



**Agenda Item 3: Report of activities and deliverables of the INTEROP TF and Subgroups**  
**b) CNS implementation. Progress of the Subgroups.**

**ACTIVITIES CARRIED OUT IN THE INTEROP TF SUBGROUPS**

(Presented by the Secretariat)

<b>SUMMARY</b>	
This working paper presents the activities carried out by the Subgroups of the Interoperability Task Force (INTEROP TF) since the last Workshop/Meeting of the SAM Region Implementation Group (SAM/IG/28), to date.	
<b>References</b>	
- GREPECAS/20 Final Report (Salvador-BA/Brazil, 16 to 18 November 2022)	
- SAM/IG/28 Final Report (Lima, 03 to 07 October 2022)	
<b>ICAO Strategic Objectives:</b>	<i>A – Safety</i> <i>B – Air Navigation Capacity and Efficiency</i>  <i>ASBU: AMET-B0/4 (IWXXM), ASUR-B0/1 (ADS-B), ASUR-B1/1 (SB ADS-B), COMI-B0/7 (AMHS) and FICE-B0/1 (AIDC)</i>

**1. INTRODUCTION**

1.1 The SAM Region Implementation Group (SAM/IG) has formed the Interoperability Task Force (INTEROP TF) to support and promote initiatives to modernize air navigation services and guarantee interoperability between automated systems used by AIM, ATM, ATFM, CNS and MET users, with a view to:

- a) facilitate the exchange of information between the systems implemented by the States, reducing the time and interconnection problems between the systems;
- b) promote a coordinated and homogeneous transition towards the new services and elements indicated in the GANP; and
- c) Encourage the multidisciplinary participation of air navigation services professionals in support of the SAM Region Implementation Group (SAM/IG) for the planning and execution of interconnection work for the systems implemented in the South American Region.

1.2 Currently, six INTEROP TF Subgroups are activated: ATM/AIDC Subgroup, ATM/FPL Subgroup, CNS/AMHS Subgroup, CNS/ANP Subgroup, CNS/SUR Subgroup and MET/IWXXM Subgroup. The activities carried out since the SAM/IG/28 Workshop/Meeting (Lima, 3 to 7 October 2022) are summarized below. The Final Report of the SAM/IG/28 Workshop/Meeting can be accessed through the link below:

<https://www.icao.int/SAM/Pages/MeetingsDocumentation.aspx?m=2022-RLA06901-SAMIG28>

## 2. DISCUSSION

### 2.1 ATM/AIDC SUBGROUP

2.1.1 The AIDC connections that are operational are:

#### *Brazil (9 de 25)*

<b>Centro A</b>	<b>Centro B</b>
ACC Amazónico	ACC Brasilia – 1
	ACC Curitiba – 2
	ACC Recife – 3
	ACC Atlántico – 4
ACC Atlántico	ACC Amazónico – (4)
	ACC Curitiba – 5
	ACC Recife – 6
ACC Brasilia	ACC Amazónico – (1)
	ACC Curitiba – 7
	ACC Recife – 8
ACC Curitiba	ACC Amazónico – (2)
	ACC Atlántico – (5)
	ACC Brasilia – (7)
	ACC Recife – 9
ACC Recife	ACC Amazónico – (3)
	ACC Atlántico – (6)
	ACC Brasilia – (8)
	ACC Curitiba – (9)

#### *Chile (2 de 11)*

<b>Centro A</b>	<b>Centro B</b>
ACC Iquique	ACC Lima – 1
ACC Puerto Montt	Punta Arenas – 2
ACC Punta Arenas	ACC Puerto Montt – (2)

*Colombia (4 de 13)*

<b>Centro A</b>	<b>Centro B</b>
ACC Barranquilla	ACC Bogotá – 1
	ACC Panamá – 2
ACC Bogotá	ACC Barranquilla – (1)
	ACC Guayaquil – 3
	ACC Lima – 4

*Ecuador (3 de 3)*

<b>Centro A</b>	<b>Centro B</b>
ACC Guayaquil	ACC Bogotá – 1
	ACC Lima – 2
	ACC CENAMER – 3

*Panamá (2 de 6)*

<b>Centro A</b>	<b>Centro B</b>
ACC Panamá	ACC CENAMER – 1
ACC Panamá	ACC Barranquilla – 2

*Perú (3 de 6)*

<b>Centro A</b>	<b>Centro B</b>
ACC Lima	ACC Bogotá – 1
	ACC Iquique – 2
	ACC Guayaquil – 3

*Establishment of AIDC between centers using the same automation system*

2.1.2 States using the same automation system are urged to seek to move forward with the establishment of the AIDC among their adjacent centers. In this context, it is identified that there are opportunities for Brazil, Paraguay and Venezuela, which could seek to advance with the AIDC between ACC Amazonico – ACC Maiquetia and ACC Asuncion – ACC Curitiba.

*Visit of EASA representative to ACC Lima*

2.1.3 The cooperation project between the European Union (EU) and Latin America & Caribbean in civil aviation (EU-LAC APP) managed by EASA, is providing support to SRVSOP and its member states in different areas, including the promotion of interoperability and the application of international standards and good practices in CNS/ATM through the GT-INTEROP.

2.1.4 Within this context, a visit was made to the CORPAC facilities at Jorge Chavez Airport (Lima), mainly to the Area Control Center (ACC) of Lima by a team formed by an expert from EU-LAC

APP and staff from the ICAO SAM regional office, to identify areas for improvement. The recommendations focused primarily on agreeing interpretations of AIDC standards between automated systems, ensuring proper maintenance and support of ATM systems, and managing change and system lifecycles to ensure service performance and promote recommendations in this regard. With the objective of implementing the AIDC in Peru with all adjacent international centers as soon as possible.

2.1.5 The recommendations focused primarily on agreeing interpretations of AIDC standards between automated systems, ensuring proper maintenance and support of ATM systems, and managing change and system lifecycles to ensure service performance.

## 2.2 ATM/FPL SUBGROUP

### *First Workshop/Meeting of the ATM/FPL Subgroup (SG ATM/FPL/1)*

2.2.1 From March 27 to 31, 2023, the First Workshop/Meeting of the ATM/FPL Subgroup (SG ATM/FPL/1) was held at the Lima Regional Office, with the participation of 11 representatives from Bolivia, Brazil, Chile, Ecuador, Paraguay, Peru and Venezuela.

2.2.2 The Meeting Summary can be accessed through the following link:

[https://www.icao.int/SAM/Documents/2023-RLA06901-SGATMFPL1/SUMARIO%20REUNION%20ATM\\_FPL%20MARZO%202023.pdf](https://www.icao.int/SAM/Documents/2023-RLA06901-SGATMFPL1/SUMARIO%20REUNION%20ATM_FPL%20MARZO%202023.pdf)

2.2.3 The participants of the Workshop/Meeting SG ATM/FPL/1 identified an opportunity for States that have implemented AMHS Frequentis/Comsoft systems, with User Agent (UA) CADAS, the possibility of implementing, more easily, a centralized management of flight plans; taking advantage of the functionality of realization of syntactic and semantic verification of flight plans messages, available in CADAS terminals.

2.2.4 Currently, Argentina, Chile, Colombia, French Guiana, Peru and Venezuela operate CADAS terminals. It is important to determine whether the implemented versions have the functionality to criticize (semantically and syntactically) the flight plan messages.

2.2.5 During the Workshop/Meeting, the representative of Chile demonstrated the scheme adopted to manage flight plans, which had produced a significant contribution to the mitigation of errors in flight plans. The representative expressed his willingness to share the experience gained in Chile with other States using CADAS terminals.

2.2.6 The representative of Venezuela reported that there was already an initiative in progress to establish centralized management of flight plans, with the activation of a new unit with its own personnel assigned to the required functions.

2.2.7 Likewise, in Peru there is an initiative to structure a centralized management of flight plans, in order to mitigate errors and duplication of messages.

### *Brazilian Centralization System of Flight Plans (SIGMA)*

2.2.8 On April 18 and 19, 2023, a presentation was made of the functionalities of the SIGMA system implemented in Brazil (DECEA), which provides centralized and automated management of flight plans, contributing to the mitigation of errors in flight plans.

## 2.3 CNS/AMHS SUBGROUP

2.3.1 Since the SAM/IG/28, the following AMHS interconnections (P1) were established, via REDDIG II:

- Brasilia COM Center – Madrid COM Center (SBBR – LEEE);
- Brasilia COM Center – Montevideo COM Center (SBBR – SUMU);
- Caracas COM Center – Madrid COM Center (SVCA – LEEE); and
- Ezeiza COM Center – Madrid COM Center (SAEZ – LEEE).

2.3.2 On May 4, 2023, IP connectivity (network layer) was established between the AMHS systems of the Argentina and South Africa COM Centers, with the following interconnection estimated to be operational by the end of May 2023:

- Ezeiza COM Center – Johannesburg COM Center (SAEZ – FAOR).

2.3.3 The **Appendix** to this working paper presents the intraregional and interregional AMHS interconnections (planned and extra plan) of the SAM Region.

### *Fourth Workshop/Meeting of Supervisors/Operators of the SAM Region COM AMHS Centers*

2.3.4 In the period from April 24 to 27, 2023, the Fourth Workshop/Meeting of Supervisors/Operators of the SAM Region COM AMHS Centers (COM AMHS/4) was held in Lima, with the participation of 14 representatives of the COM AMHS Centers of Bolivia, Chile, Ecuador, Panama, Peru, Uruguay and Venezuela.

2.3.5 During the Workshop/Meeting, the Contingency Plans of the COM Centers were discussed; the Routing Tables were revised and updated the information in the AMHS Address Management Center (AMC) of EUROCONTROL; the CNS II-1 Aeronautical Message Service (AFTN/AMHS) Plan in Volume II of the ANP CAR/SAM was updated; and other matters related to the Aeronautical Courier Service were discussed.

2.3.6 The Meeting Summary can be accessed through the following link:

<https://www.icao.int/SAM/Pages/MeetingsDocumentation.aspx?m=2023-RLA06901-COMAMHS4&t=1>

## 2.4 CNS/ANP SUBGROUP

2.4.1 The CNS/ANP Subgroup was activated at the SAM/IG/26 Meeting (Virtual, 20 to 23 September, 2021) in order to support the review of the information contained in Vol II of the CAR/SAM Air Navigation Plan, as well as providing support in the preparation of Vol III of the CAR/SAM ANP, on CNS issues.

2.4.2 The Rapporteur of the CNS/ANP Subgroup has worked individually with the States to consolidate the information from the SAM Region and subsequently work with the CAR States in coordination with the NACC and SAM Offices. It is estimated that the consolidation of the information of the CAR and SAM States will begin in July 2023, to be concluded until December 2023.

2.4.3 During the GREPECAS/20 Meeting (Salvador/Brazil, November 16-18, 2022), Conclusion GREPECAS/20-5 for the creation of an Ad-hoc Group to develop a regional project for the management of aeronautical frequencies was approved.

2.4.4 In the period from January 30 to February 3, 2023, representatives of Chile, Dominican Republic, Haiti, Uruguay and COCESNA met at the NACC Office (Mexico) as participants of the Ad-hoc Group formed to develop the GREPECAS Project required in Conclusion GREPECAS/20-5.

2.4.5 The work carried out by the Ad-hoc Group was approved at the Fifth Virtual Meeting of the Program and Project Review Committee (CRPP) of GREPECAS (eCRPP/5), establishing a GREPECAS Project for the Regional CAR/SAM Management of the Radio Spectrum for Aviation.

2.4.6 The activities related to the SAM States of the aforementioned project will be carried out within the framework of the CNS/ANP Subgroup. In this regard, electronic templates containing the information contained in Lists COM 1, COM 2 and COM 3 have already been sent for updating by each State.

2.4.7 On March 2, 2023, the SAM Office has circulated the letter of LN3/24.1 – SA6940, inviting participation in the Workshop/Training on the application "Frequency Finder 2023", which will be held at the ICAO SAM Office, from May 29 to June 02, 2023.

2.4.8 The participation of all SAM States in this Workshop/Training is essential, since the intention is to use the Frequency Finder as a tool for regional CAR/SAM management of the spectrum of frequencies used in the aeronautical context. It is also important that participants update the templates taught (see item 2.4.6) and have them in their hands, during the Workshop/Training.

## 2.5 CNS/SUR SUBGROUP

2.5.1 The CNS/SUR Subgroup deals with aeronautical surveillance data exchange issues, likewise, it is in charge of studying and proposing the necessary activities for a regional implementation of satellite ADS-B in the SAM Region, using the REDDIG as platform for the distribution of information, reducing the cost with the contracting of telecommunications services.

### *Exchange of aeronautical surveillance data*

2.5.2 Since the Workshop/Meeting SAM/IG/28, the following initiative for the exchange of information on aeronautical surveillance was carried out:

- Chile-Peru exchange of sensor data from Iquique and Arequipa; and

2.5.3 **Appendix B** to this work paper presents the surveillance information exchanges established and ongoing in the SAM Region.

### *Transmission of Space-based ADS-B data via REDDIG II*

2.5.4 On April 20, 2023, the connection via REDDIG II was established, through the MPLS nodes of Ilopango and Virginia, as one of the channels for the provision of the ADS-B Satellite service to COCESNA.

2.5.5 The connection via REDDIG II allows the reduction of costs for contracting communication links, in the provision of the Space-based ADS-B service.

2.6 MET/IWXXM SUBGROUP

2.6.1 The MET/IWXXM Subgroup was formed with the purpose of testing and exchanging OPMET messages in the new IWXXM format, via the Aeronautical Messaging Service (AMHS).

2.6.2 With the adaptations made in the Regional OPMET Data Bank (RODB) of Brasilia (see NI/3.1) and the regional AMHS Implementation, it is estimated that the implementation of the IWXXM format for the exchange of operational meteorological information will have a significant advance in the States of the SAM Region during this year.

**3. SUGGESTED ACTION**

3.1 The Meeting is invited to:

- a) Take note of the activities carried out by the INTEROP WG Subgroups; and
- b) analyze other considerations that the Meeting deems pertinent.

## Interconexiones AMHS – Región SAM / AMHS Interconnection – SAM Region

(06 Mayo 2023 / 06 May 2023)

	Conexión P1 / P1 Connection	Situación / Situation	Operativa en / Operational in	Observaciones / Notes
1	SAEZ – SBBR	Operativa / Operational	04/04/2018	
2	SAEZ – SCSC	Operativa / Operational	21/01/2020	
3	SAEZ – SGAS	Operativa / Operational	30/11/2018	
4	SAEZ – SLLP	Operativa / Operational	10/02/2020	
5	SAEZ – SPIM	Operativa / Operational	10/05/2019	
6	SAEZ – SUMU	Operativa / Operational	30/11/2022	
7	SBBR – SGAS	Operativa / Operational	30/11/2018	
8	SBBR – SLLP	Operativa / Operational	30/07/2019	
9	SBBR – SKBO	Operativa / Operational	22/05/2017	
10	SBBR – SMJP	Operativa / Operational	06/09/2018	
11	SBBR – SOCA	Operativa / Operational	22/01/2020	
12	SBBR – SPIM	Operativa / Operational	14/12/2015	
13	<b>SBBR – SUMU</b>	<b>Operativa / Operational</b>	<b>14/02/2023</b>	
14	SBBR – SVCA	Operativa / Operational	28/02/2018	
15	SBBR – SYCJ	Operativa / Operational	06/07/2017	
16	SCSC – SPIM	Operativa / Operational	14/12/2015	
17	SEQU – SKBO	Operativa / Operational	16/01/2020	
18	SEQU – SPIM	Operativa / Operational	14/07/2012	
19	SEQU – SVCA	Operativa / Operational	11/10/2018	
20	SKBO – MPPC	Operativa / Operational	30/07/2020	
21	SKBO – SPIM	Operativa / Operational	15/11/2010	
22	SKBO – SVCA	Operativa / Operational	01/12/2017	
23	SLLP – SPIM	Operativa / Operational	10/05/2019	
24	SMJP – SVCA	Operativa / Operational	31/03/2019	
25	SMJP – SYCJ	Operativa / Operational	11/10/2018	
26	SOCA – SVCA	Operativa / Operational	22/01/2020	
27	SPIM – SVCA	Operativa / Operational	01/12/2017	

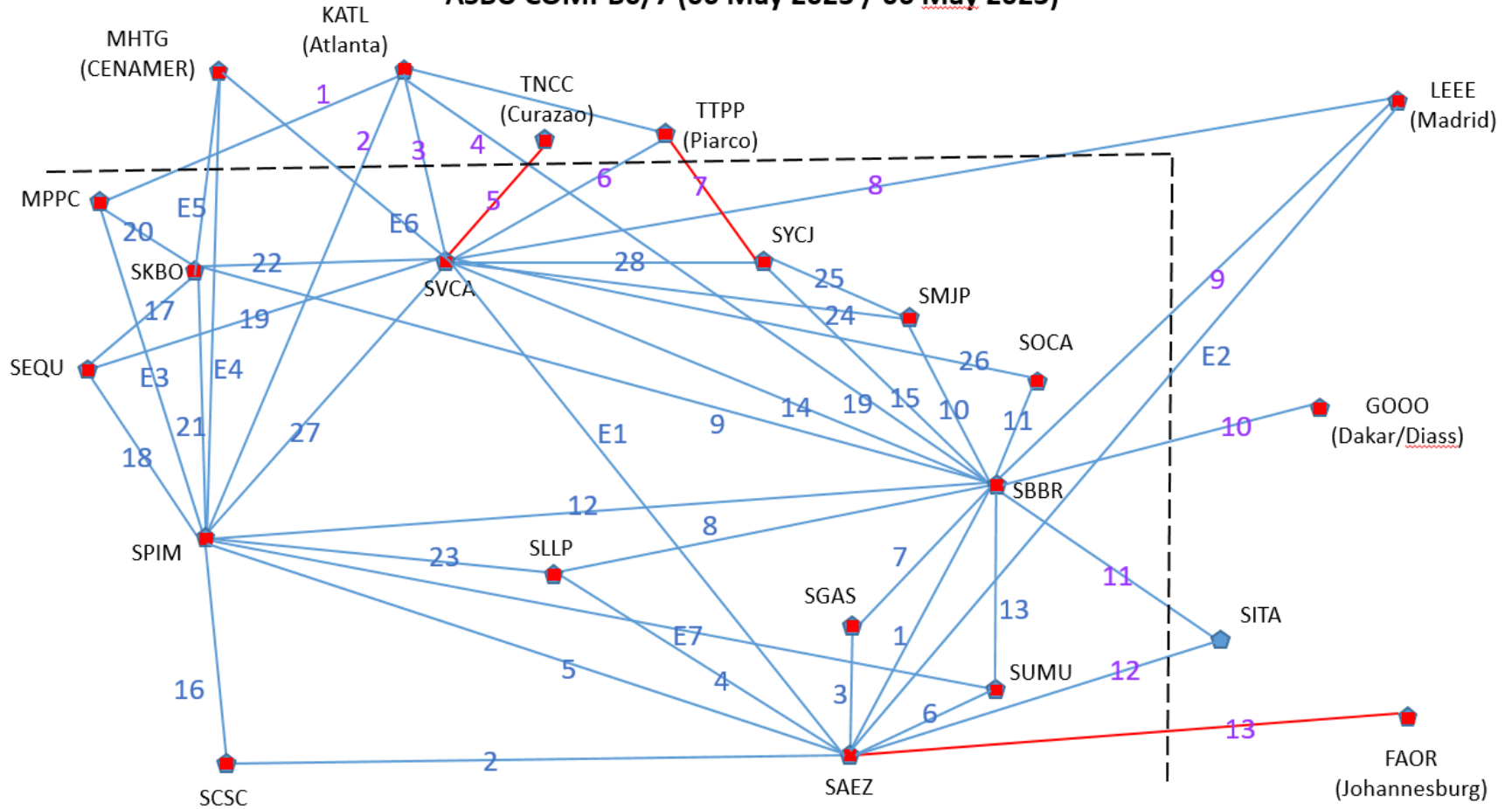
28	SVCA – SYCJ	Operativa / Operational	27/08/2019	
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**Interconexiones AMHS – Región SAM / AMHS Interconnection – SAM Region**

**(06 Mayo 2023 / 06 Mayo 2023)**

	<b>Conexión P1 / P1 Connection</b>	<b>Situación / Situation</b>	<b>Operativa en / Operational in</b>	<b>Observaciones / Notes</b>
1	MPPC – KATL	Operativa / Operational	2018	
2	SPIM – KATL	Operativa / Operational	02/03/2020	
3	SVCA – KATL	Operativa / Operational	27/01/2021	
4	SBBR – KATL	Operativa / Operational	06/08/2019	
5	SVCA – TNCC			
6	SVCA – TTPP	Operativa / Operational	26/04/2021	
7	SYCJ – TTPP			
8	<b>SVCA – LEEE</b>	<b>Operativa / Operational</b>	<b>23/02/2023</b>	
9	SBBR – LEEE	Operativa / Operational	11/10/2018	
10	SBBR – GOOO	Operativa / Operational	25/06/2020	
11	SBBR – SITA	Operativa / Operational	16/08/2018	
12	SAEZ – SITA	Operativa / Operational	18/07/2019	
13	SAEZ – FAOR	En coordinación / In coordination		
E1	SAEZ – SVCA	Operativa / Operational	06/06/2022	Extra plan (Argentina – Venezuela)
E2	<b>SAEZ – LEEE</b>	<b>Operativa / Operational</b>	<b>08/03/2023</b>	<b>Extra plan (ENAIRES)</b>
E3	<b>MPPC – SPIM</b>	<b>Operativa / Operational</b>	<b>24/04/2023</b>	<b>Extra plan (Panamá - Perú)</b>
E4	SKBO – MHTG	Operativa / Operational	15/08/2022	Extra plan (CENAMER)
E5	SVCA - MHTG	Operativa / Operational	06/09/2022	Extra plan (CENAMER)
E6	SPIM – MHTG	Operativa / Operational	30/08/2022	Extra plan (CENAMER)
E7	SPIM – SUMU	Operativa / Operational	07/12/2022	Extra plan (Peru - Uruguay)

**AMHS Interconnections / Interconexiones AMHS  
ASBU COMI-B0/7 (06 May 2023 / 06 May 2023)**



**INTERCAMBIO DE DATOS DE VIGILANCIA – REGIÓN SAM**  
**EXCHANGE OF SURVEILLANCE DATA – SAM REGION**

<b>Desde / From</b>	<b>Hacia / To</b>	<b>SSR</b>	<b>ADS-B Terrestre / Terrestrial ADS-B</b>	<b>ADS-B Satelital / Space-based ADS-B</b>	<b>Estado / Status</b>
Asunción (Paraguay)	Resistencia (Argentina)	Asterix			Operacional
Asunción (Paraguay)	Resistencia (Argentina)		Asterix		No integrado
Corrientes (Argentina)	Asunción (Paraguay)	Asterix			Operacional
Posadas (Argentina)	Asunción (Paraguay)	Asterix			Operacional
Foz do Iguazú (Brasil)	Guaraní (Paraguay)	Asterix			Operacional
Carrasco – Selex (Uruguay)	Ezeiza (Argentina)	Asterix			Operacional
Carrasco – Indra (Uruguay)	Ezeiza (Argentina)	Asterix			Operacional
Durazno (Uruguay)	Ezeiza (Argentina)	Asterix			Operacional
Ezeiza (Argentina)	Carrasco (Uruguay)	Asterix			Operacional
Paraná (Argentina)	Carrasco (Uruguay)	Asterix			Operacional
Quilmes (Argentina)	Carrasco (Uruguay)	Asterix			Operacional
Santiago (Chile)	Mendoza (Argentina)	Asterix			En test
Malarguë (Argentina)	Santiago (Chile)	Asterix			En test
Aireon (Virginia – USA)	COCESNA (Ilopango – El Salvador)			Asterix	Operacional
Arequipa (Perú)	Santiago (Chile)	Asterix			En coordinación
Iquique (Chile)	Lima (Perú)	Asterix			En coordinación