



**Agenda Item 4: Report of activities and deliverables of GESEA and Subgroups**

**IMPACT OF MISSING OR DUPLICATE FLIGHT PLANS**

(Prepared by Perú)

**SUMMARY**

In compliance with SAM/IG/21 – 03 conclusion, which requests States to monitor the functioning of AIDC by recording errors obtained during the notification, coordination, and transfer stages, this Study Note presents the work carried out by the Peruvian State to mitigate the lack of flight plans in automated coordination and the effects that these interruptions generate.

**References:**

- Pan Regional (NAT and APAC) Interface Control Document for ATS Interfacility Data Communications (PAN AIDC ICD). SAM/IG/21 –03
- Conclusion SAM/IG/30
- NE/3.3 AIDC PERU Update and Improvements
- SAM/IG/31 NE/4.3 LRM 6 Error Mitigation.

**1. Background**

1.1 AIDC is an application whose objective is to automate coordination between adjacent control centers through data communications, in order to reduce or minimize the use of oral coordination, and, consequently, the operational errors associated with this coordination.

1.2 LIMA FIR has three operational AIDC connections with adjacent FIRs: BOGOTÁ FIR (INDRA system operational since 2019), GUAYAQUIL FIR (INDRA system operational since 2018), and ANTOFAGASTA FIR (INDRA system operational since 2018).

1.3 At the twenty-ninth SAM Implementation Group (SAM/IG/29) workshop/meeting, the Peruvian representation presented "NI/3.8 CURRENT STATUS OF THE AIDC SYSTEM INTERCONNECTION" with the objective of monitoring errors presented in AIDC interactions with states with which there are active AIDC connections.

1.4 At the thirtieth SAM Implementation Group (SAM/IG/30) workshop/meeting, the Peruvian delegation presented "NE 3.3 AIDC PERU UPDATES AND IMPROVEMENTS". The findings

reported in that study note have been the starting point for planning mitigation activities for LRM 6 and 7 errors that occur in automated coordination and refer to the lack or duplication of flight plans, respectively.

1.5 At the thirty-first SAM Implementation Group (SAM/IG/31) workshop/meeting, the Peruvian delegation presented "NE 4.3 LRM 6 ERROR MITIGATION", which detailed the monitoring and mitigation activities carried out to reduce LRM 6 errors in automated coordination.

## 2. Analysis

2.1 The purpose of this study note is to inform and share the causes, consequences, and characteristics of the current scenarios that Peru faces, believing that, like other States in the region, in the daily operation of automated coordination processes with flight plans, highlighting the importance and necessity of coordinating joint regional activities that allow for the harmonization of the implementation of good operational practices.

2.2 The consequences arising from missing flight plans, identified as LRM 6 in the AIDC environment, impact the daily operations of the Lima Control Center and not only interrupt the processes of automated coordination (this helps minimize the associated risks of performing transfers through traditional oral means) for transfers, but also impact crucial operational aspects such as:

- a) Changes in calculated take-off times (CTOT) at provincial airports due to transfers not being correctly entered into automated systems, which allows for analyzing future declared capacities.
- b) Flight plans without associated instrumental arrivals, which complicates the evaluation of declared runway capacity in use.
- c) Overload of radar sectors, by not having enough time to generate sector predictability and, at certain times, increasing declared capacities, increasing the workload of Air Traffic Controllers.

2.3 The main reasons associated with these interruptions are primarily related to:

- a) Incorrect routing of flight plans.
- b) Incorrect distribution of flight plans.
- c) Incorrect preparation of flight plans.
- d) Incorrect edits of flight plans by sector controllers or FDP personnel, depending on the environment.

2.4 After identifying several patterns of these errors in automated coordination within the LIMA FIR, we proceed to list some of the most frequent ones that interrupt automated coordination:

- a) The airline sends the FPL to the origin AD, then the same airline sends the flight plan to the FIRs (ACC, ARO/AIS dependencies, etc.) through which the aircraft will cross on the presented route. This causes AIDC coordination to be affected during the flight due to duplicate flight plans in the FDP of the en-route FIR surveillance systems.
- b) The airline submits the flight plan to the origin AD, but this received flight plan is not correctly directed to the destination FIR or to the associated air traffic service addresses. This causes the AIDC coordination to be interrupted when the previous FIR tries to perform it, because some en-route FIR does not have the flight plan in the FDP of its surveillance systems.

- c) Incorrectly prepared flight plans are not automatically processed by the FDP of the surveillance systems and arrive in the QUEUE tray (waiting tray in the INDRA environment). This is when editing of flight plans by ATCOs or FDP personnel is required, which in some cases is done erroneously.
- d) A specific en-route FIR, not having received the flight plan, enters into the surveillance system a flight plan from past days that it has in the AMHS database. This causes erroneous and invalid data to be incorporated compared to the flight plan presented that day, such as equipment, proposed route, alternates, etc.

***Impact on ABI and Loss of Information Predictability in AIDC Environment***

2.5 Some of the most important functions included in the AIDC message set are the ABI message, and some of its main purposes are the following:

- a) Provides advanced flight information upon entry into FIR.
- b) Updates basic flight plan information.
- c) Updates flight plan route information.
- d) Facilitates precise analysis of sector load in a short time.

2.6 All this information, which can be continuously updated, contains important data on the evolution of a flight throughout its navigation that must be considered by the different en-route control dependencies, and, in turn, there is useful information that helps to improve and increase flight predictability using entry data to the sectors used by the different Flow Management Units that are responsible for maintaining the loads of Control sectors and aerodromes at ideal levels. This continuity of information is interrupted when automated systems:

- a) Do not have the flight plan in their FDPs.
- b) Have duplicate flight plans.
- c) There are incorrect edits of the flight plan that cause it to be diverted to the FDP's QUEUE tray and not be processed by the system.

2.7 Not having updated information about these flight plans with a destination, for example, Lima, affects the predictability calculations that are extremely useful for Flow Control offices. These dependencies, due to their dynamism, continuously see their calculations affected by flight plans that suddenly appear within the system, generating a domino effect that finally impacts the modifications (greater delay) of the calculated times (CTOT) of aircraft departing from provinces to Lima to not exceed the declared capacities of the Control Sectors involved.

2.8 In **Appendix A**, we can observe the number of LRM errors generated in automated coordination with the Guayaquil FIR (SEFG). Data from automated coordination with this FIR are shared because it accounts for the largest number of transfers made by the Lima FIR using the automated AIDC tool.

**3. Suggested actions**

3.1 The meeting is invited to take note of the information provided in this study note and highlight the importance of continuous monitoring of the different LRM 6 errors in the AIDC environment, as well as to share the experiences and strategies of each State for registration, traceability, analysis, and other activities related to error mitigation.



**APPENDIX A**

**LRM 6 ERROR LOG WITH FIR SEFG**

<b>MES</b>	<b>EST</b>	<b>LRM</b>	<b>% LRM/EST</b>	<b>LRM 6</b>	<b>% LRM 6</b>
<b>MAR</b>	5870	178	2.18%	33	19%
<b>ABR</b>	5222	113	2.77%	30	27%
<b>MAY</b>	5169	110	2.36%	33	30%
<b>JUN</b>	4971	119	3.03%	52	44%
<b>Total</b>	<b>21232</b>	<b>520</b>		<b>148</b>	