International Civil Aviation Organization

WORKING PAPER

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(Information paper)

ASSEMBLY — 36TH SESSION

TECHNICAL COMMISSION

Agenda Item 31: Continued evolution of a performance-based global air traffic management (ATM) system

AIRPORT AND AIR TRAFFIC MANAGEMENT MODERNIZATION (MAGTA)

(Presented by Venezuela)

EXECUTIVE SUMMARY	
This information paper presents the progress made by the Venezuelan Aviation Authority in its modernization of airports and air traffic management and the decrease in air navigation deficiencies achieved through this modernization. It also relates current plans for the transition from the old systems in place to new systems using the latest technology in accordance with global aviation requirements.	
Strategic Objectives:	This working paper relates to Strategic Objectives A and D, as the aim of this modernization project is to enhance civil aviation ***safety*** and improve the ***efficiency of aviation operations***.
Financial implications:	This modernization project has been carried out under the budgetary allocation of the Bolivarian Government of Venezuela within the framework of the Special Law on Annual Debt (LEEA 2003, 2004, 2005).
References:	Various documents supporting the contractual achievements of the Airport and Air Traffic Management Project.

1. INTRODUCTION

1.1 As an ICAO Contracting State, the Bolivarian Republic of Venezuela examined the need to strengthen its national aviation system and align itself with the general objectives of world civil aviation through the Airport and Air Traffic Management Modernization (MAGTA) Project. This project arose following an institutional diagnosis carried out in 2002 and 2003, when requirements were defined for a state-of-the-art updating of aviation systems and equipment to gradually introduce CNS/ATM technology.

1.2 The MAGTA Project has received direct support from the ICAO Technical Cooperation Bureau, which, throughout the various phases of the project, has provided guidance with expert contributions to such priority technical areas as radar systems, aeronautical communications, radio aids, search and rescue, and personnel training.

1.3 The MAGTA Project has also involved joint work with the Maiquetía International Airport Autonomous Institute (IAAIM) on the Maiquetía 2000 Project, with the purpose of developing airport infrastructure through investment and the implementation of guidelines, producing definite results.

1.4 Our country has thus established a work programme based on a methodology for the application of precise parameters for the introduction of CNS/ATM technology; the amount contemplated in the Project is therefore invested in, among others, such areas as navigation, communications, surveillance, and search and rescue. The progress made is detailed in the following section.

2. PROJECT PROGRESS

2.1 In keeping with the guidelines of the Air Navigation Plan for the CAR/SAM Regions, the following has been provided for within Project frameworks:

Navigation: The purchase of twenty-one VOR/DME systems, three of which have been installed; the purchase of three sets of ILS/DME equipment, one of which has been installed; also contemplated, in light of the future transition to new CNS/ATM systems, the geodesic survey of thirty-three national airports, and the development of their respective RNAV procedures.

Communications: The purchase of ten extended-range VHF stations, seven of which have been installed with the capability for upgrading to VDL Mode 4; a switch from the AFTN system to the AMHS system with the purpose of improving ground-ground communications in the transmission of ATN data; the establishment of our own VSAT-based aviation network, with twenty-five stations installed and in operation, seventeen VHF-AM systems installed and in operation, and twelve (12) HF systems to support control tower equipment.

Surveillance: The purchase of ten radars, three of which are in operation with the capability for upgrading SSR radars from Mode A/C to Mode S.

Search and Rescue : The purchase of three MI-172 helicopters; the purchase of fifteen fully-equipped SAR vehicles; the purchase of twenty-one fire engines, eighteen of which have been delivered; the purchase of six rescue vehicles, all of which are in service; the purchase of ten type-III airport ambulances; the purchase of a COSPAS-SARSAT system which has enabled Venezuela to no longer depend on Puerto Rico's SPOT, making it possible for this service to now be provided to other South American countries.

Air Traffic Management: The equipment and renovation of the infrastructure of thirty-three control towers, ten of which have been completed; the purchase of two air-portable mobile towers.

Other Areas: The purchase of WAFS equipment which enables the handling of meteorological information; the purchase of ten boarding bridges, five of which are installed; the purchase of thirty-three sliding doors which are fully functioning at Maiquetía International Airport; the purchase of a portable lighting system; the acquisition of an English laboratory for the Miguel Rodríguez Technological University Institute of Civil Aviation; inclusion of Venezuela in the TRAINAIR Programme; and training of aeronautical personnel.

Maiquetía 2000 Project: This project involves the purchase of an S-band radar system, a DVOR/DME system, a set of ILS/DME equipment for Simón Bolívar International Airport, and the establishment of a new Maiquetía approach (APP) and area control centre (ACC). As this ACC is able to incorporate up to 24 radar heads, the ten radars contemplated in the MAGTA Project will be integrated through this system.

3. CONCLUSION

3.1 With these projects, the Venezuelan State is committed to compliance with ICAO Standards and Recommended Practices (SARPs). It is committed to raising safety standards through the development of a new air navigation scheme which will allow the country to take on a new role within the context of world aviation. Moreover, the experience acquired and success achieved will extend throughout the sector through the modernization of the national aviation system, on the basis of the strengthening of the Bolivarian government's integration policies with regard to the countries of the region, and through the activation of technical cooperation mechanisms, whose results will directly contribute to the safety of Latin American skies.

3.2 As part of the methodology of the projects' execution, special emphasis has been placed on ensuring an effective transfer of technology, which has enabled the training of more than 255 specialists in the various areas of national aviation. This, in turn, has had a definitive effect on the integration of human resources with project objectives, guaranteeing the sustainability of the investments made.

3.3 It is essential to point out how important the International Civil Aviation Organization's institutional support is to the Bolivarian Republic of Venezuela. In conjunction with the development policies adopted by the National Executive aimed at prioritizing and attending to the aviation sector, this assistance has enabled our country to make significant progress and to ensure the fulfilment of the objectives set, upholding our commitment to maintaining high standards of safety.

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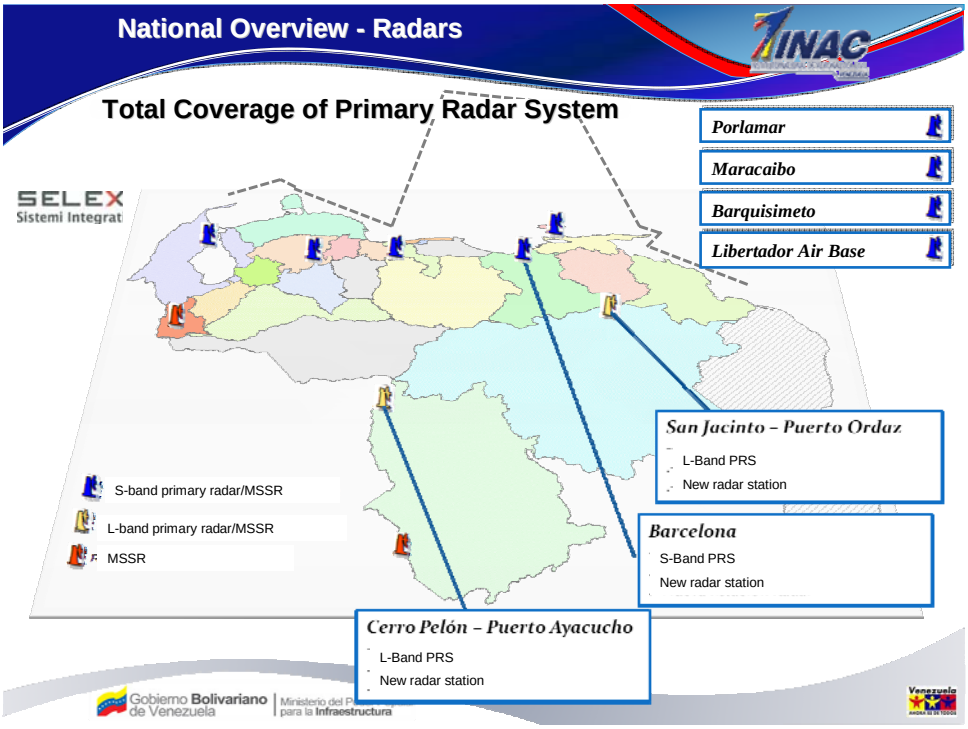
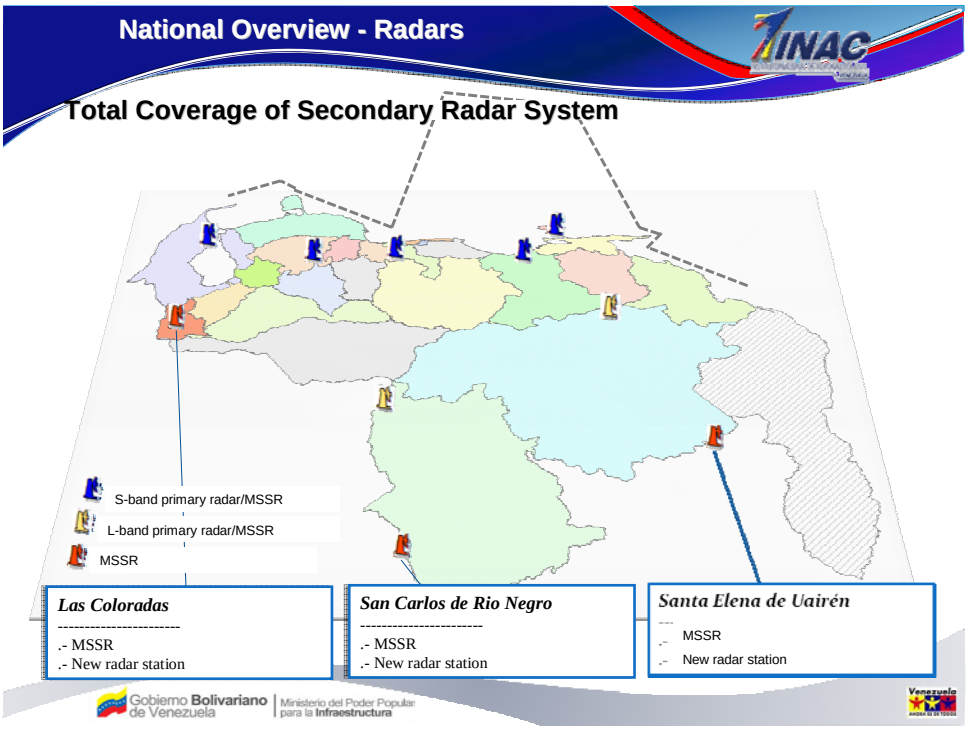
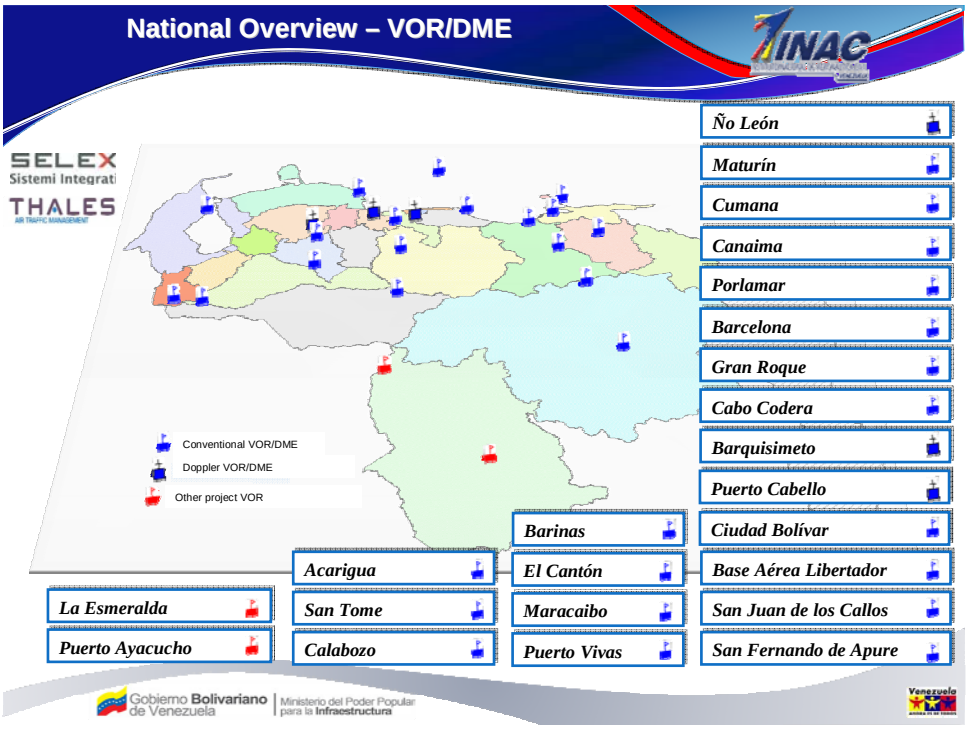
APPENDIX

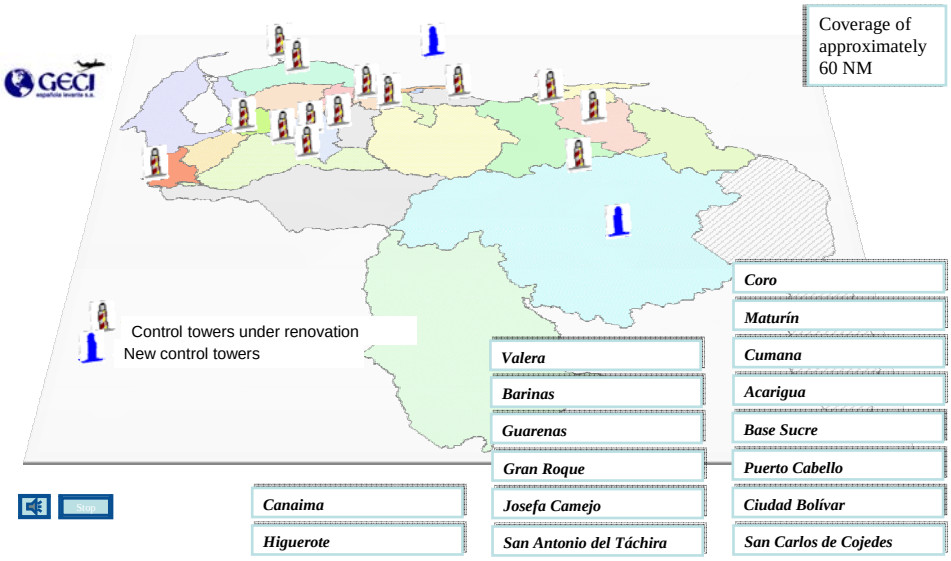
GEOGRAPHIC DISTRIBUTION OF THE OBJECTIVES TO BE MET THROUGH THE MAGTA PROJECT




National Overview - Radars
Total Coverage of Secondary Radar System
S-band primary radar/MSSR
L-band primary radar/MSSR
MSSR
Las Coloradas
.- MSSR
.- New radar station
San Carlos de Rio Negro
.- MSSR
.- New radar station
Santa Elena de Uairén
MSSR
New radar station
Gobierno Bolivariano de Venezuela
Ministerio del Poder Popular para la Infraestructura

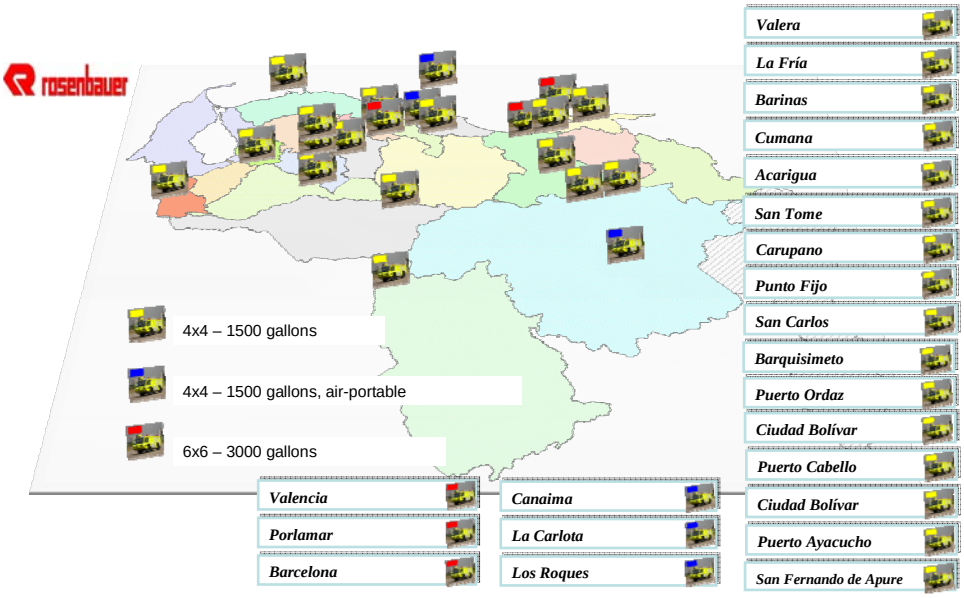

National Overview – VOR/DME
SELEX
Sistemi Integrati
THALES
Conventional VOR/DME
Doppler VOR/DME
Other project VOR
Ño León
Maturín
Cumana
Canaima
Porlamar
Barcelona
Gran Roque
Cabo Codera
Barquisimeto
Puerto Cabello
Ciudad Bolívar
Base Aérea Libertador
San Juan de los Callos
San Fernando de Apure
Barinas
El Cantón
Maracaibo
Puerto Vivas
Acarigua
San Tome
Calabozo
La Esmeralda
Puerto Ayacucho
Gobierno Bolivariano de Venezuela
Ministerio del Poder Popular para la Infraestructura

National Overview –Control Towers, Phase I

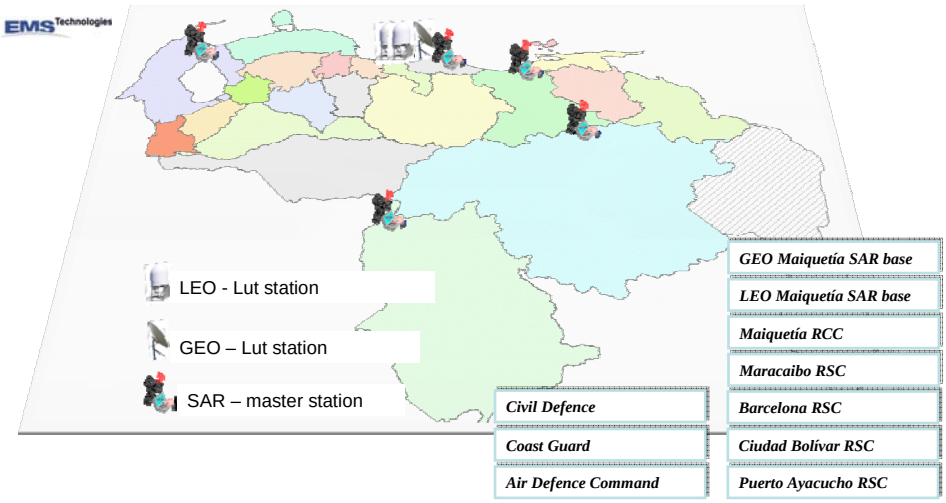


National Overview – Control Towers, Phase II

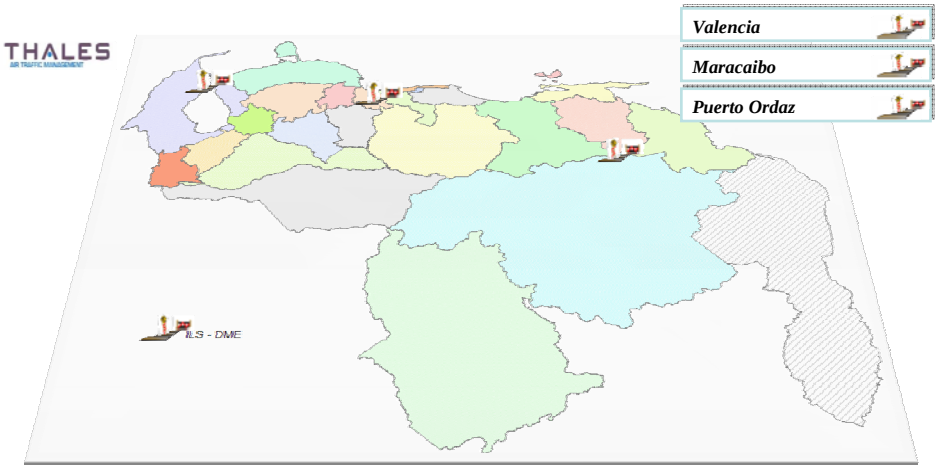
National Overview – Fire Engines

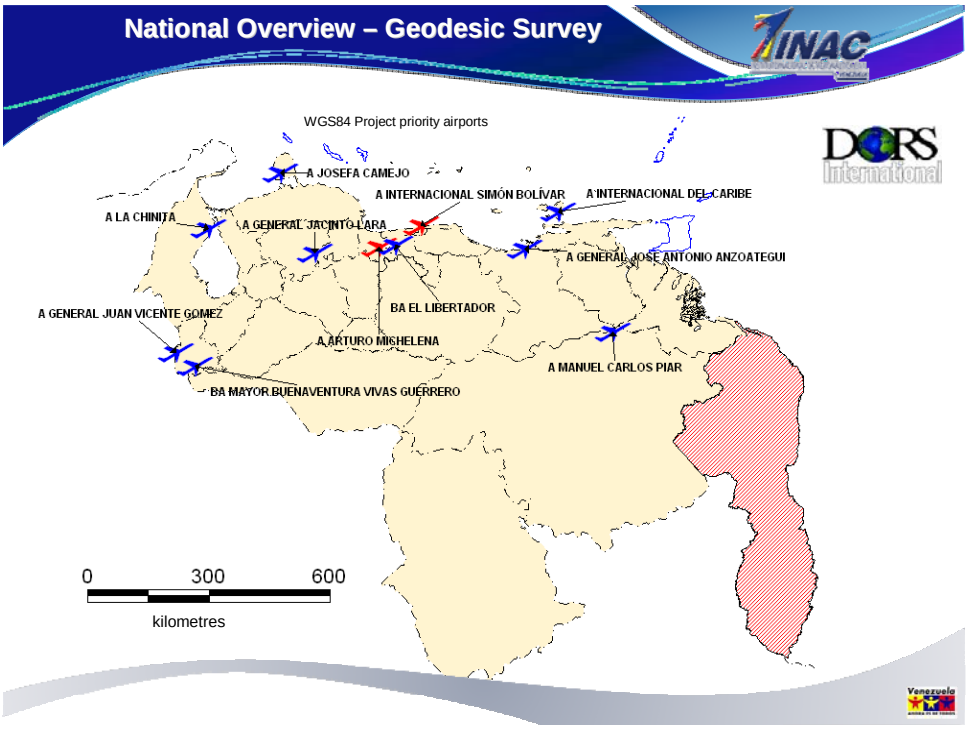


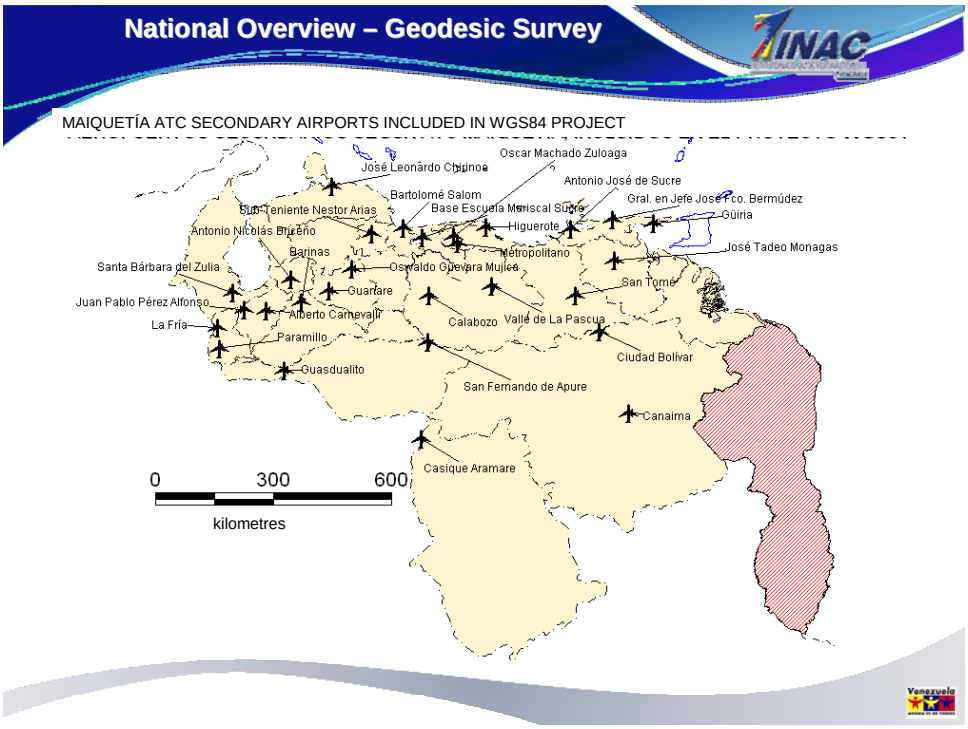
National Overview – COSPAS - SARSAT



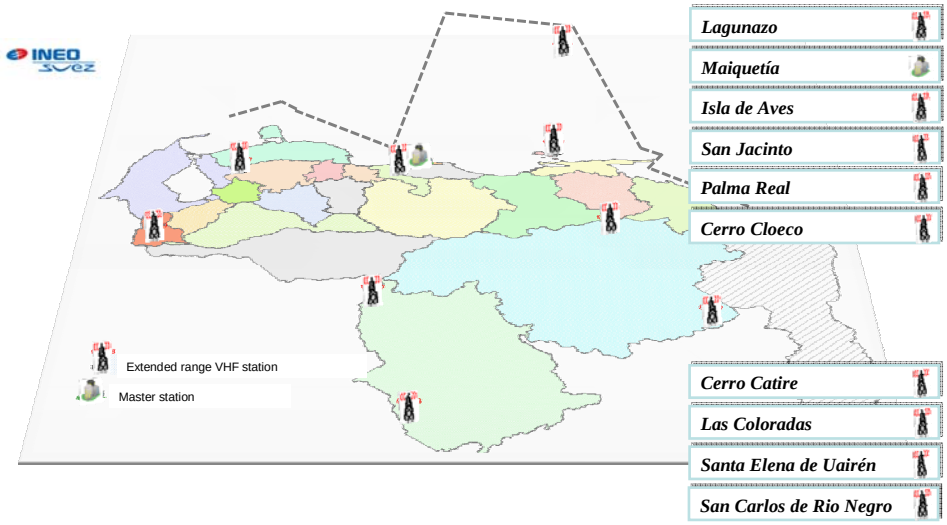
National Overview - ILS/DME




National Overview – Geodesic Survey
WGS84 Project priority airports
A JOSEFA CAMEJO
A INTERNACIONAL SIMÓN BOLÍVAR
A INTERNACIONAL DEL CARIBE
A LA CHINITA
A GENERAL JACINTO LARA
A GENERAL JOSE ANTONIO ANZOATEGUI
A GENERAL JUAN VICENTE GOMEZ
BA EL LIBERTADOR
A ARTURO MICHELENA
A MANUEL CARLOS PIAR
BA MAYOR BUENAVENTURA VIVAS GUERRERO
0
300
600
kilometres


National Overview – Geodesic Survey
INAC
MAIQUETÍA ATC SECONDARY AIRPORTS INCLUDED IN WGS84 PROJECT
José Leonardo Chirinos
Oscar Machado Zuloaga
Antonio José de Sucre
Bartolomé Salom
Gral. en Jefe José Fco. Bermúdez
Güiria
Sub-Teniente Nestor Arias
Base Escuela Mariscal Sucre
Higuerote
Antonio Nicolás Briceño
Barinas
Metropolitano
José Tadeo Monagas
Santa Bárbara del Zulia
Oswaldo Guevara Mujica
San Tomé
Guanare
Juan Pablo Pérez Alfonso
Alberto Carnevalli
Calabozo
Valle de La Pascua
La Fría
Paramillo
Ciudad Bolívar
Guasdualito
San Fernando de Apure
Canaima
Casique Aramare
0
300
600
kilometres
Venezuela

National Overview - VHF-ER



Lagunazo

Maiquetía

Isla de Aves

San Jacinto

Palma Real

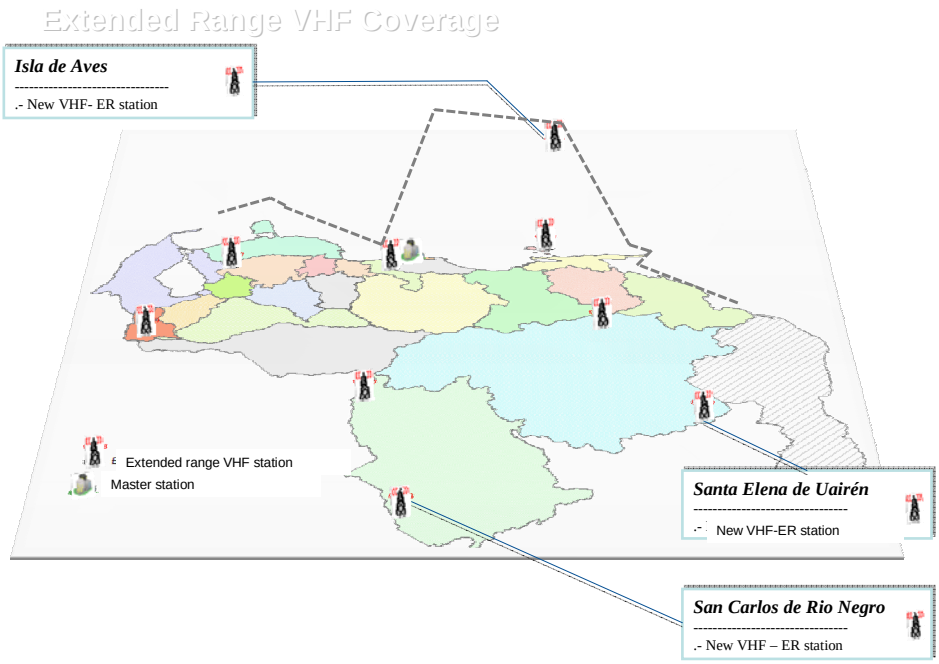
Cerro Cloeco

Cerro Catire

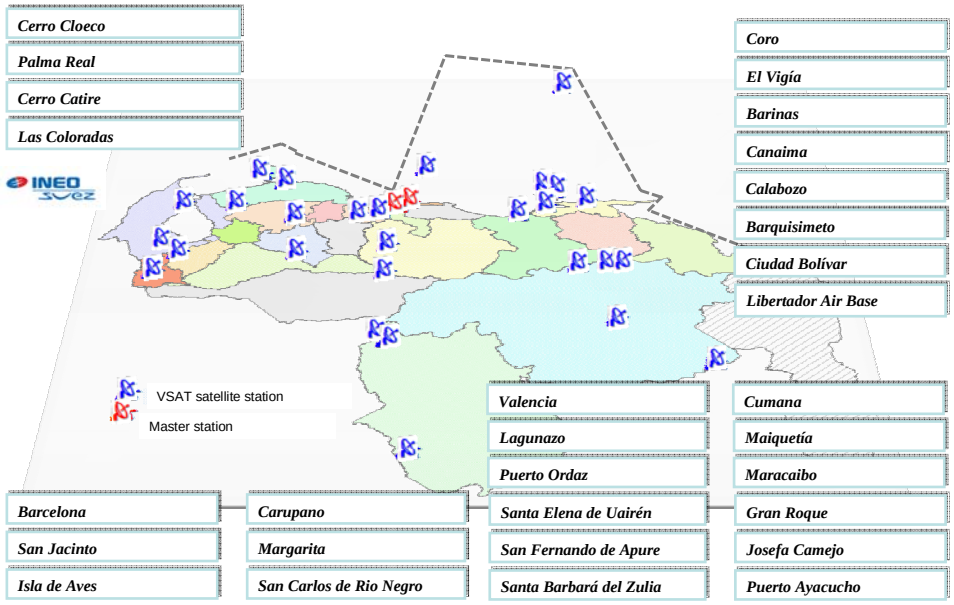
Las Coloradas

Santa Elena de Uairén

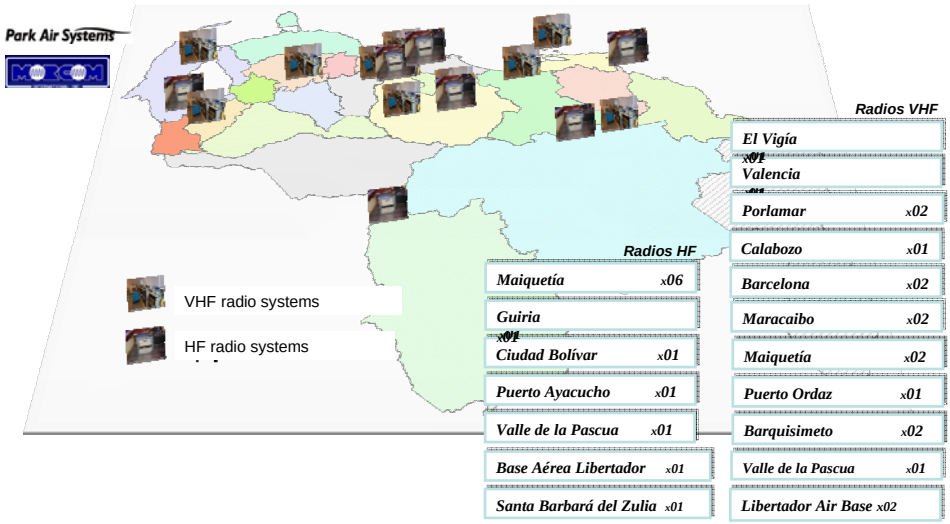
San Carlos de Rio Negro


Extended Range VHF Coverage
Isla de Aves
.- New VHF- ER station
Extended range VHF station
Master station
Santa Elena de Uairén
New VHF-ER station
San Carlos de Rio Negro
.- New VHF – ER station

National Overview - VSAT



National Overview –HF and VHF Radio



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