO. This information is gathered and published annually by ICAO in *Tariffs for Airports and Air Navigation Services* (Doc 7100).

4.20 Article 15 also sets forth that upon request by a Contracting State, ICAO will proceed to review the charges imposed and will formulate the relevant recommendations thereon for consideration of the State or States concerned. Note should be taken that the Article specifically refers to claims posed by an interested Contracting State, not by an aircraft operator.

4.21 With regard to the legal status of the principles set forth in Article 15 and, in general, in all the Articles of the Chicago Convention, an ICAO Contracting State cannot be exempt from applying any of the stated principles, given that in its signatory State status it is committed to adhere to all the Articles without exception.

4.22 In ICAO's *Policies on Charges for Airports and Air Navigation Services*, (Doc 9082), some common issues to airports and air navigation services are addressed including scope and proliferation of charges, organizational and managerial issues, and other factors affecting the economic situation of airports and air navigation services.

4.23 ICAO's Policies on Charges differ from the Chicago Convention concerning legal status, in view that an ICAO Contracting State is not legally bound to adhere to them, but to the Convention Articles. Notwithstanding, ICAO principles on policies, including those regarding charges, are based on recommendations formulated in important international conferences, and States are morally bound to follow them and to ensure that adopted methods for cost recovery are aligned with them.

4.24 In ICAO's Policies on Charges, concern is expressed on the proliferation of charges on air traffic and it recommends that States:

- a) permit the imposition of charges only for services and functions which are provided directly related to, or ultimately beneficial for, civil aviation operations; and
- b) refrain from imposing charges which discriminate against international civil aviation in relation to other modes of international transport.

4.25 It is also recommended that, where this is in the best interest of providers and users, States consider establishing autonomous entities to operate their airports and air navigation services in view that experience gained worldwide indicates that where airports and air navigation services have been operated by autonomous entities, their overall financial situation and managerial efficiency have generally tended to improve. With the rapidly growing autonomy in the provision and operation of airports and air navigation services, many States may wish to establish an independent mechanism for the economic regulation of airports and air navigation services. Moreover, States are recommended to apply the best commercial practices for airports and air navigation services in order to promote transparency, efficiency and cost effectiveness in the provision of an appropriate quality of services and facilities.

4.26 An important consideration of ICAO's Policies on charges is that there should be a balance between the respective interests of airports and providers of air navigation services on one hand and of air carriers on the other, in view of the importance of the air transport system to States and its influence in fostering economic, cultural and social interchanges between States. This applies particularly during periods of economic difficulty. It is therefore recommended that States encourage increased cooperation between airports and providers of air navigation services and air carriers to ensure that economic difficulties facing them all are shared in a reasonable manner.

4.27 The principles of Section III of the ICAO Policies on charges for air navigation services cover issues such as: the cost basis for air navigation charges, cost-assignment among aeronautical users, systems for the imposition of charges, pre-funding of projects, currency issues, charges for approach and aerodrome control, enroute charges, charges for services used by aircraft that do not fly over the provider State and consultation with users.

4.28 Among the main principles of the ICAO Policies on charges that are related with the cost base for setting charges for air navigation services are the following:

- a) where air navigation services are provided for international use, the providers may require the users to pay their share of the related costs; at the same time international civil aviation should not be asked to meet costs which are not properly allocable to it; and
- b) the cost to be shared is the full cost of providing the air navigation services, including appropriate amounts for cost of capital and depreciation of assets, as well as the costs of maintenance, operation, management and administration.

4.29 Other principles and recommendations related with the cost basis to set air navigation services charges, the systems for the imposition of charges and their collection are the following:

- a) States should maintain accounts for the air navigation services they provide in a manner which ensures that air navigation services charges levied on international civil aviation are properly cost based; and, it is advised to provide consultations to provide users with transparent and adequate financial, operational and other relevant information;
- b) air navigation services may produce sufficient revenues to exceed all direct and indirect operating costs and so provide for a reasonable return on assets (before tax and capital costs) to contribute towards necessary capital improvements;
- c) allocation of the costs of air navigation services among aeronautical users should be carried out in a manner equitable to all users. The proportions of cost attributable to international civil aviation and other utilization of the facilities and services (including domestic civil aviation, State or other exempted aircraft, and non-aeronautical users) should be determined in such a way as to ensure that no users are burdened with costs not properly allocable to them according to sound accounting principles;
- d) any charging system should, so far as possible, be simple, equitable and, with regard to route air navigation services charges, suitable for general application at least on a regional basis. The administrative cost of collecting charges should not exceed a reasonable proportion of the charges collected;
- e) charges should not be imposed in such a way as to discourage the use of facilities and services necessary for safety or the introduction of new aids and techniques;
- f) charges should be determined on the basis of sound accounting principles and may reflect, as required, other economic principles, provided that these are in conformity with Article 15 of the *Convention on International Civil Aviation* (Doc 7300) and other principles in the present Policies on charges; and

- g) air navigation services providers for international use may require all users to pay their share of the cost of providing them regardless of whether or not the utilization takes place over the territory of the provider State.

4.30 An important aspect is that pre-funding of projects may be accepted in specific circumstances where this is the most appropriate means of financing long-term, large-scale investment, provided that strict safeguards are in place.

4.31 ICAO's Policies on Charges emphasize the importance of consultation with users of air navigation services before changes in charging systems or levels of charges are introduced. The purpose of consultation is to ensure that the provider gives sufficient information to users related to the proposed change and gives proper consideration to the views of users and the effect the charges will have on them. It is also important, in light of the high and ever-increasing cost of providing new or expanded air navigation services, that users or their representative organizations be consulted before the finalization of plans for such projects. Likewise, users, particularly air carriers, should provide to the extent possible and with anticipation, planning data based on a 5 to 10-year forecast. In this sense, with regard to charges in particular, there may be a need for a neutral party at the local level to preempt and resolve disputes before they enter the international arena (a first resort mechanism).

4.32 ICAO Policies on Charges does not mention cost-recovery principles for CNS/ATM systems, since all ICAO basic principles related to air navigation services charges are applied to its implementation. However, it is necessary to give special consideration to organization, management and cooperation, as well as financing, cost-determination and cost-recovery mechanisms.

4.33 ICAO Policies on Charges in the air transport field are expressed in the Assembly resolutions that are updated in each Assembly ordinary session. These resolutions deal with policies related to all sectors of the air transport programme through special appendices. Assembly Resolution A35-18 – *Consolidated statement of continuing ICAO policies in the air transport field*, the last one in force, includes Appendix F, which is related to airports and air navigation services, which urges Contracting States to comply with Article 15 of the Chicago Convention. States are also reminded that they are the sole responsible entities to assume Article 28 of the Convention, which is separate from the organizational structure being employed by airports and services.

Eleventh Air Navigation Conference

4.34 The Eleventh Air Navigation Conference modified several CNS/ATM concepts in order to refocus aspects related to the implementation of new satellite-based air navigation systems. These systems are being developed under the "Global ATM Operational Concept," whose structure consists of ATM homogeneous and regular air traffic areas that bring world-wide aeronautical infrastructure elements into a global system.

4.35 The Global ATM Operational Concept offers a global framework to unify State and regional planning processes, since it foresees the need for regional coordination and takes into account the differences among States and regions. The global framework recognizes the need for uniformity with implementation of the Global Plan, regional plans and national plans. To accomplish the ATM global system several initiatives from the Global Plan will be implemented progressively over several years.

4.36 This operational concept defines seven “concept components” that have been integrated to form the ATM system. These include: organization and air space management, aerodrome operations, balancing demand and capacity, synchronizing traffic, conflict management, airspace user operations and ATM services delivery management.

4.37 The Global ATM Operational Concept represents the ICAO vision of an integrated, harmonized and functional ATM system that will be extended until 2025 and beyond. In this manner, the Operational Concept describes services that will be necessary for the operation of the global air traffic system well beyond 2025. Therefore, it includes and considers requirements to increase user flexibility and elevate operational efficiency to the maximum for increased system capacity and improved safety of the future ATM system.

ICAO Functions and Responsibilities

4.38 In accordance with Article 37 of the Convention, ICAO will continue to be responsible for the adoption and amendment of SARPs and procedures that govern civil aviation systems. In order to guarantee the highest degree of uniformity for all issues related to air navigation safety, regularity and efficiency, ICAO will coordinate and oversee the implementation of the GPIs in accordance with the air navigation plans and the elements of the Global ATM Operational Concept. Furthermore, ICAO will facilitate assistance to States with technical, financial, management, legal and cooperative aspects. ICAO will continue to be acknowledged in the promotion and coordination of implementation of SARPs.

Technical Co-operation

4.39 ICAO acknowledges that for coordinated and harmonized global implementation and obtaining prompt benefits for States, users and providers it is necessary to have a technical co-operation project for the efficient implementation and operation of civil aviation systems. With this objective, ICAO will have a central role in the coordination of technical co-operation arrangements to develop projects to assist implementation. ICAO also invites States who are able to do so, to provide assistance with technical, financial, legal and cooperative aspects for implementation.

Project Description

4.40 The purpose of the project is to develop a sound platform for the implementation of modern civil aviation systems to provide efficient aeronautical services in the CAR Region, based on application of the highest level of ICAO standards and recommended practices, the ICAO Strategic Objectives, and modern technologies that meet the operational requirements of the Global ATM operational system contemplated in the Global Air Navigation Plan.

4.41 The activities to be developed by the project in order to comply with the Strategic Objectives include the preparation of action plans to: *enhance global civil aviation safety; enhance the efficiency of aviation operations; maintain the continuity of aviation operations strengthen law governing international civil aviation and minimize the adverse effect of global civil aviation on the environment.*

4.42 Within the activities, new operational requirements will be analyzed for the functionality, seamlessness, flexibility and interoperability established in the Global ATM Operational Concept for the operation of modern air navigation systems. To do so, an analysis of the current infrastructure, services, equipment and human services situations will be performed to determine the GPIs that apply in each State/Territory/Organization and in the region as a whole. In this manner, States and the region will be able to choose the GPIs that allow compliance with performance objectives and adapt specifically to the particular needs of the CAR Region States.

4.43 Likewise, a study will be performed to strengthen both technically and financially, civil aviation facilities and services by developing activities to review airport rights and air navigation services to establish in those States who require it, a financial system that allows taking advantage of the efforts made with the provision of services. In general, the project will cover other necessary aspects to ease the uniform transition to the modern ATM system such as:

- Legal framework and adaptation to changing needs.
- Ensure the highest level of civil aviation efficiency and safety.
- Validity, coordination and implementation of regional air navigation plans.
- International Aeronautical Law instruments to base the strategic objectives.
- National organizational structures and their modernization.
- Required air navigation services and system infrastructure and financing.
- System for Air navigation service charges and collection.
- Aerodrome management and design.
- Human resources and training.

4.44 The project will be carried out in two phases. The first phase involves the analysis, studies and compilation of information including action plan preparation and development. The second phase involves the implementation of systems and services.

Co-operation of International Organizations

4.45 To obtain financing, the project will involve to the assistance of participating States in the Region, government entities of developed countries, multilateral organizations, financing agencies, aeronautical industry, etc.

5. Expected outcome by the end of the project

5.1 Implementation of all identified steps in the CAR/SAM Regional Implementation Plan for New Civil Aviation Systems and Services.

5.2 Development of an action plan for the implementation of the ICAO Strategic Objectives for 2005-2010 and the Global Plan Initiatives (GPIs).

5.3 Establishment of an action plan for the seamless transition to the ATM system outlined in the Global ATM Operational Concept.

5.4 Establishment of a financing management system for airport and air navigation services charges.

5.5 Determination of legislative modifications required to adjust certain laws to modern civil aviation requirements.

5.6 Development of a plan to modernize organizational structures.

5.7 Establishment of national committees for the implementation of action plans and CNS/ATM systems.

5.8 Establishment of national committees to review discrepancies found in USOAP audits regarding aeronautical operations, airworthiness, licenses and the implementation of action plans.

5.9 Development, in coordination with the TRAINAIR Centres in the Region, of a training plan for the implementation of CNS/ATM systems in different services, taking into consideration the strategy to prepare training plans in the Global Air Navigation Plan.

5.10 Personnel familiarization in the different aviation fields involved in the project, with planning, implementation and operation of modern civil aviation systems.

Foreseen Beneficiaries

5.11 Civil aviation administrations, operators and air services users will benefit from the results of this project, through implementation of new CNS/ATM systems, which will result in increased safety of air operations, reduction in fuel burn, reduction in flight delays and increased capacity of the air navigation system.

Reasons for the UNDP/ICAO Assistance

5.12 Uniform implementation of standards, recommended practices and international procedures that emanate from the International Civil Aviation Convention and its Annexes, requires all States to provide facilities and technological aviation services. The implementation and maintenance of these services in developing countries would be almost impossible without external technical assistance. Experience has shown that the ideal and convenient way for States to obtain assistance is through the corresponding international organizations and agencies of the United Nations system.

5.13 UNDP participation allows the subsector to have the cooperation of the specialized agency in the planning and coordination of programmes and development projects and take advantage of their well-structured organization to support international technical co-operation activities.

5.14 ICAO assistance, as the civil aviation specialized agency, ensures that technical co-operation is based on SARPs, and internationally adopted procedures and plans for the provision of facilities and services supporting air navigation and air operation safety.

Special Considerations

5.15 The regional project will have liaison with national technical co-operation programmes that participating States have in place for the same sub-sector in order to coordinate and complement activities required regionally and in States/Territories/Organization.

5.16 The project will standardize the implementation of the CAR/SAM Regional Air Navigation Plan.

5.17 The participation of women in civil aviation activities has been slowly increasing in the region, with an estimated 10% level of participation in training, support and technological preparation activities through ICAO technical co-operation projects.

Coordination of the Project

5.18 The coordination of the project will be centralized at the ICAO Technical Co-operation Bureau in Montreal with the support of the NACC Regional Office in Mexico, who will contribute to the establishment and supervision of the project technical activities.

5.19 The implementation of the project will be overseen by a Coordination Committee consisting of participating States, the ICAO Secretariat formed by representatives of the Technical Co-operation Bureau and the participation of the NACC Regional Office.

5.20 The Coordination Committee will meet regularly at least once a year to determine the annual programme of activities for the project, obtain information on accomplishments and progress and decide on any necessary adjustments.

5.21 The Regional Office will make necessary arrangements for the monitoring and follow-up on the technical activities and project results, and will make recommendations to the Technical Co-operation Bureau.

C. DEVELOPMENT OBJECTIVE

The project will contribute to a more safer, more efficient and economical air transport system, as a means to support social, economical and cultural development in the region.

D. IMMEDIATE OBJECTIVES, RESULTS AND ACTIVITIES

These are contained in the following pages. Acronyms used in the third column mean:

RO	ICAO NACC Regional Office
ADM	Civil Aviation Organizations Administration Consultant
AGA	Aerodromes Consultant
ATM	ATM Systems Consultant
AIM	AIS Automation Consultant
CNS	CNS Systems Consultant
IC	Project International Coordinator
DCAs	Directorate of Civil Aviation or equivalent authorities
EAT	Economy Consultant in Air Transport
FIN	Civil Aviation Systems Finance Consultant
INF	Aviation Information Systems Planning
LEG	Legal Consultant, Specialized in Civil Aviation Standards
MAP	Aeronautical Mapping Consultant
MET	MET Systems Consultant
SO	Safety Oversight Consultant
TCB	ICAO Technical Co-operation Bureau

IMMEDIATE OBJECTIVE No. 1 – Develop an air navigation systems implementation plan in accordance with the Global Air Navigation Plan and the ICAO Strategic Objectives

Results	Activities	Responsible entity for each activity
<LEG-ADM> 1.1.- Updating of the national standards in accordance with air navigation services and international safety standards	1.1.1 Review the critical elements found in ICAO USOAP Audits regarding valid standards on air navigation services regulations and procedures of each State/Territory/Organization; draft the corrective actions required and take joint action with Administrations to make the necessary changes. 1.1.2 Review the organizational structures of Civil Aviation Administrations to draft recommendations to separate tasks between the regulatory entity and the service provider, and recommend the required legal modifications. 1.1.3 Review organizational structures of air navigation services and draft recommendations to modernize management and administration. 1.1.4 Review reference material on institutional aspects (administrative, financial and action plans) related to the transition towards CNS/ATM systems and formulate recommendations. 1.1.5 Analysis of air navigation services human resources and recommend required staffing.	IC/ RO/ DCAs/ /LEG /ADM
<FIN> 1.2. Financial system on air navigation and airport services charges	1.2.1 Review the criteria applied to charges for air navigation services in each State/Territory/Organization and draft recommendations to establish a proper financial system that includes: a) financial control, implementation of financial management; b) cost-determination to set charges for navigation, landing and airport services; c) charging procedures and collection of rights; and d) infrastructure and service management financing. 1.2.2 Organize seminars to disseminate information on institutional, administrative and financial aspects to the corresponding staff at each State / Territory /Organization	IC/ RO/ DCAs / /LEG /FIN
<CNS> 1.3 Development of VHF and HF air-ground communications infrastructure	1.3.1 Analysis and implementation of infrastructure to improve current VHF and HF air-ground coverage in accordance with the relevant requirements: a) technical analysis of current VHF and HF coverage; b) preparation of technical solutions to complete the required air-ground coverage; c) review the implementation status of required air-ground voice and data communications; and d) technical recommendations to improve reliability and availability in air-ground communications.	IC/RO/ DCAs/ CNS

Results	Activities	Responsible entity for each activity
1.3a Development of ground-ground communications infrastructure	1.3a.1 Integral analysis and implementation of ground-ground communications infrastructure: a) technical analysis of the ATS voice circuits, in accordance with requirements; b) technical analysis of AFTN communications; c) technical recommendations to improve reliability and availability of ground-ground communications; d) AMHS implementation; and e) implementation of other applications.	IC/RO/ DCAs/ CNS
1.3b Development of navigation infrastructure	1.3b.1 Integral analysis and implementation of navigation infrastructure in accordance with the Aerodrome, terminal and ATC route: a) analysis of the existing navigation aids; b) recommendation on optimizing and modernizing the radio navigation aids infrastructure; and c) prepare recommendations related to Regional Project RLA/03/902 on the implementation of GNSS available capacity and their augmentation systems.	IC/RO/DCAs/CNS
1.3c Development of surveillance infrastructure	1.3c.1 Integral analysis of implemented and required surveillance systems through implementation of the following tasks: a) analysis of the current and required surveillance systems; b) recommendations on radar data exchange; and c) recommendations on implementation of new surveillance systems, such as ADS-B.	IC/RO/DCAs/CNS
1.3d Definition of supporting activities for validation/certification of CNS systems	1.3d.1 Necessary activities for the CNS Systems validation and certification process are: a) technical supervision regarding standards and regulations, including documentation; b) verification of technical systems regarding standards and regulations, including documentation; and c) definition of a development model and follow-up on the CNS infrastructure.	IC/RO/DCAs/CNS
1.3e Implementation of new CNS/ATM elements	1.3e.1 Preparation of the reference material on institutional aspects related to the transition to CNS/ATM systems, including action plans that lead to the implementation of CNS/ATM elements.	IC/RO/DCAs/CNS
<ATM>		
Integral Plan for the implementation of ATM Systems in accordance with the Global ATM Operational Concept	1.4.1 Study to determine the level of regional infrastructure in each State/Territory/Organization for implementation of ATM systems	IC/RO/DCAs/ATM

Results	Activities	Responsible entity for each activity
	<p>1.4.2 Study to establish the “Uniformity of Upper Airspace Classifications” in order to obtain harmonization and traffic handling using the ICAO ATS airspace classification, which will be determined for the region with the following characteristics:</p> <ul style="list-style-type: none"> a) continuous, free of discontinuities; b) free of operational differences; c) uniform standards and procedures application; and d) a more flexible and dynamic airspace management. <p>1.4.3 Study to establish “Dynamic and Flexible Management of ATS Routes,” that integrates the performance-based navigation concept (PBN), in order to use preferred flight-trajectories based on the performance navigation capacity:</p> <ul style="list-style-type: none"> a) RNAV routes; b) Required Navigation Performance (RNP); c) Implementation of PBN capability in all flight phases (route, terminal and approach) that optimize connection with the final approach; and d) safety assessment after the RVSM implementation. <p>1.4.4 Study to establish “Terminal Area Design and Management” for each State/Territory to optimize the TMA improving traffic management and capacity including:</p> <ul style="list-style-type: none"> a) uniform design of all TMAs; b) complete implementation of the WGS-84 system (review); c) arrivals and departures standardized with SID and STARs with PBN; and d) Integral functioning of ground systems with aircraft systems – FMS arrival procedures <p>1.4.5 Study to establish Air Traffic Flow Management (ATFM) in order to implement demand and capacity pre-tactical and tactical strategic measures to handle traffic flows compatible with ATM system capacity</p> <p>1.4.6 Study for the preparation of “Collaborative Airspace Design and Management” leading to implementation of uniform organization principles and more flexible and capable air traffic management to dynamically adapt to air traffic flow in the region, which includes:</p> <ul style="list-style-type: none"> a) a cooperative airspace organization with the participation of all users; b) analysis of aircraft and fleet capacity; and c) collaborative decision-making (CDM), flight management systems (FMS), data link applications (CPDLC), ATS automation, processing of flight plans. 	IC/RO/DCAs/ATM

Results	Activities	Responsible entity for each activity
<SAR>		
<AIM>		
1.5 Establishment of a Quality Management System for AIS/MAP services in the CAR Region in accordance with ISO standards	<p>1.5.1 Development of the Guidance Manual phases for implementation of a Quality Management System for AIS/MAP Services in the CAR Region.</p> <p>1.5.2 Phase 1: Gather information, data and working methods of the AIS/MAP Services in participating States and determine the level of assistance required for each State/Territory/Organization for the implementation of a Quality System.</p> <p>1.5.3 Phase 2: Based on the gathered information, analyze and diagnose working methods of each State, for the adaptation of services to ISO standards.</p> <p>1.5.4 Phase 3: Preparation of documentation applicable to the characteristics of each State, which consists of:</p> <ul style="list-style-type: none"> a) Quality Manual b) General Procedures c) Technical Procedures and Technical Instructions d) Records <p>1.5.5 Phase 4: Carry out a workshop for the joint review of prepared documentation, accompanied by a meeting of the project members for planning of the following phases (Duration: 7 days):</p> <ul style="list-style-type: none"> a) The meeting will be coordinated by the NACC Regional Office. b) Prepare the corresponding meeting report. <p>1.5.6 Phase 5: Organize a course (70-hour duration) for the formation of AIS Quality System Managers, who will be the specialists in charge of the State's system maintenance.</p> <p>1.5.7 Phase 6: Start the implementation of processes and the activation of the quality system in each service</p>	IC/RO/DCAs/AIM

Results	Activities	Responsible entity for each activity
	<p>1.5.8 Phase 7: Assess and verify each State / Territory / Organization quality system level of compliance, through an internal audit.</p> <p>1.5.9 Phase 8: Carry out relevant actions to proceed with the certification of AIS/MAP Quality Management Systems at each State, that include:</p> <ul style="list-style-type: none"> a) hiring of a certification company; b) systems audit; and c) systems certification. 	IC/RO/DCAs/AIM
1.5a Production and implementation plan for electronic aeronautical charts required for planning, navigation and air traffic control based on ICAO Annex 4 international specifications	<p>1.5a.1 Review and update the CAR/SAM ANP Volume II, FASID Part VIII, Table AIS 7 and Chart AIS 2, which established States' WAC chart production responsibility.</p> <ul style="list-style-type: none"> a) Determine States that accept WAS chart production responsibility for other States territories. b) Preparation of a Memorandum of Understanding, by which States delegate production of charts to other States. c) Promote and obtain the corresponding signatures for agreement validity. <p>1.5a.2 Develop a digital production, implementation and maintenance plan based on Annex 4 specifications and CAR/SAM Air Navigation Plan requirements and other RNAV, RNP and FMS system requirements (supporting the GNSS system implementation). The plan will include the following aspects:</p> <ul style="list-style-type: none"> a) establishment of the recommended methodology and production processes, taking into account quality requirements (accuracy, definition and integrity); b) establishment of technologies to be used in chart production and maintenance, including Geography Information systems (GIS) and Terrain Digital Models (TDM); c) coordination of different sources (Geographic Institutes, International Organizations, and other public or private sources) to obtain electronic data: terrain, obstacles, geographic, geodesic, aeronautical and cartographic; and d) establishment of production and implementation plan stages. 	IC/RO/DCAs/MAP

Results	Activities	Responsible entity for each activity
MET		
1.6 Implementation plan for MET services improvement	<p>1.1.6 Develop a plan to improve national and regional meteorological systems in an integrated manner supporting global ATM systems for airspace optimization. The plan will include the following aspects:</p> <ul style="list-style-type: none"> a) automation of States meteorological systems; b) availability of OPMET operational meteorological information in real-time and with immediate access, contributing to aircraft surveillance, air traffic flow management and flexible and dynamic aircraft direction; c) timely distribution and use of information prepared by the World Area Forecast System (WAFS), International Aviation Volcano Watch (IAVW) and tropical cyclones awareness system; and d) improvements in use of data links through D-ATIS and D-VOLMET systems to maximize capacity. 	IC/RO/DCAs/MET
GEN		
1.7 Execution of action plans for air navigation systems	<p>1.7.1 Review, prepare and execute regional and national action plans for implementation of modern air navigation systems.</p> <p>1.7.2 Analyze and establish national committees for execution of national action plans and implementation of CNS/ATM systems.</p> <p>1.7.3 Analyze and establish national committees for reviewing discrepancies reported in USOAP audits regarding flight operations, airworthiness, licenses and execution of action plans.</p>	IC/RO/DCAs
1.8 Organization of courses, workshops and seminars	<p>1.8.1 Gather, analyze and process information on human resource training needs in the air navigation fields subject to this project and determine training programmes required by States / Territories / Organization.</p> <p>1.8.2 Coordinate and develop with TRAINAIR CIACs in the Region, a training programme for CNS/ATM system implementation in the different services, using as reference the Global Air Navigation Plan strategy for developing training programmes, which includes:</p> <ul style="list-style-type: none"> a) basic training for personnel with different service competence; b) specific personnel training for tasks and for continuous managing, operating and maintaining systems; c) training for planners responsible for implementing CNS/ATM systems; d) organize workshops and seminars as necessary; and e) develop and assess a plan for granting fellowships. 	IC / RO / DCAs / CIACs TRG

Immediate Objective N° 2

Develop an aerodrome design and management implementation plan in accordance with the Global Air Navigation Plan initiatives to improve the use of the movement areas and operational security

Outputs	Activities	Party responsible for each activity
AGA		
2.1 Implementation plan for improvements in aerodrome design and management	2.1.1 Gather and analyze information on the current status of international aerodromes regarding: available runways and their characteristics, design and use of the movement area, quantity and locations of aircraft parking slots, available stop-over services, aircraft arrival and departure procedures and operation numbers at peak hours.	IC / RO / DCAs / AGA
	2.1.2 Develop and prepare guidance material to be used by participating States and organization for implementing improvements to international aerodrome design and management, aimed at guaranteeing optimum use of resources and stop-over services; increasing capacity; improving arrival procedures; parking and aircraft departure; encourage coordination for the efficient use of aircraft parking areas; optimize of surface traffic by improving land vehicle movement in the maneuvering area; increase operational security through continuous surveillance and environmental protection.	
	2.1.3 Execute necessary structural improvements for optimization of movement area use with necessary structural improvements, such as the installation of additional taxiways, parallel taxiways to main runways for two-way traffic flow, additional runway exits, including high-speed or rapid exit taxiways and improved lighting and signage.	
	2.1.4 Aerodrome design and management improvement, achieving optimum capacity for each runway considering limitations regarding implemented procedures, area movement design, surveillance capacity and meteorological limitations.	
	2.1.5 Coordinate development of seminars and workshops in aerodromes, for implementation of improvements on aerodrome design and management, aimed at providing necessary technical material and facilitating exchange of experiences and knowledge among the participants with the ICAO NACC Regional Office.	

Immediate Objective N° 3

Implement an Operational Safety System for use by aircraft operators, maintenance entities, air navigation service providers and aerodrome administrations.

Outputs	Activities	Party responsible for each activity
SO		
3.1 Revise and apply civil aviation law regarding safety oversight and corresponding national regulations.	3.1.1 Analyze current aviation laws and regulations on safety oversight in States/Territories and develop appropriate amendments. 3.1.2 Prepare an action plan for drafting and application of regulations, and create a committee formed by OPS/AIR/PEL specialists for its execution.	IC / RO / DCAs / SO
3.2 Action plan for implementation of required elements for a operational safety management system	3.2.1 Compile, analyze and process information on operational safety systems and action plans applicable to States/Territories of the CAR Region. 3.2.2 Review, prepare and execute national action plans to implement a safety oversight management system applicable to aircraft operators, aircraft maintenance entities, air navigation service providers and aerodrome administrations in accordance with the ICAO Safety Management Manual.	IC / RO / DCAs / SO
3.3 Support for implementation of the based on the GASP GSIs.	3.3.1 Develop a programme to support the Regional Aviation Safety Group – Pan America with implementation of recommended actions on all Global Aviation Safety Programme (GASP) GSIs, including aspects such as: a) Implementation of the Safety Management System for risk and hazard identification; b) Use of technology to improve safety – Gap elimination. c) Information flow on safety hazards.	IC / RO / DCAs / SO
3.4 Electronic system for reporting and collecting information on accidents and incidents in accordance with the ICAO ADREP classification.	3.4.1 Gather and analyze States / Territories / Organization, reporting and collecting procedures for accident and incident information to implement an electronic system fulfilling ICAO ADREP classification, including: a) establishment of tools, mechanisms and processes for effective investigation of accidents and incidents; b) establishment of a CAR regional network based on the ECCAIRS model for critical aviation safety information exchange; and c) establishment of a database in accordance with the ECCAIRS model to provide preventive information on operational risks and hazards, including SMS information, loss of separation both air and runway incursions or excursions in its most critical classification.	IC / RO / DCAs / SO
3.5 Organization of courses, seminars and workshops	3.5.1 Coordinate and develop with TRAINAIR CIACs of the region a training programme for the implementation of Safety Oversight Systems. 3.5.2 Coordinate with the ICAO NACC Regional Office development of safety oversight seminars and workshops.	IC/RO/DCAs/SO

E. INPUTS**1. Participant States****1.1 Personnel**

1.1.1 Participant States will provide:

- a) counterpart personnel corresponding to project consultant specialties, including the designation of an officer responsible for air navigation planning; and
- b) administrative support personnel, as necessary.

1.2 Training

1.2.1 Participant States will provide air transportation tickets to and from locations where training programmes supported by the project will be held, and will continue paying personnel holding fellowships their salaries and other allowances throughout their attendance.

1.3 Office accommodation and equipment

1.3.1 Participant States will provide office accommodation, office equipment, stationery and supplies, as well as local transportation and international telephone and electronic communication facilities for project consultants.

2. UNDP Inputs**2.1 Assignment of professional staff**

2.1.1 International consultants in the following specialties will be provided:

RO	ICAO NACC Regional Office
ADM	Civil Aviation Organizations Administration Consultant
AGA	Aerodromes Consultant
ATM	ATM Systems Consultant
AIM	AIS Automation Consultant
CNS	CNS Systems Consultant
IC	Project International Coordinator
DCAs	Directorate of Civil Aviation or equivalent authorities
EAT	Economy Consultant in Air Transport
FIN	Civil Aviation Systems Finance Consultant
INF	Aviation Information Systems Planning
LEG	Legal Consultant, Specialized in Civil Aviation Standards
MAP	Aeronautical Mapping Consultant
MET	MET Systems Consultant
SO	Safety Oversight Consultant
TCB	ICAO Technical Co-operation Bureau

2.1.2 A national professional in the following specialty will be provided:

17-01 Information Systems Planning (INF)

2.1.3 The tentative project workplan is shown in **Attachment 1** and job descriptions in **Attachment 3**.

2.2 **Administrative Support**

2.2.1 Administrative support personnel shall be provided as necessary to assist in the development of project activities.

2.3 **Official travel and missions**

2.3.1 Funds to cover the costs of project personnel official travel and project co-ordination, monitoring or review missions, as necessary.

2.4 **Training**

2.4.1 Funds for the implementation of fellowships in accordance with a tentative training programme as shown in **Attachment 4**.

2.5 **Equipment**

2.5.1 Funds are provided for the procurement of equipment as shown in **Attachment 5** and other as necessary.

2.6 **Miscellaneous**

2.6.1 A budgetary provision is considered to cover miscellaneous expenses, including the preparation of reports, plans and manuals and simultaneous interpretation and documents translation services.

F. RISKS

1. Factors that could cause a delay or impede the achievement of project outcomes and objectives are the lack of timely payment of cost sharing contributions by participant States, possible delays in the selection of professional personnel and fellowship candidates, and bureaucratic delays in the process of approval acquisition.

2. A probable factor that could be the cause of major delays or impede the achievement of project outcomes and objectives would be a drastic change in the political or economical situation in participant States.

G. PRIOR OBLIGATIONS AND PREREQUISITES

1. Funds corresponding to the cost sharing contribution of the participant States should be deposited immediately after project approval on the dates foreseen, according to the schedule of payments, in order for the executing agency to start the activities.
2. The States hosting project activities will provide to the project professional staff with all reference and background material available in relation to the activities to be developed, as well as the authorizations, approvals, permits and logistical support required for the discharge of their functions.
3. Participant States will provide the counterpart support necessary to ensure the effective development of the project, the achievement of its objectives and the maintenance of its results. To this end, the recipient organizations of technical co-operation to be provided by this project will participate with the assignment of counterpart personnel as required and with the provision of facilities, office equipment, vehicles, material, supplies and services which shall deem necessary.
4. Participant States will ensure the application of legal bonds considered necessary to retain in service the personnel trained by the project at least during the project duration.
5. The project document will be signed by UNDP, and UNDP assistance to the project will be provided only if the prior obligations and prerequisites stipulated above have been fulfilled or are likely to be fulfilled. When anticipated fulfillment of one or more prerequisites fails to materialize, UNDP may, at its discretion, either suspend or terminate its assistance.

H. PROJECT REVIEWS, REPORTING AND EVALUATION

1. The project will be subject to tripartite review (joint review by representatives of the States/Governments, executing agency and UNDP) at least once every 12 months, and the first of such review meetings will take place within the first 12 months after the starting of full implementation. The international project co-ordinator shall prepare and submit to each tripartite review meeting a Project Performance Evaluation Report. Additional project performance evaluation reports may be requested, if necessary, during the project implementation.
2. A Project Terminal Report will be prepared for consideration at the terminal tripartite review meeting. It shall be prepared in draft sufficiently in advance to allow review and technical clearance by the executing agency at least four months prior to the terminal tripartite review meeting.
3. The three parts will determine jointly if the project shall be subject to evaluation. If so decided, the necessary budgetary provisions and arrangements should be made through consultations between the parties to the project document, on the organization of the evaluation mission, their terms of reference and the time in which it should be effected.
4. A description of project reviews and reporting is included in **Attachment 2**.

I. LEGAL CONTEXT

1. The present project document will be the instrument foreseen in Article I, paragraph 1, of the Basic Assistance Agreement of the United Nations Development Programme and the Governments of the participant countries, which have signed such agreement. Alternatively, for those participant countries which have not signed such agreement, this project document will be the instrument identified as Plan of Operations in Article 1, paragraph 2 of the Agreement related to assistance under the sector Special Fund of the United Nations Development Programme, between UNDP and the Governments of those participant countries that have signed it.

2. The following types of revisions may be made to this project document with the signature of UNDP only, provided UNDP is assured that the other signatories of the project document have no objections to the proposed changes:

- a) Revisions of any of the attachments of the project document or additions to them;
- b) Revisions which do not involve significant changes in the immediate objectives, outcomes or activities of the project, but are caused by the rearrangement of inputs already agreed to or by cost increases due to inflation; and
- c) Mandatory annual revisions, which rephase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility.

J. BUDGET

The project budget is shown in the following pages.

ATTACHMENTS

- 1. **Tentative Project Work Plan**
- 2. **Project Reviews and Reporting**
- 3. **Post Descriptions**
- 4. **Tentative Training Programme**
- 5. **Procurements of Equipment**

ATTACHMENT 1

TENTATIVE PROJECT WORK PLAN
(To be determined at Project's approval)

ATTACHMENT 2

PROJECT REVIEWS AND REPORTING

1. Project tripartite reviews will be conducted at least once every 12 months by a joint meeting of representatives of the implementing States, UNDP and ICAO.
2. The review is carried out based on the Project Document and the Project Performance Evaluation Report prepared by the International Project Coordinator as per the relevant procedures established for this type of reports.
3. The Project Experts and Consultants are responsible for supplying ICAO, for its distribution to the States and participant agencies, with copies of technical and interim reports on project activities.
4. Reports on missions carried out to participant States will be prepared by the concerned personnel and submitted to ICAO for further transmission to interested States.
5. A Project Terminal Report will be prepared by the International Project Coordinator for consideration at the terminal tripartite review meeting.

ATTACHMENT 3**POST DESCRIPTION**

Project N°: RLA/08/000
Post N°:
Title: Communications, Navigation and Surveillance
Duty stations: States/Territories CAR Region
Starting dates:
Duration: 9.5 months
Language requirements: Spanish and English

Qualifications:

1. University degree in electronics engineering or acceptable equivalent academic and technical qualifications.
2. Specialization in the planning of aerocom electronics installations, nav aids, ATC radar (en route and terminal) and data processing.
3. Ten years professional experience with the equipment, including radar, used in ATC, in aeronautical telecommunications (arocom) and in electronics nav aids, with practical experience as supervisor of ground based technical personnel.
4. Experience acquired in a senior level position in the management of electronics engineering pertinent services and submission of reports.
5. Experience in the maintenance of HF/VHF/UHF communication systems, inter-communication systems, COM and ATC automation equipment, primary and secondary radar, NDB, VOR, DME and ILS.
6. Knowledge of solid state and digital techniques and flight testing of nav aids systems.
7. Awareness of pertinent ICAO standards and recommended practices, procedures, manuals and regional planning.
8. Posses initiative, tact, good judgement and the ability to foster and maintain harmonious working relationships.

Duties:

In cooperation with other project consultants and under the technical coordination of the respective ICAO Regional Offices:

1. Advise in the analysis and processing of replies received to a project survey on ATS/COM facilities and services presently available in participant States.

2. Prepare and conduct a programme of seminars for the concerned personnel of the civil aviation administrations on the following subjects:
 - a. Dissemination of the CNS/ATM concept and results of the survey on the present situation of ATS/COM facilities and services available at each State;
 - b. CNS/ATM systems implementation options, their characteristics and cost-benefit relationship of each of them;
 - c. CNS/ATM systems transition planning strategy;
 - d. Action plan for the implementation of the new CNS/ATM systems;
 - e. Other aspects considered necessary.
3. Evaluate the seminars' results and consider the possibility of repetition.
4. Prepare an action plan for the CNS/ATM systems implementation in the Region, in accordance with the directives emanating from GREPECAS.
5. Prepare descriptions of the different CNS/ATM systems implementation options.
6. Prepare the necessary information to establish the cost-benefit relationship in the implementation of the new systems.
7. Develop guidelines for the preparation of technical specifications of the required systems and equipment for the different implementation options.
8. Establish implementation plans at the sub-regional level as necessary.
9. Prepare and implement a programme of missions, as arranged by ICAO, to advise States so requiring, in the establishment of transition plans to the CNS/ATM systems, including:
 - a. Establishment of the national committee for the planning and implementation of the CNS/ATM systems,
 - b. Adoption of an action plan,
 - c. Air traffic forecasting,
 - d. Review of the commitments taken upon for the provision of the facilities and services described in the regional plan,
 - e. The status of the facilities and services exclusively or partially used for domestic aviation,
 - f. Consideration and definition of the applicable implementation options,
 - g. The transition requirements,
 - h. Human resources and training programmes required,
 - i. The technical specifications of the systems and equipment required,
 - j. The cost/benefit relationship,
 - k. Updating of the national air navigation plan,
 - l. Other related matters,
 - m. Technical advice to implement the transition requirements.

10. Prepare a report by each State on the results of missions, recommending follow-up action as necessary.
11. Determine the level of assistance required by each State interested in receiving direct technical advice for the preparation and implementation of a national action plan for the transition to the CNS/ATM systems.
12. Prepare and conduct the technical advice missions to interested States, as disposed by ICAO, and the reports on the assistance provided to each State with pertinent conclusions and recommendations, for their transmission to concerned authorities through ICAO.
13. Prepare information and reference material on the institutional, administrative and financial aspects related to the transition to the CNS/ATM systems, to develop and conduct seminars with the objective of divulging such information to the concerned personnel of each interested State, evaluating their results.
14. Collect, analyze and process information on human resources and training programmes on CNS/ATM subjects required by each State.
15. Recommend the development of CNS/ATM courses to the civil aviation training centres, as may be appropriate, in accordance with the needs and demands.
16. Perform other related duties as required.

POST DESCRIPTION

Project N°: RLA/08/000
Posts N°:
Title: Air Traffic Management
Duty stations: States/Territories CAR Region
Starting dates:
Duration: 9.5 months
Language requirements: Spanish and English

Qualifications:

1. Eight years of experience as a licensed and rated controller and qualified in various services as tower, approach, area, radar control, automatic or semiautomatic centres, including their personnel and training needs.
2. A minimum of three years experience in ATS training, two of which dedicated to teaching functions in a training centre that counts with simulators, audiovisual aids and that offers training in instruction techniques.
3. A high level experience in ATS training programmes planning and in the preparation of the necessary didactical texts, notes for the courses, audio visual aids and other guidance means, including those of radar control.
4. Experience in selection procedures and ATS personnel examinations.
5. Awareness of pertinent ICAO standards and recommended practices, procedures, manuals and regional planning.
6. Posses initiative, tact, good judgment and the ability to foster and maintain harmonious working relationships.

Duties:

In cooperation with other project consultants and under the technical coordination of the respective ICAO Regional Offices:

1. Advise in the analysis and processing of replies received to a project survey on ATS/COM facilities and services presently available in participant States.
2. Prepare and conduct a programme of seminars for the concerned personnel of the civil aviation administrations on the following subjects:
 - a. Dissemination of the CNS/ATM concept and results of the survey on the present situation of ATS/COM facilities and services available at each State;

- b. CNS/ATM systems implementation options, their characteristics and the cost-benefit relationship of each of them;
 - c. CNS/ATM systems transition planning strategy;
 - d. Preparation of the action plan for the implementation of the new CNS/ATM systems;
 - e. Other aspects considered necessary.
3. Evaluate the seminars' results and consider the possibility of repetition.
4. Prepare an action plan for the CNS/ATM systems implementation in the Region, in accordance with the directives emanating from GREPECAS.
5. Prepare descriptions of the different CNS/ATM systems implementation options.
6. Prepare the necessary information to establish the cost-benefit relationship in the implementation of the new CNS/ATM systems.
7. Cooperate in the development of guidelines for the preparation of technical specifications of the required systems and equipment for the different implementation options.
8. Establish implementation plans at the sub-regional level as necessary.
9. Prepare and implement a programme of missions, as arranged by ICAO, to advise States so requiring, in the establishment of transition plans to the CNS/ATM systems, including:
 - a. Establishment of the national committee for the planning and implementation of the CNS/ATM systems,
 - b. Adoption of an action plan,
 - c. Air traffic forecasting,
 - d. Review of the commitments taken upon for the provision of the facilities and services described in the regional plan,
 - e. The status of the facilities and services exclusively or partially used for domestic aviation,
 - f. Consideration and definition of the applicable implementation options,
 - g. The transition requirements,
 - h. Human resources and training programmes required,
 - i. The technical specifications of the systems and equipment required,
 - j. The cost/benefit relationship,
 - k. Up-dating of the national air navigation plan,
 - l. Other related matters,
 - m. Technical advice to implement the transition requirements.
10. Prepare a report by each State on the results of missions, recommending the follow-up action as necessary.

11. Determine the level of assistance required by each State interested in receiving direct technical advice for the preparation and implementation of a national action plan for the transition to the CNS/ATM systems.
12. Prepare and conduct the technical advice missions to interested States, as disposed by ICAO, and the reports on the assistance provided to each State with the pertinent conclusions and recommendations, for their transmission to concerned authorities through ICAO.
13. Prepare information and reference material on institutional, administrative and financial aspects related to the transition to the CNS/ATM systems, to develop and conduct seminars bounded to divulge that information to the concerned personnel of each interested State, evaluating their results.
14. Collect, analyse and process information on human resources and training programmes on CNS/ATM subjects required by each State.
15. Recommend the development of CNS/ATM courses to the civil aviation training centres, as may be appropriate in accordance with the needs and demands.
16. Perform other related duties as required.

POST DESCRIPTION

Project N°: RLA/08/000
Post N°:
Title: Air Transport Economics
Duty stations: States/Territories CAR Region
Starting date:
Duration: 5.0 months
Language requirements: Spanish and English

Qualifications:

1. University degree in economics.
2. At least, ten years governmental or international airline experience including policy submissions or decisions on some, or all such matters of major concern to civil aviation or related Directorates as:
 - a. setting up an air transport section;
 - b. regulation of air transport operations including general aviation, operating licences, route permits, rates, fares, business practices and competition;
 - c. regulation of the air transport market, control of airline operating economics and control of the economics of airports and route facilities;
 - d. bi-lateral agreements;
 - e. record keeping for regulatory, managerial, statistical and control purposes including a general knowledge of airline data processing and presentation to inform and assist management;
 - f. traffic studies, forecasting trends, fleet planning;
 - g. tour and charter operations;
 - h. relationship of recurrent costs and user charges.
3. Proven ability to express views clearly and to prepare concise reports; ability to present, defend, and amend air transport projects or proposals.
4. Awareness of pertinent ICAO standards and recommended practices, procedures, manuals and regional planning.
5. Posses initiative, tact, good judgment and the ability to foster and maintain harmonious working relationships.

Duties:

In cooperation with other project consultants and under the technical coordination of the respective ICAO Regional Offices:

1. Prepare the information and guidance material necessary for the air traffic forecasting with an appropriate target to plan the implementation of the CNS/ATM systems.
2. Prepare and conduct a programme of seminars for the concerned personnel of the civil aviation administrations on the following subjects:
 - a. Air traffic forecasting;
 - b. Dissemination of the CNS/ATM concept and results of the survey on the present situation of ATS/COM facilities and services available at each State;
 - c. CNS/ATM systems implementation options, their characteristics and cost-benefit relationship of each of them;
 - d. CNS/ATM systems transition planning strategy;
 - e. Other aspects considered necessary.
3. Evaluate the seminars' results and consider their possible repetition.
4. Prepare the necessary information to establish the cost-benefit relationship in the implementation of the new CNS/ATM systems.
5. Prepare and conduct a programme of missions, as disposed by ICAO, to States requiring assistance for the establishment of transition plans to the CNS/ATM systems, including:
 - a. Establishment of the national committee for the planning and implementation of the CNS/ATM systems,
 - b. Adoption of an action plan,
 - c. Air traffic forecasting,
 - d. Review of the commitments taken upon for the provision of the facilities and services described in the regional plan,
 - e. The status of the facilities and services exclusively or partially used for domestic aviation,
 - f. Consideration and definition of the applicable implementation options,
 - g. The transition requirements,
 - h. Human resources and training programmes required,
 - i. The technical specifications of the systems and equipment required,
 - j. The cost/benefit relationship,
 - k. Updating of the national air navigation plan,
 - l. Other related matters,
 - m. Technical advice to implement the transition requirements.
6. Prepare a report by each State on the results of missions, recommending follow-up action as necessary, for its transmission to concerned authorities through ICAO.
7. Prepare information and reference material related to the administrative and financing aspects of the transition to the CNS/ATM systems to develop and conduct seminars to divulge these aspects to concerned personnel of each interested State, evaluating their results.
8. Perform other related duties as required.

POST DESCRIPTION

Project N°: RLA/08/000
Post N°:
Title: Aeronautical Information Services
Duty stations: States/Territories CAR Region
Starting date:
Duration: 9.5 months
Language requirements: Spanish and English

Qualifications:

1. Seven years practical experience or close familiarity with AIS work including practical experience in a supervisory capacity in an international NOTAM office.
2. Knowledge of the international requirements for the collection, classification, processing and dissemination in appropriate format of aeronautical information and the preparation of AIP's Notams, bulletins and information circulars.
3. Sound knowledge of the requirements and production and printing processes involved in the development and amendment of an AIP. Practical cartographic skills and experience would be useful.
4. Awareness of the pertinent ICAO standards, recommended practices, procedures, manuals and regional planning.
5. Posses initiative, tact, good judgment and the ability to foster and maintain harmonious working relationships.

Duties:

In cooperation with other project consultants and under the technical coordination of the respective ICAO Regional Offices:

1. Evaluate the present situation of the aeronautical information services in participant States.
2. Prepare reports on findings and recommendations resulting from the evaluation to each State for their transmission to concerned authorities through ICAO.
3. Prepare and conduct seminars and/or workshops on the application of Annex 15 standards and recommended practices and standardization of the integrated aeronautical information package, following the guidelines contained in ICAO Doc 8126, evaluating the results obtained.
4. Prepare and implement technical advisory missions, as disposed by ICAO, to interested States in updating and improving their aeronautical information services.
5. Prepare a report by each State on the results of missions, recommending the follow-up action that might be necessary, for its transmission to concerned administrations through ICAO.
6. Perform other related duties as required.

POST DESCRIPTION

Project N°: RLA/08/000
Post N°:
Title: Aeronautical Cartography
Duty stations: States/Territories CAR Region
Starting date:
Duration: 5.5 months
Language requirements: Spanish and English

Qualifications:

1. Seven years of practical experience or familiarization with the cartographic work, including experience as responsible for an aeronautical information and aeronautical charts service in an important civil aviation administration or equivalent governmental agency.
2. Awareness of the international requisites for the collection, classification, production and dissemination, in the appropriate format, of aeronautical information and aeronautical charts.
3. Solid practical knowledge and experience in cartography, awareness of the requisites and procedures of production and printing of maps and aeronautical charts and of the 1984 world geodetic system (WGS-84).
4. Awareness of the pertinent ICAO standards, recommended practices, procedures and manuals.
5. Posses initiative, tact, good judgment and the ability to foster and maintain harmonious working relationships.

Duties:

1. Advise the project participant States in the timely and effective implementation of the world geodetic system 1984 (WGS-84), including:
 - a. The assignment of the officers responsible for the implementation of the system by the aeronautical party,
 - b. The role and responsibilities concerned to the aeronautical party,
 - c. The required coordination among the cartographic and aeronautical authorities,
 - d. The establishment of a WGS-84 implementation plan,
 - e. The interpretation and application of the requirements contained in the reference documents,
 - f. Other related aspects.
2. Advise States in the selection and determination of the technical specifications of the GPS geodetic devices, including:
 - a. Guidance for their practical utilization,
 - b. The rules to set up horizontal and vertical geodetic control points with a high level of accuracy,
 - c. Training of personnel in establishing at least a control point at the main airport,
 - d. Establishment of control points at all airports,
 - e. Identification of difficulties encountered while implementing the system, suggesting and recommending remedial actions.

3. Advise States in the selection of appropriate informatics equipment and in the use of the most convenient software for the computerized processing of aeronautical data required and their conversion to the WGS-84 system.
4. Advise States in the determination of human resources, training programmes and inputs required for the efficient maintenance of the system.
5. Prepare a report recommending the follow-up action that will be necessary, for its transmission to concerned administrations through ICAO.
6. Perform other related duties as required.

POST DESCRIPTION

Project N°: RLA/08/000
Post N°:
Title: Information Systems Planning Specialist
Duty station: States/Territories CAR Region
Starting dates:
Duration: 18.0 months
Language requirements: Spanish and English

Qualifications:

1. University degree in systems engineering or equivalent experience.
2. Wide experience in the organization, development and implementation of informatics systems applicable to civil aviation.
3. Recognized experience in the development of operational specifications and in the application of data processing systems.
4. Proven ability for the preparation of technical specifications of the preliminary schemes and for the determination of informatics systems adequate to the typical functions of a modern governmental civil aviation administration, both in the technical-operational as well as in the economical and financial aspects, including the procurement, installation and operation of the systems and on-the-job training of personnel involved.
5. Awareness of the pertinent ICAO standards, recommended practices and manuals.
6. Posses initiative, tact, good judgment and the ability to foster and maintain harmonious working relationships.

Duties:

Under the direction of the Consultant on Electronic Data Processing Applied to Civil Aviation:

1. Prepare guidance material on:
 - a. The information and communication technologies and their relationship with the new CNS/ATM systems;
 - b. The strategic planning of information systems for civil aviation;
 - c. The methodology for the development of managerial information systems for the administration of civil aviation.
2. Prepare the material for a programme of seminars on the referred aspects, oriented to concerned officials of the civil aviation administrations of project participant States.
3. Prepare a manual-guide for the strategic planning of information systems of a civil aviation organization on the basis of the material divulged and dealt with in the seminars, for its distribution by ICAO to project participant States.

4. Analyze and process the comments received from States, incorporating the results in the final version of the manual-guide.
5. Develop a programme of missions, as disposed by ICAO, to advise States that so require in the adoption of a mechanism for the strategic planning of information systems for civil aviation.
6. Prepare reports on missions results, recommending follow-up action as necessary, for their transmission to concerned authorities through ICAO.
7. Perform other related duties as required.

ATTACHMENT 4

TENTATIVE TRAINING PROGRAMME
(To be determined in phase 2)

ATTACHMENT 5

PROCUREMENTS OF EQUIPMENT
(To be determined in phase 2)