



**Fifth GREPECAS–RASG-PA Joint Meeting (GREPECAS-RASG-PA/5) and  
 Twenty-Third Meeting of the CAR/SAM Regional Planning and Implementation Group  
 (GREPECAS/23)**

Virtual Phase (Asynchronous, 19 January to 17 February 2026)  
 In-Person Phase (Mexico City, Mexico, 4 to 6 March 2026)

**Agenda Item 8: CAR/SAM Air Navigation Implementation**

**DEVELOPMENT OF ADS-B SYSTEMS IN THE AIR TRAFFIC SURVEILLANCE SYSTEMS  
 MODERNIZATION PROGRAM IN ARGENTINA**

(Presented by Argentina)

<b>EXECUTIVE SUMMARY</b>	
<p>This information paper aims to present the progress of the air traffic surveillance systems modernization program in Argentina. The scope of this program, driven by the ANSP (National Air Service Agency), developed, and manufactured by the national industry, includes ADS-B surveillance systems and the upgrade of monopulse secondary surveillance radars (MSSRs) with the incorporation of Mode S and ADS-B capabilities. Furthermore, it expands coverage and redundancy through the installation of new, modern MSSR systems and autonomous ADS-B stations.</p>	
<p><i>Strategic Objectives 2026-2050:</i></p>	<ul style="list-style-type: none"> <li>• Every flight is safe and secure</li> <li>• Aviation is environmentally sustainable</li> <li>• Aviation delivers seamless, accessible, and reliable mobility for all</li> <li>• No country left behind</li> <li>• The International Civil Aviation Convention and Other Treaties, Laws and Regulations Address All Challenges</li> <li>• The Economic Development of Air Transport Assures the Delivery of Economic Prosperity and Societal Well-Being for All</li> </ul>
<p><i>References:</i></p>	<ul style="list-style-type: none"> <li>• ICAO (2019): “Global Air Navigation Plan” (<a href="https://www4.icao.int/ganpportal">https://www4.icao.int/ganpportal</a>).</li> <li>• GREPECAS/22 Information Note NI/11 ADVANCES IN THE MODERNIZATION OF AIR TRAFFIC SURVEILLANCE SYSTEMS IN ARGENTINA</li> </ul>

## 1. Introduction

1.1 The aeronautical surveillance systems modernization program was launched in 2021 by Argentina's air navigation service provider, EANA SA, with the overall objective of contributing to the strengthening of the physical and digital infrastructure of the Argentine airspace surveillance systems and the National Airport System.

1.2 This program, which includes the complete renewal of the national surveillance sensor systems, also includes the development, manufacture, installation and commissioning by the company INVAP SAU of the RSMA-S/A model sensor (Advanced Monopulse Secondary Radar) with Mode S support and ADS-B reception, the first model of which was installed and put into service at the Gral. Justo José de Urquiza Airport (PAR – SAAP) in the City of Paraná in August 2024.

1.3 This implementation concluded with ANAC's approval of the RSMA-S/A model, consisting of a Mode S MSSR (Monopulse Secondary Surveillance Radar) developed and manufactured by INVAP SAU. The approval verified compliance with ICAO SARPs and suitability for Air Traffic Control (ATC) functions. The ADS-B receivers currently installed are of foreign manufacture and were supplied and integrated into the MSSR system by INVAP SAU.

1.4 Currently, ANAC is undergoing the approval process for the new ADS-B receiver system developed by INVAP SAU, which is currently in the factory-testing phase to verify its suitability for use as an aeronautical surveillance system. Testing is also planned for the new Primary Radar model for air traffic control.

## 2 Analysis

2.1 The air traffic surveillance systems modernization program includes the following items:

2.1.1 *In progress*: Technological upgrade and expansion of Mode S and ADS-B capacity (RSMA S/A system developed domestically by INVAP) for the current twenty-two (22) SSR systems located in the five FIRs of Argentina for en-route air traffic control. To date, INVAP and EANA installed and commissioned ten RSMA S/A systems and one INDRA SSR system with Mode S and ADS-B capability.

2.1.2 Installation and commissioning of five (5) new INVAP-developed autonomous ADS-B ground stations for en-route air traffic.

2.1.3 Installation and commissioning of two (2) new MSSR systems with Modes A/C/S and ADS-B functionality (RSMA S/A systems of national development INVAP) for en route air traffic.

2.1.4 Installation and commissioning of three (3) new multisensor PSR systems with associated MSSR of Modes A/C/S, ADS-B functionality and MET channel of national development INVAP for air traffic in terminal.

2.1.5 Installation of two (2) radomes on the MSSR system antennas in Calafate and Ushuaia exposed to adverse environmental conditions.

2.1.6 Development, installation and integration of Traffic Situation visualization software and Integrated Remote Control and Monitoring system (Monitoring Center).

2.1.7 In addition to the technological upgrades and expansion described, the program includes training for ANSP technical personnel. This training will cover both factory and on-site (OJT) instruction on surveillance systems. It will also extend to the technical inspectors of the Aeronautical Authority.

2.1.8 This program included the renewal of the automated ATM systems in the five (5) ACC, currently underway, which will allow the effective implementation of surveillance capabilities.

2.2 ADS-B receiver model approval

2.2.1 INVAP has a long and distinguished record of accomplishment in the execution of civil and military radar projects. For over 15 years, it has successfully developed and maintained the three main radar programs in Argentina: the Air Traffic Surveillance and Control Program, the Aerospace Surveillance and Control Program for National Defense, and the National Meteorological Radar System, handling their development, manufacturing, and maintenance.

2.2.2 For the approval of the ADS-B receiver model, ANAC will apply the methodology used during the development and installation of the RSMA A/C and RSMA S/A models, agreeing with INVAP and EANA SA on an operational homologation plan for the system. This process includes the active participation of the aeronautical authority inspectors along with the manufacturer's technical teams and the ANSP in the key milestones of development, installation, commissioning and integration into the ATM systems.

2.2.3 INVAP has developed several models of ADS-B receivers for testing, which are currently undergoing laboratory tests in an autonomous prototype station located on a factory property. This station consists of receiver equipment and a duplicate power supply, network connections, housed in a cabinet and mast, antennas, GPS, filters, solar panel power supply, and an installation is planned at the Bariloche Airport to continue testing in an airport environment.

2.3 Planned activities

2.3.1 INVAP continues developing an ADS-B receiver station model for aeronautical use, for integration with RSMA sensors in autonomous stations and with the PSR system. Factory testing of the ADS-B receiver is expected to begin in 2026.

2.3.2 Once the factory and on-site testing, flight inspections, demonstration periods, and other procedures have been successfully completed and the ADS-B receiver model approved, installation of the INVAP-manufactured ADS-B receiver model will continue at the remaining sites to be upgraded, at the new radar sites, and at the autonomous ADS-B stations. It is worth noting that the development, validation, and performance testing were based on EUROCAE's "ED-129B Technical Specification for a 1090 MHz extended Squitter ADS-B ground station."

2.3.3 This case presented can be considered an outstanding example of the joint work between the technical teams of the ANSP, the Aeronautical Authority and the National Industry, resulting in the exchange of work experience, lessons learned that are valuable for the continuous improvement in the processes of implementing technological systems.

### **3 Suggested action**

3.1 The Meeting is invited to:

- a) Take note of the information provided in this document; and

- b) Make any comments deemed necessary to contribute to continuous improvement.

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