



EIGHTH MEETING OF THE SAT IMPLEMENTATION MANAGEMENT GROUP (SAT IMG/8)

Virtual, 19 to 20 October 2026

Agenda Item 3: **Airspace and ATS Route improvements**

OPERATIONAL IMPACT OF SPACE LAUNCH ACTIVITIES ON ATLANTICO FIR

(Presented by Brazil)

SUMMARY	
This paper provides an operational update on commercial space launch activities and the implementation measures taken within Atlantico FIR (SBAO) to mitigate their impact on oceanic ATS routes.	
Action by the Meeting at paragraph 4.	
<i>Strategic goals</i>	A-Every Flight is safe and secure C- Aviation Delivers Seamless, Accessible, and Reliable Mobility for All

1. **Introduction**

- 1.1 This report is directly inspired by the operational experiences, coordination measures, and lessons learned presented by ASECNA/Dakar Oceanic FIR (GOOO) at the Seventh Meeting of the SAT Implementation Management Group (SAT-IMG/07-WP/03E).
- 1.2 As observed in the Dakar Oceanic FIR and other South Atlantic (SAT) airspace sectors, commercial space launch activities—particularly those originating from sites adjacent to the Atlantico FIR (SBAO), such as the Guiana Space Centre in Kourou, French Guiana—generate debris hazard areas and risk corridors that may affect multiple FIRs within the SAT region.
- 1.3 Specifically, the Ariane 6 VA270 launch mission (scheduled for August 27th) generated rocket-fragment hazard zones that directly intersected core ATS routes within the EUR/SAM corridor across both the SBAO and the adjacent GOOO.
- 1.4 To mitigate international air traffic disruptions resulting from temporary airspace closures, the Atlantico and Dakar ACCs held virtual coordination meetings. These sessions enabled both ANSPs to conduct joint pre-event traffic analyses and harmonize NOTAM publications, ensuring safe, efficient, and orderly cross-boundary operations.

2. Discussion

2.1. South Atlantic Launch Demand and Traffic Analysis

2.1.1 The Department of Airspace Control (DECEA), through CINDACTA III, monitored multiple space operations affecting oceanic routes within the Atlantico FIR. Table 1 summarizes these major missions and highlights those causing active route diversions.

ID	Event/Mission	Activation Period	Impacted Airspace Structures	SBAO FIR impact?
1	OBSAT Suborbital Launch (CLBI)	27 Aug to 29 Aug 2025	No impacts (Launch conducted within SBR 215 BARREIRA).	NO
2	Operation Spaceward 2025 (CLA)	17 Nov to 03 Dec 2025	Airways of the Atlantico FIR.	YES
3	AST Space Mobile BlueBird 7 Satellite Launch	19 Apr to 21 Apr 2026	Airways of the Atlantico FIR.	YES
4	Operation Supersonic Rider 2026 (Suborbital launch from CLA)	18 Aug to 28 Aug 2026	SBSL IFR procedures suspended and Amazonica FIR and EUR/SAM corridor airways of the Atlantico FIR affected.	YES
5	Debris fall of French Guiana Ariane 6 (VA270) Rocket	27 Aug to 06 Sep 2026	EUR/SAM corridor airways of the Atlantico FIR, requiring deviations to avoid hazard areas.	YES
6	Operation Potiguar Phase 2 (CLBI)	15 Sep to 17 Sep 2026	Recife FIR airways; SBNT, SBSG, and SBRF Air Navigation procedures; BANT EACs.	NO
7	SpaceX O3b mPOWER-F	13 Sep to 19 Sep 2026	SOOO and SBAO airways on 08°58'N 050°28'W, 08°06'N 047°28'W, 03°21'N 032°11'W, 00°57'N 032°55'W, 05°44'N 048°12'W and 08°58'N 050°28'W area.	YES

Table 1 — Space Operations in Atlantico FIR Oceanic Routes

2.1.2 As Table 1 illustrates, four out of seven major regional space operations directly impacted the oceanic route network of the Atlantico FIR. This underscores the critical necessity for robust, pre-established bilateral coordination protocols with adjacent ATS units.

2.1.3 OBSAT Suborbital Launch (CLBI) and Operation Potiguar Phase 2 (CLBI) were entirely contained within domestic Brazilian airspace, with seamless cross-boundary inter-facility coordination fully established between Recife ACC (SBRE) and Amazonico ACC (SBAZ). For missions, such as Operation Spaceward 2025, the AST SpaceMobile BlueBird 7 Launch, and Operation Supersonic Rider 2026, due to their localized trajectories, no international FIR coordination was required and caused minimal disruption, restricted strictly to low-density ATS route segments.

2.1.4 Conversely, major orbital operations — most notably the debris fall area of the French Guiana Ariane 6 Rocket (VA270) and SpaceX O3b mPOWER-F — generated extensive hazard corridors extending across oceanic sector boundaries. These launches directly disrupted primary high-density transatlantic main routes in the EUR/SAM corridor toward the GOOO FIR, which represented the primary focus of the analysis detailed below.

2.2 French Guiana Ariane 6

2.2.1 To mitigate the operational impacts of the Ariane 6 VA270 launch mission scheduled for August 27th, the Atlantico and Dakar ACCs conducted two virtual bilateral coordination meetings via MS Teams on 12 August 2026 and 14 August 2026.

2.2.2 These coordination sessions aimed to establish comprehensive operational procedures to manage the temporary unavailability of a critical airspace on EUR/SAM corridor. Historical traffic analysis for the peak window (6–10 August 2026, 19:00–23:59 UTC) revealed an average of 28 daily flights heavily concentrated on airways UN873 (13 flights), UN866 (8 flights), and UN857 (7 flights) — representing 60.8% of Atlantico FIR's peak oceanic traffic during that timeframe.

2.2.3 To accommodate these traffic flows safely, both ACCs agreed on specific operational gateways: four entry/exit waypoints for southbound flights and three for northbound flights. Primary alternative gateways included:

- MOVGA (airway UZ51);
- NANIK (airway UN741, southbound only);
- KODOS (airway UL206); and
- The oceanic boundary coordinate at 02°00'35"N / 027°17'00"W.

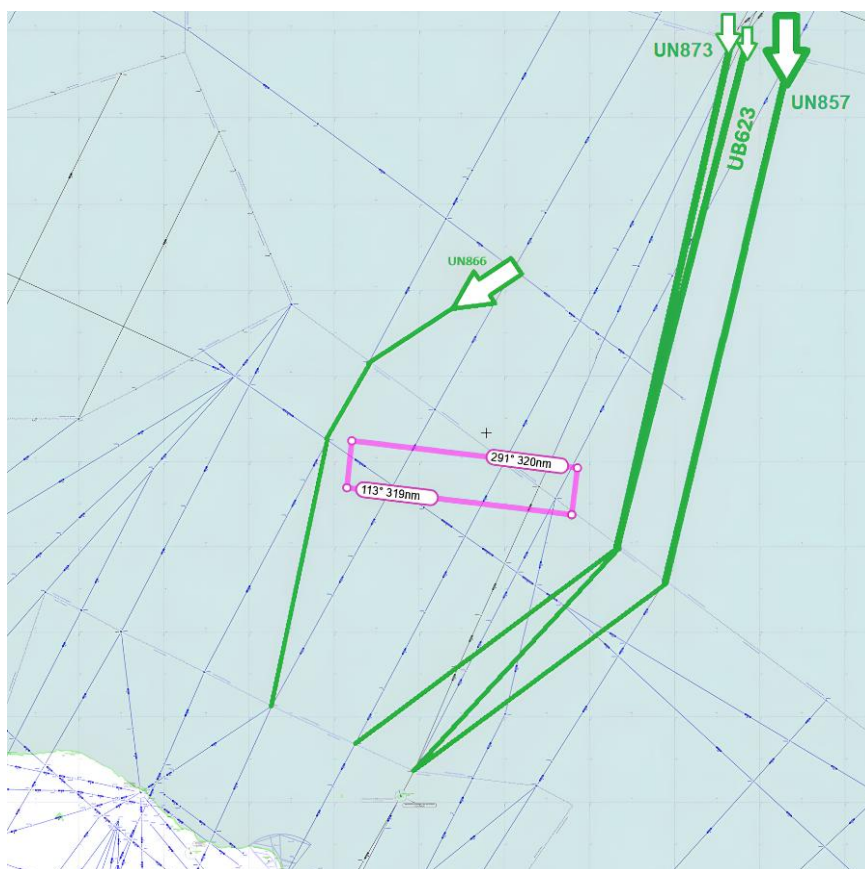


Figure 1 - Southbound Tactical Rerouting

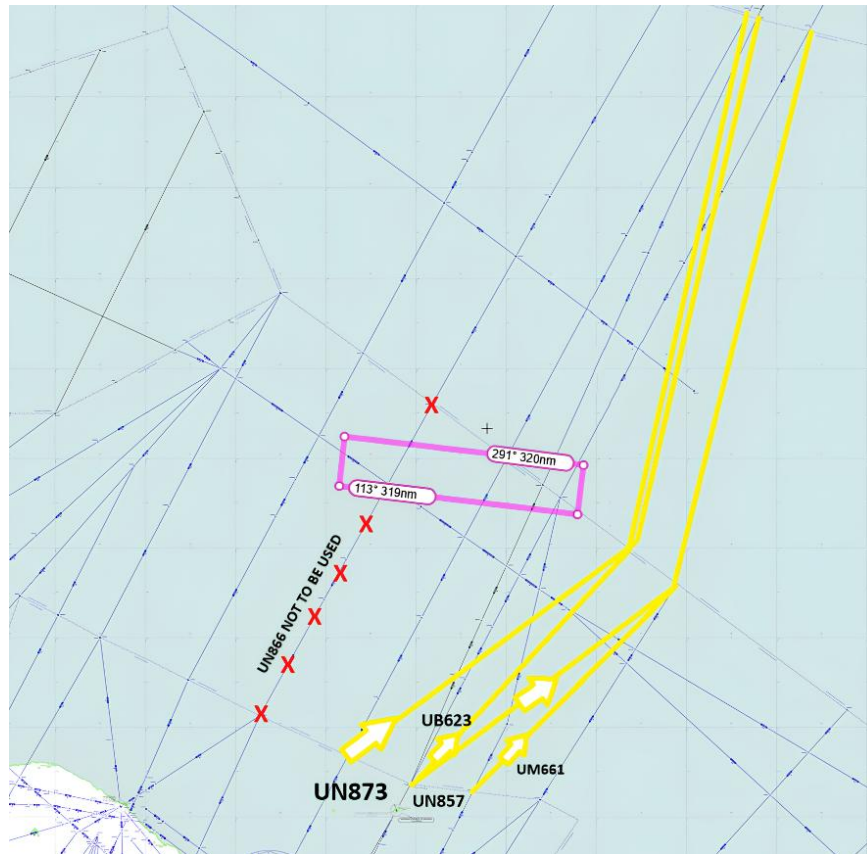


Figure 2 - Northbound Tactical Rerouting

2.2.4 Post-operational analysis indicated that operators predominantly elected to file pre-coordinated contingency routes via ATS airways UZ51 (transiting waypoint MOVGA) and UN857/UL206 (transiting waypoint KODOS). Sector workload was most concentrated on northbound traffic converging at waypoint MOVGA along 06 route UZ51.

2.2.5 Approximately 30 aircraft were affected by launch-related airspace restrictions. Safe longitudinal separation was maintained along these concentrated flows, and controllers applied minor tactical flight level adjustments to six aircraft. Only one flight was cleared to descend more than 4,000 feet below its filed cruise level, while just one aircraft fulfilled the established offshore routing segment at coordinate 02°00'35"N / 027°17'00"W in its flight plan.

2.3 SpaceX O3b mPOWER-F

2.3.1 The SpaceX Falcon 9 launch supporting the O3b mPOWER-F mission (scheduled to launch from Cape Canaveral, Florida, on 13 September 2026, starting at 18:50 UTC) involved a designated upper-stage debris reentry hazard area affecting the Atlantico FIR (SBAO) and the Cayenne FIR (SOOO).

2.3.2 As specified by the Federal Aviation Administration (FAA), stage-drop operations generate an active hazard corridor between 21:34 UTC and 23:57 UTC (a window of 2 hours and 23 minutes), bounded by the following coordinates: 08°58'N / 050°28'W, 08°06'N / 047°28'W, 03°21'N / 032°11'W, 00°57'N / 032°55'W, 05°44'N / 048°12'W, and 08°58'N / 050°28'W.

2.3.3 The active debris hazard area intersects several major transoceanic airways within SBAO, specifically: UZ54, UZ55, UZ56, UL540, UM799, UZ5, UZ51, UN741, UN866, UL375, and UL695.

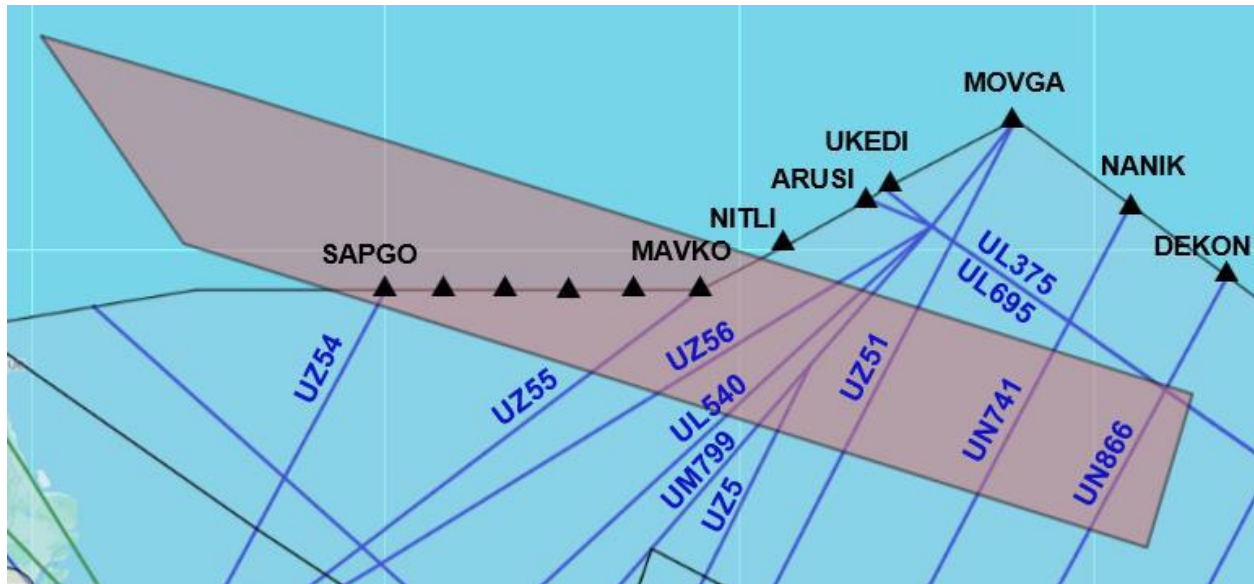


Figure 3 - SpaceX O3b mPOWER-F Debris Area

2.3.4 Through joint coordination between CGNA, CINDACTA III, and SDOP, temporary closures were established via NOTAM (A0076/26 and N0060/26) covering specific route segments during the activation window from 21:34 to 23:57 UTC:

- **UZ54:** Segment MOPNO – SAPGO
- **UZ55:** Segment OBGAP – MAVKO
- **UZ56 / UL540 / UM799:** Segments transiting to EGIMI
- **UZ51:** Segment MOTBU – DAKAP
- **UN741:** Segment DIKEB – JOBER
- **UN866:** Segment DEKON – MABMU
- **UL375 / UL695:** Segment PABIR – DIKEB

2.3.5 Because the activation period was limited to 2 hours and 23 minutes, 8 affected aircraft were rerouted via adjacent oceanic routes. No operational impacts happened, and no other tactical ATFM measures were applied.

3. Conclusion

3.1 These space operations experiences within FIR SBAO confirm that comprehensive hazard assessment — such as the one presented by Dakar Oceanic ACC — combined with detailed traffic flow studies and route structure proposals developed by Brazil, as well as rapid real-time coordination, are essential for maintaining safety during this type of event.

4. Action by the Meeting

- 4.1 The meeting is invited to:
- a) note the information presented; and
 - b) provide direction as deemed necessary.

— END —