

Coordination arrangements

8.1 Project co-ordination will be centralized at the Technical Co-operation Bureau of ICAO in Montreal, which will assign the International Co-ordinator, with the support of the regional offices of this organization in Lima and Mexico, which will contribute in establishing and supervising the technical aspect of project activities.

8.2 Co-ordination arrangements will be assumed by a project Co-ordination Committee composed by the President and Vice-President of GREPECAS, the President and Vice-President of the CNS/ATM ~~Implementation and Co-ordination~~ Sub-Group of GREPECAS ~~or by the corresponding Sub-Group which could substitute it, in representation of the participant States~~, by the Secretaryies of GREPECAS and the referred Sub-Group and by representatives of the ICAO Regional Offices in Lima and Mexico.

8.3 The Co-ordination Committee will meet regularly once a year, under the conduction of the International Co-ordinator, in order to determine the annual program of project activities, take knowledge of project progress and achievements and decide on the adjustments which shall deem necessary.

8.4 In the technical aspects, the ICAO Regional Offices involved will make the necessary arrangements for the monitoring and following-up of project activities and outputs, taking into consideration the conclusions and recommendations to be adopted by States in the context of GREPECAS in aspects related to project objectives, informing the Co-ordination Committee on their decisions.

8.5 The project shall develop its activities with the assistance of a team of international consultants, which will act coordinately in each Region involved, under the supervision of the ICAO Regional Offices in Lima and Mexico, where the consultants will be respectively based.

D. IMMEDIATE OBJECTIVES, OUTPUTS AND ACTIVITIES

They are shown in the following pages.

The abbreviations used in the third column mean:

ROs	ICAO Regional Offices in Lima and Mexico
CNS	Communications, Navigation and Surveillance Consultant
DCAs	Departments of Civil Aviation or other equivalent authorities
ATM	Air Traffic Management Consultant
TCB	Technical Co-operation Bureau, ICAO, Montreal
ATE	Air Transport Economics Consultant
TRAINAIR	ICAO's TRAINAIR Programme for the preparation and sharing of standardized training packages
WGS	Aeronautical Cartography Consultant
AIS	Aeronautical Information Services Consultant
IAC	Institutional Aspects Consultant
<u>LEG</u>	<u>Institutional Legal Issues Consultant</u>

Immediate Objective N° 1

Advise States in the planning and implementation of the transition to the CNS/ATM systems and in the definition of the most convenient ~~implementation~~-options, according to the implementation schedule agreed for the CAR and SAM regions, including the specifications of the required systems and the analysis of the cost/benefit relationship of each option.

Outputs	Activities	Party responsible for each activity
1.1 Survey on the present status of the ATS/COM facilities and services available at each State, status of aircraft fleets operating in those States and definition of their international and domestic requirements.	1.1.1 Prepare a questionnaire on the following ATS/COM facilities and services available at present: <ul style="list-style-type: none"> a. Competent authority and its organization. b. Network of air routes c. Tables of aircraft operations d. Status of operating aircraft fleets e. Air space organization f. Air traffic services <ul style="list-style-type: none"> - Flight information services - Area control centres - Approach control centres - Primary radar systems - Secondary radar systems g. Air navigation and landing aids <ul style="list-style-type: none"> - VOR, DME, NDB, ILS h. Human resources i. Other facilities and services j. Identification of special international and domestic ATM requirements 	ICAO -ROs 2 weeks
	1.1.2 Distribute the questionnaire among <u>participant the States of the CAR/SAM Regions</u> .	ICAO , ROs 1 week
	1.1.3 Prepare and dispatch responses to ICAO.	DCAs, 8 weeks
	1.1.4 Analyze and process responses received.	ICAO , ROs, CNS, ATM, 12 weeks

1.2 Officers responsible for the transition trained in the strategy of planning the change to the new systems.	1.2.1 Specify and procure the portable informatics equipment, software and supplies necessary for the preparation of training material and presentations.	ICAO , RO Lima, TCB/Procurement 8 weeks
	1.2.2 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.	ICAO , ATE 4 weeks
	1.2.3 Prepare a programme of seminars for the concerned personnel of the civil aviation administrations on the following subjects:	ICAO , ROs, ATE, CNS, ATM 8 weeks
	<ul style="list-style-type: none"> 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. Implementation options, their characteristics and cost-benefit relationship of each of them d. Transition planning strategy e. Preparation of the action plan for the implementation of the new systems f. Reduced vertical separation minimum g. ACC Automation h. Other concerned aspects. 	
	1.2.4 Nominate candidates for the seminars and award fellowships.	DCAs/ ICAO Fellow-ships
	1.2.5 Carry out the seminars and evaluate their results.	ICAO , ATE, CNS, ATM
1.3 <u>Updated R</u> regional action plan for the implementation of the CNS/ATM systems.	1.3.1 <u>Study the 18 main traffic flows identified in the Regional Plan</u> Prepare an action plan for the CNS/ATM systems implementation in the Region, in accordance with the guidelines emanating from the GREPECAS, including:-	ICAO , CNS, ATM, 8 weeks

- ~~a) study of the 18 main traffic flows identified in the Regional Plan~~
- ~~b) pre-operational trials and demonstrations~~
- ~~c) reduced vertical separation minimum and required navigation performance~~
- ~~d) study and trial of other elements of the system.~~

1.3.2 Prepare and circulate a survey to determine the status of regional CNS/ATM planning and implementation.

ROs

1.3.3 Evaluate the results of 1.3.2.

CNS/ATM

1.3.4 Considering the results of activity 1.3.2 and of the XI Air Navigation Conference, update the CNS/ATM regional implementation plan and prepare a project of amendment to the FASID including:

CNS/ATM, ROs

- a. The development of a regional implementation strategy
- b. Preparation of an implementation schedule

1.3.25 Prepare scenarios descriptions and of the different CNS/ATM systems implementation options.

ICAO, CNS, ATM, 4 weeks

1.3.36 Prepare the necessary information to establish the cost-benefit relationship in the implementation of the new systems.

ICAO, ATE, CNS, ATM

~~1.3.4 Develop guidelines for the preparation of technical specifications of the required systems and equipment for the different implementation options.~~

~~ICAO, CNS, ATM 4 weeks~~

~~1.3.5 Establish implementation plans at the sub-regional level as necessary.~~

~~ICAO, CNS, ATM 4 weeks~~

1.3.67 Disseminate the regional action

ICAO, ROs

plan among ~~the participant States~~ of the CAR/SAM Region. 4 weeks

1.4 National air navigation plans updated including the transition to the CNS/ATM systems.

1.4.1 Prepare a programme of missions to States requiring advise for the establishment of transition plans to the CNS/ATM systems, including: ~~ROs ICAO,~~ CNS, ATM, ATE 4 weeks

- 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. Other related matters
- l. Updating of the national air navigation plan
- m. Technical advice requirements to implement the transition.

1.4.2 Notify States on the availability of the programme of missions and financing arrangements that are necessary to implement it, requesting their agreement and approval. ~~ICAO,~~ ROs 4 weeks

1.4.3 Prepare responses and dispatch them to ICAO. DCAs, 8 weeks

1.4.4 Analyze and process responses received. ~~ROs ICAO,~~ CNS, ATM, ATE 4 weeks

	1.4.5 Implement the programme of missions in accordance with the States' requirements and the agreed financing arrangements.	ROs ICAO, CNS, ATM, ATE
	1.4.6 Prepare a report by each State on the results of the missions, recommending follow-up actions as necessary.	ROs ICAO, CNS, ATM, ATE
	1.4.7 Transmit the mission reports to concerned States.	ICAO, ROs
	1.4.8 Based on the reports recommendations, prepare and officially adopt a detailed national air navigation plan including the CNS/ATM requirements, and transmit it to ICAO.	DCAs
	1.4.9 Consider and include the officially adopted national plans in the regional planning process.	ICAO, ROs
<u>1.5 Assistance in the preparation and execution of CNS/ATM elements/systems implementation plans provided</u>	<u>1.5.1 Prepare plans and follow up the execution of:</u>	<u>ROs, ATM, CNS</u>
	<u>a) pre-operational trials and demonstrations of RNP/RNAV routes</u> <u>b) reduced vertical separation minimum and required navigation performance (RVSM/RNP)</u> <u>c) automation of air navigation services</u> <u>d) study and surveys of other elements of CNS/ATM systems</u>	
	<u>1.5.2 Develop guides for the preparation of technical specifications of the systems and equipment required for the different implementation options.</u>	<u>CNS ATM, ROs</u>
<u>1.6 The CATCs should have received guidance to establish the training programmes that the</u>	<u>1.6.1 Collect, analyze and process the human resources and training programmes information on CNS/ATM matters required by each State.</u>	<u>ROs, CNS, ATM</u> <u>4 weeks</u>

change of technology
may demand.

1.6.2 Consider the possibilities of
preparing the courses through the
adherence of concerned CATCs to the
ICAO TRAINAIR Programme.

DCAs/ROs, TRAINAIR
4 weeks

16.3 Recommend the CATCs the
development of the appropriate courses
according with the needs and demands.

ORs, CNS, ATM
4 weeks

1.6.4 Consider the recommendations
and arrange their execution.

DCAs

Immediate Objective N° 2

Advise States ~~in the institutional schemes for~~ the implementation of CNS/ATM national/regional plans and their application for the transition to the CNS/ATM systems, including the requirements for human and financial resources and the applicable training programmes.

Outputs	Activities	Party responsible for each activity
<u>2.1 CAR and SAM Regions informed and vamiliarized in topics related to institutional aspects according to the CNS/ATM action plan.</u>	<u>2.1.1 Preparation and development of (3) three seminars on institutional and economic aspects of CNS/ATM systems.</u>	<u>IAC, Ors</u>
	<u>2.1.2 Visits to CAR and SAM States for exchange of information on institutional aspects.</u>	<u>IAC, CNS, ATM</u>
<u>2.2 Analysis of institutional arrangements options in relation to CNS/ATM scenarios.</u>	<u>2.2.1 Establish and validate the list of facilities and services and study the operational feasibility of regional and sub-regional institutional arrangements.</u>	<u>IAC</u>
	<u>2.2.2 Select the most convenient institutional arrangements for the management and operation of CNS/ATM systems.</u>	<u>IAC</u>
<u>2.3 Feasibility study and selection of institutional arrangements options of CNS/ATM facilities and services.</u>	<u>2.3.1 Through the use of planning and evaluation tools review the most convenient implementation options taking into consideration the scenarios of results 2.2.</u>	<u>IAC, CNS, ATM, ATE</u>
	<u>2.3.2 Prepare business cases for selected option.</u>	<u>ATE, IAC, CNS, ATM</u>
	<u>2.3.3 Document the studies carried out to circulate them to States in order to obtain their criteria for their validation.</u>	<u>IAC, Ors</u>
	<u>2.3.4 Based on the results of previous activities, prepare a report for GREPECAS.</u>	<u>IAC</u>

<u>2.4 Migration strategy to the new institutional arrangements established</u>	<u>2.4.1 Study the institutional arrangements presently established and to be internally established and determine, if necessary, the most convenient institutional framework for their operation and future insertion in a future scheme that contemplates a regional institutional arrangement.</u>	<u>IAC</u>
	<u>2.4.2 Establish the regional strategy for the future implementation of an institutional arrangement of regional characteristics.</u>	<u>IAC</u>
	<u>2.4.3 Develop a model of institutional agreement with the corresponding legal basis for the administration and operation of air navigation services under the ICAO CNS/ATM concept.</u>	<u>IAC, LEG</u>
	<u>2.4.4 Approval of the model and the legal basis.</u>	<u>States/GREPECAS</u>
2.1 Technical advice for the preparation and implementation of a national action plan for the transition to the CNS/ATM systems provided to interested States.	2.1.1 Determine the level of assistance required by each State interested in receiving direct technical advice.	ICAO, CNS, ATM 4 weeks
	2.1.2 Determine the costs involved and the most appropriate modality to implement the assistance required by each State.	ICAO, TCB 2 weeks
	2.1.3 Notify interested States the details of the assistance planned for them and the financing arrangements to cover its costs, requesting their agreement and approval.	ICAO, ROs 4 weeks
	2.1.4 Consider the proposed arrangements for assistance and reply to ICAO.	DCAs 8 weeks
	2.1.5 Prepare and conduct the technical advice missions to interested States under the modality agreed.	ICAO, CNS, ATM
	2.1.6 Prepare reports on the assistance provided to each State with pertinent conclusions and recommendations.	ICAO, CNS, ATM

	2.1.7 Analyze the reports and submit them to the consideration of the concerned authorities.	ICAO, ROs
	2.1.8 Evaluate the results of the missions and determine the need for additional advice to follow up the recommendations.	DCAs
	2.2.1 Prepare information and reference material on the institutional aspects related to the transition to the CNS/ATM systems.	ICAO, CNS, ATM 8 weeks
2.2 Guidance provided to concerned government officers to confront the institutional, administrative and financial aspects related to the transition.	2.2.2 Prepare information and reference material related to the administrative and financial aspects of the transition.	ICAO, ATE 8 weeks
	2.2.3 Prepare seminars to divulge information on the institutional, administrative and financial aspects to concerned personnel of each interested State.	ICAO, CNS, ATM, ATE 4 weeks
	2.2.4 Notify interested States on the details of the seminars and the arrangements of logistic and financial nature to conduct them.	ICAO, ROs 4 weeks
	2.2.5 Approve the implementation of the proposed seminars and the arrangements for their financing.	DCAs 4 weeks
	2.2.6 Conduct the seminars at each interested State and evaluate their results.	ICAO, CNS, ATM, ATE
2.3 Guidance provided to CATCs to establish the training programmes in demand due to the change of technology.	2.3.1 Collect, analyze and process information on human resources and training programmes on CNS/ATM subjects required by each State.	ICAO, CNS, ATM 4 weeks
	2.3.2 Consider the possibilities of preparing courses through the adherence of the concerned CATCs to the ICAO TRAINAIR Programme.	DCAs/ICAO, TRAINAIR 4 weeks

~~2.3.3 Recommend CATCs the development of appropriate courses in demand as required.~~ ICAO, CNS, ATM 4 weeks

~~2.3.4 Consider the recommendations and arrange their implementation.~~ DCAs

Immediate Objective N° 3

Assist States in the implementation of the world geodetic system 1984 (WGS-84) and in improving their aeronautical information services.

Outputs	Activities	Party responsible for each activity
3.1 World geodetic system 1984 implemented in at least five States of the Region.	<p>3.1.1 Advise States in the timely and effective implementation of the world geodetic system 1984 (WGS-84), including:</p> <ul style="list-style-type: none"> 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. <u>g. Geoid undulation.</u> 	ROs ICAO, WGS 12 weeks
	<p>3.1.2 Advise States in the selection and determination of the technical specifications of the GPS geodetic devices, including:</p> <ul style="list-style-type: none"> 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. 	ORs ICAO, WGS 8 weeks
	<p>3.1.3 Advise States in the selection of appropriate informatics equipment and in</p>	ROs ICAO, WGS 8 weeks

the use of the most convenient software for the computerized processing of aeronautical data required and their conversion to the WGS-84 system.

3.1.4 Advise States in determining the human resources, training programmes and inputs required for the efficient maintenance of the system. ~~ROs~~ICAO, WGS 8 weeks

3.2 Training of some 80 AIS officers and improvement of the aeronautical information services in at least five States of the Region.

3.2.1 Evaluate the present situation of the aeronautical information services in participant States. ~~ICAO~~, AIS, ROs

3.2.2 Prepare reports on findings and recommendations resulting from the evaluation to each State and transmit them to the ICAO Regional Office concerned. ~~ICAO~~, ROs, AIS

3.2.3 Analyze the reports, as necessary, and transmit them to the concerned authorities of each State including the relevant comments. ~~ICAO~~, ROs

3.2.4 Prepare seminars and/or workshops, as necessary, on the application of ICAO Annex 15 provisions and standardization of the integrated aeronautical information package, following the guidelines contained in ICAO Doc 8126. ROs~~ICAO~~, AIS

3.2.5 Nominate candidates to the seminars and/or workshops and award fellowships. DCAs/ROs~~ICAO~~, Fellowships

3.2.6 Implement the seminars and/or workshops and evaluate their results. ROs~~ICAO~~, AIS

3.2.7 Prepare technical advice missions to States interested in updating and improving their AIS, financed by their own. ~~ICAO~~, ROs, AIS

3.2.8 Carry out the missions and prepare the respective reports. ~~ICAO~~, AIS

3.2.9 Transmit the mission reports to concerned States. ~~ICAO~~, ROs

E. INPUTS

1. Participant Governments' inputs

1.1 Personnel

1.1.1 Participant States will provide:

- a) The national counterpart personnel corresponding to the project consultants' specialties, including the designation of an officer responsible for air navigation planning.
- b) Administrative support personnel to project advisory missions, as necessary.

1.2 Training

1.2.1 Participant States will provide air transportation tickets to and from the places where training programmes supported by the project will be held, and will continue paying to their personnel holding fellowships their salaries and other allowances during all the time of 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 the project consultants.

2. UNDP/ICAO Inputs

2.1 Assignment of professional staff

2.1.1 International consultants in the following specialties will be provided:

- 11-51 Communications, Navigation and Surveillance (CNS)
- 11-52 Air Traffic Management (ATM)
- 11-53 Air Transport Economics (ATE)
- 11-54 Aeronautical Information Services (AIS)
- 11-55 Aeronautical Cartography (WGS)
- 11-56 Electronic Data Processing applied to Civil Aviation (EDP) (suspended)
- 11-57 Institutional Aspects CNS/ATM (IAC)
- 11-58 Legal Aspects Consultant (LEG)
- 11-97 Consultants

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

- 17-01 Information Systems Planning (INF) (suspended)
- 17-02 Air Traffic Management – RNP
- 17-03 Air Traffic Management – RVSM

- 17-51 Air Traffic Management – RNAV
- 17-97 Speakers

2.1.3 The tentative project workplan is shown on **Attachment 1** and job descriptions on **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 are provided 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 are provided 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.