International Civil Aviation Organization
CAR/SAM Regional Planning and Implementation Group (GREPECAS)
Sixteenth Meeting of the CAR/SAM Regional Planning and Implementation Group (GREPECAS/16)
Punta Cana, Dominican Republic, 28 March – 1 April 2011

Agenda Item 3: Performance framework for Regional Air Navigation Planning and Implementation

3.1 Global, inter-regional and intra-regional activities concerning air navigation systems in the CAR/SAM Regions

BRAZILIAN AERONAUTICAL SEARCH AND RESCUE SYSTEM

(Note presented by Brazil)

SUMMARY

This information paper aims to present to the meeting the structure of the Brazilian Aeronautical Search and Rescue System.

References:

- Law 7565 of December 19, 1986
- PCA 64-1 – Brazilian Aeronautical Search And Rescue Plan
- NSCA 64-1 – Aeronautical Search And Rescue System
- AIP Brasil GEN 3.6-1
- FCA 64-10 - Operational Agreement SISSAR / SALVAMAR

1 Introduction

1.1 With the responsibility of safeguarding the lives of the victims of aeronautical and maritime accidents, the Brazilian administration has established, by means of the Brazilian Aeronautical Code, that the Air Force Command is responsible for the organization and provision of the Aeronautical Search and Rescue Service (SAR).

1.2 Therefore, the Department of Airspace Control (DECEA) assumed responsibility for managing the resources needed to deliver the SAR Service in the Brazilian Search and Rescue Region (SRR) composed of more than 22 million km^2, which includes the entire national territory and extends over the Atlantic Ocean up to meridian 10 ºW.

1.3 In addition to establishing Rescue Coordination Centers (RCC) and SAR Units (SRU), DECEA is responsible for maintaining Brazil's operability as the Ground Segment Provider of the COSPAS-SARSAT System, ensuring the capture, processing and distribution of warnings of said system activated at any point in its SRR.

2 Brazilian Aeronautical SAR system

2.1 The Brazilian Aeronautical SAR System is organized in accordance with the guidelines of Annex 12 to the Convention on International Civil Aviation and is composed of a central agency, the Department of Airspace Control (DECEA), five coordination links called Rescue Coordination Centers (RCC) and execution links - Air Units of the Brazilian Air Force dedicated to providing the SAR Service on a regular basis.

2.2 The Brazilian Search and Rescue Region (SRR) has its limits coinciding with the Brazilian Flight Information Region (FIR) and is divided into five sub-regions, each under the responsibility of a RCC, as provided in **Appendix A.**

2.3 All Brazilian RCC work in accordance with the guidelines provided in the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual, with the goal of coordinating the more than 2,000 SAR operations that occur annually under national responsibility. Within each RCC, teams of SAR Coordination professionals take turns so as to ensure uninterrupted service delivery.

2.4 With the same degree of operability, the Units of the Brazilian Air Force dedicated to the delivery of the SAR Service (SRU) as execution links are distributed nationwide to ensure speed and professionalism in arriving on the scene of the air or marine incident.

2.5 Aiming to ensure effective interoperability of air and maritime resources to safeguard human life on a maritime area of 14 million km^2, the Air Force Command and the Naval Command maintain an operational agreement to allow the integration of their Rescue Coordination Centers and their Search and Rescue Units.

3 Brazil and the COSPAS-SARSAT System

3.1 As a vital tool for locating aircraft and vessels in distress, Brazil participates in the COSPAS-SARSAT Programme since the 1980s, and is the COSPAS-SARSAT Ground Segment Provider of the Western Data Distribution Region (WDDR).

3.2 The Brazilian participation includes ensuring an operational system consisting of three antennas (Figure 1), capable of receiving beacon signals from COSPAS-SARSAT low earth orbit satellites (LEOLUT), and two antennas (Figure 2), capable of receiving beacon signals from COSPAS-SARSAT geostationary satellites (GEOLUT), both directed to GOES 13 (75ºS) and arranged in the ground (**Appendix B**) to ensure coverage of the entire SSR.

Fig. 1 – LEOLUT - Manaus

Fig. 2 – GEOLUT - Brasília

3.3 All alerts received by the Brazilian antennas are processed by the Brazilian COSPAS-SARSAT Mission Control Center (BRMCC) and distributed to the Brazilian aeronautical RCC, to the Naval Command SAR and to the administration of the island of Ascension, as shown in the accompanying diagram (**Appendix C**). All the beacon signals picked up outside the Brazilian region are automatically handled by the COSPAS-SARSAT System, so that they reach the authorities in charge in the other countries.

3.4 In June 2009, as result of the decision to actively participate in the evolution of the concept of using medium earth orbit search and rescue satellites (MEOSAR), in support of Search and Rescue Operations, Brazil implemented a station capable of receiving beacon signals from COSPAS-SARSAT from medium earth orbit satellites (MEOLUT). Installed on the premises of the First Integrated Center for Air Defense and Air Traffic Control (CINDACTA 1), the station has a coverage capacity that goes beyond the Brazilian SRR and includes all South America (**Appendix D**).

4 Conclusion

4.1 The investment that Brazil, by DECEA, has been conducting in the human resources training and in the operational development of the SAR System and COSPAS-SARSAT Ground Segment Provider, has proven to be effective in ensuring the provision of a high quality SAR service, positioning the country as a reference in the activity as evidenced by the statistical data obtained in 2010.

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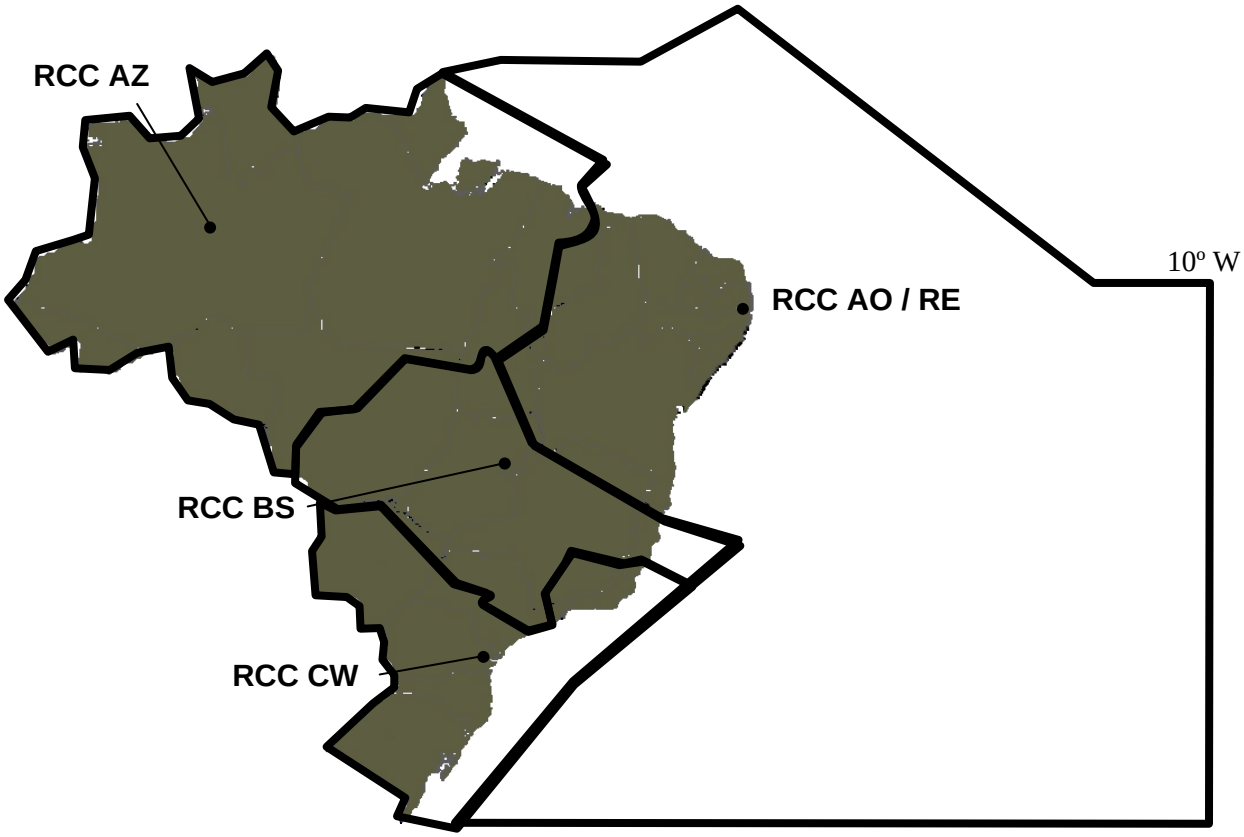
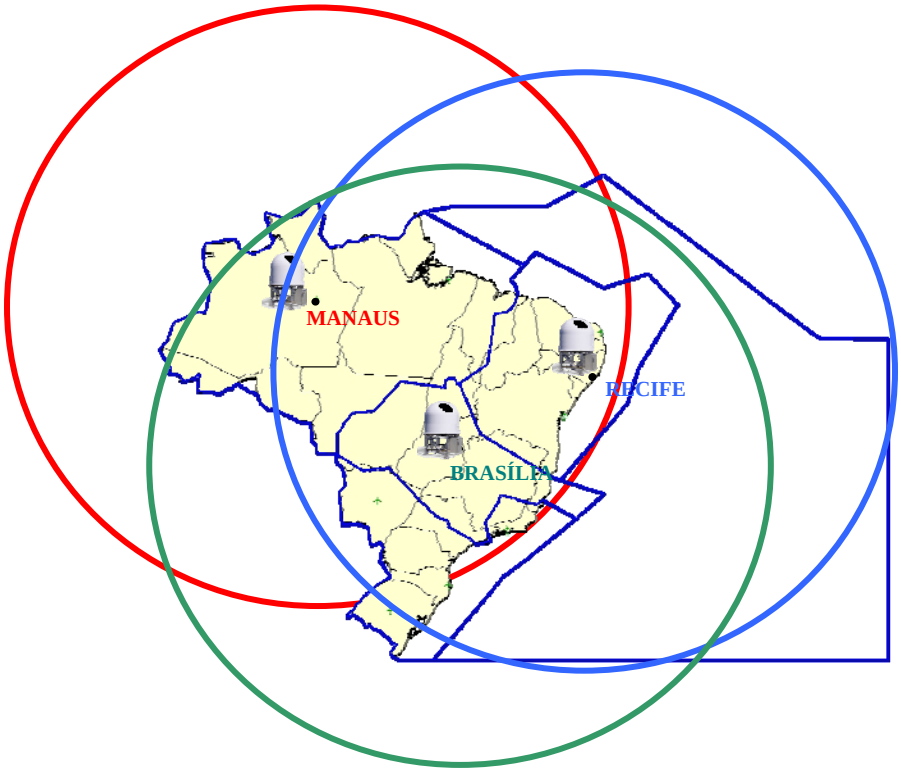
APPENDIX A

AERONAUTICAL RESCUE COORDINATION CENTERS

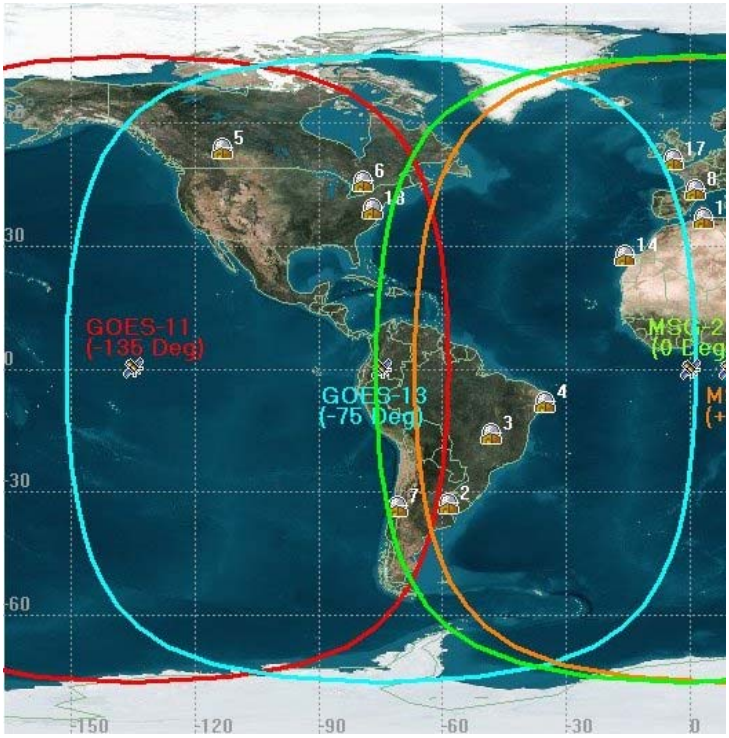


APPENDIX B

COVERAGE OF THE BRAZILIAN COSPAS-SARSAT GROUND SEGMENT PROVIDER



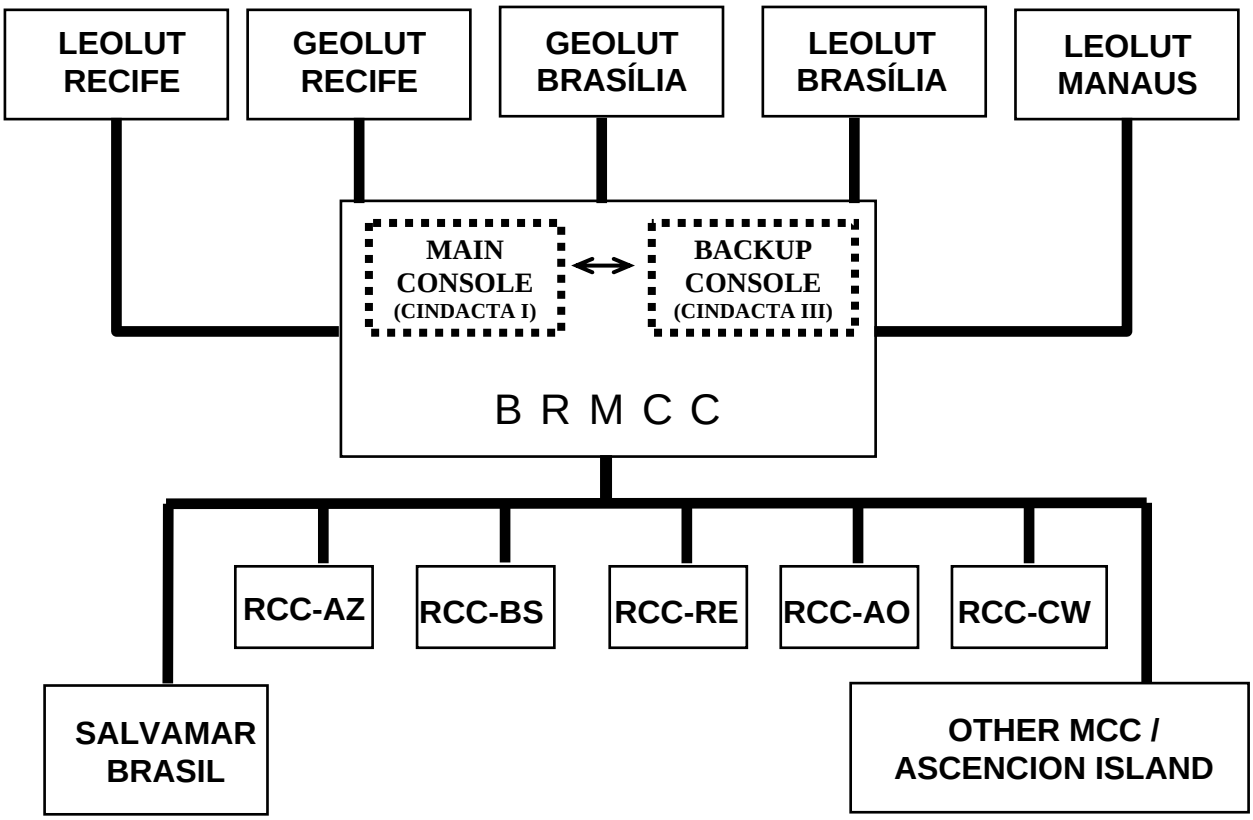
LEOLUT COVERAGE



COBERTURA GEOLUT

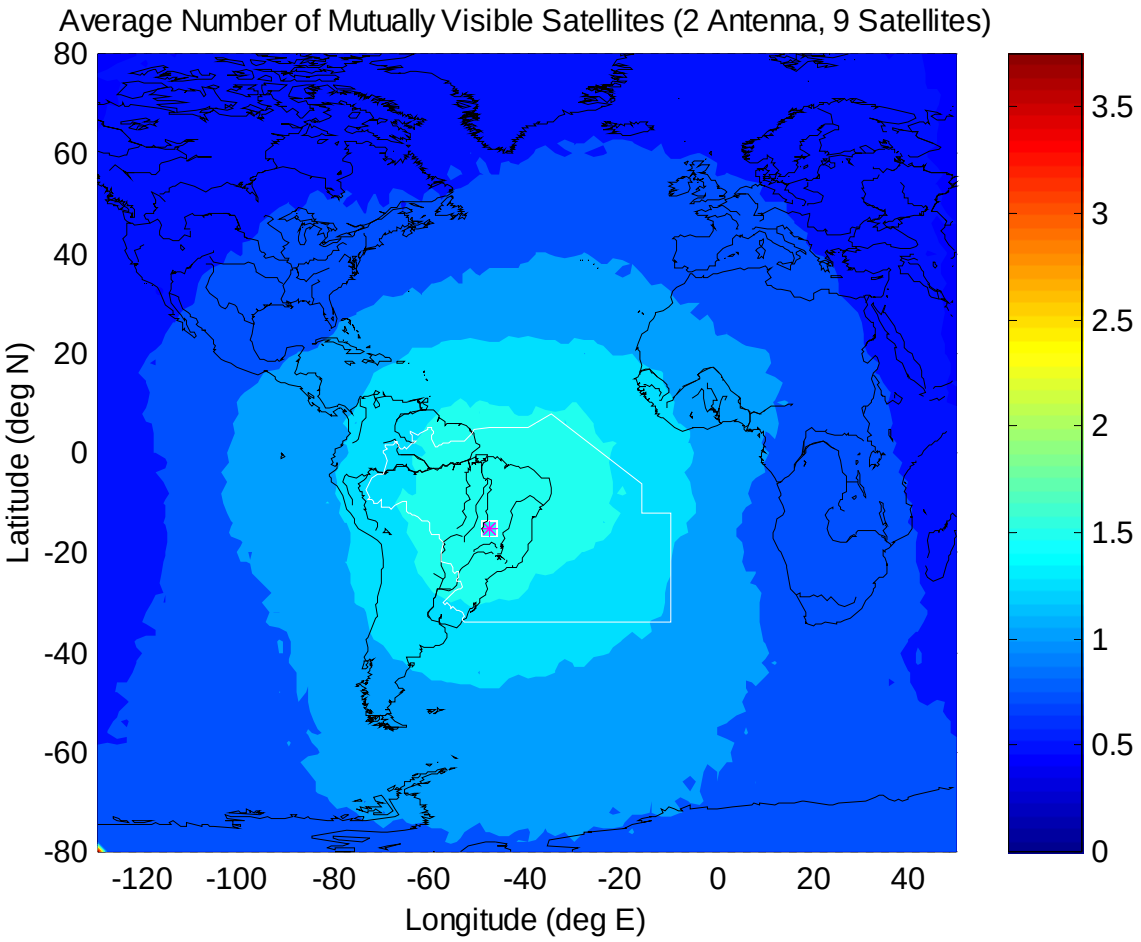
APPENDIX C

DISTRIBUTION FLOWCHART COSPAS-SARSAT ALERTS IN BRAZIL



APPENDIX D

BRAZILIAN MEOLUT STATION COVERAGE



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