



INTERNATIONAL CIVIL AVIATION ORGANIZATION

Twenty-Second Meeting of the AFI Planning and Implementation Regional Group (APIRG/22)
(Accra, Ghana, 29 July– 2 August 2019)

Agenda Item 4: Other Air Navigation Issues

4.4 Regional and Interregional Activities

Report of the SAT 24 Meeting

(Presented by the Secretariat)

SUMMARY
<p>This paper presents the report on the 24th Informal Coordination Meeting on the improvement of air traffic services over the South Atlantic (SAT/24) held in Luanda, Republic of Angola, back to back with the SAT FANS/1 Interoperability Team (SAT/FIT) 14th and the CAFSAT Network Management Committee (CNMC) 9th meetings from 03 to 07 June 2019.</p>
<p>Action by the meeting is at paragraph 3: Paragraph 3</p>
<p>REFERENCE(S):</p> <ul style="list-style-type: none"> ▪ Doc 9750, <i>Global Air Navigation Plan</i> ▪ Doc 7474, <i>Air Navigation Plan — Africa-Indian Ocean Region</i> ▪ Report on the Limited Africa/Indian Ocean (COM/MET/RAC) Regional Air Navigation Meeting (<i>LIM/AFI, Lomé, Togo 12-27 April 1988</i>) ▪ Report on the Seventh Africa/Indian Ocean Regional Air Navigation (RAN) meeting (<i>AFI RAN/7, Abuja, Nigeria, 12-23 Mai 1997</i>) ▪ Report on SAT 21th and previous meetings
<p>Related ICAO Strategic Objective(s): A – <i>Safety</i>, B – <i>Air Navigation Capacity and Efficiency</i>, D – <i>Economic Development of Air Transport</i>, and E – <i>Environmental Protection</i>.</p> <p>Related ASBU KPIs & B0 Modules: All applicable to ATM and CNS issues</p>

1. INTRODUCTION

1.1 The Twenty Fourth Informal Coordination Meeting on the improvement of air traffic services over the South Atlantic (**SAT/24**) was held at **EPIC SANA** Hotel, in Luanda, Republic of Angola, from **05** to **07** June **2019** back to back with the SAT FANS/1 Interoperability Team (SAT/FIT) 14th meeting held in parallel with the CAFSAT Network Management Committee (CNMC) 9th meeting from **03** to **04** June 2019, at the kind invitation of the of **Empresa Nacional de Exploração de Aeroportos e Navegação Aérea (ENANA)** of Angola.

1.2 The meeting was officially opened by Mr. **Ricardo Viegas de ABREU**, Angola **Honorable** Minister of State in charge of Transport assisted by senior officials from the State civil aviation authority and the industry.

1.3 The meeting was attended by Eighty-One (81) participants from Thirteen (13) States of the ICAO AFI, EUR and SAM regions namely, **Angola, Brazil, Cabo Verde, Côte d'Ivoire, France, Ghana, Mauritania, Portugal, Sao Tomé & Príncipe, Senegal, South Africa, Spain, United States of America** including their Air Navigation Service providers (**ASECNA, ASA, DECEA, ENAIRE, ENANA, ENASA, NAV Control**) and **six (06)** representatives of the aeronautical industry (**AIREON, ANGOLA TELECOM, IATA, INFRASAT, FREQUENTIS, AZIMUT**).

1.4 Mr. **Francisco Carvalho**, Senior Advisor to the Managing Board on Air Navigation and Airport Matters, ENANA, Angola, was unanimously elected as Chairperson of the SAT meeting. He therefore chaired and moderated its plenary sessions.

1.5 MM. **François-Xavier Salambanga**, Regional Officer CNS ICAO WACAF Office, **Albert Aidoo Taylor**, Regional Officer ATM & SAR, ICAO WACAF Office, served as the Secretary of the meeting and accordingly prepared and aligned the Working and Information papers. They were assisted by MM. **Harvey Gabriel Lekamisy**, Regional Officer CNS ICAO ESAF Office, Mr **Francisco Almeida da Silva**, Regional Officer ICAO SAM Office and Mrs **Keziah Ogutu**, Regional Officer ICAO ATM ESAF Office.

2. DISCUSSION

The meeting adopted an agenda comprising eight (08) items that were discussed, within the ATM Working Group, the CNS Working Group or during the plenary sessions as appropriate.

ATM and CNS issues

Atlantic Ocean Coordination Meeting (ACM) and follow up Activities

2.1 The meeting was briefed on the actions undertaken for the implementation of SAT/23 Decision 23/19: ***Improvement of coordination and cooperation with adjacent PIRGs*** and Decision 23/20: ***Preparation for the convening of the Atlantic Coordination meeting***.

2.2 In this regard, the meeting was informed of the outcome of preliminary discussions related to the improvement of communication and coordination in the Atlantic Area among the SAT Group, NATSPG, APIRG and GREPECAS held on 18th October 2018 in Montreal by a side meeting of the 13th Air Navigation Conference and with a summary report on the first Atlantic Coordination Meeting(ACM/1), held in Paris France on 31st January 2019 and the deliberations from which the following conclusions were formulated:

- Acknowledgement of the good work and achievements of the SAT and NAT working groups in ensuring safety and efficiency of operations;
- Recognition that the Atlantic airspace is a homogeneous area with similar issues and solutions due to the inherent nature of oceanic airspace;
- Support to the need for further improvement of coordination and cooperation between NAT and SAT;
- Identification the following priority topics for potential joint future projects:

First priority

1. Contingency plans harmonization;
2. Performance based (PBCS/PBN) separation minima implementation;
3. Space based ADS-B implementation and operation.

Second priority

4. AIDC/AMHS implementation;
5. Harmonization of NAT and SAT CONOPS elements to the extent possible;
6. Assignment of flight levels;
7. HF communication issues (urgent safety issue);
8. Agreement that the project leads (ICAO ROs to further coordinate with NAT/SAT representatives to co-lead, UK contributor for contingencies) will draft a list of coordination actions and coordinate by e-mail;
9. Agreement to recommend to the NAT SPG and SAT that ACMs should be conducted annually to review the progress of implementation with the next meeting in February 2020 in a location to be determined.

The meeting applauded these outcomes, endorsed the above conclusions and agreed on the priorities identified for cooperation between SAT and NAT.

2.4 However, at the request of the airspace users, the meeting outlined that these priorities and their categorization stand for the cooperation between SAT and NAT, while within SAT, some items such as HF communication issues, assignment of Flight Levels, AIDC/AMHS implementation should be assigned SAT internal higher priorities for implementation.

2.5 It was also confirmed that the final goal of this cooperation initiative is to improve and enhance the current working arrangement of the parties involved in the Atlantic coordination, and does not seek to disband any of the current established coordination groups dealing with air traffic management over the Atlantic Ocean nor establish a new group with additional bureaucratic layer.

PBCS planning implementation and monitoring

2.6 The meeting was provided with the ongoing development related to Performance Based Communication and Surveillance (**PBCS**) planning, implementation and monitoring, noted the low pace of implementation of PBCS operation in the AFI Region and was informed that the NAT region has experienced 7 months after PBCS implementation that States were still not able to produce PBCS approvals. The meeting recognized that setting up the process to transmit PBCS/RCP/RSP approvals is expected to be slow in the AFI region and therefore recommended to urge this region to begin the process as soon as possible.

2.7 The role of Regional Monitoring Agencies (**RMAs**) **ARMA, CARSA, SATMA**, involved in PBCS monitoring activities in the SAT was underlined and it was agreed to bring to APIRG structures the adequate arrangements to issue the mandate to ARMA for PBCS Monitoring in the AFI Region.

Air Traffic Management (ATM)

The meeting reviewed the Conclusions and Decisions pertaining to the ATM field which were adopted by the SAT 23 meeting held in Durban, South Africa, from 6 to 10 June 2018 and noted the action items that were either closed, still valid or transferred to be addressed as part of the restructuring of the SAT Group.

Review of the reports of the Regional Monitoring Agencies on Traffic Statistics, Safety procedures and operational procedures

2.8 The meeting analyzed the reports on traffic statistics, safety and operational procedures developed by the Regional Monitoring Agencies namely, **ARMA – AFI, CARSAMMA - CAR/SAM; SATMA - EUR/SAM corridor**. The meeting assigned specific tasks to RMAs and ANSPs in the matter of statistic on navigation specifications of aircraft which operate in the EUR/SAM corridor and harmonization of reporting subjects and/or format for traffic statistics.

SAT Area Risk Assessment and LHD Monitoring

2.9 The meeting discussed reports from RMAS analyzing data and conditions on collision risk assessment, Large Height Deviation (**LHD**) necessary for the safe implementation of RVSM and RNP10 in the SAT AFI, Caribbean and South America airspaces, and in the EUR/SAM Corridor. The meeting outlined the need for available and accurate data for Risk Assessment and LHD Monitoring and urged Civil Aviation Authorities of SAT member States/FIRs to ensure that height monitoring is conducted regularly for all aircraft on their registry.

2.10 Furthermore, addressing Coordination Failures between ACCs was identified as high priority to be considered by SAT States/FIRs through the implementation of AIDC and the management of related Human Factors which are factors impacting negatively on the Target Levels of Safety and report to next SAT meeting.

SAT Airspace Structure and ATM Operational Improvements

2.11 The meeting agreed that the SAT Study Group on the Improvement of the Airspace Structure with its current Terms of Reference, work programme and composition was limited in scope and was unable to provide the SAT Group with expertise in the effective and timely implementation of new and emerging operational concepts, systems and technologies for the whole SAT area. It was agreed to properly develop a vision document along with associated Concepts of Operation (CONOPs) for the SAT area with an implementation roadmap, and harmonized with the NAT 2030 Vision programme where feasible and mutually beneficial.

2.12 The meeting therefore reconstituted the SAT Study Group on the Improvement of the Airspace Structure (**IAS/SG**) and renamed it SAT Atlantic Implementation Management Group (**SAT IMG**) to coordinate the development and adoption of a SAT Vision document, Concepts of Operation and an implementation roadmap and request the Secretariat to align its Terms of Reference and work programme accordingly.

2.13 The meeting reviewed and discussed the following issues and took appropriate conclusions for implementation such as the report on the EUR/SAM Corridor New Airspace Concept Project developed by the EUR/SAM Corridor Implementation Team (**ESCIT**), proposal for Amendment PANS ATM Doc 4444- Strategic Lateral Offset Procedure (**SLOP**), Flight Level Occupancy and Airspace Optimization, recurrence of flights in Dakar Oceanic Airspace without contact and, advanced Surveillance-Enhanced Procedural Separation (**ASEPS**) using ADS-B trials in parts of the NAT airspace.

ATM Contingency Plan Over the Atlantic Ocean

2.14 The meeting was informed on the initiation by ICAO of an inter-regional Special Implementation Project (**SIP**) for development of a common contingency plan that will cover North and South Atlantic FIRs. The SAT Group analyzed the status of the SAT Contingency Plan and the updates provided regarding collaboration with the NAT and the initiative from the ICAO and decided to cancel the ongoing work development of SAT specific Contingency Plan in favor of a harmonized one for the Atlantic Ocean.

Communications, Navigation and Surveillance (CNS)

The meeting reviewed the status of implementation of the outcome of SAT 23rd meeting pertaining to aeronautical, Communication Navigation and Surveillance (CNS) summarized and presented by the Secretariat from the available information collected from ANSPs on actions taken for implementation.

Missing Flight Plans

2.15 The meeting discussed issues related to missing Flight Plans with provisions from ANSPs and identified probable main causes that involve agreed on remedial measures undertaken with success, to mitigate missing Flight Plans.

2.16 SAT ANSPs were encouraged to reinforce their effort to reduce missing flights plan by sensitizing staff on compliance to procedures, improving the work programme of their local multidisciplinary group tasked to assess and mitigate missing Flight Plans and regularly exchanging data on missing flight plan between centers for investigation.

Performance Matrix of SAT CNS Infrastructure and Systems

2.17 The meeting discussed issues related to the performance of SAT CNS Infrastructure and Systems by examining the Performance statistics data compiled by the Accra FIR for the 3rd Quarter period of year 2018 and ASECNA for the Dakar FIR namely in the ACCs of Abidjan, Dakar and Nouakchott for the first Quarter of Year 2019.

2.18 The meeting appreciated the work carried out and noted that to sharpen the relevance of the indicators established in the Performance Matrix by SAT/23, it was advisable to clarify the definition of the different terms encompassed in the calculation of the indicators. Therefore, the meeting adopted as attached at **Appendix**, the revised **Performance Matrix of SAT CNS Infrastructure and Systems** developed by an ad'hoc working Group established and tasked to review the list and definition of the measurement parameters of the Matrix and highlight those applicable to the SAT.

Cyber Safety and Resilience of SAT CNS Infrastructure and Systems

2.19 The meeting noted the low status of implementation of **SAT/23 Conclusion 23/10-Cyber Safety and Resilience of SAT CNS Infrastructure and Systems**. The meeting also identified institutional issues arising from the need to exchange information related to cyber safety that could be considered as sensitive and the necessary confidence between ATSU's prior to ensure cyber safe interconnectivity and interoperability of automated ATM/CNS infrastructure and systems. In consideration of the new restructuration of the SAT and its contributory bodies that will dissolve the CNMC, the meeting agreed to establish an ad'hoc Group tasked to identify actions to be carried out within the SAT CNS Working Group at the aim to assessing guidelines, policies and best practices to be shared by SAT ANSPs on cyber protection and make proposals for harmonization of mitigating actions against Cyber risks.

Improvement of CNS system in the SAT Region (AMHS, AIDC, ADS-B)

2.20 The meeting reviewed regional and interregional initiatives conducted or being conducted by SAT members for the improvement of CNS system in the SAT Region through bilateral and multilateral arrangements with the aim to improve SAT CNS systems and comprising the following:

2.20.1 ***AFI North West Area Technical Group (ANWA TG) initiative*** by ENAIRE (Spain) and ASECNA for the improvement of **Aeronautical Mobile Service** (Sharing of locations of extended VHF Air/Ground radio communications stations frequencies), **Aeronautical Fixed Service** through the implementation of modern ATS Ground Voice Network (AGVN) protocols, evolution to Voice over IP (**VoIP**) and implementation of AMHS &AIDC/OLDI and **Surveillance data sharing**.

2.20.2 ***AIDC Interconnection between Abidjan and Accra ACC identified*** by a coordination meeting under the auspices of ICAO, held in Lomé, Togo from 2 to 4 May 2016 between ASECNA, GCAA (Ghana), NAMA (Nigeria), the Roberts FIR. The meeting agreed that the successful implementation of AIDC service between Abidjan and Accra ATSU's will improve coordination and the lessons learnt from this exercise will enable a more efficient organization of similar interconnection in the future

2.20.3 ***AMHS/AIDC Interconnection between Dakar and Recife ATCs*** identified years ago by SAT and coordinated through teleconferences on 2016 and 2017 and recently by a side meeting between ASECNA and the ICAO Regional Offices of Dakar and Lima during the Atlantic Coordination meeting in Paris (31st January 2019) for effective implementation and the exercise is ongoing.

2.20.4 ***IATA initiative for AMHS/AIDC Interconnection between Casablanca and Nouakchott ACCs*** to facilitate with the support of ICAO, the AIDC and AMHS interconnection between Casablanca and Nouakchott ACCs.

2.21 The meeting appreciated these initiatives and encouraged concerned ANSPs to pursue implementation and requested the Secretariat to continue supporting the forthcoming activities through coordination and provision of guidelines

Interconnection and interoperability of CNS/ATM systems

2.22 The meeting recognized that although SAT/23 meeting clearly identified necessary AMHS and AIDC circuits and tentative dates for their full implementation, it appeared that the percentage of effective implementation is low. It was therefore recommended to identify hurdles encountered by ANSPs in order to clear them out and effectively implement the identified circuits.

2.24 Amongst others and not limited to, were identified in one hand a lack of formal bilateral/multilateral agreements comprising, technical documents, interconnection protocols and procedures in the conduct of interconnection of AIDC and in the other hand, the weaknesses related to the absence of Training Programmes and Training Plans, the effective conduct of which should increase the competence of SAT ANSPs personnel (ATCOs and ATSEPs) for the implementation and operation of AIDC.

2.25 In this regard, the meeting requested ICAO concerned Regional Offices to provide guidance materials including regulatory framework, operational procedures and technical interface guidelines in order to formalize and facilitate SAT CNS AMHS and AIDC interconnection. Furthermore, the meeting tasked ASECNA and GCAA to identify, with the assistance of the Secretariat, exhaustive training needs in AIDC for SAT concerned personnel and requested the conduct in the AFI SAT concerned Region of a regional workshop on AIDC with the support of the industry to reinforce capacity building.

ATM and CNS issues

Endorsement of the Conclusions & Decisions of the ninth meeting of the CAFSAT Network Management Committee (CNMC/9).

2.26 The meeting reviewed and endorsed the outcome of the (05) Conclusions and four (04) Decisions that were adopted by the CNS Working Group.

SAT Procedural Handbook

2.27 The meeting discussed the future evolution of the SAT Group on the basis of provisions re-examining the working structure and arrangements of the SAT Group and its associated SAT/FIT and CNMC bodies and formulating the proposals in order to provide efficient arrangements and achieve the overall objective of the SAT Group, being, improvements in the provision of air traffic services over the South Atlantic.

2.28 The meeting was reminded that the SAT area has an impact on the North Atlantic (NAT), Africa Indian Ocean (AFI), Caribbean (CAR) and South American (SAM) regions thus requiring coordination and harmonization of operations.

The meeting considered a proposal by the Air Navigation Commission (ANC) to establish performance requirements for the Atlantic Group (SAT/NAT) to improve coordination between the SAT and NAT as well as the recommendation by ANC to the ICAO Council that options be identified to formalize the SAT Group although the Commission did not specify on how to formalize the Group.

2.29 In this regard, and in order to initiate the restructuring and formalization of SAT and its auxiliary bodies, a Draft SAT Handbook comprising SAT Terms of Reference, SAT Working Methodology & Arrangements, Rules of procedures of SAT meetings, SAT Contributory Bodies, Composition of the Group, Reporting) and Future Work programme of the SAT Group developed by the SAT Secretariat was submitted to the meeting for discussion and endorsement bearing in mind the way to improve efficiency in collaboration between the NAT and the SAT.

2.30 The new SAT structure attached in **Appendix** to this Working Papers comprising the main SAT organization with two (2) Working Groups (ATM/WG & CNS/WG) is based on the following changes:

- Merging of part of SAT/FIT items addressing operational and IAS/SGG issues in the new ATM/Working Group;
- Merging of part of the SAT/FIT and addressing infrastructure and systems (CNS) and the CNMC in the CNS/WG;
- Clear identification of operational requirements and targets by the ATM/WG and eligible technology to be planned and implemented by the CNS/WG; and
- Flexibility for every Working Group to establish an ad'hoc Group or Implementation Team.

2.31 The meeting also agreed that in the SAT future work programme, Safety issues should be given importance and therefore that the Safety Assessment function should be considered and included in the Mandate of the Contributory Bodies, of SAT Working Groups.

The detailed SAT/24 meeting can be downloaded @: <https://www.icao.int/WACAF/Pages/SAT-24.aspx>

2 ACTION BY THE MEETING.

3.1 The meeting is invited to:

- a) Take note of the information presented in this working paper, reporting on the SAT/24 meeting;
- b) Review the SAT Procedural Handbook and provide the Secretariat with any information aim to improving the work carried out by SAT/24.
- c) Endorse the following Draft Decision and Conclusion:

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Draft Decision xxxx: Endorsement of SAT Procedural Handbook	
That; The SAT Procedural Handbook comprising its Terms of Reference, Working Methodology & Arrangements, Rules of procedures of SAT meetings, Contributory Bodies, Composition, Reporting and Future Work programme of the SAT Group is endorsed as presented in Appendix xxxx.	Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Technical/Operational
Why: Restructuration and formalization of SAT	
When: APIRG/22	Status: Valid
Who: <input type="checkbox"/> Coordinators <input type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Others: ANSPs	

Draft Conclusion xxxx: Implementation of the Safety Assessment Function	
That; The Safety Assessment Function included in the Mandate of the SAT Group be effectively implemented by its Contributory Bodies (SAT Working and Study Groups).	Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Technical/Operational
Why: To enhance safety assessment in the SAT	
When: Continuously	Status: Valid
Who: <input type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: ANSPs	