

**INTERNATIONAL CIVIL AVIATION ORGANIZATION
South American Regional Office**

**UNDP/ICAO REGIONAL PROJECT RLA/98/019
IMPLEMENTATION OF THE SOUTH AMERICAN DIGITAL NETWORK (REDDIG)**

SIXTH MEETING OF THE COORDINATION COMMITTEE (RCC/6)

(Lima, Peru, 20 – 21 November 2003)

Agenda item 4: Final report of project RLA/98/019

PROJECT FINAL REPORT

(Paper presented by the Secretariat)

Summary

In this working the draft of the final report for project RLA/98/003 is being presented. Likewise, forms containing the description of project activities are being presented in order that States participating in the project can submit their evaluation.

References:

- RLA/98/019 Project Document
- UNDP Programming Manual

1. Introduction

1.1 The Final Report is a general assessment of the project, made by the direct interested parties, to be prepared when the project is to be finalized. The last annual report of the project fulfils the UNDP requirements of a final report. Likewise, this report can be used as a source of initial lessons obtained from the experience and to recommend the necessary follow-up activities. The annual report has the following objectives:

- a) Provide a rating and a written assessment of the project progress towards the planned results;
- b) Present the opinion of the direct interested parties about questions that could influence in the execution of the project and present proposals for solving these questions;
- c) Be used as input for any project evaluation.

2. **Content and structure**

2.1 The report is divided in three parts. The first part corresponds to the numerical rating; the second part, to the textual evaluation of the project; and the third part, is a synoptical chart with two sections (regarding resources and expenditures, and regarding expected results). On the other hand, the second part includes additional questions about the project impact, sustainability of results, and its contribution to capacity development.

3. **Suggested action**

3.1 The meeting is invited to:

- a) Take note of the draft of the Project Final Report, which is being presented as **Appendix A** to this working paper;
- b) Submit your evaluation on the chart being presented in Part I of the Final Report; and
- c) Analyze Parts II and III of the Final Report.

- end -

APPENDIX A

FINAL REPORT

UNDP/ICAO PROJECT RLA/98/019

Implementation of the SAM Digital Network (REDDIG)

Basic information of the project (Prepared by the project management)

Number and title of the project:	RLA/98/019 Implementation of the SAM Digital Network (REDDIG)
Designated institution:	ICAO
Project initiation date:	
Originally planned	1 January 1999
Effective	2 May 2000
Project termination date:	
Originally planned	31 December 2000
Effective	31 December 2003
Total budget (dollars):	
Initial amount:	3,887,300
Last approved revision	5,145,228
Period covered by the report:	2002-2003

SUBSTANTIVE APPROACH	ICAO	ARG	BOL	BRA	CHI	COL	ECU	FRA	GUY	PAR	PER	SUR	URU	VEN	AVRG
6. Were project resources sufficient (financial, physical and human) regarding to: a) Quantity? b) Quality?	2 2														
7. Project resources to produce expected results were efficiently used?	1														
8. Was the project efficient regarding costs, in comparison to similar projects?	1														
9. On the basis of the project work plan, how would you evaluate the project opportunity degree regarding to: a) Achievement of products and initial results? b) Delivery of supplies?	1 2														
GLOBAL EVALUATION OF THE PROGRAM OR PROJECT	2														

Please explain the foundation of your evaluation, which does not have to be limited to the criteria of pertinence nor performance as above evaluated. This could not coincide with the above evaluation. Regarding the last year of the project, an estimation of the possible project success should be included, as well as its pertinence or performance.

The Contract for the provision of a digital network for the fixed aeronautical service in the SAM region (REDDIG) was signed by SEEE (France) and ICAO (Acting according to the mandate of the Governments of Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, France, Guyana, Paraguay, Peru, Suriname, Uruguay and Venezuela) on 28 September 2001, initiating in this way the activities for its implementation.

Technical specifications were revised by the Project Office in two design review meetings. Additionally, site survey visits were carried out to the locations where the nodes would be installed. Custom clearance process of indoors and outdoors equipment was carried out.

Subsequently, the installation of the equipment was done, the contract with the supplier of the satellite segment was signed, training courses were carried out, as well as the network start-up , PSAT and NAT tests.

Additionally, the project prepared a transitory scheme for the REDDIG management, through a technical cooperation project, in order to establish in two (2) years the definite management scheme..

It can be considered that, despite of difficulties encountered by the project, the results are highly satisfactory.

PART II: DESCRIPTIVE EVALUATION

1. Which were the principal achievements of the project in terms of expected results, during the year covered by the evaluation? As possible, please include an evaluation in terms of possible effects, of sustainability, and of contribution to capacity development.

Under project RLA/98/019 States received support for the purchase, installation, start-up, management and initial future operation of a digital network addressed to modernizing communications of the aeronautical fixed services in support of the CNS/ATM system development considered in the CAR/SAM FASID document.

This network, known as the South American Digital Network (REDDIG) has satellite resources as principal means of transmission, using VSAT technology, TDMA access. It is a multi-service / multi-protocol digital network, of open architecture that uses the Frame Relay protocol for the implementation of voice and data communications. The REDDIG gathers all the CNS/ATM present and future requirements, and it will permit a smooth transition to data communications environment where the aeronautical applications of ATM computers will be integrated using the Aeronautical Telecommunications Network (ATN).

The original topology of the network comprises 15 nodes that cover, with the exception of Panama, all the SAM States. The special satellite PanAmSat PAS-1R is being used, and it has communication to any earth node using public ISDN services, in case that the satellite is missing. Due to its characteristics, the REDDIG is interconnected at different levels with other digital networks, such is the case of the present plans being carried out to interconnect the future MEVA with a computer network operating in the CAR Region with the REDDIG.

The REDDIG is being considered as the awaited solution in the region, which would give an answer to all AFS problems and would maintain the quality and necessary capacity to attend ATM communications requirement to be established in the following 10 years.

2. Which were the principal questions and problems that influenced in the achievement of the project results?

Complexity and necessary co ordinations to clear from customs the equipment were far beyond the expectative established in the REDDIG implementation program. Likewise, the budget had to be revised in several occasions, cutting human resources of the project in order to reduce costs, situation which affected co ordinations with the States.

On the other hand, some States had problems in managing with their Administrations the on-time payment of the cost-sharing contributions, affecting several activities in the different stages of the project.

ICAO, as an international organization acting by mandate of the States cannot assume contractual obligations that involve civil responsibility clauses. This impediment endangered the signature of a contract for the lease of the satellite segment with PanAmSat.

3. What learning (positive or negative) can be extracted from the experience of the project?

Experience collected by ICAO in the implementation of a multinational project with these characteristics will be very valuable in the future. With the purpose of having an adequate coordination in future projects of this kind, it is important to clearly define in the project document the responsibilities of each actor in the process, i.e. ICAO Central Office, Regional Office, International Coordinator, States, Contractor, etc.

The States of the region have different process to clear goods from customs, which can vary from a one-week period to more than two months duration. Some States require that their technical cooperation projects be accredited before the Foreign Affairs Ministries in order to have the privileges granted to United Nations Organizations. Before establishing an implementation timetable, a careful study on the nationalization process in each State should be carried out in order to establish realistic times for these processes.

Likewise, ICAO limitations to sign contracts with civil responsibility clauses should be taken into account.

4. Which are the opinions of the States concerning the project?

The REDDIG is seen as an awaited solution that will provide them answer to all the problems of the present fixed communications system and will maintain necessary service quality and capacity to cover all communications requirements in order to implement in the next 10 years the ICAO CNS/ATM systems.

5. Provide any other information that can support or clear out your evaluation of the project. You can include annexes if necessary.

PARTE II: Project Synoptical Chart

Title and number of the program or project:	RLA/98/019 – Implementation of the South American Digital Network (SAM REDDIG)	Management dispositions:	
Designated institution:	ICAO	Period covered:	JUL 2002 - NOV 2003
EVALUACIÓN GLOBAL			
<p>The SAM REDDIG was successfully implemented. For this purpose, the following activities were implemented and a new regional technical cooperation project was established with ICAO for the rental of the satellite segment for five years and for the initial administration of the REDDIG for a period of two years while a definite institutional arrangement is established.</p> <p>Evaluation of the offers and award of enterprise SEEE Signature of the contract First design review meeting (DRM1) Visits to the installation locations (Site Surveys) Second design review meeting (DRM2) Custom clearance of indoor and outdoor equipment Factory acceptance tests Contract with the supplier of the satellite segment (PanAmSat) Installation and start-up Provisional site acceptance tests (PSAT) Network acceptance tests (NAT) REDDIG Operation Manual Backup network</p>			

FINANCIAL SUMMARY			
Funds sources	Budget (thousand dollars)	Expenditures (thousand dollars)	Execution rate (%)
The Governments detailed below participated in the funding of expenditures:			
Argentina	336,8		
Bolivia	336,8		
Brazil	1,054,5		
Chile	336,8		
Colombia	336,8		
Ecuador	336,8		
France	336,8		
Guyana	336,8		
Paraguay	336,8		
Peru	336,8		
Suriname	336,8		
Uruguay	336,8		
Venezuela	336,8		
Interests	48,7		
TOTAL	5,147,0	5,053.3	98%

SUMMARY OF RESULTS		
Immediate Objectives	Indicators	Achievements
<p>Immediate Objective No. 1</p> <p>Implementation of a digital network for the aeronautical fixed services in the SAM Region, intended to improve air navigation services and to provide a digital platform in support of the development of future aeronautical telecommunications networks under the ICAO CNS/ATM concept.</p>	<p>Digital network for fixed aeronautical telecommunication services under operation, on the basis of fifteen nodes installed in predetermined locations.</p>	<p>The digital network for the fixed aeronautical service was successfully implemented in the SAM Region</p>
<p>Immediate Objective No. 2</p> <p>Initial management of the REDDIG by the project, and establishment of a multinational mechanism for its final management.</p>	<p>Digital network for fixed aeronautical services in operation, on the basis of fifteen nodes installed in predetermined locations.</p>	<p>The project carried out the initial management of the REDDIG and established a new technical cooperation project in order to lease the satellite segment for five years and to manage the REDDIG for (2) two years, while the definite multinational arrangement is implemented.</p>

Annual milestones	Achievement of results
Immediate Objective No. 1	Implementation of a digital network for the fixed aeronautical service in the SAM Region, intended to improve air navigation services and to provide a digital platform in support of the development of future aeronautical telecommunications networks under the ICAO CNS/ATM concept.
1.1 Technical specifications of the digital network approved.	Technical specifications of the SAM digital network were approved unanimously by the States participating in the project during the Fourth Informal Meeting on the SAM Digital Network Implementation (REDDIG/4), carried out in Lima, from 4 to 8 September 2000.
1.2 Tender process carried out for the provision of the digital network installed under a turnkey contract.	The tender process was carried out and award was granted to enterprise SEEE (France), ICAO and SEEE signed the contract on 28 September 2001.
1.3 Conditions for the maintenance and operation of the REDDIG prepared.	Manufacturer manuals about instructions were evaluated, and comments and corresponding amendments carried out by the contractor.
1.4 REDDIG Maintenance personnel in each country prepared.	The following training courses were carried out under the auspices of the project: <ol style="list-style-type: none"> 1. REDDIG training course in Spanish, Santafé de Bogotá, from 13 to 24 January 2003 2. Leveling course on management of VSAT network and open architecture networks, Santafé de Bogotá, from 6 to 10 January 2003, offered by the Colombian Administration 3. REDDOG training course in English, Recife, Brazil, from 27 January to 7 February 2003. 4. REDDIG practical course (Ezeiza, Argentina, August 2003)
1.5 REDDIG installed and under operation.	SAM REDDIG was installed and put under operation starting 1 October 2003.

Annual milestones	Achievement of results
Immediate Objective No. 2 Initial management of the REDDIG by the project, and establishment of a multinational mechanism for its subsequent management.	
2.1 REDDIG initially managed by the project.	Project RLA/98/019 initially managed the SAM REDDIG from the Lima NCC since its star-up. Afterwards, this Administration will be assumed by the new regional project.
2.2 Multinational mechanism established for the final REDDIG management.	The States members of the REDDIG agreed on the establishment of a new technical cooperation project with ICAO, in order to manage the SAM REDDIG for two (2) years, while the definite multinational mechanism is established.