International Civil Aviation Organization
CAR/SAM Regional Planning and Implementation Group (GREPECAS)

WORKING PAPER

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**Fourth Joint Meeting GREPECAS–RASG-PA and
Twenty-second Meeting of the Caribbean and South American Regional Planning and
Implementation Group (GREPECAS/22)
Virtual Phase: Asynchronous Online (September 13 to October 11, 2024)
In-person Phase: Lima, Peru (November 20 to 22, 2024)**

| Agenda Item 5: | CAR/SAM Air Navigation Services (ANS) Implementation |
| | 5.2   Communications, Navigation and Surveillance (CNS) |

**STRENGTHENING COMMUNICATIONS AND AERONAUTICAL SURVEILLANCE DATA
EXCHANGE BETWEEN COCESNA AND SENEAM**

(Note presented by the States of Belize, Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua,
Members of the Central American Corporation for Air Navigation Services - COCESNA)

EXECUTIVE SUMMARY COCESNA and SENEAM have had a Cooperation Agreement since April 2008, which, among other aspects, establishes the terms for exchanging data from the Cancún and Belize Radars.	
Earlier this year, two Annexes were signed to the existing Agreement to add sensors to the Surveillance Data exchange and improve Voice and Data Communications between the two entities.	
Action:	Highlight the importance of developing initiatives like this to make more efficient use of resources and contribute to enhancing operational safety.
Strategic Objectives:	• Operational Safety
	• Air Navigation Capacity and Efficiency
References:	Cooperation Agreement between COCESNA and SENEAM

1.   Introduction

1.1   The Central American Corporation for Air Navigation Services (COCESNA) and the Air Navigation Services of Mexican Airspace (SENEAM) resumed discussions in 2023 to explore possibilities for strengthening mutual support between both organizations.

1.2   Through these technical-operational meetings, it was confirmed that both institutions had capabilities that could be highly useful in improving the air navigation services they provide within their respective airspaces.

1.3   Specifically, there were a series of surveillance sensors that could be useful beyond those originally included in the Agreement, as well as a series of ATS Communication channels between control units that had been implemented over the years.

1.4   Additionally, for several years, connection and messaging exchange tests have been conducted to implement the AMHS service between SENEAM and COCESNA, utilizing the communication link established between Tegucigalpa, Honduras, and Mérida, Mexico, allowing communication with Mexico City through SENEAM's internal IP network. It was necessary to formalize all this through one of the Annexes and to draft a Technical Letter that defines the coordination procedures between units to achieve the exchange of aeronautical messaging.

2. Benefits and Opportunities

2.1   Regarding surveillance sensors, it was determined that both institutions had information from secondary radars as well as ADS-B receivers that would allow expanded Surveillance coverage within the Mexican FIR and the Central American FIR, under COCESNA and its Member States' responsibility. This expansion improves coverage in the upper and lower airspace controlled by the Member States of Guatemala and Belize, where some coverage gaps currently exist, thus enhancing surveillance and automation between Adjacent Control Centers.

2.2   Additionally, integrating these surveillance sensors into the Control Centers, given the overlap in coverage, will allow for preventive or corrective maintenance activities on the systems without affecting Air Traffic Control operations or compromising Operational Safety, and it will also help avoid increased costs for airlines and airspace users.

2.3   Summary Table of Surveillance Sensors Exchanged by COCESNA:

Name	Location	Manufacturer	Model	Interface	Protocol
Belice	Belice	Indra	IRS20-MP/S	IP	Asterix CAT 21/34/48
Cerro Santiago	Guatemala	Indra	IRS20-MP/S	IP	Asterix CAT 21/34/48
Palencia	Guatemala	Indra	IRS20-MP/S	IP	Asterix CAT 21/34/48
Dixon Hill	Honduras	Indra	IRS20-MP/S	IP	Asterix CAT 21/34/48
Niktun	Guatemala	Indra	IRS20-MP/S	IP	Asterix CAT 21/34/48

2.4   Summary Table of Surveillance Sensors Exchanged by SENEAM:

Name	Manufacturer	Model	Interface	Protocol
Villahermosa	Thales	RSM970S	IP	Asterix CAT 34/48
Mérida	Thales	RSM970S	IP	Asterix CAT 34/48
Tuxtla Gutiérrez	Thales	RSM970S	IP	Asterix CAT 34/48
Huatulco	GECI	GT280	IP	Asterix CAT 21

Tulum	Thales	RSM970S	IP	Asterix CAT 34/48
Cancún	Thales	RSM970S	IP	Asterix CAT 34/48

2.5 Regarding the ATS Channels, a series of communications were formalized with Control Units belonging to both SENEAM and COCESNA and its Member States. Below is the Summary Table:

Channel Number	Control Unit 1	Control Unit 2
1	APP La Aurora, Guatemala	Tapachula Airport, México
2	APP Belize, Belice	APP Mérida, México
3	APP Belize, Belize	Chetumal Airport, México
4	ACC CENAMER, Honduras	APP Mérida, México

2.6 Through these communication channels, it is possible to improve the efficiency of coordination's between Air Traffic Control Units, which also significantly contributes to improving operational safety.

2.7 The coverages of both the Surveillance Systems provided by SENEAM and COCESNA are presented below to observe the contribution in coverage by integrating the data into their control units.
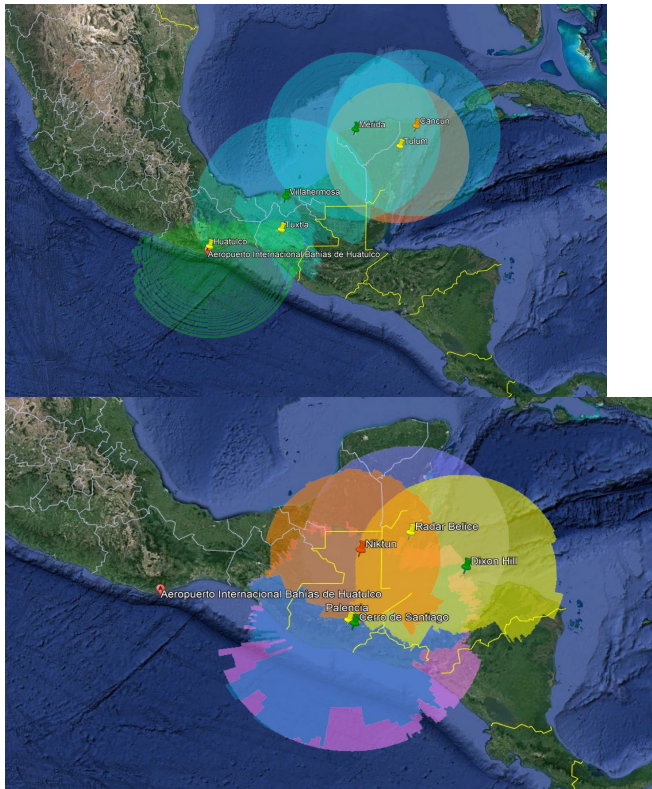
Contributions of SENEAM and COCESNA Surveillance Sensors to FL030

2.8 Additionally, regarding Aeronautical Messaging, the implementation of the AMHS Service between SENEAM and COCESNA provides better support to regional AMHS

networks, improving message distribution, traffic separation requests, and network diversity among participating States, which also ensures information availability in the event of main system failures.

2.9   Given the positive results of such initiatives, COCESNA continues to explore opportunities to expand cooperation with SENEAM as well as to replicate these initiatives with other Air Navigation Service Providers, especially those from adjacent FIRs in North, Caribbean, and South America.

3.   Action Request

3.1   Participants are invited to:

- Take note of the information presented.
- Highlight the importance of developing initiatives like this to make more efficient use of resources and contribute to enhancing operational safety.
- Continue studies to implement this type of initiative among Air Navigation Service Providers, which results in benefits by increasing operational capacity and efficiency and improving operational safety.

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