



**SUMMARY OF DISCUSSIONS OF THE SOUTH ATLANTIC
IMPLEMENTATION MANAGEMENT GROUP**

THIRD MEETING

(Santa Maria, Portugal, 5 to 8 February 2024)

0. Introduction

0.1 The third meeting of the South Atlantic Implementation Management Group (SAT IMG) was organized, thanks to the kind invitation of the Portuguese Air Navigation Service Provider (NAV Portugal), from **5 to 8** February 2024 in Santa Maria (Azores), Portugal.

0.2 The meeting was opened by Mr. Luis Tojais (SAT IMG Chairperson) who welcomed the SAT IMG participants to Santa Maria and a total of 38 participants from Angola, Brazil, Cape Verde, France, Ghana, Portugal, Senegal, South Africa, Spain, United States, ASECNA, IATA discussed the latest developments for the harmonization of operations, infrastructure and development programmes in the South Atlantic.

0.3 The lists of participants and meeting documentation are provided in [Appendices A](#) and [B](#) respectively.

0.4 Mr. Luis Tojais (Portugal) chaired the meeting with support from Mr. Sven Halle, SAT IMG Secretary, from the ICAO EUR/NAT Office. Administrative assistance was provided by Ms. Leyla Suleymanova from the ICAO EUR/NAT Office. Remote attendance was provided to the ICAO colleagues from the WACAF, ESAF, SAM and NACC Regional Offices.

0.5 At its opening session the Group adopted the following agenda and agreed on the proposed work schedule:

Agenda Item 1: Opening and review of latest developments

- 1.a) Adoption of the Agenda
- 1.b) Latest significant international aviation developments
- 1.c) Review of action item list
- 1.d) Presentation of the results from the SAT SG/01 meeting
- 1.e) Review outcome of other meetings which are of relevance to the SAT IMG

Agenda Item 2: Planning and implementation programmes

- 2.a) States/ANSP updates including traffic figures
- 2.b) Airspace user update
- 2.c) AIDC implementation updates
- 2.d) Update SAT PBCS IS PT
- 2.e) Other issues (i.e. Mach Number Technique application)

Agenda Item 3: Airspace and ATS Route improvements

- 3.a) EUR/SAM corridor improvements
- 3.b) AORRA developments
- 3.c) Study results for dualization of UN866 and any other airspace or ATS Route improvement activities

Agenda Item 4: SAT documentation

- 4.a) SAT Doc 002 (SAT Contingency Plan)

Agenda Item 5: Coordination between SAT IMG and SAT SOG

- 5.a) Review of outcome from SAT SOG/02 meeting
- 5.b) Any other aspects

Agenda Item 6: Any other business

- 6.a) Future work programme and follow-up actions
- 6.b) Next meetings
- 6.c) Report to the next SAT SG meeting

1. Opening and review of latest developments

1.1 The Group noted that 29 working papers and 7 information papers had been prepared and submitted for discussion at the SAT IMG.

1.2 The SAT IMG action item list and SAT IMG decisions table were reviewed. The Group closed multiple pending decisions & action items and agreed to 7 new decisions and 6 new actions for completion until the next meeting.

1b-e) significant international aviation developments and outcome of meetings with relevance to the SAT IMG

SAT SG/01 meeting

1.3 The Group was informed about the outcomes from the 1st Meeting of the South Atlantic Steering Group (SAT SG/01) which was held virtually on 4 December 2023, from 1100 UTC to 1600 UTC. The objective of the meeting was to review the activities carried out in the SAT area by its contributory bodies as well as safety and capacity improvement initiatives by SAT Member States and organizations. 52 delegates from SAT members States, Organizations and Observers attended the virtual meeting. The Group took note of the amendment of the SAT SG ToRs and working arrangements, the establishment of a SAT DMO, the updated SAT Safety policy, the list of SAT SG actions and SAT SG decisions/conclusions, the SAT work programme 2024 and the SAT contact list. The Group incorporated the relevant SAT SG decisions and actions into the SAT IMG work programme and agreed to support the finalisation of the SAT contact list in response to the ICAO WACAF State Letter SR 3/80-0043SR by 29 February 2024 (Action Item 03-01)

NAT IMG/63 meeting

1.4 The Group noted the presentation on the main results from the 63rd meeting of the North Atlantic Implementation Management Group (NAT IMG/63) which was convened at the International Air Transport Association (IATA) office premises in Montréal, Canada, from 31 October to 3 November 2023. The Group took note of the endorsement of the operational 15 NM TtT trial in Reykjavik CTA, the NAT 2030 vision aspects, the support to the Oceanic Clearance removal (OCR) PT activities, the NER PT discussion on Commercial Space Operations (including the NAT CSO workshop in May 2024), the timeliness of PBCS monitoring and reporting, the establishment of several Project Teams, the outcome of the flight level usage

above FL410, the endorsement of NAT documentation (NAT Docs and OPS Bulletins), the update of the work programmes and the schedule of the next meetings.

Outcome of the EUR/SAM Air Space Concept Implementation Team ESCIT/04 meeting

1.5 The Group was informed about the outcome of the 4th EUR/SAM Air Space Concept Implementation Team (ESCIT/04) meeting which was held virtually on 11 January 2024. During the last SAT IMG/02 meeting the ESCIT PT (Atlantico, Dakar OCE, Sal OCE and Canarias) was tasked with two main issues. Firstly, with analyzing jointly the impact on becoming UN866 AWY (one of the four AWY of EUR/SAM Corridor). The results of these analysis are presented in WP19. Secondly, the PT has developed some improvements in our Airspace by eliminating the time compensation using the Mach Number Technic (MNT) between Canarias and Sal FIRs. The team had not reached all of our goals for this period (by eliminating partially this compensation in all the Corridor), but we expect to get it by the first semester of 2024. (Action Item 03-05). Further information regarding the EUR/SAM improvements are presented in WP10. Finally, the PT has committed with the objective of holding more frequent online meetings (in-between SAT IMG meetings) to move forward in the tasks pertaining to UN866 bi-directionality and PBCS implementation in EUR/SAM Corridor.

ICAO UPDATE

1.6 The Group was provided with an information paper about the recent significant international aviation developments, including the latest amendments and proposals for amendment to ICAO Annexes and Procedures for Air Navigation Services (PANS), the distributed State letters and Electronic Bulletins, as well as other publications (e.g. ICAO Documents, Manuals and iPacks). The Group also took note of the upcoming ICAO meetings at global and regional levels, as well as the planned regional and Global Aviation Training (GAT) courses. During the discussion, it was confirmed that the results multiple activities (including the work of the True North Advisory Group) are expected to be presented at the 14th Air Navigation Conference in September 2024.

ITU WRC-23

1.7 In response to the SAT IMG Decision 02/07, Spain presented the results from the ITU WRC23, regarding the frequency allocation for datalink services. The ITU WRC-23 Plenary Session approved a new allocation to AMS(R)S (aeronautical mobile-satellite service (en-route)) in the VHF aeronautical band (117.975 - 137 MHz). This is a very important and historic decision that paves the way for innovation and significant improvements in air traffic control by allowing the use of satellites to provide aeronautical services both in oceanic areas and in many countries around the world. At the initiative of ENAIRE, ICAO has already started work on the modification of technical standards, frequency planning and allocation procedures, as well as the elaboration of the relevant ICAO SARPs. Spain thanked all SAT IMG members for the support given to this initiative which contributed to the successful outcome from the ITU WRC-23.

2. Planning and Implementation Programmes

2a-b) State/ANSP reports and airspace user updates

2.1 The Group noted the report from **Spain** on the latest developments in Canarias ACC, which registered an increase of 13% in the traffic figures of the EUR/SAM Corridor in Canarias FIR for the year 2023. The initial upward trend was higher at around 30% in first three months, but then remained unsteady for the rest of year. The Group discussed an issue with aircraft fleet equipment capabilities as the figures for RSP180/RCP240 in the EUR/SAM corridor were showing a decrease for 2023 when compared to 2022 and concluded that this would be a FPL filing issue that needs to be addressed with aircraft operators and CFSPs (Action Item 03-02), as similar issues were also reported by ASECNA, Cabo Verde and Senegal. The Group noted the OLDI/AIDC status for Canarias, the data link service analysis (most of FANS equipped aircraft (93%) connect to Ground System, traffic in the EUR/SAM Corridor using FANS services was above 75% of total traffic, ADS-C surveillance data accuracy: almost all (99.96%) of the analysed ADS-C messages in the studied period report a FOM value equal to or better than 6). The implementation of ADS-B in the TMA has been planned for 2024 and the installation of ADS-B/VHF stations in Mauritania to improve Surveillance and Communication Coverage in Canarias FIR is on-going in accordance with the initial roadmap. The

implementation of satellite-based VHF and ADS-B concept with the company Statical has been planned in the longer term.

2.2 This was followed by the statistical data collection from South Atlantic Regional Monitoring Agency (**SATMA**) which presented traffic data for 2023, the main city pairs, the main northbound and southbound traffic flows, the traffic numbers per aircraft operator, the aircraft types which operate in the EUR/SAM corridor, the main transversal/crossing flows and the indicated aircraft equipment percentages for the EUR/SAM corridor. The data collection was in accordance with the SAT IMG/02 Decisions was derived from the EUROCONTROL Demand Data Repository, combined with additional data from ENAIRE and ASECNA systems. During the discussions several aspects, such as the delineation of the SAT area (SAT SG Activity), the problems with the differences (incorrect filing, filing of RCP240 only, etc.) in PBCS equipment data from FPL field 10 and the number of flights using random routings (13%) or crossing traffic (1%) between AORRA and the EUR/SAM corridor airspaces. SATMA also presented the detailed information about forecast for traffic in the EUR/SAM Corridor from 2023 until 2025, which had been based on the EUROCONTROL DDR and NM data. The base scenario foresees a traffic increase of 10% for 2025. In a more optimistic (high) scenario the traffic increase could be up to 13%. SATMA agreed to verify the correct flight plan filing in F10 and F18 for RCP240 and RCP180 with aircraft operators in the EUR/SAM corridor (Action Item 03-02). The Group thanked SATMA for the valuable information provided and amended the respective Action Items.

2.3 **Portugal** informed the Group about the latest updates and developments in Santa Maria OACC, including traffic numbers and information on implementation activities. Traffic in Santa Maria continues do be distributed in 80% for overflights, 10% for traffic to and from the Azorean Islands, and 10% for internal Azorean traffic. In 2023, the historical maximum set in 2019 was exceeded by more than 10 thousand flights, reaching for the first time the 180 000 mark, and showing an increase from 2022 of 13.8%. Santa Maria continues to show increased efficiency with the ADS-B surveillance in the entire airspace. Safety has also increased with the introduction of the Selected Flight Level function, providing ATCOs with faster intervention tools. Sectorization in the ATM system was improved to accommodate the new full surveillance environment, optimizing the allocation of work load. In regards to interface with adjacent centers, work has begun with Lisboa ACC to study the possibility of direct routes between Lisboa and Santa Maria independent from fixed waypoints, allowing for a seamless boundary crossing between the two FIRs. Work continues with Sal to progress AIDC implementation, with increased cooperation between Santa Maria and Sal FIRs. Currently most of the resources are concentrated on the implementation of the Oceanic Clearance Removal on 21 March 2024. Nav Portugal is collaborating in EUR projects like Echoes/SESAR2 for the feasibility of introducing VHF communications over satellite.

2.4 The Group noted the information from **Ghana** for the Accra Oceanic Airspace. The quarterly traffic figures had been growing steadily and forecast values remain high within the Accra FIR (30% oceanic flights and 70% flights between Accra and Atlantico). The report also included details on the aircraft equipment data (percentage of equipped aircraft: RVSM 96%, ADS-C 74%, ADS-B 80%, RNP10 88%, RNP4 69%, RNP2 88%). Due to the high percentage of regional aircraft operators with older aircraft types in a small sector of the oceanic airspace, it will be challenging to achieve higher percentages of equipage rates. About half of the oceanic airspace within the Accra FIR is covered by VHF and it is difficult to cover the other half. Therefore, in areas where there is no VHF, CPDLC is used as the primary communication and HF as secondary communication media. Free Route Airspace has been implemented within the Accra FIR between Latitudes 2°N and 11°N from the 25 January 2024. The routes within the Oceanic airspace are RNP10 routes and RNP 4 / RNP2 routes are yet to be developed. An overview of AMHS and AIDC implementation was presented and technical/operational training was done by Indra. There has not been much change in the status of the implementation of PBCS. This is because the safety oversight organization does not have a policy or legal framework to that effect. Meanwhile, the ATM Systems of the ANSP are RCP 240 and RSP 180 compliant. ADS-C CPDLC provides 100% coverage over the Accra FIR to ensure efficient and effective Air Traffic Services within the few areas where there is no radar and VHF. Ghana is practicing the AFI SSR Code Allocation and Assignment concept. No progress had been achieved in the implementation of FUA and civ/mil coordination. 3 ADS-B antennas, each with a range of 250NM have been strategically positioned to cover a greater part (one at the northern part of the FIR, another at the center, and the other at the south-eastern part. It is difficult to cover the south-western part of the FIR) of the FIR. The Accra ACC is equipped with a state-of-the-art Indra ATM system. Meanwhile, a new Air Navigation Complex has also been built and it is equipped

with a newer version of the MANAGAIR system. During the discussion, ASECNA raised the aspect of the 250NM ADS-B coverage from Sao Tome and expressed their support in the foreseen updates of LoAs. The importance of a harmonised PBCS implementation plan was confirmed as the new ATM system can monitor RSP and RCP performance in order to get more correct data on PBCS equipped/compliant aircraft.

2.5 The Group was informed by **Cabo Verde** on the updates of projects and traffic movements on SAL FIR, including efforts to improve the air traffic services, enhance operational support capacity, intensify the application of new technologies and accelerate the construction of infrastructure. The traffic figures for overflights and for arrivals/departures to Cabo Verde indicate a continuous growth and are higher than the 2019 figures. The report also presented details on the main aircraft operators that are flying in the Sal FIR. Several projects, such as the modernization of the ATM system, implementation of Performance Based Navigation (PBN) Procedures including CDO-CCO procedures at all 4 international airports, Phase 1 and 2 of transition from AIS to AIM- eAIP and QMS, certification of ATS, CNS and AIS have been fully implemented. The installation of ground based ADS-B, implementation of AIDC with Dakar and Santa Maria, the transition from AFTN to AMHS and the implementation of dynamic AIS are ongoing. The analysis of aircraft equipment showed that approximately half of the aircraft flying in the Sal FIR are equipped with PBCS, aligning with the information derived from Flight plans (P2 on field 10 and RSP180 on field 18). However this number should be much higher as already discussed at other ANSP reports.

2.6 The Group took note of an update from the **United States** in which New York Center saw a significant increase of 7 % in traffic from 2022 to 2023 when compared to the pre-COVID traffic levels of 2019. The Advanced Technologies and Oceanic Procedures (ATOP) system at New York air route traffic control center (ARTCC) has been operational on the T-29 release since October 2023. The Federal Aviation Administration (FAA) is currently researching issues identified with CPDLC/ADS-C connection forwarding identified once stepping up to the T-29 build. It is not currently known if these issues are native to the T-29 build or a latent issue that was identified by new functionality contained in T-29. New York Center plans to step up to the ATOP T-30 release in February 2024. Some features contained in the T-30 release are logic to address the rejection of quick uplink messages and logic to identify incorrect time entered into the coordination window. Once on the T-30 release, New York Center will implement the latency monitor. There is a final test of AIDC between New York and Piarco FIRs scheduled for February 2024. Once this test is complete the two facilities will be ready to begin discussing implementation and developing procedures for its use. Discussion around changes to the LoA and the implementation plan should begin shortly afterward. The United States Datacomm program has completed implementation at Miami and Jacksonville Centers. The implementation at New York Center is now planned for early 2025.

2.7 **South Africa** presented an update for the SAT-AORRA portion of the FAJO (Johannesburg Oceanic FIR) which indicated that the traffic figures for the Johannesburg Oceanic airspace in 2023 have recovered to the 2019 pre-COVID figures. The DEP/ARR traffic statistical analysis depiction showed continuing incline in traffic demand/recovery and the forecast trends have similar figures. South Africa commissioned the operational use of space-based ADS-B data within FAJO-Johannesburg Oceanic, FAJA-Johannesburg and FACT-Cape Town FIRs from 8 August 2023 onwards, following the successful conclusion of the operational trials. The service availability for Space Based ADS-B was 99.5%, for ADS-C and CPDLC was 97.7% and for HF was 98.3% in the reporting period. AIDC Implementation planning and coordination meetings were held between February and September 2023 between South Africa and Angola in consultation with Namibia. To date the implementation of the supporting telecom infrastructure to enable point-to-point connectivity between FAJO and FNAN, remain a barrier. Previous reports received from Angola indicated that the point-to-point datalink implementation forms part of the ATM modernisation programme which was envisioned to reach completion by end of 2023. The status of the Angolan ATM modernisation programme is yet to be determined, thus the resultant delay in AIDC implementation planning activities. South Africa Plans to resume coordination and implementation planning with Angola in February 2024 to establish datalink acquisition and ATM modernisation programme status in order to update implementation plans. Following establishment of the REDDIG II note in Johannesburg, the network technical evaluation, capacity assessments and line designation to determine available capacity considering the required services is still ongoing. The outcome of this technical evaluation will inform the status and coordination required with the respective FIRs to support implementation planning and determining roadmap timelines. The coordination failures statistical

analysis between FAJO and FNAN performances showed a slight increase noticeable in the 2023 performances.

2.8 **ASECNA** gave a presentation to the Group which provided not only statistical data on traffic movements and performance projections for the Dakar Oceanic FIR, but also updates on planned changes to the ATM/CNS infrastructure, including percentages for aircraft equipage. The Group noted that the traffic figures increased by 20% when compared to 2022 and surpassed the 2019 levels for Dakar Oceanic FIR and the traffic distribution (on the unidirectional RNAV routes (UN741 and UN866) and bidirectional routes (UN873 and UN857) and the Atlantic Ocean Random Routing Area (AORRA) airspace with 10 min longitudinal separation and Mach Number Technique). The traffic distribution indicated that random routings are the most frequent routes in the oceanic airspace of Dakar with 40%, while traffic on the EUR/SAM corridor utilized UN873 for almost 50% of flights. The list of main operators together with the aircraft types that are operating in the Dakar Oceanic FIR were presented. The flight equipage data for 2023 was presented which showed capabilities for RSP180 57%, RSP240 59%, RNP4 81%, ADS-B 98% and CPDLC 97%. The CPDLC Actual Communications Performance for messages sent within Dakar FIR was around 99.7% and the ADS-C Downlink Latency measurements per month for messages sent within Dakar FIR was around 99.2%. The updated status of implementation of CNS/ATM concepts, such as AIDC-PBCS-SB ADS-B, in the Dakar Oceanic airspace was also presented. During the discussion it was clarified that SB ADS-B will be used to compliment the surveillance data and that no reduction in separation was currently planned. It was also highlighted that due to AIDC problems with Atlantico FIR, only voice communication can be used for coordination between both FIRs.

2.9 The Group noted the comprehensive presentation from **Angola** on the 2 major implementation projects with impacts to the improvement of safety, capacity and efficiency within the Luanda FIR airspace. The new international airport opened on 10 November 2023 and in the first phase of the project only cargo flights will operate to/from the new airport. As part of this project major upgrades to CNS systems, NAV system including ILS (CAT I and CAT II) & DVOR/DMEs and SUR systems (PSSR, SSR, SMR and ADS-B) were installed. The second major project is the air navigation support systems modernization program in Angola which has started as a joint ENNA and ICAO TCB project. The program includes the airspace reorganisation within Luanda FIR, new SIDs and STARs for Luanda TMA, increased coverage of VHF-ER communications up to FL100 level in Luanda FIR, installation of a new HF-SSB system at the new airport for communication in oceanic and long range continental areas of the FIR, implementation of GNSS PBN procedures for 13 airports in Angola, implementation of surveillance services throughout the Luanda FIR, use of ADS-B and MLAT as back-up surveillance systems, new ATC simulators for TWR and APP/ACC training purpose that can be used as back up systems in case of ATM system failure, use of Space Based ADS-B to improve traffic monitoring at continental and mainly the oceanic airspace. Automatic ATS/DS Coordination with adjacent FIRs was implemented through voice communication, using a SADC network communication. AIDC implementation is under coordination between FNAN and FAJS and expansion to Atlántico is foreseen at a later stage. Agreements were signed with SENASA, Spain, for aspects related to the migration of the provision of ATS services from Conventional Control to Surveillance based Services (change in the paradigm of provision of ATC services).

2.10 The Group agreed to include the SAT SG01 Action item (Collect data on aeronautical mobile services frequency allocation and report to the SAT IMG at each of its sessions) as a recurrent action item R3-04 into the future version of the State/ANSP reports.

2.11 At the end of the presentation of the State/ANSP reports the Group proposed that any interoperability or ATM coordinated related issues should be included into future reports for appropriate discussion at the IMG meeting. (Action 02-05).

2.12 SAT IMG members were invited to submit their State/ANSP reports, even if they could not attend the meeting, in order to allow the distribution of important information and coordination of ANS related developments within the SAT FIRs. (Recurrent Action R1-01).

2.13 The Group recalled that any AMHS and/or AIDC implementation activities should be reported at every SAT IMG meeting either as part of the State/ANSP report or as an individual working paper. (Recurrent Action R1-02).

2c) AIDC and/or AMHS implementation updates

2.14 The Group was presented with a progress update on the AIDC and PBCS implementation in Brazil. The PBCS Brazil project is an integral component of an interregional strategy, specifically within the context of PBCS in the EURSAM Corridor. The various tasks/activities (e.g. the establishment of a task force to coordinate the implementation; development of a work plan with completed and ongoing activities; and contracting the ATC system developer to address the PBCS requirements) were presented and the hybrid operation of aircraft with different performances in SBAO FIR was presented. In a first phase, a significant reduction in longitudinal separation minima from the current 10 minutes or 80 NM to 5 minutes with lateral separation of 50 NM will be implemented from December 2025. For the second phase a longitudinal separation of 30 NM will be introduced from March 2026. The lateral separation will then be either 30 NM or 50 NM depending on the aircraft equipment performance. At this initial stage, the decision for a minimum separation of up to 30NM aims to facilitate the enhancement and acquisition of onboard aircraft requirements, while concurrently fostering the technical and operational development of air traffic controllers and crews. Further scenarios with reduced separations are currently under study. In the discussion on PBCS, a proposal for a common approach/concept for the EUR/SAM corridor (e.g. to start with a common PBCS separation and not with a PBCS or RNP4 mandate) was addressed.

2.15 AIDC is already being used in Brazil in all 5 national ACCs, between its domestic and oceanic ATC systems and there are a total of 9 connections. ASECNA and Ghana reported about technical problems with the AIDC connection to Atlantico ACC, as there had been technical system interoperability issues/problems reported which are preventing a successful implementation. One interoperability problem was the parameter setup of the AIDC message (ABI message with additional characters) that can only be solved by the ATM system manufacturers and not by the ANSPs. As similar issues were also reported by other SAT members, the Group agreed to the following decision:

Why	To support the harmonized implementation of AIDC in the South Atlantic Area
What	Invite all SMEs for a virtual meeting in May 2024 Develop an AIDC follow up action plan Present updates at SAT IMG/04
Who	ICAO Secretariat, SAT IMG members
When	May 2024

SAT IMG Decision 03/01 – VIRTUAL AIDC TECHNICAL EXPERT MEETING

That, in support of the various AIDC implementation activities, a technical expert meeting (virtual) be organized in May 2024 with participation of SMEs from the ATM System manufactures to discuss interoperability issues which currently prevent the successful implementation of AIDC between the involved ACCs/OACCs.

2.16 The Group was presented with information on the status of AIDC Implementation planning in South Africa and the activities recommended to enable definition of the implementation roadmap. South Africa and Angola in consultation with Namibia conducted AIDC implementation planning and coordination meetings. Based on the reported status of telecom infrastructure developments in the SAT and AIDC implementation planning activities, South Africa proposes the following activities to further support the successful AIDC implementation:

- a) The conduct of the AIDC pre-operational implementation assessments;

- b) The assessments outcomes of the technical analysis, interoperability, and pre-operational tests to inform implementation readiness and define implementation timelines; and
- c) The proposed assessments activities and respective timelines as described in table below will facilitate the scheduling of the pre-implementation operational trials between respective FIRs.

The Group thanked South Africa for the proposal and agreed to the following decision:

Why	To support the harmonized implementation of AIDC in the South Atlantic Area
What	Invite all identified ANSPs to collaboratively coordinate the conduct of AIDC pre-implementation assessments Determine/develop a detailed AIDC implementation roadmap for the next SAT IMG/04 meeting
Who	ICAO Secretariat, SAT IMG members
When	SAT IMG/04 meeting

SAT IMG Decision 03/02 – AIDC IMPLEMENTATION ROADMAP

That the SAT IMG invites all identified ANSPs to collaboratively coordinate the conduct of AIDC pre-implementation assessments and to determine/develop a detailed AIDC implementation roadmap for the next SAT IMG/04 meeting

2.17 Brazil informed the Group about the data link communication performance in Brazilian Oceanic Airspace (Atlantico FIR) and especially regarding monitoring data related to the RCP 240 specification. Most messages are delivered using satellite media, both during the uplink and downlink of data packets, all RCP240 benchmarks (either 95% or 99.9%) are being met and in all benchmark results, the PORT criteria (<60s) were met, achieving 100%. In addition, the paper also highlighted the flightplan filing issues as the analysis for Atlantico FIR from September to December 2023 that only showed 8% of the aircraft were equipped with avionics sets compatible for maximizing the benefits arising from the operationalization of PBCS (data link CPDLC/ADS-C PBCS RNP4, RCP240, and RSP180). These numbers should be much higher with the aircraft types operating to/from Europe in the EUR/SAM corridor. However, the data link performance in the Atlantico FIR does not pose an obstacle to the implementation of the PBCS concept in this airspace.

2.18 The Group was presented with information on the South African PBCS implementation and roadmap planning. South Africa opted to migrate from the current RNAV 10 in FAJO (Johannesburg oceanic FIR) to RNP4 supported by implementation of PBCS. The Planning activities will be in alignment with the SAT PBCSIS PT recommendations and PBCS Implementation Plan – Checklist. The South African PBCS Implementation plan is under review in order to test the current system in terms of functionality required for PBCS technical requirements. To assess the current system, data needs to be extracted from the ATM system and then analysed to determine if the RCP and RSP meets the technical specification required for PBCS. South Africa will closely monitor, participate, and take into consideration the SAT PBCSIS PT recommendations and the definition of the SAT PBCS implementation roadmap.

2.19 A working paper from IATA concerning potential PBCS Airframe Non-Compliance and detailed issues with the processes and criteria being used by ANSPs, CMAs/RMAs, State of the Operator, and State of Registry was presented to the Group. The discussion highlighted that this paper is too early as the PBCS implementation is only starting in the SAT area. The Group felt that the discussion of PBCS approvals/withdrawals should only take place when States have their own processes in place. The experience from then NAT (where ANSPs will do the PBCS monitoring, will identify the non performing aircraft, will contact the operators so that issues can be solved between them) was shared with the Group. However the correct filing of PBCS identifiers in the ICAO flightplan must be addressed with aircraft operators and CFSPs as indicated in earlier discussions.

2.20 The SAT PBCS Implementation Support Project Team provided an interim report concerning the work of the PT on the development of a combined implementation plan, task list and timelines/action items,

to support the harmonized implementation of PBCS and use of the related PANS-ATM separation minima in the South Atlantic. The first virtual Project Team meeting was conducted on 20 December 2023 where the first version on the PBCS implementation plan was presented and discussed. Unfortunately, it was not possible to schedule the second PT meeting before the SAT IMG/03 meeting in January 2024. However, it can be expected that the development of the document can be finalised in the next 6 months, so that the final draft of the PBCS implementation plan for the SAT area can be presented at the SAT IMG/04 meeting for endorsement. ESCIT States have highlighted, in their last meeting, the importance of advancing in a coordinated and joint manner in the implementation of the PBCS in EUR/SAM Corridor and ESCIT offered its support to the activities of the PT with more frequent virtual meetings. As part of the discussion, the post implementation monitoring aspects were highlighted and the Group agreed to engage with the SAT SOG to ensure that the post implementation monitoring task (E-1) will include the involved RMAs (Action Item 03-04).

2.21 The United States, together with the ICAO Secretariat, presented a proposal to create a seamless airspace table that will contain information on capabilities of the oceanic flight information regions FIRs or portions of oceanic airspace for all States within the South Atlantic area. The SAT IMG had been presented with individual State airspace updates containing information related to CNS capabilities and implementation plans. Additionally, the updates contain separation standards and cross-boundary coordination procedures and are vital to the SAT IMG when reviewing future implementation plans within the SAT area. The seamless airspace table will serve as documentation of the current operating state for each oceanic FIR or portion of oceanic airspace within the SAT area and should be updated during each SAT IMG meeting going forward. This table could be a useful tool for the SAT IMG and associated Project Teams in the development of their work to harmonize cross-boundary operations and identify opportunities to improve efficiency and capacity. This table could also be used as a baseline for the developments of a Service Development Roadmap for the SAT area. The Group reviewed and amended the first version of the data table and agreed to the following:

Why	To support the SAT IMG in the creation of a Service Development Roadmap and assist with harmonizing implementation efforts across oceanic FIR boundaries.
What	Complete the SAT FIR Seamless Airspace data table identifying each States' CNS capabilities, operational procedures including separation standards, airspace configurations and implementation or proposed plans for all South Atlantic member States.
Who	All SAT Member States
When	at every SAT IMG meeting as this will be a living document.

SAT IMG Decision 03/03 – Creation of a SAT seamless airspace data table

That the SAT IMG supports the creation of a seamless airspace data table containing information on capabilities of the oceanic flight information regions (FIR)s or portions of oceanic airspace for all States within the South Atlantic area

2.22 As part of the airspace user update, IATA presented South Atlantic Operational Strategy. The strategy has been validated by the IATA Regional Coordination Group with governance over the South Atlantic and described member airlines regional objectives pertaining to operational efficiency, infrastructure, interoperability, safety, sustainability, harmonization, implementation of regional programs and the future of ATM. The Group was requested to review the operational strategy and provide its recommendations specifically, pertaining to those objectives in the *Short-Term: 2024-2025*. The operational objectives seen in the *Medium-Term: 2025-2027* aligns with ANSP activities to improve ATM efficiency and coordination. The *Long-Term: 2027* and Beyond objectives should be viewed as aspirational goals and could be amended at a future date to ensure harmonization with regional potential improvement areas. Lastly, the IATA SAT Operational Strategy may assist the SAT IMG with the evolution of the SAT service development roadmap. The SAT IMG recognized that certain operational strategy objectives come under the purview of the SAT Safety Oversight Group (SAT SOG). The Group noted that IATA will submit a working paper to the SAT SOG highlighting airlines' safety objectives for the SAT area. The Group discussed the proposed IATA

strategy and concluded that each SAT member will have to do an individual assessment and therefore the following was agreed:

Why	To align work activities between the SAT IMG and IATA and to support the evolution of the SAT service development roadmap.
What	Endorse operational objectives in the IATA SAT Operational Strategy.
Who	SAT IMG, SAT SOG
When	Update at SAT IMG/04 meeting

SAT IMG Decision 03/04 – Consider the IATA South Atlantic Operational Strategy for the SAT SDR

That the SAT IMG take the appropriate actions to include relevant elements from the IATA SAT operational strategy into the SAT service development roadmap

2.23 ASECNA informed the Group about some problems with ADS-C and CPDLC connections from AORRA overflights within Abidjan ACC. There had been an increasing number of cases where aircraft that are operating within the AORRA airspace are not correctly connecting to Abidjan ACC (logon DIII) when flying in that airspace. Due to a possible misinterpretation of the airspace structure, aircraft operators seem to consider the Abidjan Airspace as a sub-FIR of Dakar FIR and logon to Dakar ACC (GOOO) instead of Abidjan ACC (DIII) for Tetragram connections. These events have resulted in an unnecessary increase on ATC workload as ATCOs have to look for the concerned and not correctly connected flights. In some cases these events had even triggered the Emergency (INCERFA) phase. Airspace users should therefore be informed that there is functional difference in ATM (ADS-C and CPDLC logon procedures) when it comes to Dakar and Abidjan ACCs. In the discussions, Ghana reported similar issues with overflights in the AORRA area for Accra ACC. The Group discussed the issue, highlighted that aircrews should connect to the appropriate controlling authority and therefore agreed to the following:

Why	To inform airspace users about the correct logon procedures and mitigate the problems with overflights not being correctly connected to the controlling ACC
What	Develop, in coordination with IATA, and publish a SAT OPS Bulletin
Who	SAT IMG, SAT DMO, SAT SOG
When	Publication asap

SAT IMG Decision 03/05 – Publication of a SAT OPS Bulletin to address the CPDLC logon issues for flights especially in the Dakar - Abidjan - Accra FIRs

That, in coordination with the SAT DMO, a SAT OPS Bulletin should be developed to address the CPDLC logon issues for flights especially in the Dakar –Abidjan-Accra FIRs as a mitigation measure for the presented safety aspects

2.24 The Group discussed a proposal from ASECNA to explore the potential for harmonizing emergency phase notifications, particularly in the event of a loss of communication in the SAT Region. During 2023 the Dakar OCA has experienced 81 notifications of emergency phases to Search and Rescue Coordination Centers (RCC) involving 41 overflying traffic and all of them were initiated due to a non-receipt of position reports. This high number of notifications is largely caused by the increase in low level overflying aircraft which are only equipped with HF COM systems. The primary objective of this proposal was to have a practically well understood and harmonized mechanism in the SAT region regarding notification of emergency phases in the event of loss of communication. During the discussion, several SAT IMG members requested further analysis of the specific (low level, visual) flights before they could agree to amended values (xx minutes after alerting phase when unsuccessful attempt to establish communication) for the alerting and distress phases. ASECNA was invited to make a case study on the high numbers of aircraft in the alert phases, reach out to

neighboring FIRs if they have similar issues in remote/lower areas of their FIRs and bring the issue back to the next SAT IMG/04 meeting (Action Item 03-04).

3. Airspace and ATS Route improvements

3a) EUR/SAM corridor improvements

3.1 The ESCIT (EUR-SAM Air space Concept Implementation Team) PT presented an overview of the latest activities in the EUR/SAM corridor, highlighting the changes in all Letters of Agreement for a harmonised application of the Mach Number Technique within the corridor. It was proposed to calculate and apply MNT between each FIR, instead of at entrance/exit of the whole corridor. The remaining safety case for Dakar Oceanic is expected to be completed by June 2024. In the interface with Cabo Verde, the elimination of the time compensation between traffic with different speeds, when one of them has Cape Verde airports as its destination had brought significant improvements and enhancements in the separation between traffic at same level have been achieved.

3.2 In response to SAT IMG Action item 02-08, Spain presented the study report on the assignment of optimal/requested flight levels for southbound traffic in the EUR/SAM corridor, Canarias FIR/UIR. This study was carried out 24 hours per day and for 35 days between December 2023 and January 2024. In a 24-hour report, and for the entire area, 93.96% of flights get their required optimal level. Analyzing the traffic in each Airway, it was also seen that in UN873, being the most used, this percentage drops to 92.79%. On analyzing the distribution of traffic on the most used airway (UN873), it was seen that there are two very clear peak periods, one during the day and the other at night. That is the reason why three different segments have been established for the study report. The study report segments are the “day peak” (between 11:00 – 15:00), the “night peak” (between 23:00 – 03:00) and the “Rest of the day” segment. The study indicated, that the amount of “non-optimal” FL in Canarias is 7.90% between 11:00 and 15:00 (Day Peak), 15.44% between 23:00 and 03:00 (Night Peak) and 1.87% out of these periods. It is important to highlight that better data at daytime compared to nighttime peak is largely because during the day there is a large volume of traffic destination Cabo Verde.

3.3 The Group was presented with information of FL utilization in Atlantico FIR from Brazil (Action Item 02-08). Between January and December 2023, data collections via Datalink were conducted to examine level change requests and authorizations under normal conditions, specifically utilizing Controller Pilot Data Link Communications (CPDLC). The study collected 5.524 messages for level change requests. In percentage terms, 97.6% of the requests were associated with the intention to climb, while only 2.4% were related to descent. There were 4516 (82.3%) positive clearances issued by the ATCO of Atlantico ACC, granting approval for both ascent and descent according to the pilot's request. Authorization was not feasible for 1,853 (17.7%) of the requests. The negative responses occurred 90% of the time justified due to the presence of conflicting traffic. In this study, requests made through voice or coordination channels were not considered. Around 55% of requests were made by traffic evolving in the EUR/SAM corridor on airways UN741 (13%), UN866 (8.9%), UN873 (23.1%), UN857 (10.1%). Outside the corridor, but comprising the lateral dimensions of the corridor, 23% requested for level change were made at UZ51 (9.6%), UM661 (2.9%), at UL206 (7.7%) and at the intersection with the airways UL695 (0.4%) and UL375 (2.3%). Finally, 22% of the requests were carried outside of the EUR/SAM corridor. Regarding the timing of the requests, the analysis reveals that the majority (600 requests) were submitted between 03:00 and 06:00 UTC. Furthermore, two additional peaks were observed between 17:00 (250 requests) and 21:00 UTC (300 requests) throughout the entire data collection period.

3.4 ASECNA presented a report which focussed on traffic distribution, flight level occupancy, and the satisfaction rate for preferred level requests in the Dakar Oceanic FIR (action Item 02-08). The analysis showed that random routings are the most frequent routes in the oceanic airspace of Dakar with 40%, while traffic on the EUR/SAM corridor utilizes for almost 50% the ATS Route UN873. The Southbound and Northbound traffic are almost equivalent in terms of proportion, but they do not occur at the same time. According to the collected data, in 2023, it was found that FL370 (16%) was the most utilized flight level, followed by FL380 at 15%, and FL360 at 14%. Data collection of Datalink communications was made from

Controller Pilot Data Link Communications (CPDLC) database, from November 2023 to January 2024. The collection depicts the Flight level change requests and authorizations. The analysis showed that 3656 climbs were requested, the number of clearances/approvals to climb were 3386, so that the satisfaction rate was 92.6%. However, there were 56 situations where the ATCO instructed descent to resolve a conflict. These cases of descent instruction were mainly due to crossing traffic (about 8%) requesting to operate at the same altitude and practically at the same time.

3.5 IATA appreciated the data collection and the study results, which had shown a significant performance increase since the SAT/24 meeting, where airspace users reported that they would not get their optimum flight level for 30% of their flights. The Group invited SAT ANSPs to provide data on the flight level allocation for flights within the EUR/SAM corridor (Action Item 03-06)

3.6 A joint working paper was presented by the 4 ESCIT members on the study results for the possible change of the ATS Route UN866 into bidirectional route. Spain, ASECNA, Cabo Verde and Brazil stated that there were in favor of this change, as it would potentially absorb traffic from the excessively concentrated UN873 during peak hours, as it would better balance the traffic loads of the south- and northbound flows and as it would allow the use of more efficient FLs. However, the integration of West/Eastbound traffic, around 8%, connecting Africa to the USA and vice versa and operated mainly by DAL and UAL which uses the same altitude ranges at times of high traffic was a major concern for Dakar Oceanic ACC. Several implementation options (including a trial period, which was not supported by the Group) were discussed and at the end the meeting agreed to the following

Why	To make more efficient use of airspace in the EUR/SAM Corridor
What	To reverse UN-866 AWY for bidirectional use
Who	ESCIT States with a series of meetings
When	As soon as possible

Draft SAT IMG Decision 03/06 – Change of ATS Route UN866 to bi-directional route

That the SAT IMG endorses the change of the ATS Route UN866 to a bi-directional ATS route and invite all members from the EUR/SAM corridor, within the framework of the ESCIT, to finalize the implementation activities (e.g. additional simulations, required safety assessments, ATCO training, airspace users awareness) and change their national AIPs for a common AIRAC implementation date before the end of 2024 accordingly

3.7 In addition to the analysis of the transition of UN866 to a bi-directional ATS Route, Brazil presented further study results on the proposal to change also the ATS Route UN741 to a bi-directional ATS Route. The study raised the safety aspects and asked to explore how the thoughtfully designed current configuration of one-way versus two-ways routes could optimize the efficient utilization of altitude levels along the route. A second consideration in terms of safety, is the current suspension of non-compliant flight level usage during Intertropical Convergence Zone (ITCZ) activity at UN866 (and also at UN741). This safe measure allows aircraft to descend to less turbulent atmospheric layers when using the airway uni-directionally, which may be impossible when using it in both directions. A further suggestion was to conduct a new study with the creation of additional ATS routes (perhaps similar to proposals from 2006 SAT study) in close collaboration with the airspace users. The Group discussed the proposal and it was felt that this new project should be delayed to 2025 (after the UN866 dualisation). Some SAT members were of the opinion that a new airspace study/airspace concept should only be started after the full PBCS implementation has been completed.

4. SAT Documentation

4a) Development and update of SAT documents

4.1 The Secretariat provided the results from the work of the SAT CPR PT on the development of an ATM Operational Contingency Plan for the South Atlantic. Following the initial call for nomination of experts the

members in March 2023, the PT continuously grew and was composed of subject matter experts from Angola, Brazil, Cape Verde, Côte d'Ivoire, French Guiana, Ghana, Namibia, Portugal, Senegal, Spain, South Africa, ASECNA, IATA. The Project Team based its development of the SAT Doc 002 on the SAT/24 meeting WP 20, which was an initial draft of the ATM contingency plan in the SAT area following the outcomes from the Atlantic Coordination Meetings in 2018 and 2020, and the AFI Regional ATM contingency plan. The baseline document was completely rewritten with actual information from national AIPs and the structure of the document includes now detailed information on contingency arrangements for flights inside the EUR-SAM corridor, for flights in the AORRA airspace, for flights in the SAT area outside of the EUR-SAM corridor and for flights in specific FIR-to-FIR interface areas. Several ATS Routes had been re-designed/re-published so that they can be used in a contingency scenario and it should be noted that South Africa is currently in process to reactivate UL375 (*potentially be available from AIRAC April/May 2024*) for contingency purposes. In addition, it must be highlighted that many FL restrictions have been taken out and that except for FL 310 and FL 320 for crossing traffic, multiple FL options have been made available for airspace users in a contingency scenario. The document includes now also reference links to national contingency plans, an updated contact list for each State and stakeholder in the SAT area and 2 NOTAM templates that can be used in a contingency scenario. The final consultation within the PT took place from 12 to 19 January 2024 and comments were received from Angola, Brazil, French Guiana, Ghana, Spain and IATA. All of them were incorporated into the version which is now proposed for endorsement. The Group reviewed the proposed SAT Doc 002 and consequently agreed to the following:

Why	To publish information on contingency arrangements for flights inside the EUR-SAM corridor, for flights in the AORRA airspace, for flights in the SAT area outside of the EUR-SAM corridor and for flights in specific FIR-to-FIR interface areas
What	To approve the SAT Doc 002
Who	SAT IMG, SAT DMO, SAT SOG
When	February 2024

Draft SAT IMG Decision 03/07 – SAT Doc 002

That the SAT IMG endorses the SAT Contingency Plan (SAT Doc 002, 1st edition, February 2024)

4.2 The Group also accepted that the SAT Doc 002 will be a living document and that the SAT IMG has to expect updates to the document on a regular basis. The maintenance of the SAT Doc 002 will be done in close cooperation with the SAT DMO. IATA expressed their strong support for the publication of this document and thanked all PT members for their outstanding work and contributions.

4.3 The meeting was informed that a virtual launch meeting for the SAT DMO has been planned for 01 March 2024

5. Coordination between SAT IMG and SAT SOG

5.1 The Group was informed about the outcome of the Second Meeting of the South Atlantic Safety Oversight Group (SAT SOG/02) which was held in virtual mode from 20 to 22 November 2024. The Summary of the meeting was presented together with the SOG action items and SOG decisions. Several SAT SOG Project Teams were established:

- a) SAT RMAs' HARMONIZATION/STANDARDIZATION PROJECT TEAM – SAT RMA H/S PT.- aimed to conduct a feasibility study consisting of a detailed analysis of the current state of data collection, processing, and dissemination among the three concerned RMAs (ARMA, CARSAMMA & SATMA), identify differences in the current processes employed by SAT RMAs and propose solutions to harmonize and standardize procedures where needed. The PT is led by the United States of America. Deliverables of the PT will be presented to the SAT SOG/02 meeting.

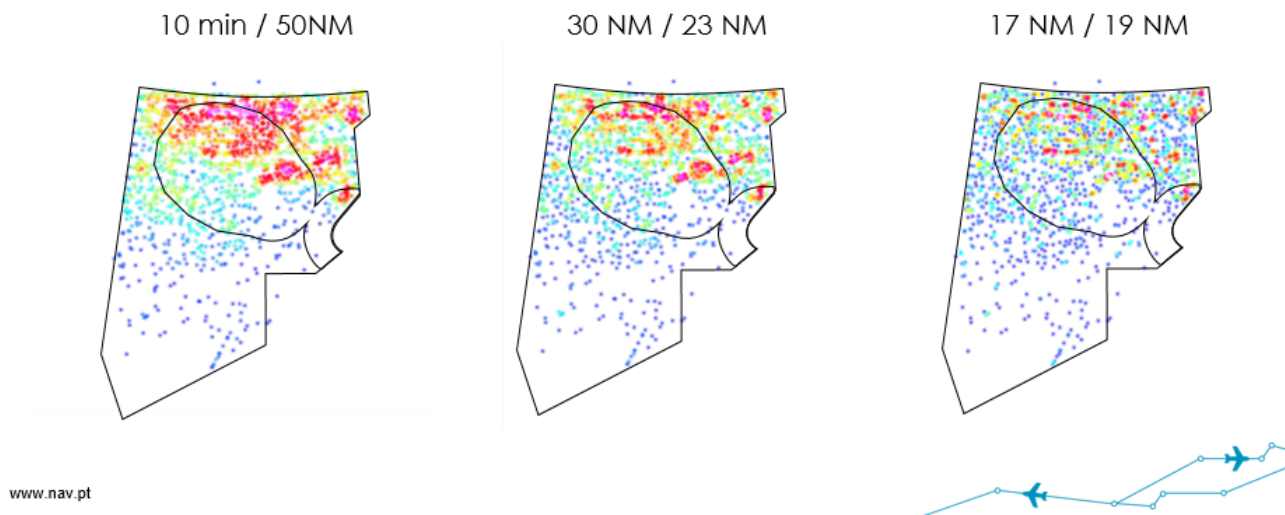
- b) SAT ANNUAL SAFETY REPORT (SAT ASR) PROJECT TEAM – SAT ASR PT.- appointed to improve aviation safety in the South Atlantic airspace by developing an annual safety report that will analyze safety data, identify trends, propose enhancements, and mitigate risks. The PT led by Senegal, is already organized with nominated SMEs. Starting activities are programmed for SAT SOG/02.
- c) SAT OCEANIC ERRORS SAFETY BULLETIN PROJECT TEAM (SAT OESB) PROJECT TEAM - SAT OESB PT.- Aimed to establish a Bulletin, based on the NAT OESB to provide guidance and best practices to operators in the SAT region to avoid errors and promote regional safety management. The PT is led by Brazil and is already organized with nominated SMEs. Starting activities are programmed for SAT SOG/02.

5.2 The Group noted that the SAT SOG/03 meeting will be organised in Sao Paulo, Brazil from 15 to 19 April 2024.

6. Any other business

6.1 All IMG participants were invited to visit the Santa Maria Oceanic Area Control Center and NAV Portugal prepared a simulation for the EUR/SAM corridor (with PBCS and new PANS ATM separation standards) to showcase the developments in the NAT interface area. NAV Portugal also explained the increased efficiency with the ADS-B surveillance in the entire airspace. The following picture shows the traffic proximity and potential conflicts with reference to the old and the new separations:

Heatmap snapshots of traffic at 1330Z, aggregate of August 2023



6.a) Future work programme and follow-up actions

6.2 The list of all SAT IMG Decisions, as attached in Appendix E and the Action Item list as attached in Appendix D were endorsed by the SAT IMG/03.

6.3 All SAT IMG meeting documentation will be made available on the ICAO Secure Portal <https://portallogin.icao.int/>, Group name **SATIMG** (all caps, no space). IATA pointed out that it is essential to respect the deadlines for submission of the SAT IMG working paper/information papers as they might require internal coordination with other stakeholders in preparation for discussion at the IMG meeting.

6.4 The Chairman thanked all SAT IMG participants for the timely submission of the working papers, the very active discussions and the continuous support to the harmonisation and implementation activities.

6.b) Next meetings

6.5 The Group agreed that the next meeting (SAT IMG/04) would be organised, thanks to the kind invitation from ASECNA, in Abidjan Cote D'Ivoire from 7 to 11 October 2024. The SAT IMG/05 meeting will be jointly organised with a SAT SOG meeting in April 2025 (7 to 11 April 2025) at the ICAO SAM Office in Lima, Peru.

6.6 In the closing remarks, all SAT IMG participants expressed their strong support in conducting the SAT IMG meetings as face-to-face meetings. The agenda driven discussions and the possibility to have side meetings are more productive and strongly supported the achievement of the meeting objectives as well as the successful outcome of the SAT IMG.

6.c) Report to the SAT SG/02

6.7 The report to SAT SG/02 will be prepared after the SAT IMG/04 meeting as the SAT SG/02 will take place in December 2024.



~~~~~



**APPENDIX A — LIST OF PARTICIPANTS**

*(paragraph 0.3 refers)*

**ANGOLA**

José AGOSTINHO GONÇALVES  
António BORGES PEREIRA  
Manuel DIONISIO LOPES  
Francisco José DOMBALA  
Celso LUDGERO AMARO GASPAR  
Joaquim Marcial SAWENDO

**BRAZIL**

Jose PEREIRA DOS SANTOS NETO  
Marcos VINICIUS DE OLIVEIRA

**CAPE VERDE**

Helder BRITO  
Micael DELGADO LIMA MORENO  
Margarett MARQUES GRACA  
Arlindo NEVES  
Adilson VAZ

**FRANCE**

Michel MORETTI

**GHANA**

Daniel DOE  
Daniel Ansah LARBI

**PORTUGAL (SAT IMG Chair)**

Luis TOJAIS

**SENEGAL**

Gallo BA  
Abibou MBAYE  
Papa Dibocor SENE

**SOUTH AFRICA**

Martin COOPER

**SPAIN**

Alexander DORTA FUMERO  
Eduardo ORTUNO VILLAPALOS  
Mikel PINEIRO ZABALETA  
Mauricio RUIZ ROLLE

**UNITED STATES**

Holly KING  
Shawn KNIGHT  
Steven PINKERTON

**ASECNA**

Mi Fernande Jocelyne ABY épse DJIA  
Kpatcha Essozimna AWISSOBA  
Mamour DIOUF  
Arturo Nieto ESONO MBUY  
Yao Paulin KOUASSI  
Moustapha THIOUNE  
Cosse WADE  
Kisito ZABSONRE

**IATA**

Chris MICHALAKIS

**ICAO EURNAT**

Sven HALLE  
Leyla SULEYMANOVA (secretarial support)

**ICAO REGIONAL OFFICERS**

Serge TCHANDA , ICAO WACAF (remote)  
Fernando HERMOZA, ICAO SAM (remote)  
Francisco ALMEIDA ICAO SAM (remote)

## APPENDIX B — MEETING DOCUMENTATION

*(paragraph 0.3 refers)*

| <b>WP</b> | <b>A.I.</b> | <b>Title</b>                                                                                             | <b>By</b>           |
|-----------|-------------|----------------------------------------------------------------------------------------------------------|---------------------|
| WP01      | 1           | Draft Agenda                                                                                             | Secretariat         |
| WP02      | 1           | SAT IMG action item list and SAT IMG decisions                                                           | Secretariat         |
| WP03      | 4           | SAT DOC 002 (SAT CONTINGENCY PLAN)                                                                       | Secretariat         |
| WP04      | 1           | First meeting of the SAT Steering Group (SAT SG/01)                                                      | Secretariat         |
| WP05      | 2e          | Creation of a SAT Seamless Airspace Chart                                                                | USA and Secretariat |
| WP06      | 2a          | Traffic figures in the EUR/SAM corridor 2023                                                             | SATMA               |
| WP07      | 2a          | Forecast for traffic in the EURSAM corridor until 2025                                                   | SATMA               |
| WP08      | 2a          | State Report 2023 Spain - Canarias ACC                                                                   | Spain               |
| WP09      | 3           | Flight level allocation in canaries FIR/UIR                                                              | Spain               |
| WP10      | 3a          | Update on the EUR-SAM corridor improvements                                                              | ESCIT PT            |
| WP11      | 3           | Flight level occupancy and airspace optimization in Atlántico Center                                     | Brazil              |
| WP12      | 2           | Implementation Status of PBCS and AIDC in Brazil                                                         | Brazil              |
| WP13      | 2           | Data Link Communication Performance in Brazilian Oceanic Airspace                                        | Brazil              |
| WP14      | 2b          | Impact on operators concerning performance based communication and surveillance erroneous non-compliance | IATA                |
| WP15      | 2b          | IATA South Atlantic Operational Strategy                                                                 | IATA                |
| WP16      | 2a          | State report                                                                                             | Portugal            |
| WP17      | 2a          | State report                                                                                             | Ghana               |
| WP18      | 2a          | State report                                                                                             | Cabo Verde          |
| WP19      | 3c          | Analysis for the change of EUR-SAM AWY UN-866 into a bi-directional route                                | ESCIT PT            |
| WP20      | 2a          | State Report                                                                                             | USA                 |
| WP21      | 2a          | State Report                                                                                             | South Africa        |
| WP22      | 2c          | AIDC implementation in South Africa                                                                      | South Africa        |
| WP23      | 2d          | PBCS implementation in South Africa                                                                      | South Africa        |
| WP24      | 2a          | State Report Dakar FIR                                                                                   | ASECNA              |
| WP25      | 3           | Flight level occupancy and airspace optimization in Dakar FIR                                            | ASECNA              |
| WP26      | 3           | Statistics and scenarios beyond the UN866 bidirectionality                                               | Brazil              |
| WP27      | 2e          | Analysis for a change of ADS-C/CPDLC tetragram connection                                                | ESCIT PT            |
| WP28      | 2           | Emergency phases notification process harmonization within the SAT Region                                | ASECNA              |
| WP29      | 2a          | State Report                                                                                             | Angola              |
| <b>IP</b> | <b>AI</b>   | <b>Title</b>                                                                                             | <b>Presented by</b> |
| IP01      | 1           | Meeting schedule                                                                                         | Secretariat         |
| IP02      | 1           | List of meeting documents                                                                                | Secretariat         |
| IP03      | 1           | ICAO update                                                                                              | Secretariat         |
| IP04      | 1           | NAT IMG63 summary of discussions                                                                         | Secretariat         |
| IP05      | 1e          | Datalink frequency band allocation                                                                       | ENAIRES Spain       |
| IP06      | 2           | Update on the SAT PBCS IS Project Team                                                                   | Secretariat         |
| IP07      | 5           | SAT SOG/02 meeting                                                                                       | Secretariat         |
|           |             |                                                                                                          |                     |
|           |             |                                                                                                          |                     |

**APPENDIX C — LIST OF APPENDICES**

| <b><i>Attached:</i></b> |                                             |          |               |
|-------------------------|---------------------------------------------|----------|---------------|
| Appendix A              | SAT IMG/03 List of Participants             | Para 0.3 |               |
| Appendix B              | List of Documents                           | Para 0.3 |               |
| Appendix C              | List of Appendices                          | Para 6.2 |               |
| Appendix D              | SAT IMG/03 Action Items List                | Para 6.2 |               |
| Appendix E              | SAT IMG/03 Decisions                        | Para 6.2 |               |
| Appendix F              | South Atlantic Seamless Airspace Data Table | Para 6.2 | separate file |

---



---

## APPENDIX D — ACTION ITEM LIST

(paragraph 6.2 refers)

| ID #  | ACTION                                                                                                                                                                                                                  | REMARKS                              | WHO                          | WHEN                   |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------------------|------------------------|
| R-01  | Provide State/ANSP Reports including traffic figures and information on implementation activities.                                                                                                                      | SAT IMG/1 SoD,                       | All SAT IMG members          | Every meeting          |
| R-02  | In accordance with the detailed AIDC implementation activity plan for the SAT Region (Appendix X) present updates on AIDC implementation to the SAT IMG                                                                 | SAT IMG/1 SoD, para. 2.3             | Secretariat SAT IMG members  | Every meeting          |
| 01-01 | <del>Share the AFI Region Free Route Airspace FRA implementation roadmap with SAT IMG members</del>                                                                                                                     | <del>SAT IMG/1 SoD, para. 2.3</del>  | <del>Secretariat</del>       | <del>SAT IMG/02</del>  |
| 01-02 | Review the SAT Contingency Plan (inclusion of 20 min LONG separation minima and use of FL 400) in the framework of the SAT CPR Project Team report back to the next meeting                                             | SAT IMG/1 SoD, Para. 2.12            | SAT CPR PT                   | SAT IMG/03             |
| 01-03 | <del>Share the deliverables/guidelines in support of AIDC implementation between 2 ACCs/OACs in the SAT Region with SAT IMG members</del>                                                                               | <del>SAT IMG/1 SoD, Para. 4.2</del>  | <del>Secretariat</del>       | <del>31 DEC 2022</del> |
| 01-04 | Report back on the technical solutions which support the implementation of AMHS and present updates on completed implementation                                                                                         | SAT IMG/1 SoD, Para. 2.12            | Secretariat SAT IMG members  | SAT IMG/04             |
| 01-05 | <del>Update on implementation timelines and coverage of ground and space based ADS-B within the EUR-SAM corridor</del>                                                                                                  | <del>SAT IMG/1 SoD, Para. 2.12</del> | <del>ESCIT members</del>     | <del>ESCIT/03</del>    |
| 01-06 | <del>Submit the ESCIT/03 meeting report for discussion and review to the next SAT IMG meeting</del>                                                                                                                     | <del>SAT IMG/1 SoD, Para. 2.12</del> | <del>ESCIT chairperson</del> | <del>SAT IMG/02</del>  |
| 01-07 | Following the assessment of the current implementation activities, prepare a SAT Service Development Roadmap for the coordinated harmonised implementation of operational improvements from 2024 onwards                | SAT IMG/1 SoD, Para. 2.12            | Secretariat SAT IMG members  | SAT IMG/04             |
| 01-08 | <del>Submit all material from the individual AIPs on the airspace dimensions, waypoints and procedures of the AORRA phase 4 area to the Secretariat. If available, send also any information on the AORRA phase 5</del> | <del>SAT IMG/1 SoD, Para. 2.12</del> | <del>SAT IMG members</del>   | <del>31 DEC 2022</del> |

| ID #                  | ACTION                                                                                                                                                                                                                                                                      | REMARKS                  | WHO                                        | WHEN                                  |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------------------------|---------------------------------------|
| 02-01<br>SG           | Based on the SAT Area description in the Draft SAT Doc002, develop a map of the SAT Area (including EUR/SAM corridor and AORRA)<br>The delineation of the SAT area be coordinated between SAT IMG and SAT SOG relevant project teams                                        | SAT IMG/2 SoD<br>SAT SG  | Secretariat<br>SAT IMG members             | 31 OCT 2024                           |
| 02-02                 | Request the AIM/SWIM Team of the EUR Region to share best practices and guidance on the AMHS implementation                                                                                                                                                                 | SAT IMG/2 SoD            | Secretariat                                | SAT IMG/04                            |
| <del>02-03</del>      | <del>SATMA to maintain the data collection and traffic figure analysis for the EUR/SAM corridor, but to exclude the not planned RFL tables in future reports</del>                                                                                                          | <del>SAT IMG/2 SoD</del> | <del>SATMA</del>                           | <del>SAT IMG/03</del>                 |
| 02-04<br>move<br>R-03 | SATMA, upon request from SAT members, to create specific use case scenarios which would support implementation initiatives in the SAT area                                                                                                                                  | SAT IMG/2 SoD            | SAT IMG members                            | <del>SAT IMG/03</del><br>if requested |
| <del>02-05</del>      | <del>Invite States/ANSPs to include any ATM coordination or interoperability issues into the State reports for discussion at the SAT IMG</del>                                                                                                                              | <del>SAT IMG/2 SoD</del> | <del>SAT IMG members</del>                 | <del>SAT IMG/03</del>                 |
| 02-06                 | Collect all the information from State Reports & WPs and develop consolidated AMHS and AIDC implementation status tables                                                                                                                                                    | SAT IMG/2 SoD            | Secretariat                                | SAT IMG/04                            |
| <del>02-07</del>      | <del>SAT members to contact their national authorities on the proposed frequency allocation aspects and to support the AMS(R)S-B1 method (including data link functionality) for agenda item 1.7 at the next ITU-WRC 23</del>                                               | <del>SAT IMG/2 SoD</del> | <del>SAT IMG members</del>                 | <del>3Q 2023</del>                    |
| <del>02-08</del>      | <del>Cabo Verde, Spain and Brazil to collect Flight Level utilization data (e.g. a monthly traffic data sample for 2<sup>nd</sup> half in 2023) at the entry into the EUR/SAM corridor (requested FL vs assigned FL, not FL from FPL) and present this to the SAT IMG</del> | <del>SAT IMG/2 SoD</del> | <del>Brazil<br/>Cabo Verde<br/>Spain</del> | <del>SAT IMG/03</del>                 |
| <del>02-09</del>      | <del>Contact Argentina and Uruguay for inclusion of their contingency arrangements into SAT Doc 002</del>                                                                                                                                                                   | <del>SAT IMG/2 SoD</del> | <del>Secretariat</del>                     | <del>SAT IMG/03</del>                 |

| ID #  | ACTION                                                                                                                                                                            | REMARKS                                                         | WHO                                     | WHEN                                                     |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------|----------------------------------------------------------|
| SG    | Conduct coordination activities with other regions before the implementation of the final version of the SAT contingency plan Doc002                                              | SAT SG/01-01                                                    | Secretariat                             | January 2024                                             |
| SG    | Establish a teamwork approach to address issues of ATM interoperability in the SAT area                                                                                           | SAT SG/01-02                                                    | SAT IMG members                         | SAT IMG/03<br>Every meeting as part of State ANSP report |
| R-04  | Collect data on aeronautical mobile services frequency allocation and report to the SAT IMG at each of its sessions                                                               | SAT SG/01-03R                                                   | SAT IMG members                         | Every meeting as part of State ANSP report               |
| 03-01 | In response to WACAF State Letter SR 3/80-0043SR provide the requested contact details for the South Atlantic Group                                                               | SAT IMG/3 SoD<br>SAT SG                                         | SAT IMG members                         | 29 FEB 2024                                              |
| 03-02 | Based on the report from SATMA, verify the correct flight plan filing in F10 and F18 for RCP240 and RCP180 with aircraft operators in the EUR/SAM corridor                        | SAT IMG/3 SoD                                                   | SATMA<br>IATAs                          | SAT IMG/04                                               |
| R-05  | Spain /SATMA presents traffic figures for the EUR/SAM corridor with traffic values from the past year (Y-1), the actual/current year (Y) and the next year (Y+1)                  | SAT IMG/3 SoD                                                   | SATMA                                   | Every meeting, with DDR data                             |
| 03-03 | Following the approval by the SAT IMG, engage with the SAT SOG to ensure that the post implementation monitoring task (E-1) will include the involved RMAs                        | SAT IMG/3 SoD<br>PBCS IS PT<br>outcome and written consultation | PBCS IS PT<br>Secretariat<br>SAT SOG    | 30 June 2024                                             |
| 03-04 | ASECNA to make a case study on the high numbers of aircraft in the alert phases and reach out to neighboring FIRs if they have similar issues in remote/lower areas of their FIRs | SAT IMG/3 SoD                                                   | ASECNA<br>SAT IMG members               | SAT IMG/04                                               |
| 03-05 | With all LoAs on the MNT being signed by the involved ANSPs, notify the ICAO Secretariat of the actual implementation date                                                        | SAT IMG/3 SoD                                                   | ASECNA<br>Spain<br>Cabo Verde<br>Brazil | SAT IMG/04                                               |
| 03-06 | SAT ANSPs are invited to provide data on the flight level allocation for flights within the EUR/SAM corridor                                                                      | SAT IMG/3 SoD                                                   | SAT IMG members                         | SAT IMG/04                                               |
|       |                                                                                                                                                                                   |                                                                 |                                         |                                                          |

## APPENDIX E — SAT IMG/02 DECISIONS

| Reference/Title                                                                                                                 | Description                                                                                                                                                                                                                                                                                   | Comments                                                                                                                                                                                             | Status                                                         |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| SAT IMG/01-1<br>Inclusion of RCP240 and RSP 180 values into the aircraft equipment monitoring tables                            | That, Spain amends the aircraft equipment monitoring tables for the EUR/SAM corridor so that they include the values for RCP240 and RSP 180.                                                                                                                                                  | To be included into the next report for the SAT IMG/02 meeting                                                                                                                                       | On-going<br><u>Completed</u>                                   |
| SAT IMG/01-2<br>Expand the time horizon for traffic number monitoring in the EUR/SAM corridor                                   | That, Spain expands the time horizon for traffic figures within the EUR/SAM corridor so that the range includes traffic figure from the past year (Y-1), the actual/current year (Y) and the next year (Y+1)                                                                                  | To be included into the next report for the SAT IMG/03 meeting                                                                                                                                       | On-going<br><u>Completed</u>                                   |
| SAT IMG/01-3<br>Submit survey on PBCS implementation, analyze the results obtained, and present them to the next meeting        | That:<br>a) — the SAT IMG members are invited to complete a survey (similar to the one from ARMA) in order to determine the readiness for PBCS Implementation;<br>b) — the ICAO Secretariat analyse the results of the survey; and<br>c) — report the results to the next SAT IMG/02 meeting. | Survey launch before end 2022<br>3-months comments period<br>Share the results with the 3 SAT RMAs<br>invite remaining States to complete the survey and prepare a WP for SAT IMG/03                 | On-going<br><u>Completed</u><br>with PBCS IS PT                |
| SAT IMG/01-4<br>Implement solutions for the improvement of flight efficiency and flight level occupancy in the EUR-SAM corridor | That, SAT ANSPs are invited to provide the solutions to mitigate flight level limitations and improve flight level occupancy for existing and future flights within the EUR/SAM corridor                                                                                                      | State Letter to be sent in Q3-2023<br>Follow-up at SAT IMG/03                                                                                                                                        | On-going<br>changed to<br>Action Item                          |
| SAT IMG/01-5<br>Organisation of ESCIT/03 meeting in Q1/2023                                                                     | That, in accordance with the SAT IMG ToRs, the ESCIT/03 meeting will be organized as early as possible in 2023 with the main priority to assess and improve the air navigation system capacity and efficiency within the EUR/SAM corridor.                                                    | State Letter invitation to be sent<br>ESCIT report to be presented at SAT IMG/02                                                                                                                     | On-going<br><u>Completed</u>                                   |
| SAT IMG/01-6<br>Establishment of a SAT Contingency Plan Review Project Team                                                     | That, a Project Team be established in order to review and propose amendments to the ATM Operational Contingency Plan for the South Atlantic, to verify the accuracy of the information particular to each SAT FIR, and to publish the SAT Contingency Plan as a new SAT-DOC-002.             | State Letter for nominations to be sent<br>Series of virtual meetings<br>Participation in the AFI workshop<br>PT report to be presented at SAT IMG/02<br>Final version to be submitted to SAT IMG/03 | On-going<br><u>Completed</u><br>regular updates as part of DMO |



| Reference/Title         | Description                                                                                                                                                                                                                                                                                                                                                                                     | Comments                                                                                                                                                                                                                                                                         | Status                                                  |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| SAT IMG/02-1            | That, a Project Team be established in order to develop a combined implementation plan, task list and timelines/action items, which will support the harmonized implementation of PBCS and the use of the related PANS-ATM separation minima in the South Atlantic.                                                                                                                             | State Letter for nominations to be sent<br>Series of virtual meetings<br>PT report to be presented at SAT IMG/03<br><a href="#">PT will finalize implementation plan until June 2024</a><br><a href="#">Written SAT IMG consultation</a><br><a href="#">Update at SAT IMG/04</a> | On-going                                                |
| <del>SAT IMG/02-2</del> | <del>That all ANSPs in the EUR/SAM corridor study the proposal from Cape Verde to change ATS Route UN866 into a bi-directional Route and consider also the effects for traffic flows crossing the EUR/SAM corridor.</del>                                                                                                                                                                       | <del>Either as part of ESCIT/04 or as a series of individual meetings<br/>Study report to be presented at SAT IMG/03</del>                                                                                                                                                       | <del>New Completed</del>                                |
| <del>SAT IMG/02-3</del> | <del>That all ANSPs in the EUR/SAM corridor amend and update their individual Letter of Agreements so that the application of the Mach Number Technique in the EUR/SAM corridor can be amended accordingly.</del>                                                                                                                                                                               | <del>Update of all LoAs before 30 September 2023<br/>Information on signed LoAs should be sent to the Secretariat<br/>Report back to SAT IMG/03</del>                                                                                                                            | <del>New Completed and changed to Action Item</del>     |
| <del>SAT IMG/02-4</del> | <del>That, in response to the SAT SOG Regional Monitoring Agency Harmonization and Standardization Project Team report, the Secretariat will share the SAT area geographical definition (as published in the States AIPs) with the PT and discuss the delimitation aspects. The SAT IMG has also decided that July should be the month for the collection of optimal traffic sample data.</del> | <del>Share the data from SAT Doc 002 with SAT SOG RMA H/S PT<br/>Participate at the next PT meeting</del>                                                                                                                                                                        | <del>New SAT SG action until 31 OCT 24</del>            |
| <del>SAT IMG/02-5</del> | <del>That, following the request from IATA, the SAT IMG proposes an amendment for the establishment of a SAT Document Management Office (DMO) to SAT Doc 001 for consideration/approval by the SAT SG</del>                                                                                                                                                                                     | <del>Extract the SAT DMO ToRs from the NAT Doc 001<br/>Amend the ToRs with coordination aspects between NAT and SAT DMOs<br/>Follow up at SAT IMG/03</del>                                                                                                                       | <del>New Completed DMO kick off meeting 01 Mar 24</del> |
| <del>SAT IMG/02-6</del> | <del>That the SAT IMG agenda has to be expanded with a dedicated agenda item that will address aspects and/or working papers which need to be coordinated between the SAT IMG and SAT SOG</del>                                                                                                                                                                                                 | <del>Prepare revised agenda for SAT IMG/03</del>                                                                                                                                                                                                                                 | <del>New Completed</del>                                |

| Reference/Title | Description                                                                                                                                                                                                                                                                                                                                                                                                                           | Comments                                                                                                                                                                                                              | Status |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| SAT IMG/03-1    | That, in support of the various AIDC implementation activities, a technical expert meeting (virtual) be organized in May 2024 with participation of SMEs from the ATM System manufactures to discuss interoperability issues which currently prevent the successful implementation of AIDC between the involved ACCs/OACCs                                                                                                            | Invite all SMEs for a virtual meeting in May 2024<br>Develop an AIDC follow up action plan<br>Present updates at SAT IMG/04                                                                                           | New    |
| SAT IMG/03-2    | That the SAT IMG invites all identified ANSPs to collaboratively coordinate the conduct of AIDC pre-implementation assessments and to determine/develop a detailed AIDC implementation roadmap for the next SAT IMG/04 meeting                                                                                                                                                                                                        | Develop an AIDC implementation roadmap for the involved FIRs<br>Present results at SAT IMG/04                                                                                                                         | New    |
| SAT IMG/03-3    | That the SAT IMG supports the creation of a seamless airspace data table containing information on capabilities of the oceanic flight information regions (FIR)s or portions of oceanic airspace for all States within the South Atlantic area                                                                                                                                                                                        | Reference material for the SAT Service Development Roadmap<br>Present a new version of the xls file at SAT IMG/04                                                                                                     | New    |
| SAT IMG/03-4    | That the SAT IMG take the appropriate actions to include relevant elements from the IATA SAT operational strategy into the SAT service development roadmap                                                                                                                                                                                                                                                                            | Reference material for the SAT Service Development Roadmap<br>Present an update at SAT IMG/04                                                                                                                         | New    |
| SAT IMG/03-5    | That, in coordination with the SAT DMO, a SAT OPS Bulletin should be developed to address the CPDLC logon issues for flights especially in the Dakar –Abidjan-Accra FIRs as a mitigation measure for the presented safety aspects                                                                                                                                                                                                     | Series of virtual expert meetings with SMEs from ANSPs and IATA<br>Drafting of a SAT OPS Bulletin<br>Coordination with SAT SOG ,written SAT IMG approval process<br>Publication of SAT OPS Bulletin before SAT IMG/04 | New    |
| SAT IMG/03-6    | That the SAT IMG endorses the change of the ATS Route UN866 to a bi-directional ATS route and invite all members from the EUR/SAM corridor, within the framework of the ESCIT, to finalize the implementation activities (e.g. additional simulations, required safety assessments, ATCO training, airspace users awareness) and change their national AIPs for a common AIRAC implementation date before the end of 2024 accordingly | Finalize implementation activities within a series of ESCIT meetings<br>Present updates at SAT IMG/04                                                                                                                 | New    |
| SAT IMG/03-7    | That the SAT IMG endorses the SAT Contingency Plan (SAT Doc 002, 1st edition, February 2024)                                                                                                                                                                                                                                                                                                                                          | Publication of SAT Doc 002 via ICAO SL<br>Promulgation of SAT Doc 002 by all SAT members<br>Coordinate with SAT DMO the next version of SAT Doc 002 and present it at SAT IMG/04 for approval                         | New    |

**-END-**