



**Agenda Item 4: Report on activities and deliverables for the GESEA and Subgroups**

**STATUS OF AIDC PROTOCOL IMPLEMENTATION BETWEEN  
MONTEVIDEO ACC AND CURITIBA ACC**

(Presented by URUGUAY)

<b>SUMMARY</b>	
<p>This information note presents the status of AIDC implementation in line with Uruguay's commitment to airspace optimization and the implementation of the AIDC protocol, in accordance with the Global Air Navigation Plan (GANP), FICE-B0/1.</p>	
<i>Strategic Objectives:</i>	<ul style="list-style-type: none"><li>• Operational Safety</li><li>• Air Navigation Capacity and Efficiency</li><li>• Aviation Security and Facilitation</li><li>• Economic Development of Air Transport</li><li>• Environmental Protection</li></ul>
<i>References:</i>	<ul style="list-style-type: none"><li>• First AIDC Implementation Meeting in the SAM Region (Lima, Peru, 28–30 March 2016) Report</li><li>• Bogotá Declaration</li><li>• Guide for the Implementation of AIDC through Adjacent Automated Centres in the SAM Region (Lima, Peru, September 2016)</li><li>• Doc 9750 – Global Air Navigation Plan (GANP), Seventh Edition, 2022</li><li>• Thirty-Second Workshop/Meeting of the SAM Implementation Group (SAM/IG/32), September 2024, Final report</li><li>• Summary of the Plenary Meeting of the SAM Airspace Study and Implementation Group – GESEA/8 (Lima, Peru, 12–14 March 2025) – GESEA/8/1 Action</li></ul>

**1. Introduction**

1.1 During the SAM Implementation Group Meeting (SAM/IG/13) held in Lima, Peru, from 21 to 25 April 2014, it was reiterated that the interconnection of automated systems between adjacent ACCs aims to reduce the risk of aviation incidents caused by coordination activities between centres, while also improving the planning phases for more efficient control of flights entering and leaving the respective Flight Information Regions (FIRs).

1.2 GREPECAS Conclusion 15/36, "Measures to Reduce Operational Errors in the ATC Coordination Cycle between Adjacent ACCs", urges States, Territories, and International Organizations in the CAR/SAM Region to gradually implement the interface for data exchange between ATS units (AIDC).

1.3 In August 2024, Uruguay and Brazil initiated bilateral efforts to define the parameters and necessary steps to advance in AIDC implementation between the Montevideo and Curitiba ACCs. This implementation is expected to significantly enhance capacity, safety, and efficiency by reducing controller workload and minimizing the occurrence of LHD events caused by coordination errors or failures.

1.4 In SAM/IG/30-WP/4.1, the need for SAM States to take effective measures to advance AIDC implementation was emphasized, in order to achieve the operational and safety benefits offered by this functionality, already available in automated ATC centres. As the ATM/AIDC Subgroup had adopted a strategy involving site visits to ACCs establishing AIDC connections — to promote new connections and provide closer support to involved centres — a visit to Uruguay was conducted as part of SAM/IG/31. The mission was led by Mr. Francisco Almeida and Mr. Jorge Merino, who provided technical assistance, training to Montevideo ACC controllers, and supported the signing of an agreement to initiate operational testing.

1.5 As part of the assistance received from ICAO, two training sessions were held by Mr. Jorge Merino for all Montevideo ACC controllers. The training covered AIDC procedures, definitions, concepts, and development history, leading up to the current procedure, and included practical simulator exercises.

## 2. **Analysis**

2.1 FICE-B0/1 establishes that the fundamental purpose of AIDC implementation is to improve the efficiency of coordination between ATS units through the automatic exchange of messages. This functionality represents a first step in the evolution of coordination and control transfer between adjacent ATS units, ensuring that all required flight information is shared between them.

2.2 In line with these premises, Uruguay and Curitiba ACC representatives jointly developed a Memorandum of Understanding (MoU) to establish pre-operational testing procedures of AIDC coordination between the automated systems of the Curitiba and Montevideo Control Centres.

2.3 With the collaboration of Mr. Francisco Almeida, a definitive version of the document was reached and signed on 9 September 2024. The document defined the pre-operational testing period up to 15 December 2024.

2.4 At the start of the testing phase, a communication protocol incompatibility was identified between the AMHS service and the AIRCON 2100 ATM system installed at Montevideo ACC. The system manufacturer, INDRA, was subsequently involved to implement a system update to resolve the issue.

2.5 Pre-operational testing was suspended on 15 December 2024, as scheduled, due to the start of the high-traffic season in Montevideo FIR. Testing resumed in May 2025 following communication from the manufacturer regarding the imminent completion of a software patch for the system, which is expected to be installed in the coming months.

2.6 The implementation of the AIDC protocol provides the following benefits:

- Enhances operational safety by reducing the likelihood of message misinterpretation
- Reduces voice channel congestion
- Lowers controller workload

- Improves communication availability
- Prevents delays in control transfer
- Avoids misinterpretation of verbal coordination
- Reduces the time required for coordination
- Helps reduce stress levels



2.7 The goal of operational AIDC implementation is to facilitate ATC tasks and streamline coordination between automated control centres.

2.8 The basic message set will be implemented in accordance with the Pan Regional (NAT and APAC) Interface Control Document for ATS Interfacility Data Communications (PAN AIDC ICD), Version 1.0, 2014.

2.9 This implementation is part of the provision of basic services for the optimization of airspace in the SAM Region, as part of the transition towards Free Route Airspace (FRA).

### 3. **Conclusion**

3.1 This information note, along with the aforementioned Memorandum of Understanding, is presented for the meeting's awareness regarding the current status of implementation.

	<b>MEMORANDUM OF UNDERSTANDING FOR ATS SERVICES</b>		
	<b>MEMORANDUM OF UNDERSTANDING BETWEEN CURITIBA CONTROL CENTER AND MONTEVIDEO CONTROL CENTER FOR THE IMPLEMENTATION OF AIDC</b>		
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## MEMORANDUM OF UNDERSTANDING BETWEEN CURITIBA CONTROL CENTER AND MONTEVIDEO CONTROL CENTER

### I. GENERAL INFORMATION

#### 1. Purpose

The purpose of this protocol is to establish procedures for the pre-operational testing of automated AIDC coordination between the automated systems of Curitiba and Montevideo Control Centres, using standardized procedures that include operational, technical, and administrative considerations involved in the matter.

This procedure is continuous in nature and may be interrupted at any time by mutual agreement between both units.

#### 2. Effective Period: 09/09/2024 to 12/15/2024

Note 1: If the tests are satisfactory, the test period will end on December 15; if not, tests will resume from February 1 to April 30, 2025.

Note 2: A coordination error report will be sent to ATECH/INDRA every 10 days.

#### 3. Operational Aspects

Operational personnel must have full knowledge of this document.

Initial coordination shall be performed via AIDC. Afterwards, a telephone coordination between Curitiba and Montevideo ACCs shall take place to confirm whether the AIDC protocol was successfully executed.

This procedure may be revised, upon request of the parties, to incorporate significant changes or to amend its details. Any revisions will be properly recorded and disseminated.

The application of these procedures may require adjustments to existing Operational Agreements between Curitiba and Montevideo ACCs. Corresponding documents will be developed accordingly and shall not contradict the applicable LOAs in force.

All flight plans must comply with the provisions of ICAO Doc 4444 ATM 501, Chapter I.

#### 4. Technical Aspects

### a. Automated Systems

Curitiba ACC: Uses an extension of a SAGITARIO system installed by ATECH, which provides radar surveillance service throughout the SBCW FIR, as well as automated flight plan processing and AIDC coordination.

Montevideo ACC: Uses an extension of AIRCON 2100 system installed by INDRA, which provides radar surveillance service throughout the SUEO FIR, as well as automated flight plan processing and AIDC coordination.

## II. PROCEDURES

During pre-operational testing, ATS voice circuits shall be the primary means of coordination, and automated data exchange (AIDC) shall be the secondary means.

AIDC messages used during the pre-operational testing period between both units are detailed in Appendix A of this protocol.

### 1. Flights from Curitiba FIR to Montevideo FIR

- (a) Curitiba AIDC system will automatically send an ABI according to parameters in Appendix B.
- (b) The EST will be automatically coordinated based on parameters in Appendix B.
- (c) During testing, Curitiba ACC will send a level change request via CDN (15 to 20 minutes before FIR boundary), and Montevideo ACC may ACCEPT (ACP), REJECT (REJ), or respond with another CDN based on traffic. A corresponding AIDC message will be sent by Curitiba ACC in response. Up to two CDN requests may be made per each transferred flight.

Note: The time may be modified upon mutual agreement.

- (d) After verifying successful AIDC coordination, Curitiba ACC will call Montevideo ACC via ATS voice circuits to confirm receipt and match flight data. Times for each COP are in Appendix B.
- (e) If a coordination error occurs (LRM, LMO, OTO, or MAN), Curitiba will notify Montevideo ACC via ATS voice and perform manual coordination.
- (f) Curitiba ACC will send a TOC message at least 20 NM before the FIR boundary when no conflict exists and simultaneously transfers communications.
- (g) Montevideo ACC will assume control (AOC) of the flight once no conflicts exist with traffic under Curitiba ACC.

### 2. Flights from Montevideo FIR to Curitiba FIR

- (a) Montevideo AIDC system will automatically send an ABI according to parameters in Appendix B.
- (b) The EST will be automatically coordinated based on parameters in Appendix B.
- (c) During testing, Montevideo ACC will send a level change request via CDN (15 to 20 minutes before FIR boundary), and Curitiba ACC may ACCEPT (ACP), REJECT (REJ), or respond with another CDN

based on traffic. A corresponding AIDC message will be sent by Montevideo ACC in response. Up to two CDN requests may be made per transferred flight.

Note: The time may be modified upon mutual agreement.

(d) After verifying successful AIDC coordination, Montevideo ACC will call Curitiba ACC via ATS voice circuits to confirm receipt and match flight data. Times for each COP are in Appendix B.

(e) If a coordination error occurs (LRM, LMO, OTO, or MAN), Montevideo will notify Curitiba ACC via ATS voice and perform manual coordination.

(f) Montevideo ACC will send a TOC message at least 20 NM before the FIR boundary when no conflict exists and simultaneously transfers communications.

(g) Curitiba ACC will assume control (AOC) of the flight once no conflicts exist with traffic under Montevideo ACC.

## II. COORDINATION

### 1. Message exchange addresses:

Curitiba AMHS: SBCWZQZX / AIDC: SBCWZQZY  
Montevideo AMHS: SUEOZQZX / AIDC: SUEOAIDC

### 2. Applicable to both Control Centres:

(a) Coordination fixes shall be as listed in Appendix B.

(b) Incorrect flight levels based on route will not be authorized; magnetic course-based levels shall be used as per the designated table.

(c) In case of AIDC protocol failure, the originating unit must notify the shift supervisor as soon as possible and coordinate via ATS voice circuits.

(d) If no flight plan is available, full flight plans (not truncated) must be sent to the above-mentioned AMHS addresses.

(e) AIDC coordinators at both control centres will monitor exchanged messages to detect errors and determine appropriate solutions.

(f) Any irregular situation must be reported IMMEDIATELY to the shift supervisor or sector chief. Testing may be suspended until the issue is resolved.

(g) Unless a reliability concern arises, AIDC coordination is to remain active and may not be discontinued by either unit. In case of suspension, the shift supervisor or sector chief must state the reason and notify the AIDC Coordinator as soon as possible.

(h) Any coordination or request outside the AIDC protocol must be made via ATS voice circuits.

## III. SYSTEM PARAMETERS

Appendices A and B show the parameters used in the database of both systems.

## APPENDIX A

Message	Meaning	Transmission Time Minutes		SUEO	SBCW
		SUEO	SBCW		
<b>ABI</b>	Advanced Boundary Information	30	30	Automatic	Automatic & Manual
<b>CPL</b>	Current Flight Plan	-----		Not Used	Not used
<b>EST</b>	Coordination Estimate	20	20	Automatic	Automatic & Manual
<b>PAC</b>	Preliminary Activate	(*)	(*)	Not Used	Not used
<b>MAC</b>	Coordination Cancellation	-----	-----	Automatic	Automatic
<b>CDN</b>	Coordination Negotiation	-----	-----	Manual	Manual
<b>ACP</b>	Acceptance	-----	-----	Manual	Automatic
<b>REJ</b>	Rejection	-----	-----	Manual	Manual
<b>TOC</b>	Transfer of Control	-----	-----	Manual	Manual
<b>AOC</b>	Acceptance of Control	-----	-----	Manual	Manual
<b>LAM</b>	Logical Acknowledgement Message	2	2	Automatic	Automatic
<b>LRM</b>	Logical Rejection	2	2	Automatic	Automatic

## APPENDIX B

	COP	ACC CURITIBA		ACC MONTEVIDEO	
		AIDC SEND TIME (MIN) ABI	INIT TIME (MIN) EST	AIDC SEND TIME (MIN) ABI	INIT TIME (MIN) EST
SUPERIOR AIRSPACE	SEKLO	30	20	30	20
	CUARA	30	20	30	20
	UBLAM	30	20	30	20
	GAMOT			30	20
	URURI	30	20	30	20
	UMRUD	30	20		
	VUGNI	30	20		
	OGRUN	30	20	30	20
	AKPOD			30	20
	TOLEP	30	20	30	20
LOWER AIRSPACE	TULIO	30	20	30	20
	ISALA	30	20	30	20
	ASUMA	30	20	30	20
	UGURA			30	20
	UGELO	30	20	30	20