



ICAO

Second Meeting of the Steering Group of the Improvement of Air traffic Services over the South Atlantic

(SAT/SG2)

Dakar, Senegal 9-12 December 2024

Agenda Item 3: Review of the subsidiary bodies' activities

3.2 Activities of the SAT SOG

ACTIVITIES OF SAT RMA HARMONIZATION/STANDARDIZATION PROJECT TEAM (SAT RMA HS PT)

(Presented by SAT SOG RMA HS PT)

SUMMARY	
<p>This working paper presents the status of the activities of the SAT RMA H/S PT. Challenges identified by the Project Team are highlighted. Action by the Meeting is contained in paragraph 3.</p>	
<i>Strategic Objectives</i>	<ul style="list-style-type: none"> • Safety • Capacity and Efficiency

1 INTRODUCTION

1.1 To foster the best practices and safety culture applied in the SAT Area, three project teams (PT) have been activated by the SAT Safety Oversight Group. The SAT RMAs' Harmonization and Standardization Project Team (SAT RMA H/S PT) aims to improve the data collection, processing, and dissemination among applicable stakeholders and the concerned RMAs (ARMA, CARSAMMA & SATMA) and adopt standardized collision risk assessment methodology to ensure consistent and accurate assessment of risk in the SAT Area.

1.2 The Fourth Meeting (virtual) of the South Atlantic Safety Oversight Group (SAT SOG/04) was held from 01 to 04 October 2024. The preliminary Summary of Discussions of the SAT SOG/04 meeting (deadline for comments is 3 December 2024) is provided in a separate paper.

1.3 Complete SAT SOG meeting documentation and summaries are available on the ICAO Secure Portal <https://portallogin.icao.int/>, Group name SATSOG (all caps, no space).

2 DISCUSSION

2.1 Considering the objectives specified in paragraph 1.1, the Project Team identified a set of recommended deliverables, shown in table 1.

#	Deliverable	Target Date (tentative)	Status
1	Standardized SAT-specific traffic sample data collection template (Ref. SAT/SOG/1-WP/3.3, SAT/SOG/1-WP/3.4)	February 2025	In Progress, Final version is dependent on SAT Delineation
2	Data field and format requirements for reporting and documenting large height deviation (LHDs), large lateral deviations (LLDs), and large lateral errors (LLEs)	TBD	In Progress, contingent on SAT Area delineation
3	Know Your Airspace Analysis for the South Atlantic Area (ref. SAT/SOG/1-WP/2.80, Action SOG01-05)	March 2025	In Progress/First draft complete, next iteration contingent on SAT Area delineation
4	Action plan for recommended SAT SOG future actions supporting standardization and harmonization of data collection, processing, and dissemination among the three SAT RMAs (Ref. SAT/SOG/1-WP/3.3, SAT/SOG/1-WP/3.4)	April 2025	
5	Standardized collision risk assessment methodology (ref. SAT/SOG/1-WP/5.7)	April 2025	In Progress, contingent on SAT Area delineation
6	Action plan for conducting workshops to promote implementation of standardized data collection and collision risk assessment methodology among the SAT RMAs. (ref. SAT/SOG/1-WP/5.7)	30 Mar 2024	Action Plan Complete, Workshop 1 complete, Workshop 2 pending.

Table 1. SAT SOG RMA H/S PT Recommended Deliverables

2.2 During 2024, the Project focused on deliverables 1, 2, and 4. Activities and accomplishments related to these deliverables performed during 2024 are detailed in the following sections.

Activities during 2024

2.3 SAT-Specific Traffic Sample Data (TSD) Collection Template

2.3.1 The RMA HSPT performed an assessment of traffic sample data provided to SAT RMAs for the purpose of conducting airspace characteristic and collision risk analyses. The goal of the assessment was to determine the feasibility of developing a unified SAT TSD file.

2.3.2 Given the outcomes of the TSD review, the Project Team developed an initial draft SAT specific TSD collection template, provided as Appendix A. The purposes of this template are to ensure data field and format consistency among SAT RMAs, ensure that the data fields necessary for conducting airspace operational and collision risk assessments are captured, and support developing a unified SAT TSD. Additional data fields are included in the TSD to enable the RMAs to analyze future reductions in horizontal separation.

2.3.3 The outcome of the SAT delineation will also affect the design of the template. For example, applicable to a State whose FIR expands across continental and oceanic airspace, the ability to separate data (continental from oceanic operations) could affect the template design. Once the SAT delimitation is complete, a more specific SAT TSD template will be developed.

2.3.4 The RMA HSPT will continue to modify the TSD template as necessary and aim to produce a finalized version following completion of delineation of the SAT Area. It should be noted that the purpose of the template is to consolidate traffic samples provided by States and it will be used by RMAs. States and ANSPs should use the standardized TSD template that is used everywhere.

2.4 SAT Area Large Height Deviation (LHD) Assessment

2.4.1 The RMA HSPT initiated an assessment of LHDs observed in the SAT Area. The purposes of this effort were to assess the feasibility of standardizing data collection practices for reporting LHDs, LLDs and LLEs and to determine collision risk model parameter values that are directly related to LHDs.

2.4.2 In summary, the RMA HSPT reviewed 2022 LHD data provided by the SAT RMAs with the following goals:

- 1) Identify the occurrences that took place in SAT high seas airspace
- 2) Assess and establish taxonomy continuity among the SAT RMAs
- 3) Assess the data fields, and formats, in which LHD data are recorded for continuity
- 4) Assess the LHD data fields and formats recorded by SAT RMAs and ensure that the data fields necessary for performing safety assessments and assessing collision risk.

2.4.3 The Project Team performed an assessment of the data fields, and formats, in which LHD data are recorded. The first step of the assessment was to review the taxonomy, a letter code assigned to each LHD event that indicates a route cause, used by SAT RMAs. Except for a few minor differences, all SAT RMAs use the same taxonomy; therefore, application of standardized LHD taxonomy among SAT RMAs is feasible.

2.4.4 The next step was to review the LHD data fields and formats recorded by SAT RMAs to ensure that the data fields necessary for performing safety assessments and assessing collision risk (e.g., Speeds other than normal, coordinates, date, and assigned values (e.g., time spent at incorrect flight level) are captured. Although there were some differences, majority of the fields were consistent.

2.4.5 It should be acknowledged that RMA duties and responsibilities are applicable to reduced vertical separation minimum (RVSM); however, LLD and LLE reporting activities were including in the assessment to determine which tasks are currently being performed and to highlight areas that should be addressed if there is an agreement that this responsibility will be designated to RMAs. There is currently an effort underway to develop LLD and LLE reporting requirements. Consequently, the following action was identified by SAT SOG:

(Action SOG03-04)

Secretariat monitors the progress, outcomes and deliverables issued by SAT SOG RMA HS PT to timely communicate SAT States and ANSPs regarding upcoming requirements and about infrastructure needs for collecting LLDs and LLEs.

2.4.6 The assessment also addressed resource availability and constraints. This portion of the assessment focused on the following question: “If you were tasked by your Regional Planning Group (PIRG) to perform the duties related to the monitoring of horizontal separation minima, would this impose a resource constraint for your organization?”. Some responses indicated that human resources and financial constraints would be a concern.

2.4.7 It was recommended that groups and organizations take this concern into account when actions applicable tasks related to performance-based horizontal monitoring are discussed and to continue discussions with SAT RMAs regarding resource availability and requirements.

2.5 Know Your Airspace Analysis for the SAT Area

2.5.1 A key step to supporting delineation of the SAT Area, is conducting a detailed examination of the operational structure and use of the airspace in which the delineation is planned to take place, otherwise known as a “Know Your Airspace” (KYA) analysis. The purpose of the study is to provide analysts and airspace planners involved in the SAT Area with information pertaining to the operators, aircraft, and traffic characteristics observed in the airspace.

2.5.2 This study also provides the basis for evaluating key parameters used in the collision risk model, identifying significant traffic flows, identifying areas that require enhanced monitoring, and informing harmonization and standardization decision-making.

2.5.3 The Project Team has initiated work under this initiative and presented the results of an initial assessment during SAT SOG/02. In alignment with SAT Delineation Phase 1, the work performed to date has been focused on the EURSAM Corridor, the area with the highest traffic volume. It is intended that the KYA will be a “living” document and will be periodically updated to include ongoing assessment of the EURSAM Corridor and other areas of the SAT Area such as the AORRA airspace and low traffic volume areas.

2.5.4 To represent operations observed in the SAT Area most accurately, the next iteration of the KYA is contingent on SAT Area delineation.

2.5.5 In an effort to continue work related to this task, the Project Team is focused on assessing LHDs, LLDs and LLEs recorded during the period of 2023-2024.

2.6 First SAT RMA Workshop

2.6.1 The Project Team was tasked with developing an action plan and conducting workshops to promote implementation of standardized data collection and collision risk assessment methodology among the SAT RMAs. During SAT SOG/03, the Project Team presented a SAT RMA Workshop Action Plan. The action plan included five high-level goals with subtasks aimed at fostering collaborative development of some of the Project Teams deliverables. The purposes of the Workshop were to: (1) promote standardization and implementation of harmonized data collection and collision risk assessment methodology to ensure consistent and accurate assessment of risk in the SAT Area, (2) identify stakeholder training requirements, and (3) establish standardized training materials disseminated by the SAT RMAs to promote awareness of data collection and safety reporting requirements.

2.6.2 The first SAT RMA Workshop was held at the International Civil Aviation Organization (ICAO) North American, Central American, and Caribbean (NACC) Office from 31 July through 2 August 2024 and completed the tasks shown in table 2.

Goal: Adopt standardized collision risk assessment methodology to ensure consistent and accurate assessment of risk in the SAT Area	
Tasks	
1	Establish methodology for observing application of the strategic lateral offset procedure (SLOP)
2	Establish a process for incorporating the observed SLOP into the vertical collision risk estimate
3	Establish a process for evaluating reported occurrences involving lateral and deviations and longitudinal errors
4	Establish a process for estimating vertical and lateral occupancy values
5	Establish a process for producing Lateral and longitudinal risk estimates
6	Develop and establish standardized methodologies to estimate collision risk parameters, applicable to the vertical and horizontal planes, for the EUR/SAM traffic flow, AORRA airspace and other areas of the SAT Area
7	Establish methodology to estimate vertical collision risk for same and crossing track operations

Table 2. SAT RMA Workshop 1 Tasks

2.6.3 The SAT Workshop was attended by the three SAT Area RMAs: Africa Indian Ocean Regional Monitoring Agency (ARMA), Caribbean and South American Monitoring Agency (CARSAMMA) and South Atlantic Monitoring Agency (SATMA) and was led by the SAT RMA H/S Chairperson.

2.6.4 Upon conclusion of the workshop, it was agreed that the Project Team will review the outcomes of the workshop and discuss the need to conduct a follow-on workshop during the next few Project Team meetings. In other words, some tasks can be achieved through regular Project Team meetings, where an in-person meeting might be a better forum for other tasks.

2.6.5 It should also be noted that plans to conduct a second SAT RMA Workshop are contingent on SAT Area delineation.

Outcomes, deliverables up to November 2024

2.7 Completed and forecasted Project Team deliverables are shown in figure 2.

SAT SOG RMA Harmonization and Standardization PT | Timeline (estimated target dates)

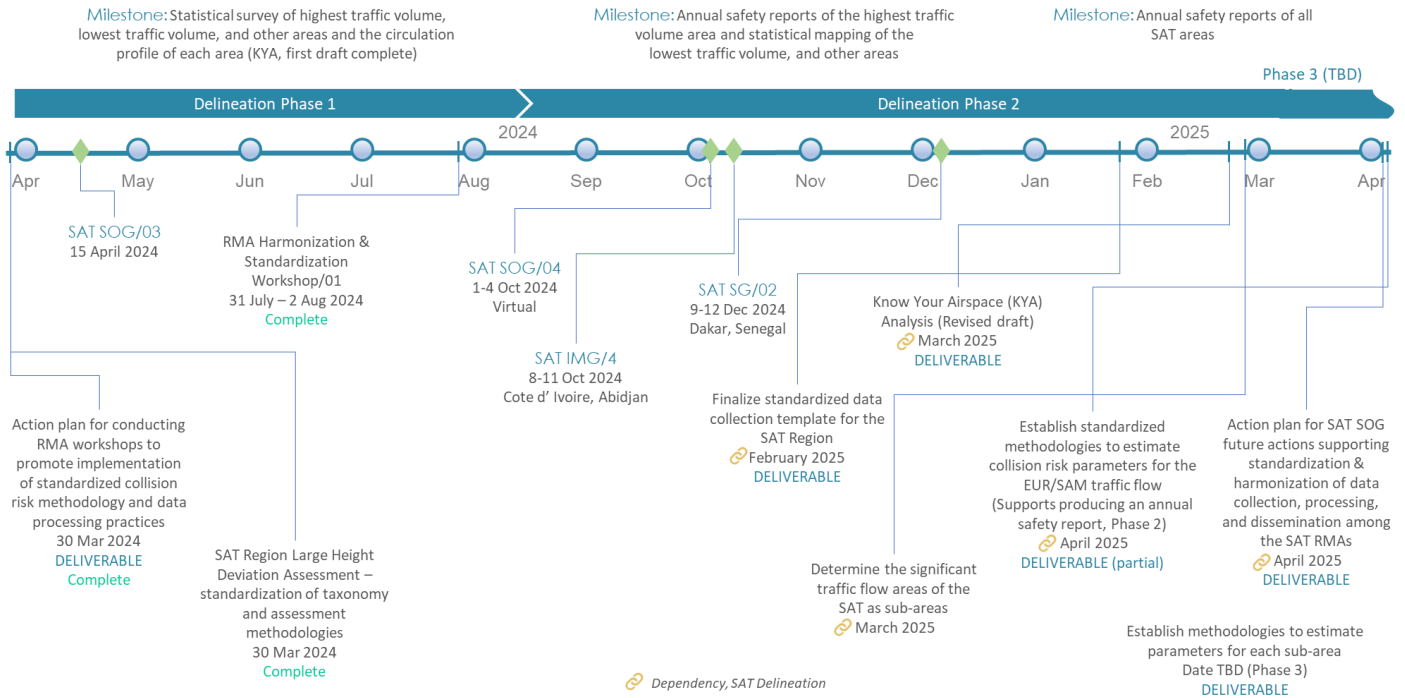


Figure 1. SAT SOG RMA H/S PT completed and forecasted deliverables.

Challenges identified by the project team

2.8 With respect to completing the tasks and goals assigned to the Project Team and completing deliverables within forecasted timelines, it should be recognized that completion of most of the Project Team deliverables are contingent on SAT Area delineation.

2.9 The RMA resource and financial constraints related to horizontal-plane performance monitoring highlighted in paragraph 2.4.6 should be recognized.

3 ACTION BY THE MEETING

3.1 The SAT SG is invited to:

- a) note the information provided;
- b) support the SAT RMA H/S PT implementation activities; and
- c) provide further guidance, as necessary.

END

APPENDIX A

Traffic Sample Data (TSD) Collection Template

This appendix provides the information required for each flight in a sample of traffic movements. This information is referred to as traffic sample data (TSD). Each SAT Area Flight Information Region (FIR) should provide their RMA with the TSD for the month of July each year.

INFORMATION FOR EACH FLIGHT IN THE SAMPLE

The information requested for each flight observed in the FIR is listed in the following table. Some of the fields listed in the table are available from the operator filed flight plans.

Field Number	Field	Example	Mandatory or Optional	Comment
1	Date (YYYY/MM/DD)	2024/04/15 for 15 April 2024	Mandatory	
2	Aircraft Identification (or call sign)	DAL156	Mandatory	
3	Aircraft Registration Mark	N1604R	Mandatory	Available in Item 18 of the operator filed flight plan, e.g. REG/
4	Item 10 in the filed flight plan	SDE2E3FGHIJ3J7M3P2RWXY Z/LB1D1	Mandatory	Available in operator filed flight plan
5	PBN/ field in Item 18 of the filed flight plan	PBN/A1B1C1D1L1O1S1T1	Mandatory	Available in operator filed flight plan
6	SUR/ field in Item 18 of the filed flight plan	SUR/260B RSP180	Mandatory	Available in operator filed flight plan
7	Aircraft Type	B763	Mandatory	Available in operator filed flight plan
8	Origin Aerodrome	KJFK	Mandatory	Available in operator filed flight plan
9	Destination Aerodrome	DGAA	Mandatory	Available in operator filed flight plan
10	Cleared/expected route of flight (item 15 of flight plan)	35N050W 30N040W 28N035W 25N030W DCT BAMUX DCT SEPOM DCT ANITI UR979 ERMIT DCT TUSEK UL433 ACC	Mandatory	Available in current flight plan
11	First point (fix name or latitude/longitude) into FIR/Airspace	BAMUX or 2313N02632W	Mandatory	
12	Time at FIR entry point (UTC)	0520 or 05:20	Mandatory	

Field Number	Field	Example	Mandatory or Optional	Comment
13	Flight Level at FIR entry point	330	Mandatory	
14	Exit point (fix name or latitude/longitude) at FIR Boundary	SEPOM or 1800N02000W	Mandatory	
15	Time at FIR exit point (UTC)	0700 or 07:00	Mandatory	
16	Flight Level at FIR exit point	330	Mandatory	
17	Additional fix or position/time/flight-level combinations that the monitoring organization judges are necessary to capture the traffic movement characteristics of the airspace		Optional	Include any fix-position/time/FL combinations between the FIR entry and FIR exit