



ICAO

**INTERNATIONAL CIVIL AVIATION ORGANIZATION
WESTERN AND CENTRAL AFRICAN OFFICE**

**REPORT OF THE TWENTY-THIRD MEETING ON THE
IMPROVEMENT OF AIR TRAFFIC SERVICES OVER THE
SOUTH ATLANTIC
(SAT/23)**

(Durban, South Africa 06-08 June 2018)

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PART I: HISTORY OF THE MEETING

1 Place and duration of the meeting

The Twenty Third Informal Coordination Meeting on the improvement of air traffic services over the South Atlantic (**SAT/23**) was held at the **Southern Sun Maharani** Hotel in Durban, South Africa, from **06 to 08 June 2018** back to back with the SAT/FIT/13 meeting held in parallel with the CNMC/8 meeting from **04 to 05 June 2018**, at the kind invitation of the of Air Traffic and Navigation Services (**ATNS**) of South Africa.

2. Opening ceremony

2.1 The meeting was officially opened on the 04th June 2017 by Mrs. **Tshitshi Phewa, Acting Deputy Director General** responsible for Civil Aviation, representative of the Department of Transport in South Africa. **Mrs. Phewa** firstly welcomed the participants to the three meetings (**CNMC/8, SATFIT/13 and SAT/23**) being held back to back and expressed the great honor for South Africa to be requested to host these important meetings.

2.2 Then, she reminded to the attention of the meeting the importance of the agenda items planned to be discussed and expressed her confidence to the capacity of 60 industry delegates comprising of Air Navigation Service Providers (**ANSPs**), industry regulators and airlines from the global diaspora consisting of Europe, Middle East, South America and Africa to share knowledge and ideas, and work towards ensuring interoperability and harmonization of operations to enhance our aviation industry and bring an Air Traffic Systems synergy to the region. She wished to all participant a pleasant stay in Durban and declared the meeting open.

3. Organization, Secretariat and attendance

3.1 Mr. **Simon Zwane**, Senior Manager: ATM Research and Planning, ATNS was unanimously elected as Chairperson of the SAT meeting. He therefore chaired and moderated its plenary sessions.

3.2 MM. **François-Xavier Salambanga**, Regional Officer CNS ICAO WACAF Office, **Albert Aidoo Taylor**, Regional Officer ATM & SAR, ICAO WACAF Office, served as the Secretary of the meeting and accordingly prepared and aligned the Working and Information papers.

They were assisted by MM. **Fernando Hermoza**, Regional Officer ICAO ATM SAM Office, **Onofrio Smarrelli**, CNS Consultant ICAO SAM Office, **Harvey Gabriel Lekamisy** Regional Officer CNS ICAO ESAF Office and **Hall Sven** Regional Officer ATM ICAO EUR/NAT Office.

3.3 The meeting was attended by Fifty-Five (**55**) participants from Ten (**10**) States of the ICAO AFI, EUR, NACC and SAM regions namely, **Angola, Cabo Verde, Côte d'Ivoire, Ghana, Portugal, Senegal, South Africa, Spain, Trinidad de Tobago, United States of America** including their Air Navigation Service providers (**ASECNA, ASA, ENAIRE, ENANA, NAV Control, FAA**) and **four (04)** representatives of the aeronautical industry (**AIREON, IATA, INEO, SITA**).

3.4 The detailed list of participants and their contact addresses is at **Appendix A** to this report.

4. Working languages

The meeting was conducted in the English language and the documentation was presented in this language.

5. Agenda of the meeting

The meeting adopted the following agenda and discussed its items when appropriate, within the ATM Working Group, the CNS Working Group or during the plenary sessions.

Agenda Item 1: *Election of the chairperson and adoption of the agenda (Plenary session)*

Agenda Item 2: *Air traffic management (ATM) (by the ATM Working Group)*

1. Status of implementation of SAT/22 Conclusions pertaining to the ATM field
2. Review of SATMA report on Traffic Statistics, Safety procedures and operational procedures in the EUR/SAM corridor.
3. EUR SAM Corridor Risk Assessment and LHD Monitoring
4. EUR/SAM Corridor Airspace Concept Project
5. Follow up on operations in the AORRA airspace.
 - AORRA post Implementation and PBCS application in the entire SAT area
6. ATM Contingency Plan for the SAT Area
7. Any other business

Agenda Item 3: *Communications, Navigation and Surveillance (CNS) (by the CNS Working Group)*

1. Status of implementation of SAT/22 Conclusions pertaining to the CNS field
2. Review of the performance of SAT CNS Infrastructure and systems
3. Improvement of the CNS systems in the SAT Region (AMHS, AIDC, ADS-C&B)
4. Interconnection and interoperability of CNS/ATM systems
5. Any other business

Agenda Item 4: *Communications, navigation and surveillance / Air traffic management (CNS/ATM) Systems (Plenary session)*

1. Endorsement of the conclusions/decisions of the thirteen meeting of the SAT/ FANS 1/A Interoperability Team (SAT/FIT/13).

- 2. Endorsement of the conclusions/decisions of CNMC/8 meeting
- 3 Emerging technologies

Agenda Item 5: *New structure, Working methodology, Terms of Reference and Future work programme of the SAT Group (Plenary session)*

Agenda Item 6: *Adoption of the conclusions/decisions of the SAT/23 meeting (Plenary session)*

Agenda Item 7: *Any other business (Plenary session)*

6. Conclusions and Decisions of the meeting

The meeting adopted Eleven (11) Conclusions and Ten (10) Decisions listed as following:

Agenda Item 2: Air traffic management (ATM)

Conclusion SAT/23/01: Assessment of air traffic services provision, determination of causes to inefficient operations and implementation of mitigation action in the EUR-SAM Corridor, and proposal of performance indicators to improve flight efficiency in the SAT area.	
<p>What:</p> <p>That,</p> <p>a) individual State/ANSP and RMA's conduct a comprehensive assessment on the provision of air traffic services along the EUR SAM corridor to determine the likely causes to inefficient operations, plan and implement mitigation measures, and propose appropriate performance indicators to assess the effectiveness of implemented solutions; and</p> <p>b) The SAT Group conduct studies on the key operational issues along the SAT area in order to establish appropriate performance indicators for consideration, adoption and application in the SAT area.</p>	<p>Expected impact:</p> <p><input type="checkbox"/> Political / Global</p> <p><input checked="" type="checkbox"/> Inter-regional</p> <p><input checked="" type="checkbox"/> Economic</p> <p><input type="checkbox"/> Environmental</p> <p><input checked="" type="checkbox"/> Operational/Technical</p>
<p>Why?</p> <p>SATMA statistics revealed 20-30% of flights did not receive clearance to fly at the requested flight levels, with a variance of 2000-4000ft, due to capacity constraints. Take action to improve flight efficiency along the and the whole SAT area.</p>	
<p>When: SAT 24</p>	<p>Status: Adopted by SAT/23</p>
<p>Who: <input type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: ANSP, IATA, Airlines, ESCIT, RMA's</p>	

Decision SAT/23/02: Available solutions to improve flight efficiency and Flight Level Occupancy in the EUR-SAM Corridor.

<p>What:</p> <p>That, the EUR/SAM Corridor Airspace Implementation Team (ESCIT) addresses inefficient operations in the corridor and analyse causes to implement corrective actions, considering the deployment of available solutions such as ATFM, AIDC, review of ATS operational procedures, etc, and</p> <p>ESCIT shall conduct a comprehensive operational assessment of flights utilizing the EUR/SAM corridor to identify flight level limitations regarding the requested flight levels and develop appropriate mitigation measures. (Reference SAT23 Report)</p>	<p>Expected impact:</p> <p><input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input checked="" type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Operational/Technical</p>
<p>Why:</p> <p>Take action to improve:</p> <p>a) flight efficiency along the EUR/SAM corridor; and b) flight level allocation performance.</p>	
<p>When: 30 September 2018</p>	<p>Status: Adopted by SAT/23</p>
<p>Who: <input type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: EUR/SAM corridor airspace implementation team (ESCIT)</p>	

Conclusion SAT/23/03: LHD Monitoring Team to address increases in the LHD and Risk levels

<p>What:</p> <p>That, The LHD Monitoring Team shall conduct quarterly teleconferences to address challenges which are identified as contributing to increases in the LHD and Risk levels.</p>	<p>Expected impact:</p> <p><input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input checked="" type="checkbox"/> Economic <input checked="" type="checkbox"/> Environmental <input checked="" type="checkbox"/> Operational/Technical</p>
<p>Why:</p> <p>It was noted that lack of coordination of traffic by ATS units contributed to incidents which impacts on the Vertical Risk in the collision risk model.</p>	
<p>When: October 2018</p>	<p>Status: Adopted by SAT/23</p>
<p>Who: <input type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: RMAs, ANSPs, IATA, stakeholders in EUR – SAM corridor</p>	

Conclusion SAT/23/04: Provision of LHD and Risk assessment by other RMAs in SAT Area

What:		Expected impact:	
That, Other RMAs in the SAT area, namely, ARMA, CARSAMA, NAT, etc. be urged to provide the SAT Group and SATMA with their report on LHD and Risk Assessment.		<input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Operational/Technical	
Why: In order for the SAT Group and SATMA to have a better picture of safety in the SAT area, regarding non-RVSM approved aircraft in RVSM airspace			
When: July 2018		Status: Adopted by SAT/23	
Who: <input type="checkbox"/> Coordinators <input type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: Concerned RMAs			

Decision SAT/23/05: Leader nominated to ESCIT			
What:		Expected impact:	
That, Mr. Eduardo Ortuño Villapalos from ENAIRE, Spain, is nominated to lead the ESCIT in order to continue with the implementation of the EUR SAM Corridor Airspace Concept.		<input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Operational/Technical	
Why: The EUR SAM Corridor Airspace Implementation Team (ESCIT) needs to continue the work already started. Mr. Simoes Nuno of NAV Portugal was stepping down as the Team Lead.			
When: SAT/23		Status: Adopted by SAT/23	
Who: <input type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Others:			

Conclusion SAT/23/06: Implementation of reduced separation minima in the Region via PBCS			
What:		Expected impact:	
That, All SAT Region States will conduct an analysis to determine needs and enhancements necessary to implement PBCS in the SAT Region		<input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Operational/Technical	

<p>Identify appropriate airspace for implementation of reduced separation minima</p> <p>All SAT States shall agree to phased in approach of reduce separation in appropriate SAT Region airspace (PH1 – EURSAM Corridor)</p> <p>Identify required components to implement reduced separation minima in EUR/SAM corridor</p> <p>In coordination with the ICAO NAT Region identify and develop specific areas required for PBCS implementation</p> <ul style="list-style-type: none"> - Propose to acquire PBCS guidance documents and materials, (ANSP requirements, RMA requirements, Operator requirements and State requirements), implementation plan, lessons-learnt, business case and best practices from the NAT Region. <p>Review and assess implementation requirements and tasks at SAT 24. Provide guidance concerning additional activities necessary to facilitate PBCS implementation in the Sat Region.</p>	
<p>Why: In order to foster a consistent planning, and coordinated activities.</p>	
<p>When: Phase 1 implementation date to be determined by SAT24</p>	<p>Status: Reviewed by SAT/23</p>
<p>Who: <input checked="" type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Regional Office <input checked="" type="checkbox"/> ICAO HQ <input type="checkbox"/> Others:</p>	

Agenda Item 3: *Communications, Navigation and Surveillance (CNS)*

3.1 Follow up of SAT/23 Conclusions & Decisions pertaining to the CNS field

<p>Conclusion 23/07: Improvement of the reporting on the work of the multidisciplinary local Group for the assessment and the mitigation of missing Flight Plans</p>	
<p>That;</p> <p>SAT ANSPs that have not yet done so, update their list of Focal Point by 31 07 2018, reinforce the activities of the local Group for the assessment and mitigation of missing Flight Plans and report monthly to ASECNA the outcome of their investigation on missing flight Plans.</p>	<p>Expected impact:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Technical/Operational

Why: To improve the reporting on the work of the multidisciplinary local Group for the assessment and the mitigation of missing Flight Plans	
When: 31 July 2018	Status: Valid
Who: <input checked="" type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: ANSPs	

Conclusion 23/08: Establishment of SITA Gateways on SAT VSATS networks	
That; a) SAT concerned members include in the project of re-engineering of their Networks (AFISNET, CAFSAT) a study on the feasibility of the establishment of SITA Gateways on VSATS networks after cost benefit analysis; b) Consider the trials already conducted in the SAM and AFI regions to facilitate through a collaboration mechanism the establishment on the SITA Gateway to support ADS-C & CPDLC data link as needed.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input checked="" type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Technical/Operational
Why: To have a cost benefit analysis that justify such implementation	
When: CNMC/9	Status: Valid
Who: <input type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: ANSPs	

3.2 Revue of the performance of SAT CNS Infrastructure and systems

Decision 23/09: Adoption of the matrix for the reporting on the performance of CNS Infrastructure and Systems	
That; a) The matrix for the reporting on the performance of SAT CNS Infrastructure and Systems is adopted as attached at Appendix I and; b) SAT Members to report quarterly to GCAA, on their CNS Infrastructure and Systems performance with the first report made available on 31 October 2018 for the 3rd Quarter of year 2018.	Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Technical/Operational
Why: To monitoring the performance of CNS infrastructure.	
c) When: 31 October 2018 for the 3rd Quarter of year 2018.	Status: Valid
Who: <input checked="" type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: ANSPs	

Conclusion 23/10: Cyber Safety and Resilience of SAT CNS Infrastructure and Systems	
<p>That;</p> <p>a) The Joint Technical Teams (JTT) for the VSAT Networks re-engineering include in its work agenda, items on the insurance of Cyber Safety and Resilience of SAT CNS Infrastructure and Systems;</p> <p>b) In this regard the JTTs will assess and identify Cyber risks and mitigation actions, prioritize and plan these actions for the short and medium term in alignment with the regional projects in the matter initiated by the PIRGs.</p>	<p>Expected impact:</p> <p><input type="checkbox"/> Political / Global</p> <p><input checked="" type="checkbox"/> Inter-regional</p> <p><input type="checkbox"/> Economic</p> <p><input type="checkbox"/> Environmental</p> <p><input checked="" type="checkbox"/> Technical/Operational</p>
Why: To asses and identify Cyber risk	
When: CNMC/9	Status: Valid
Who: <input checked="" type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: ANSPs	

3.3 Improvement of CNS system in the SAT Region (AMHS, AIDC,

Conclusion 23/11 Interconnection of AMHS system	
<p>That;</p> <p>1. SAT concerned members develop/update and implement the interconnection of the existing AMHS systems by 31 12 2018:</p> <p>a) Brazzaville/ Luanda</p> <p>b) Casablanca/Nouakchott</p> <p>c) Dakar/Recife (Brasilia)</p> <p>d) Luanda/Lisbon</p> <p>2. The Dakar/Sal AMHS link be implemented by 31 12 2019, the Accra/Luanda and Accra/ Niamey links be implemented by 31 12 2018.</p>	<p>Expected impact:</p> <p><input type="checkbox"/> Political / Global</p> <p><input checked="" type="checkbox"/> Inter-regional</p> <p><input checked="" type="checkbox"/> Economic</p> <p><input type="checkbox"/> Environmental</p> <p><input checked="" type="checkbox"/> Technical/Operational</p>
Why: To migrate from AFTN to AMHS and support new ATM application	
When: 1) 31/12/2018 2) 31/12/2019	Status: Valid
Who: <input type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: ANSPs	

Conclusion 23/12: Implementation of AIDC between SAT ATCs	
<p>That; Concerned SAT ACCs pursue their collaboration in order to overcome the technical barriers (Incompliance of Interfaces, Loss of Flight Plans, Human Factor...) for the effective implementation of the following AIDC circuits:</p> <p>a) Abidjan /Accra by 31 12 2018 b) Dakar/Atlántico by 31 12 2019 c) Ezeiza Johannesburg by 31 12 2019 d) Luanda/Johannesburg by 31 12 2020</p>	<p>Expected impact:</p> <p><input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input checked="" type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Technical/Operational</p>
Why: To improve ATM operation	
When: 2018-2020	Status: Valid
Who: <input type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: ANSPs	

Decision 23/13: Coordination of the implementation of AMHS and AIDC	
<p>That; In order to facilitate coordination, the Secretariat develop and circulate no later than 31 12 2018, follow up tables on the planning and implementation of AMHS and AIDC to be filled up by members by end of the first quarter of year 2019.</p>	<p>Expected impact:</p> <p><input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Technical/Operational</p>
Why: To facilitate AMHS and AIDC implementation	
When: 31/12/2018	Status: Valid
Who: <input type="checkbox"/> Coordinators <input type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Others: ANSPs	

Conclusion 23/14: Development of Terms of Reference for the investigation on RCP and RSP	
<p>That; The joint Technical team expand its work program to include the development of Terms of Reference for the investigation into the current systems to establish performance baseline (Transaction time, Continuity, Availability and Integrity) in preparation of the implementation and operation of RCP and RSP.</p>	<p>Expected impact:</p> <p><input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Technical/Operational</p>

Why: to establish performance baseline (Transaction time, Continuity, Availability and Integrity) for RCP and RSP	
When: CNMC/9	Status: Valid
Who: <input checked="" type="checkbox"/> Coordinators <input type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Others: ANSPs	

Agenda Item 4: *Communications, navigation and surveillance / Air traffic management (CNS/ATM) Systems*

4.1 Harmonization of ADS/CPDLC programmes

4.1.1 Review of the conclusions/decisions of the eleventh meeting of the SAT FANS 1/A Interoperability Team (SAT/FIT/11).

Decision 23/15: Adoption of the Conclusions/Decisions of the SAT FANS 1/A Interoperability Team (SAT/FIT/13)	
That; The Conclusions/Decisions of the SAT FANS 1/A Interoperability Team (SAT/FIT/13) are adopted as attached in Appendix N	Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Technical/Operational
Why: Adoption of conclusions of SAT/FIT/13	
When: SAT/23	Status: Valid
Who: <input type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: ANSPs	

4.2 Review of the conclusions/decisions of CNMC/8 meeting

Decision 23/16: Adoption of the Conclusions/Decisions of the 8th meeting of the CAFSAT Network Management Committee (CNMC/8)	
That; The Conclusions/Decisions of the 8th meeting of the CAFSAT Network Management Committee (CNMC/8) are adopted as attached in Appendix O.	Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Technical/Operational
Why: Adoption of conclusions of CNMC/8	
When: SAT/23	Status: Valid
Who: <input type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: ANSPs	

4.3 Space-based ADS-B

4.3.1 Space-based ADS-B

4.3.2 GADSS Aircraft Tracking Requirements

Conclusion 23/17: Surveillance capability meeting GADSS requirements	
<p>That;</p> <p>a) States to provide information to applicable ICAO regional office where actual surveillance capability does not meet the GADSS requirements in their area of responsibility together with a timeline for promulgation of regulatory requirements for airlines to submit requests for variations and exemptions; and,</p> <p>b) Given the new GADSS “Aircraft Tracking Requirements” are prescribed globally, ICAO ensure that other ICAO regions affected take similar action to the a) above, consolidate the information to make it available to all Operators and States alike and conduct awareness on the effective implementation of the GADSS.</p>	<p>Expected impact:</p> <p><input type="checkbox"/> Political / Global</p> <p><input type="checkbox"/> Inter-regional</p> <p><input type="checkbox"/> Economic</p> <p><input type="checkbox"/> Environmental</p> <p><input checked="" type="checkbox"/> Technical/Operational</p>
Why: GADSS requirements	
When: Before the end of 2018	Status: Valid
Who: <input type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: ANSPs	

Agenda Item 5: New structure, Working methodology, Terms of Reference and Future work programme of the SAT Group (Plenary session)

Decision 23/18: Coordination between SAT Group and the PIRGs concerned	
<p>That:</p> <p>The SAT requests that the ICAO Secretariat communicate all activities of the SAT Group through regular reports to all involved PIRG meetings</p>	<p>Expected impact:</p> <p><input type="checkbox"/> Political / Global</p> <p><input checked="" type="checkbox"/> Inter-regional</p> <p><input type="checkbox"/> Economic</p> <p><input type="checkbox"/> Environmental</p> <p><input checked="" type="checkbox"/> Technical/Operational</p>
Why: To improve coordination between SAT Group and PIRGs	
When: Before the end of 2018	Status: Valid
Who: <input type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: ANSPs	

Decision 23/19: Improvement of coordination and cooperation with adjacent PIRGs

That: The SAT supports the improvement of coordination and cooperation with the adjacent PIRGs, especially with the NATSPG	Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Technical/Operational
Why: To improve coordination between SAT Group and PIRGs	
When: SAT/23	Status: Valid
Who: <input type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: ANSPs	

Decision 23/20: Preparation for the convening of the Atlantic Coordination meeting	
That: The SAT invites the ICAO Secretariat (WACAF Office with support from the other involved ROs) to prepare the convening and to develop the necessary working arrangements for a Atlantic Coordination meeting before the end of 2018.	Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Technical/Operational
Why: To improve coordination between SAT Group and PIRGs	
When: Before the end of 2018	Status: Valid
Who: <input type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: ANSPs	

Decision 23/21: Terms of Reference and Future work programme	
That; The Terms of Reference and Future work programme of the SAT ATM Working Group (ATM/WG), SAT Study Group on the Improvement of the Airspace Structure in the EUR/SAM Corridor (IAS/SG), SAT CNS Working Group (CNS/WG) are adopted as attached at Appendix P	Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Technical/Operational
Why: Update terms of reference and work program of SAT	
When: SAT/23	Status: Valid
Who: <input type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: ANSPs	

Agenda Item 6: Adoption of the Conclusions/Decisions of the SAT/23 meeting (Plenary session)

Agenda Item 7: Any other business

Part II: REPORT ON THE AGENDA ITEMS**Agenda Item 1: Election of the chairperson and adoption of the agenda**

1.1 Under this agenda item the meeting unanimously elected. Mr. **Simon Zwane**, Senior Manager: ATM Research and Planning, ATNS as Chairperson of the SAT meeting. He therefore chaired and moderated its plenary sessions and was assisted by the Secretariat.

1.2 The meeting reviewed and adopted the draft agenda and work programme proposed by the Secretariat.

Agenda Item 2: Air traffic management (ATM)**Agenda Item 1: Election of the chairperson and adoption of the agenda**

1.1 Under this agenda item the meeting unanimously elected. Mr. **Simon Zwane**, Senior Manager: ATM Research and Planning, ATNS as Chairperson of the SAT meeting. He therefore chaired and moderated its plenary sessions and was assisted by the Secretariat.

1.2 The meeting reviewed and adopted the draft agenda and work programme proposed by the Secretariat.

Agenda Item 2: Air traffic management (ATM)**Agenda item 2.1: *Follow up of SAT/22 Conclusions pertaining to the ATM field*****Agenda Item 2: Air traffic management (ATM)****Agenda item 2.1: *Follow up of SAT/22 Conclusions pertaining to the ATM field***

2.1.1 The meeting reviewed the Conclusions and Decisions pertaining to the ATM field which were adopted by the SAT 22 meeting held in Paris, France, from 5 to 9 June 2017 and SAT 21 meeting held in Lisbon, Portugal, from 6 to 10 June 2016. The meeting noted that the implementation of these conclusions and decisions were ongoing, or needed continuous actions to be taken by concerned parties, of which the updated status is found in **Appendix B1** to this report refers.

2.1.2 The meeting also reviewed the implementation Action Plan for the five programmes which was adopted by SAT 22.

Agenda Item 2.2: SATMA report on Traffic Statistics, Safety procedures and operational procedures in the EUR/SAM corridor**2.2.1 Analysis of Traffic Statistics**

2.2.1.1 The meeting analyzed the traffic statistics for 2017 and observed that air traffic movement had increased significantly along the corridor, especially on the route UN 873. Furthermore, the preliminary figures projected for 2018 showed an increase in comparison to 2017. For instance, the daily average demand in 2017 was 80 whilst the projected analysis for 2018 currently stands at 90 movements daily. Therefore, the upward trend could be significant and should be considered for planning purposes.

2.2.1.2 The meeting noted that no analysis has been conducted to find out the reasons accounting for the increase in traffic. The Group observed that there was no record of increased ATS incidents as a result of the increase in air traffic movements. Whilst this outcome was considered as a positive development, the meeting expressed the need for continuous vigilance in order to take appropriate decisive actions should there be observance of increasing incidents resulting from increased aircraft movement along the EUR SAM corridor.

2.2.1.3 The Group decided to monitor EUR/SAM corridor traffic volume in order to determine if further studies and analysis of the air traffic statistics will be required for planning and implementation of ATM programmes /system to accommodate the emerging or future growth in air traffic.

2.2.1.4 It was noted that Air Portugal (TAP) and Iberia (IBE) remained as the dominant operators along the EUR/SAM corridor, and observed that the active participation of Portugal and Spain in the activities of the SAT Group should be encouraged.

2.2.1.5 The actual statistical traffic data and analysis are presented in the graphs and figures attached to this report in **Appendix C**.

2.2.2 Flight Level Occupancy in the EUR/SAM Corridor (2017)

SAT 22 discussed the need for additional analysis of the air traffic statistical data to help with the selection of planning options and deployment of solutions to mitigate problems which are identified along the EUR/SAM corridor. Consequently, a request was made to SATMA to include information about Flight Level occupancy to the EUR/SAM Corridor Traffic Statistics as a requirement in one of five programmes established by SAT 22 ATM WG. *In conducting an analysis of flight level occupancy along the EUR/SAM corridor, it is important to note that only flight levels at the FIR boundaries were considered.*

2.2.2.1 Flight level distribution- Canarias FIR

- The most requested flight level in Canarias FIR was FL350. However, 20% of flights in Canarias FIR were cleared to or below FL340.
- The most requested flight levels in Sal Oceanic were FL350 and FL 370. However, 27% of flights were cleared to or below FL340.
- The most requested flight levels in Dakar Oceanic was FL 370. However, 25% of flights were cleared to or below FL340.
- The most requested flight levels in Atlantico FIR was FL 380. However, 29% of flights were cleared to or below FL340.

2.2.2.2 The meeting noted, that the inability for flights to obtain approval for the flight levels which they requested but were assigned three flight levels below what were requested is a significant penalty to operators, and indicative of the need to find better ways of managing air traffic along the corridor in general, and at the ANSPs level.

2.2.2.3 The Group commended SATMA for the additional statistical analysis of the flight level distribution it carried out on traffic along the EUR/SAM corridor and urged SATMA and other Regional Monitoring Agencies (RMA) to consider expanding their scope in order to better identify challenges and plan appropriate corrective actions.

2.2.2.4 The Group identified the need to conduct studies on the key operational issues in the SAT area in order to establish appropriate performance indicators for consideration, adoption and application in the SAT area.

2.2.2.5 It was observed that between 20% and 30% of flights did not receive clearance to fly at the requested flight levels due to capacity constraints. The meeting noted that where aircraft are not able to be accommodated at a flight level within one level of that requested, this has a significant impact on the airspace users.

2.2.2.6 The meeting concluded that further analysis must be conducted at the individual ANSP level as well as a comprehensive assessment along the EUR SAM corridor to determine the likely causes, to plan and implement mitigation measures and propose appropriate performance indicators to assess the effectiveness of implemented solutions.

2.2.2.7 It was agreed that whilst there was ongoing action to implement a new EUR/SAM Corridor Airspace Concept, it was an urgent matter for SAT Sates and ANSPs to take immediate

action to improve flight efficiency along the EUR/SAM corridor.

2.2.2.8 The actual Flight Level Occupancy in the EUR/SAM Corridor data and analysis are presented in the graphs and figures below and attached to this report in **Appendix D**:

2.2.2.9 From the aforementioned, the Group formulated the following Conclusions and Decisions:

Conclusion SAT/23/01: Assessment of air traffic services provision, determination of causes to inefficient operations and implementation of mitigation action in the EUR-SAM Corridor, and proposal of performance indicators to improve flight efficiency in the SAT area.	
<p>What:</p> <p>That,</p> <p>a) individual State/ANSP and RMAs conduct a comprehensive assessment on the provision of air traffic services along the EUR SAM corridor to determine the likely causes to inefficient operations, plan and implement mitigation measures, and propose appropriate performance indicators to assess the effectiveness of implemented solutions; and</p> <p>b) The SAT Group conduct studies on the key operational issues along the SAT area in order to establish appropriate performance indicators for consideration, adoption and application in the SAT area.</p> <p style="text-align: center;">(Reference SAT23 Report)</p>	<p>Expected impact:</p> <p><input type="checkbox"/> Political / Global</p> <p><input checked="" type="checkbox"/> Inter-regional</p> <p><input checked="" type="checkbox"/> Economic</p> <p><input type="checkbox"/> Environmental</p> <p><input checked="" type="checkbox"/> Operational/Technical</p>
<p>Why:</p> <p>SATMA statistics revealed 20-30% of flights did not receive clearance to fly at the requested flight levels, with a variance of 2000-4000ft, due to capacity constraints.</p> <p>Take action to improve flight efficiency along the and the whole SAT area.</p>	
<p>When: SAT 24</p>	<p>Status: Adopted by SAT/23</p>
<p>Who: <input type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: ANSP, IATA, Airlines, ESCIT, RMAs</p>	

Decision SAT/23/02: Available solutions to improve flight efficiency and Flight Level Occupancy in the EUR-SAM Corridor.

<p>What:</p> <p>That, the EUR/SAM Corridor Airspace Implementation Team (ESCIT) addresses inefficient operations in the corridor and analyse causes to implement corrective actions, considering the deployment of available solutions such as ATFM, AIDC, review of ATS operational procedures, etc, and</p> <p>ESCIT shall conduct a comprehensive operational assessment of flights utilizing the EUR/SAM corridor to identify flight level limitations regarding the requested flight levels and develop appropriate mitigation measures. (Reference SAT23 Report)</p>	<p>Expected impact:</p> <p><input type="checkbox"/> Political / Global</p> <p><input checked="" type="checkbox"/> Inter-regional</p> <p><input checked="" type="checkbox"/> Economic</p> <p><input type="checkbox"/> Environmental</p> <p><input checked="" type="checkbox"/> Operational/Technical</p>
<p>Why:</p> <p>Take action to improve:</p> <p>c) flight efficiency along the EUR/SAM corridor; and</p> <p>d) flight level allocation performance.</p>	
<p>When: 30 September 2018</p>	<p>Status: Adopted by SAT/23</p>
<p>Who: <input type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: EUR/SAM corridor airspace implementation team (ESCIT)</p>	

2.3 Agenda Item 2.3: Follow up on operations in the AORRA airspace.

2.3.1 Since 2016, the LHD default time -value to be applied when real data is not available-, was revised accordingly (5 minutes if not available) as new systems, aircraft capabilities, coverage and procedures (OLDI, ADS, Satellite) have improved ATC provision in the corridor. Further considerations regarding that issue will be on the table at time of PBCS implementation, as ADS-C (RSP180) brings a higher surveillance precision that may help to revise some LHD considerations.

2.3.2 Lack of information negatively and significantly impacts the Collision Risk Model, as adopted by ICAO for EUR/SAM RVSM/RNP10 Safety Assessments. When no data is available for input parameters, the values for hypothesis must be taken from the most conservative figures and this, of course, penalizes the results and conclusions. This is especially important for oceanic areas, as data estimations must be applied to large distances.

2.3.3 The meeting noted that almost all medium/long term projects being considered by the SAT group targets ways of reducing distances between aircraft, exploring optimal use of Flight Levels and reduction of Longitudinal Separation Minimum in the corridor. It has therefore become imperative to reinforce LHD investigations in order to minimize the use of conservative values. It was also observed that currently, Risk Assessment and LHD analysis are conducted annually, and with this view, the group expressed the need for more regular risk assessment to be conducted.

2.3.4 The implementation of the EUR/SAM corridor airspace new concept introduces new challenges for the next years, not only in operations and procedures, but also in risk assessment. In this regard, a further step must be applied for the observance of LHDs/LD, as the current

arrangement where LHD reports are sent once to SATMA before the 5th of every month appears not to be sufficient. The SAT Group reiterated the essentiality for each State/ANSP to send LHD reports with all fields filled with requisite details, and if any data is not available, investigate the deviations within their system or the operator involved.

2.3.5 The SAT Group thanked SATMA for its decision to include Longitudinal Separation Deviations (LSD) reports to the LHD monitoring team's Terms of Reference, noting, that LSD is a prerequisite for PBCS implementation and monitoring. The meeting urged all RMAs within SAT FIRs to include LSD in their reports to the SAT Group once the appropriate framework and reporting forms are developed by the RMAs.

2.3.6 It was also noted that lack of coordination of traffic by ATS units contributed to incidents which impacts on the Vertical Risk in the collision risk model. It was recommended that effective implementation of AIDC would likely reduce the risk, and enhance capacity by reducing ATCO workload.

2.3.7 The report of EUR SAM Corridor Risk Assessment and LHD Monitoring is attached to this report in **Appendix E**.

2.3.8 With regards to 2018 Safety Assessment, States/ANSPs were reminded of the requirement to send traffic data and LHD reports to SATMA as soon as they become available, or on monthly basis; Traffic Data received after 31 December 2018 will be no be included in the 2018 Study and assessment.

2.3.9 From the foregoing, it was concluded that an LHD Team comprising of stakeholders in the EUR SAM Corridor be established to conduct quarterly teleconferences to promptly address challenges which are identified as contributing factors to the increase of the LHDs and Risk levels.

CONCLUSION	
SAT/23/03: LHD Monitoring Team to address increases in the LHD and Risk levels	
What: That, The LHD Monitoring Team shall conduct quarterly teleconferences to address challenges which are identified as contributing to increases in the LHD and Risk levels.	Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input checked="" type="checkbox"/> Economic <input checked="" type="checkbox"/> Environmental <input checked="" type="checkbox"/> Operational/Technical
Why: It was noted that lack of coordination of traffic by ATS units contributed to incidents which impacts on the Vertical Risk in the collision risk model.	
When: October 2018	Status: Adopted by SAT/23
Who: <input type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: RMAs, ANSPs, IATA, stakeholders in EUR – SAM corridor	

2.3.10 Furthermore, it was affirmed that application of SMS processes would be effective in addressing potential failures in ATM system.

2.3.11 It was further observed that operations of non-RVSM approved aircraft operating at RVSM flight levels were not considered in the current model for conducting Risk Assessment, although they have the potential to significantly impact on the TLS. It was recommended that SATMA and other Regional Monitoring Agencies (RMAs) include infractions of non-RVSM approved aircraft operations in the Risk Analysis model.

2.3.12 The Group commended SATMA for the work done and concluded that other RMAs in the SAT area, namely, ARMA, CARSAMA, NAT, etc. be urged to provide the SAT Group with their reports on LHD and Risk Assessment in order for the SAT Group to have a better picture of the safety dynamics in whole the SAT area. From the foregoing, the following conclusion was adopted.

Conclusion SAT/23/04: Provision of LHD and Risk assessment by other RMAs in SAT Area	
What: That, Other RMAs in the SAT area, namely, ARMA, CARSAMA, NAT, etc. be urged to provide the SAT Group and SATMA with their report on LHD and Risk Assessment.	Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Operational/Technical
Why: In order for the SAT Group and RMAs to have a better picture of safety in the SAT area, regarding non-RVSM approved aircraft in RVSM airspace.	
When: July 2018	Status: Adopted by SAT/23
Who: <input type="checkbox"/> Coordinators <input type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: Concerned RMAs	

Agenda Item 2.4: EUR/SAM Corridor Airspace Concept Project

2.4.1 SAT 21 established a EUR-SAM Corridor Implementation Team (ESCIT) to update the actual “EUR/SAM Corridor Airspace Concept” and coordinate its implementation. This team is composed of focal points from EUR/SAM corridor members States/ANSPs (Brazil, Cape Verde, Senegal, Spain), SATMA, ICAO (WACAF & SAM) and IATA, with Portugal as the lead.

2.4.2 The ESCIT had several videoconferences in order to define milestones and establish implementation timelines for the project. However, between SAT 21 and the second ESCIT videoconference, some ICAO relevant information regarding Amendment 7b to PANS-ATM Doc.4444 became applicable. As a result, and based on ENAIRE proposal, in SAT 22 the EUR/SAM Corridor Airspace Concept Action Plan was amended to be in line with the new PANS-ATM Doc.4444. Consequently, the SAT Group adopted PBCS with time-based longitudinal separation minima for application in the EUR/SAM corridor.

2.4.3 Based on new ICAO documentation, a five (5) minutes longitudinal separation may be

applied under specified conditions and RCP, RNP and RSP values:

- RNP: Required Navigation Performance
- RCP: Required Communication Performance
- RSP: Required Surveillance Performance

<i>Mínimas de separación</i>	<i>RNP</i>	<i>RCP</i>	<i>RSP</i>	<i>Máximo intervalo de notificación periódica de ADS-C</i>
93 km (50 NM)	10	240	180	27 minutos
	4	240	180	32 minutos
55,5 km (30 NM)	2 o 4	240	180	12 minutos
5 minutos	2 o 4 o 10	240	180	14 minutos

2.4.4 The meeting noted that RNP10 as a prerequisite is already applicable in the EUR/SAM Corridor, as it was implemented concurrently at the same time with RVSM implementation. As a new time-based criteria was adopted by SAT members, the meeting requested the ESCIT to define RCP and RSP requirements for operators in the corridor, and request operators to indicate RSP and RSC values when filing flight plans. Similarly, ANSPs should update and reconfigure their flight data processing systems and related software to meet selected performance specifications.

2.4.5 The meeting recalled that RCP240 required communication system that meet the requirement for application of 5-minutes separation minima and shall allow a controller, within 4 minutes, to intervene and resolve a potential conflict by contacting an aircraft using an alternative means of communication. An alternative means shall be available to allow the controller to intervene and resolve the conflict within a total time of 10.5 minutes, should the normal means of communication fail.

2.4.6 In this regards, EUR/SAM States were required to verify that any ATC-Pilot communication based on Data Link (CPDLC) always have a backup Direct Voice Communication (VFH or HF), in order to ensure that alternative means of communication is available at all times.

2.4.7 RSP180. When a ADS-C periodic or waypoint change event report is not received within 3 minutes of the time it should have been sent, the report is considered overdue and the controller shall take action to obtain the report as quickly as possible, normally by ADS-C or CPDLC. If a report is not received within 6 minutes of the time the original report should have been sent, and there is a possibility of loss of separation with other aircraft, the controller shall take action to resolve any potential conflict(s) as soon as possible. The communication means provided shall be such that the conflict is resolved within a further 7.5 minutes. The ANPs system should guarantee that ATCs are aware about delayed reports. If a report exceeds three minutes over the normal time, the ATC should be aware, so that an action (report demand) may be initiated. If the report exceeds six minutes, ATC should be notified in order to apply separation security actions. A colour or size of code could be used so that the signal changes appearance when the plot has not been refreshed in the agreed time (3 m or 6 min).

2.4.8 When information is received indicating ground or aircraft equipment failure or deterioration below the communication, navigation and surveillance performance requirements, ATC shall then, as required, apply alternative separation minima.

2.4.9 The three key steps for implementation of the EUR/SAM airspace project regarding “5 minutes LSM based on RSP/RCP/RNP10” are:

- EUR/SAM_1.1: Doc4444 5.4.2.9 “Longitudinal Separation Minima” in National Regulations;
- EUR/SAM_1.2: RNP10/RSP180/RCP240 (ANSP Requirements & Operators Requirements); and
- EUR/SAM_1.3: Evaluation of ADS-C/CPDLC Ground Systems (RCP/RSP) for DLink Mandate.

2.4.10 Implementation of both EUR/SAM_1.1 and EUR/SAM_1.2 steps above are out of ANSPs scope and responsibility, nevertheless, ICAO sent a letter to SAT States in January 2018 urging them to include in their national regulations, Doc4444 amendments 7b in publications and also as part of procedures for aircraft PBCS certification.

2.4.11 The SAT group will therefore direct its focus on the evaluation of existing ADS-C/CPDLC Ground Systems (RCP/RSP) in EURSAM Corridor and proactively anticipate the issues related to operational procedures and safety requirements. This approach will reduce the preparation period leading to implementation of PBCS and allow more time for States and operators to focus on certification procedures.

2.4.12 The meeting was reminded of ICAO Circular 343 requirement for regions or States to undertake an implementation safety assessment. In principle, this comprises two parts, namely, a safety assessment for navigation performance and a hazard assessment. In practice, only a hazard assessment needs to be performed for any local implementation since the safety assessment for the navigation performance under the various navigation specifications is valid for any implementation. The hazard analysis is to identify hazards and deployment of related mitigation measures that are specific to the local situation.

2.4.13 As data related to 5-minute Separation Longitudinal Minima in the corridor would not be available at the start, SATMA will apply similar scenarios and conservative hypothesis to the EUR/SAM region in order to achieve a suitable implementation outcome. States/ANSPs would be expected to collaborate by providing FANS data and equipment performance periodically.

2.4.14 SATMA assessed that all hazards established in Circular 343 (Appendix 1) essentially relate to verification of ADS/CPDLC usage in a given area. It was noted that FANS and data link have been used in EUR/SAM corridor for many years. SATMA considered that FANS operations have reached implementation maturity in all States, therefore flexibility of RSP180 and RCP240 configurations should already exist in most implemented ADS-C/CPDLC systems.

2.4.15 Actions regarding FPL filling, activation and correct usage of onboard equipment remains pilots and airspace users’ responsibility. However, exchange of correct data between ATCs regarding FANS capabilities (when an error is detected in FPLs) would be the challenge for ANSPs to manage.

2.4.16 *RSP180 –Canarias ACC*

As an example, the meeting was briefed of the Canarias SACTA System for Traffic control which is currently configured to accept ADS-C plots with a maximum delay of 180 seconds. The system does not accept ADS-C report delays of more than 180 seconds. However, the plot on the screen would be maintained but changed to a display of “low quality” (with bigger size of blue square).

In addition, a second delay or loss of ADS plot would be cancelled and ATC must demand a new report from the aircraft. Alternatively, a more accurate periodic contract should be determined, noting that the system allows a configuration of 2 minutes between periodic reports. This provides a better performance option than the 15 minutes which is currently applicable.

2.4.17 *Operational Procedures*

The meeting was informed that the implementation of 5-minutes LSM in the EUR SAM corridor will bring about new operational scenarios for ATCs. The main aspect to consider will be the challenge of managing flight levels occupied by both PBCS certificated and PBCS non-certificated aircraft, and the application of different separation minima. Consequently, procedures would have to be established regarding the assignment of flight levels. The list of issues expected to be addressed by Sates/ANSPs from an operational viewpoint could be:

- AIC models
- Letters of agreements
- Traffic transfer between collaterals
- Flight level occupancy considerations
- ADS Contracts

2.4.18 ENAIRE recommended the formation of an “Operational Procedures Task Force” to work in parallel to other project activities in order to promptly address procedural issues related to PBC implementation.

2.4.19 *Implementation considerations*

When undertaking a regional, State or local safety assessment, the following process is provided as guidance in ICAO Circular 343:

- Step 1: Undertake widespread regional consultation with all possible stakeholders and other interested parties.
- Step 2: Develop an airspace design concept or ensure that the proposed separation minima being implemented will fit the current airspace system and regional or state airspace planning strategy.
- Step 3: Review this circular noting specific assumptions, constraints, enablers and system performance requirements.
- Step 4: Compare assumptions, enablers, and system performance requirements in this circular with the regional or State’s operational environment, infrastructure and capability.
- Step 5: If a region, State or ANSP has determined that the change proposal for that region or State is equal to or better than the reference, requirements and system performance in this circular, then the region or State must undertake safety management activities including:
 - a) formal hazard and consequence(s) identification, and safety risk analysis activities including identification of controls and mitigations;
 - b) implementation plan;
 - c) techniques for hazard identification/safety risk assessment which may include:
 - i. the use of data or experience with similar services/changes;
 - ii. quantitative modeling based on sufficient data, a validated model of the change, and analyzed assumptions;
 - iii. the application and documentation of expert knowledge, experience and objective judgment by specialist staff; and
 - iv. a formal analysis in accordance with appropriate safety risk management techniques as set out in the Safety Management Manual (Doc 9859). d) identification and analysis of human factors issues identified with the

implementation including those associated with Human Machine Interface matters; e) simulation where appropriate; f) operational training; and g) regulatory approvals.

- Step 7: Develop suitable safety assessment documentation including a safety plan and associated safety cases.
- Step 8: Implementation activities should include:
 - a) trial under appropriate conditions;
 - b) expert panel to undertake scrutiny of proposals and development of identified improvements to the implementation plan;
 - c) develop an appropriate backup plan to enable reversion if necessary; and
 - d) continuous reporting and monitoring results of incidents, events and observations.
- Step 9: Develop suitable post-implementation monitoring and review processes.

2.4.20 The meeting commended ENAIRE for the detailed information provided and deferred the proposal for the establishment of the “5-minutes longitudinal separation minima operational procedures” task force for consideration by the ESCIT.

2.4.21 The SAT Group reviewed the comprehensive information presented by ENAIRE regarding the status of implementation of the EUR/SAM Corridor Airspace Concept project and noted the challenges encountered in the process. The meeting took note of the implementation of PBCS in the NAT region and its impact on the SAT region in general, and its significant impact, particularly in the EUR/SAM corridor. The Group further recalled the air traffic statistics and flight level occupancy reports which were submitted by SATMA and reiterated its commitment to the EUR/SAM Corridor Airspace Concept Project.

2.4.22 The meeting was informed of the inability of Mr. Nuno Simoes of NAV Portugal to continue as the leader of EUR SAM Corridor Airspace Implementation Team (ESCIT). The meeting expressed its profound appreciation to the work done by Mr. Simoes and its wish for NAV Portugal to nominate another ATM expert to assist with the work of the SAT ATM Working Group. The meeting expressed the desire and expectation to see Portugal, particularly Nav. Portugal to actively participate in regional activities, especially due to the significant volume of air traffic managed by Portugal and the utilization of EUR/SAM corridor airspace.

2.4.23 Consequently, the Group renewed its commitment to further development and eventual implementation of the EUR/SAM Corridor Airspace Concept. Accordingly, the SAT Group decided to endorse Mr. Eduardo Ortuño Villapalos from ENAIRE, Spain to lead the ESCIT and continue with the implementation of the EUR/SAM Corridor Airspace Concept.

Decision SAT/23/05: Leader nominated to ESCIT	
<p>What:</p> <p>That, Mr. Eduardo Ortuño Villapalos from ENAIRE, Spain, is nominated to lead the ESCIT in order to continue with the implementation of the EUR SAM Corridor Airspace Concept.</p>	<p>Expected impact:</p> <p><input type="checkbox"/> Political / Global</p> <p><input checked="" type="checkbox"/> Inter-regional</p> <p><input type="checkbox"/> Economic</p> <p><input type="checkbox"/> Environmental</p> <p><input checked="" type="checkbox"/> Operational/Technical</p>
<p>Why:</p>	

The EUR/SAM Corridor Airspace Implementation Team (ESCIT) needs to continue the work already started. Mr. Simoes Nuno of NAV Portugal was stepping down as the Team Lead.		
When:	SAT/23	Status: Adopted by SAT/23
Who: <input type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Others:		

Implementation of 5 min longitudinal separation based on PBCS in EUR/SAM

2.4.24 As part of its effort to facilitate PBCS implementation in the EUR/SAM corridor, ASECNA conducted a survey of aircraft communication and surveillance equipment in the Dakar FIR in February 2018 as attached in **Appendix F**. Based on its findings and studies on the requirement for PBCS implementation, ASECNA proposed as step one, the application of 5 minutes Time Based Longitudinal Separation with Mach Number Technique on the two (2) unidirectional ATS routes: UN741 and UN866, and the creation of one RNP10 ATS route between these two (2) routes in order to offset any aircraft which might lose its RNP4 en route capability.

2.4.25 As a second step, ASECNA proposed a post implementation evaluation to be conducted before extension of the proposal to other ATS routes namely, UN873 and UN857.

2.4.26 It was noted that 5-minutes Longitudinal Separation could be implemented with either RNP/4 or RNP/10 depending on specifications. The meeting was informed that whilst 5-minutes Longitudinal Separation can be applied with RNP/4 on established routes, 5-minutes Longitudinal Separation can be applied with RNP/10 in random routing airspace.

The meeting commended ASECNA for the survey it conducted on aircraft equipment and capability and proposal for the implementation of 5-minutes separation with RNP/4 on the selected ATS routes. The SAT ATM Group urged the ESCIT to consider the survey and proposal by ASECNA in its future work. Furthermore, other States/ANSPs were encouraged to take a cue from the ASECNA initiative in order to be proactive in proffering alternative proposals for the improvement of ATS in the SAT area.

Conclusion SAT/23/06: Implementation of reduced separation minima in the Region via PBCS (NEW CONCLUSION OF SAT 23/06 REPLACES SAT 22/04)	
What: That, All SAT Region States will conduct an analysis to determine needs and enhancements necessary to implement PBCS in the SAT Region Identify appropriate airspace for implementation of reduced separation minima All SAT States shall agree to phased in approach of reduce separation in appropriate SAT Region airspace (PH1 – EURSAM Corridor)	Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Operational/Technical

<p>Identify required components to implement reduced separation minima in EUR/SAM corridor</p> <p>In coordination with the ICAO NAT Region identify and develop specific areas required for PBCS implementation</p> <ul style="list-style-type: none"> - Propose to acquire PBCS guidance documents and materials, (ANSP requirements, RMA requirements, Operator requirements and State requirements), implementation plan, lessons-learnt, business case and best practices from the NAT Region. <p>Review and assess implementation requirements and tasks at SAT 24. Provide guidance concerning additional activities necessary to facilitate PBCS implementation in the Sat Region.</p>	
<p>Why: In order to foster a consistent planning, and coordinated activities.</p>	
<p>When: Phase 1 implementation date to be determined by SAT24</p>	<p>Status: Reviewed by SAT/23</p>
<p>Who: <input checked="" type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Regional Office <input checked="" type="checkbox"/> ICAO HQ <input type="checkbox"/> Others:</p>	

Agenda Item 2.5: Follow up on operations in the AORRA airspace

2.5.1 The meeting was recalled that SAT/16 which was held in Lisbon, Portugal, 4-8 June 2016 urged Luanda, Johannesburg and Windhoek FIRs to implement as a matter of urgency, agreements reached in respect of airspace re-organization over position ILDIR in an attempt to address the high level of ATS incidents in the AORRA airspace in order to reduce or eliminate the unsatisfactory safety reports.

2.5.2 The SAT meeting was provided updates on the safety situation following the airspace reorganization in that part of the AORRA airspace.

2.5.3 The meeting was provided with the increasing statistics about coordination failures in the AORRA between Luanda FIR and adjacent FIRs, in particular, Accra, Brazzaville and Johannesburg Oceanic.

2.5.4 ENANA (Angola) reported its constraints as regarding the limitation of their ATM system and problems with their V-SAT equipment. ENANA further reported that AIDC is expected to be implemented by December 2020. Following discussions by the Group, it was surmised that Human Factors could be a contributing factor. **ENANA was urged as a matter of urgency, to put in place appropriate mitigation measures to address the unsatisfactory safety concern prior to AIDC implementation.**

2.5.5 The representative of Angola CAA was invited to note the unsatisfactory safety report attributable mainly to coordination failures between Luanda ACCs and adjacent ATC units and ensure that the necessary corrective actions are taken by Angola to address safety risks as a matter of urgency.

2.5.6 ICAO was requested to send a State Letter to Angola regarding the Unsatisfactory Condition Report on ATS coordination in the Luanda FIR and urge Angola to ensure a corrective action is implemented.

2.5.7 The statistics of ATS Coordination Failures in AORRA Airspace between Angola and South Africa is attached to this report as **Appendix G**.

Agenda Item 2.6: ATM Contingency Plan for the SAT Area

2.6.1 The SAT Group was provided updates on ongoing activities for the finalization and implementation of the SAT ATM Contingency Plan. ASECNA reported that the SAT ATM CP was updated by including provisions for Volcanic Ash and Public Health Emergencies as required by PANS ATM Doc 4444, with additional inputs to assist in conducting search and rescue as requested by Cayenne ACC.

2.6.2 ASECNA reported that the ATM Contingency Plan for the SAT area was sent to all focal points on 13th July 2017 for comments and feedback by 31st August 2017. However, no responses were received from the SAT Member States.

2.6.3 The meeting agreed that the ATM Contingency Plan for the SAT area which is attached to this report as **Appendix H** should be validated by the member States/ANSPs who were present at the SAT 23 meeting in Durban, South Africa. The meeting requested ASECNA as the Lead to resend the document to all stakeholders and to collate and include all feedback received by 30 November 2018.

2.6.4 In parallel, the Secretariat was requested to upload the updated ATM Contingency Plan for the SAT area at the ICAO website **no later than 30 June 2018** and request States and other Stakeholder to respond by November 2018.

2.6.5 The SAT Group agreed that the ATM Contingency Plan for the SAT area should be validated by 15 January 2019.

2.7. Any other ATM business

2.7.1 Effectiveness in implementation of SAT ATM WG Action Plan

2.7.1.1 The SAT ATM Working Group was urged to endeavour to implement the conclusions and decisions which were adopted by meeting. The Team Leaders, focal points and members of the reconstituted programmes were urged to have regular teleconferences and provide quarterly update reports to the Secretariat.

2.7.1.2 The various programme leads were reminded of the need to submit reports and working papers to the next SAT meeting.

2.7.1.3 SAT member States, ANSPs and international organizations were also urged to submit working papers on agenda items for SAT meetings.

Agenda Item 3: Communications, navigation and surveillance (CNS)

3.4 Any other CNS business

3.1 Follow up of SAT/22 Conclusions pertaining to the CNS field

3.1.1 Under this agenda item the meeting reviewed the conclusions and decisions of the SAT/22 meeting pertaining to CNS field as attached in **Appendix B2**. The meeting reviewed the status of implementation of **Conclusion 22/05: Reporting on the work of the multidisciplinary local Group for the assessment and the mitigation of missing Flight Plans** in particular, the status of establishment of local multidisciplinary missing Flight Plans Investigation Groups including airlines and noted the commitment of ENANA Angola to establish such group.

3.1.2 The meeting agreed that ANSPs should update their list of Focal Point for the follow up of the work of the local group of investigation. Noting the low pace of reporting on this work by ANSPs, the meeting encouraged Centers to increase their effort in the assessment and mitigation of missing flight plans and the monthly reporting to ASECNA tasked by the SAT to coordinate and consolidate a yearly report on the action.

The following conclusion was formulated:

Conclusion 23/07: Improvement of the reporting on the work of the multidisciplinary local Group for the assessment and the mitigation of missing Flight Plans	
That; SAT ANSPs that have not yet done so, update their list of Focal Point by 31 07 2018, reinforce the activities of the local Group for the assessment and mitigation of missing Flight Plans and report monthly to ASECNA the outcome of their investigation on missing flight Plans.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Technical/Operational
Why: To improve the reporting on the work of the multidisciplinary local Group for the assessment and the mitigation of missing Flight Plans	
When: 31 July 2018	Status: Valid
Who: <input checked="" type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: ANSPs	

3.1.3 The meeting examined the status of implementation of Conclusion 22/06: *Establishment of SITA Gateways on SAT VSATS networks* and noted the progress made by ASECNA in its discussions with SITA.

It was reported that three centers (Abidjan, Dakar, Intelsat Teleport of Fuchsstadt) were provided with a SITA connection from which ACCs could pull out /push in ADS-C and CPDLC data.

The meeting applauded this achievement and encouraged ANSPs to include the establishment of the SITA Gateways in the framework of the re-engineering of VSATs Networks by SAT members.

The following conclusion was formulated:

Conclusion 23/08: Establishment of SITA Gateways on SAT VSATS networks	
That; c) SAT concerned members include in the project of re-engineering of their Networks (AFISNET, CAFSAT) a study on the feasibility of the establishment of SITA Gateways on VSATs networks after cost benefit analysis; d) Consider the trials already conducted in the SAM and AFI regions to facilitate through a collaboration mechanism the establishment on the SITA Gateway to support ADS-C & CPDLC data link as needed.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input checked="" type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Technical/Operational
Why: To have a cost benefit analysis that justify such implementation	
When: CNMC/9	Status: Valid
Who: <input type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: ANSPs	

3.2 Revue of the performance of SAT CNS Infrastructure and systems

3.2.1 Under this agenda item the meeting reviewed the performance of SAT CNS system. The Ghana civil Aviation Authority (GCAA) presented to the meeting through **WP 11** a draft matrix for the reporting on the performance of CNS Infrastructure and Systems. As there were not enough inputs to improve this draft previously circulated the meeting set up an ad'hoc commission composed with delegates from ANSPs to finalize the draft which was presented and adopted as presented in **Appendix I** to this report.

The following decision was formulated:

Decision 23/09: Adoption of the matrix for the reporting on the performance of CNS Infrastructure and Systems	
That; d) The matrix for the reporting on the performance of SAT CNS Infrastructure and Systems is adopted as attached at Appendix I and; e) SAT Members to report quarterly to GCAA, on their CNS Infrastructure and Systems performance with the first report made available on 31 October 2018 for the 3rd Quarter of year 2018.	Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Technical/Operational
Why: To monitoring the performance of CNS infrastructure.	
f) When: 31 October 2018 for the 3rd Quarter of year 2018.	Status: Valid
Who: <input checked="" type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: ANSPs	

3.2.2 The meeting discussed issues on the cyber safety and resilience of the SAT CNS infrastructures and systems. In order to avoid duplicated actions addressing this issue, it was agreed to consider the regional initiatives taken in this matter. The meeting recalled that the Networks Management committees, SNMC for AFISNET and CNMC for CAFSAT networks took conclusions related to the insurance of the networks cyber safety and resilience.

3.2.3 It was therefore agreed to task the Joint Technical Teams (**JTT**) for the re-engineering of these networks to include in their work agenda, items on the insurance of Cyber Safety and Resilience of SAT CNS Infrastructure & Systems. The **JTT** were also tasked to assess and identify Cyber risks and mitigation actions, prioritize and plan these actions for the short and medium term in alignment with the regional projects in the matter initiated by the PIRGs.

The following Conclusion was formulated:

Conclusion 23/10: Cyber Safety and Resilience of SAT CNS Infrastructure and Systems	
<p>That;</p> <p>c) The Joint Technical Teams (JTT) for the VSAT Networks re-engineering include in its work agenda, items on the insurance of Cyber Safety and Resilience of SAT CNS Infrastructure and Systems;</p> <p>d) In this regard the JTTs will assess and identify Cyber risks and mitigation actions, prioritize and plan these actions for the short and medium term in alignment with the regional projects in the matter initiated by the PIRGs.</p>	<p>Expected impact:</p> <p><input type="checkbox"/> Polítical / Global</p> <p><input checked="" type="checkbox"/> Inter-regional</p> <p><input type="checkbox"/> Economic</p> <p><input type="checkbox"/> Environmental</p> <p><input checked="" type="checkbox"/> Technical/Operational</p>
Why: To asses and identify Cyber risk	
When: CNMC/9	Status: Valid
Who: <input checked="" type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: ANSPs	

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

3.3.1 Under this agenda item the meeting was informed on the on-going projects for the implementation of AMHS systems in SAT ATCs. The Secretariat presented (**WP 12**) a summary of the status of implementation of AMHS by SAT members. The meeting took opportunity to review and update the list of Focal Points for the coordination of the implementation of AMHS as presented in **Appendix J** to this report.

3.3.2 ASECNA presented through **WP 13** the progress made in the project of implementation of AMHS in accordance with ICAO GANP and the AFI regional Air Navigation Plan (AFI ANP). It was reported that since August 2017 AFS circuits between ASECNA centers are operating in full AMHS and to date, AMHS systems are implemented and fully operational in ten (10) centers. The status of AMHS implementation is provided hereafter in the updated table on the project summarized in **Appendix K**.

3.3.3 Portugal informed the meeting (**WP 14**) on the successful implementation of the AMHS link established by ONDA and NAV Portugal between Casablanca & Lisbon by using the TDM network interconnecting Morocco and Portugal.

In consideration of the above the above, the meeting identified AMHS capable centers and agreed on target dates for their interconnection.

The following conclusion was formulated:

Conclusion 23/11: Interconnection of AMHS system	
<p>That;</p> <p>3. SAT concerned members develop/update and implement the interconnection of the existing AMHS systems by 31 12 2018:</p> <p>e) Accra/ Niamey f) Brazzaville/ Luanda g) Casablanca/Nouakchott h) Dakar/Recife (Brasilia) i) Luanda/Lisbon</p> <p>4. The Dakar/Sal AMHS link be implemented by 31 12 2019.</p>	<p>Expected impact:</p> <p><input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input checked="" type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Technical/Operational</p>
Why: To migrate from AFTN to AMHS and support new ATM application	
When: 1) 31/12/2018 2) 31/12/2019	Status: Valid
Who: <input type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: ANSPs	

3.3.4 The meeting reviewed the status of implementation of ATS Interfacilities Data Communication (AIDC) in the SAT ATCs. The Secretariat provided the meeting with (WP 15) the progress made in the implementation of AIDC. It was reported that the initial implementation of AIDC trials between Ezeiza and Johannesburg ACCs will be conducted once an AMHS circuit is made in operation between Ezeiza and Johannesburg. This AMHS circuit is expected to entry in operation by the middle of 2019.

3.3.4 Regarding the implementation of AIDC trails between Atlántico ACC (Brazil) and Dakar ACC, Brazil will be ready to start once the AMHS interconnection between Brasilia and Dakar is implemented; this AMHS circuit is expected to be in operation by the end of 2018.

3.3.5 In reference to the AIDC trails between Cayenne (French Guyana) and Dakar (Senegal) ACCs will be implemented once the AMHS between Cayenne and Dakar will be implemented no coordination was made between France and Senegal was made to implement this interconnection. **Appendix L** presents the AIDC current status connection and planning at regional and interregional including AFI region for the SAM Region.

3.3.6 In order to have a correct operation of the AIDC it is important to count with a flight plan without error as well as multiplicity/duplication in flight plans. These errors represent a safety issue for States that have implemented AIDC, since flight plans were the primary source for the automation process.

3.3.7 The meeting identified AIDC circuits to be implemented and agreed on tentative dates of implementation. This implementation will need a continuous cooperation amongst members and a follow up through teleconferences.

The following conclusion was formulated:

Conclusion 23/12: Implementation of AIDC between SAT ATCs	
That; Concerned SAT ACCs pursue their collaboration in order to overcome the technical barriers (Incompliance of Interfaces, Loss of Flight Plans, Human Factor...) for the effective implementation of the following AIDC circuits: e) Abidjan /Accra by 31 12 2018 f) Dakar/Atlántico by 31 12 2019 g) Ezeiza Johannesburg by 31 12 2019 h) Luanda/Johannesburg by 31 12 2020	Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input checked="" type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Technical/Operational
Why: To improve ATM operation	
When: 2018-2020	Status: Valid
Who: <input type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: ANSPs	

3.3.8 The meeting noted that the coordination of the implementation of AMHS and AIDC was made efficiently in the two past years thanks to the teleconferences initiated by the SAT Secretariat. The meeting also agreed on the usefulness to restore these teleconferences. In this regard the SAT Secretariat was requested to develop and circulate a follow up table on the implementation of AMHS and AIDC to be filled up by members.

The following Decision was formulated:

Decision 23/13: Coordination of the implementation of AMHS and AIDC	
That; In order to facilitate coordination, the Secretariat develop and circulate no later than 31 12 2018, follow up tables on the planning and implementation of AMHS and AIDC to be filled up by members by end of the first quarter of year 2019.	Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Technical/Operational
Why: To facilitate AMHS and AIDC implementation	
When: 31/12/2018	Status: Valid
Who: <input type="checkbox"/> Coordinators <input type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Others: ANSPs	

3.4 Any other business

3.4.1 Under this agenda item the meeting discussed the usefulness for the SAT CNS Working Group to investigate SAT CNS infrastructure to support the implementation of Performance Based Communication and Surveillance (**PBCS**). In this regard it was proposed to examine the compliance of the SAT current infrastructure and systems with the provision of the Manual on Performance Based Communication & Surveillance (**PBCS**) (ICAO Doc. 9869). This manual describes in details the requirements for all types of the Required Communication Performance

(RCP) and Required Surveillance Performance (RSP) components of PBCS that are the key components of PBCS.

3.4.2 Although PBCS issues were discussed inside the ATM Working Group the meeting agreed that the technical issues should be properly addressed by the CNS Working Group. Therefore, and in order to avoid duplication of scarce resources it was proposed that the mandate the CAFSAT Joint Technical Team (JTT) should expand its work programme to include the development of Terms of References for the investigation into the current SAT infrastructure and system to establish performance baseline (Transaction time, Continuity, Availability and Integrity) in preparation of the implementation and operation of RCP and RSP.

The following Conclusion was formulated:

Conclusion 23/14: Development of Terms of Reference for the investigation on RCP and RSP	
That; The joint Technical team expand its work program to include the development of Terms of Reference for the investigation into the current systems to establish performance baseline (Transaction time, Continuity, Availability and Integrity) in preparation of the implementation and operation of RCP and RSP.	Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Technical/Operational
Why: to establish performance baseline (Transaction time, Continuity, Availability and Integrity) for RCP and RSP	
When: CNMC/9	Status: Valid
Who: <input checked="" type="checkbox"/> Coordinators <input type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Others: ANSPs	

Agenda Item 4: Communications, Navigation and Surveillance / Air Traffic Management (CNS/ATM) Systems

Agenda Item 4: *Communications, navigation and surveillance / Air traffic management (CNS/ATM) Systems* (Plenary session)

4.1 Endorsement of the conclusions/decisions of the thirteen meeting of the SAT/ FANS 1/A Interoperability Team (SAT/FIT/13).

4.1.1 The SAT Group reviewed the conclusions/decisions of the SAT FIT/13 meeting held from 4 to 5 June 2018. The SAT FIT/13 adopted four (04) Conclusions and one (01) Decision which were endorsed by the SAT Group. The Conclusions and Decision of SAT FIT/13 are attached in **Appendix M.**

Decision 23/15: Adoption of the Conclusions/Decisions of the SAT FANS 1/A Interoperability Team (SAT/FIT/13)

That; The Conclusions/Decisions of the SAT FANS 1/A Interoperability Team (SAT/FIT/13) are adopted as attached in Appendix M		Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Technical/Operational
Why: Adoption of conclusions of SAT/FIT/13		
When: SAT/23		Status: Valid
Who: <input type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: ANSPs		

4.2 Endorsement of the Conclusions/Decisions of CNMC/8 meeting

4.2.1 Under this agenda item the Secretariat presented (**WP/19**) the draft Conclusions and Decisions of the CNMC/8 Meeting. The eighteenth meeting of the CAFSAT Network Management Committee (CNM/8) was held in Durban, South Africa from 4 to 5 June 2018 in parallel with the SAT/FIT/13 meeting.

4.2.2 The Paper highlighted that the CNMC/8 meeting deliberated on nine (09) agenda items through the review of Working and Information Papers prepared by the Secretariat and members. Based on these deliberations, the Secretariat has developed nine (09) draft Conclusions and five (05) draft Decisions that were reviewed in details and endorsed by the meeting. The Conclusions/decisions of CNMC/8 is presented at **Appendix N** to this report and the detailed report on CNM/8 meeting is uploaded on the ICAO WACAF Webpage at: <https://www.icao.int/WACAF/Pages/CNMC-8.aspx>

The following decision was formulated:

Decision 23/16: Adoption of the Conclusions/Decisions of the 8th meeting of the CAFSAT Network Management Committee (CNMC/8)		
That; The Conclusions/Decisions of the 8 th meeting of the CAFSAT Network Management Committee (CNMC/8) are adopted as attached in Appendix N		Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Technical/Operational
Why: Adoption of conclusions of CNMC/8		
When: SAT/23		Status: Valid
Who: <input type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: ANSPs		

4.3: Emerging technologies

4.3.1 Development on Space-based ADS-B

Under this agenda item the meeting was informed on initiatives for Space-based ADS-B operation being conducted by SAT members in collaboration with the industry.

4.3.1.1 AIREON presented an ANS system overview and timelines for new/emerging satellite-based global surveillance capabilities to be deployed end-2018 and indicated that while the communications and navigational operational capabilities for global ATM via satellite have been achieved over the last 2 decades, the successful launch of a next-generation LEO satellite system for ATS Surveillance services will mark a major milestone in aviation history to complete a truly satellite-based CNS system for global Air Traffic Management.

4.3.1.2 AIREON highlighted the safety & operational benefits of satellite based surveillance system to the SAT region such as:

- Reduction and sustainability of the current airspace risk for its entire area of operations within the target level of safety (TLS) (i.e *Vertical Collision and LHD Risks*)
- Automatic Conformance Monitoring within current ATM systems offering route conformance and cleared level monitoring alert mechanisms;
- Aircraft handling at FIR cross-over points thanks to the ability to “look” 50NM beyond each ANSPs boundary; and
- Compliance with ICAO Global Aeronautical Distress and Safety System (GADSS) to support Search & Rescue operation.

4.3.1.3 AIERON indicated to be currently collaborating with DECEA and ASECNA to provide surveillance data for a common defined area in the SAT as well as pockets of off-shore activities to benchmark against multiple metrics.

4.3.1.4 ASECNA informed the meeting on its interest to the opportunity given by the ongoing development related to Space based Automatic Dependent Surveillance – Broadcast (ADS-B) including radio frequency protection and potential safety, to significantly improve air navigation services provision over oceanic and remote continental areas with operational and efficiency benefit.

4.3.1.5 It was reported that, through a Memorandum of Agreement with AIREON a framework to create a collaborative relationship was established regarding the deployment of Space based Automatic Dependent Surveillance – Broadcast (ADS-B) resulting in an agreement to scope and implement the use of Data Services by ASECNA in four phases after a comprehensive assessment of technical, operational, economics and regulatory feasibility. ASECNA is currently receiving ADS-B data for monitoring, testing and trials via a VPN connection to AIREON System.

4.3.2 GADSS Aircraft Tracking Requirements

4.3.2.1 The SAT Group was briefed by IATA on the Global Aeronautical Distress and Safety System (GADSS) Concept of Operations which prescribes changes to ICAO Annexes and other documents and introduces new requirements for aircraft tracking.

4.3.2.2 The GADSS Concept of Operations (CONOPS), ICAO Annex 6 Part 1, section 3.5 titled ‘Aircraft Tracking’, which becomes applicable on the 08 November 2018 requires the operator to establish an aircraft tracking capability to track aeroplanes throughout its area of operations. Specifically, paragraph 3.5.3 requires that the operator shall track the position of an aeroplane, with a maximum certificated take-off mass of over 45,500 kg and a seating capacity greater than 19, through **automated reporting at least every 15 minutes for the portion(s) of the in-flight operation(s) that is planned in an oceanic area(s) where an ATS unit obtains aeroplane position information at greater than 15 minute intervals.**

4.3.2.3 Considering the importance of GADSS application in the SAT area, the meeting recognized the necessity for States to provide information to applicable ICAO regional office where actual surveillance capability does not meet the GADSS requirements in their area of responsibility together with a timeline for promulgation of regulatory requirements for airlines to submit requests for variations and exemptions and ICAO to ensure that other ICAO regions affected take similar action to the above, consolidate the information to make it available to all Operators and States alike.

The following conclusion was formulated

Conclusion 23/17: Surveillance capability meeting GADSS requirements	
<p>That;</p> <p>a) States to provide information to applicable ICAO regional office where actual surveillance capability does not meet the GADSS requirements in their area of responsibility together with a timeline for promulgation of regulatory requirements for airlines to submit requests for variations and exemptions; and,</p> <p>b) Given the new GADSS “Aircraft Tracking Requirements” are prescribed globally, ICAO ensure that other ICAO regions affected take similar action to the a) above, consolidate the information to make it available to all Operators and States alike and conduct awareness on the effective implementation of the GADSS.</p>	<p>Expected impact:</p> <p><input type="checkbox"/> Political / Global</p> <p><input type="checkbox"/> Inter-regional</p> <p><input type="checkbox"/> Economic</p> <p><input type="checkbox"/> Environmental</p> <p><input checked="" type="checkbox"/> Technical/Operational</p>
Why: GADSS requirements	
When: Before the end of 2018	Status: Valid
Who: <input type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: ANSPs	

4.3.3: Implementation of Performance Based Communication and Surveillance (PBCS)

PBCS Implementation preparations by ATNS

4.3.1.1 ATNS, South Africa recalled (**WP/20**) SATFIT 22 Conclusion 22/04 which referred to the implementation of PBCS concept requirements for flights operating to the NAT region from March 2018, and as a result urged the SAT Group to study the implementation of Reduced Separation Minima in line with PBCS requirements to facilitate the provision of seamless services in the entire SAT area.

4.3.1.2 Furthermore, the SAT Group was reminded that States were tasked to develop PBCS implementation plans as appropriate. However, it was observed that implementation of new concepts, systems and operations often come with challenges for many States and ANSPs which are at the initial stages of the implementation process.

4.3.1.3 ATNS also noted that many ANSPs have implemented CPDLC/ADS-C and SATCOM communication services and are required to set up their local PBCS Monitoring Programmes.

4.3.1.4 The meeting noted additional subject matter expertise was needed to develop detailed PBCS implementation plans and was amenable to assistance from States and ANSPs who have implemented ICAO SARPs and PBCS based separations in accordance with the ICAO No Country Let Behind (NCLB) policy.

4.3.1.5 In addition, Secretariat was reminded of the need to conduct more awareness seminars and workshops on PBCS implementation in accordance with SAT 22 decision.

4.3.2: PBCS Monitoring status in the AFI Region

4.3.2.1 The AFI Regional Monitoring Agency (**ARMA**) indicated (**WP/21**) that globally and historically, Regional Monitoring Agencies (RMA's) have been mandated by their respective PIRGs to conduct RVSM system monitoring. ARMA informed the meeting that RMA's have now been requested to take on additional PBCS monitoring functionality, as mandated by the respective PIRGs except APIRG.

4.3.2.2 The SAT Group was provided with the outcome of the APIRG Airspace and Aerodrome Operations sub-group meeting which formulated a Draft Conclusion for consideration by next APIRG meeting:

That, in order to implement regional PBCS monitoring for the AFI Region in accordance with the provisions of Annex 11 to the Chicago Convention, specifically Standards 2.8 and 2.9, and mindful of the PBCS monitoring models in other ICAO Regions:

a) The AFI PBCS monitoring should be established as part of the AFI RMA monitoring mechanism;

b) ICAO to formally request South Africa as matter of urgency, to include PBCS monitoring in the functions and responsibilities of the AFI Regional Monitoring Agency (ARMA), and provide necessary expertise for both functional areas (RVSM and PBCS), as well associated support to States and service providers as applicable.

4.3.2.3 The SAT Group recalled the provision of APIRG/21 stated in **Conclusion 20/24: Establishment of a Project Team for the implementation of a Data Link Central Monitoring and Reporting Agency (DL/CMRA)**

That:

a) A Project Team comprised of Cabo Verde (as Team Leader), Ghana, ASECNA, South Africa, Seychelles, AFRAA and IATA is established to identify and propose the main functions of an AFI DL/CMRA, the appropriate organizational framework and a suitable cost effective funding mechanisms; and

b) The Project Team Leader should provide a report of the activities of the project, which are to be mainly done through electronic conferences to the Secretariat for submission to the APCC and the outcome should subsequently be submitted to APIRG/21.

A concern was therefore raised up regarding the likelihood of establishing a parallel system or duplication of functions.

4.3.2.4 The meeting was also informed that the SAT CNS Working Group addresses technical issues relating to Data Link Monitoring as reported through SAT 23 **Conclusion 23/14: Development of Terms of Reference for the investigation on RCP and RSP**. The SAT Group urged for collaboration on the establishment of DLM service in the AFI region.

The Secretariat took note of the paper from ARMA and will bring the concern raised to APIRG for final assignment.

4.3.3: PBCS Implementation in the EUR-SAM Corridor Airspace (SATMA Monitoring)

4.3.3.1 ENAIRE of Spain reported (WP/22) the readiness of SATMA when requested as a Monitoring Agency to conduct the Regional EUR/SAM Safety Assessment for the implementation of 5 minutes Longitudinal Separation Minima, based on CRM (ICAO model), with data and information to be provided by States.

4.3.3.2 The meeting reiterated the need for similar assessment to be done by RMAs for the other States/ANSPs in the SAT region when the implementation of 5-minutes separation is eventually extended to cover the whole area.

4.3.3.3 Regional PBCS monitoring responsibility has been raised in ICAO RMA meetings. Specifically, a NAARMO task force was established to coordinate with the ICAO CP-OPDLWG on potential updates to the ICAO Doc 9896 and ICAO Doc 9937 to reflect the expanded role of RMAs in support of regional PBCS monitoring programs (Target Date was December 2017).

4.3.3.4 The SAT Group was reminded of paragraph 2.1.6 of ICAO Doc. 10063 Manual on Monitoring the Application of Performance-based Horizontal Separation Minima (2017 Edition) which provides, *“that within a region, these functions could be combined with the functions of the Regional Monitoring Agency (RMA), established to provide airspace safety assessment and monitoring services to support the continued safe use of the reduced vertical separation minimum (RVSM), and supported by other monitoring programmes, such as the performance-based communication and surveillance (PBCS) monitoring programme established by air navigation service providers detailed in Doc 9869”*.

4.3.3.5 The SAT meeting was informed of an upcoming RMA Coordinating Group (RMACG) meeting in Brazil from 11 to 15 June 2018 where the extension of RMAs functions to be combined with the provision datalink monitoring will be discussed.

Agenda Item 5: New structure, Working methodology, Terms of Reference and Future work programme of the SAT Group

5.1 Under this agenda item the Secretariat presented to the meeting (**WP 25**) a summary of the results of a study from the ICAO Secretariat intended to propose an optimum way forward to increase the efficiency and effectiveness in the work of the SAT Group and enhance necessary coordination and collaboration with all regional groups concerned.

5.2 This proposal was justified by the need to ensure an appropriate level of inter-regional coordination during the development of the NAT Future Concept of Operations (**NAT CONOPS**) and to achieve a harmonized, seamless and synchronized implementation by:

- a) reviewing the NAT coordination mechanism with adjacent ICAO Regions to be used during the development of the NAT Future Concept of Operations; and
- b) identifying/creating opportunities whereby the NAT can engage with adjacent ICAO Regions on the development and sharing of best practices.

5.3 The principles applied to prepare a proposed way forward consisted of the following:

- a) ensure consistent coordination with adjacent regions and informal groups in the planning and implementation of new initiatives;
- b) make the best use of expertise and experience available, and adopt existing best practices for enhanced coordination and collaboration among different groups;
- c) avoid unnecessary administrative and bureaucratic processes;
- d) adopt a more project-based approach in the initiation, monitoring and completion of work programmes;

5.4 The meeting was informed that the fifty third meeting of NATSPG (NATSPG/53, Paris, 26 to 29 June 2017) reiterated the importance of its continuing coordination with the SAT Group, not only for ensuring inter-regional harmonization and interoperability, but also for avoiding duplication of efforts. In this regard, the ICAO Secretariat was invited by NATSPG/53 to facilitate the better coordination between the SAT Group and the NATSPG, and bring this matter to the attention of the Caribbean and South American (CAR/SAM) Regional Planning and Implementation Group (GREPECAS).

5.5 Furthermore the meeting was informed that the eighteenth meeting of the GREPECAS (GREPECAS/18, Punta Cana, Dominican Republic, 9-14 April 2018) was presented with information on the work of the SAT Group and the discussions in the NATSPG concerning the need for a better coordination mechanism with the SAT Group. The GREPECAS was also informed of a study initiated by the ICAO Secretariat to analyze challenges and opportunities of both the SAT Group and NATSPG in an effort to propose a way forward.

5.6 For the way forward, WP 25 outlined that closer and more consistent coordination with the planning and implementation regional groups (PIRGs) concerned can be made in the future through regular reports by the ICAO Regional Officers to the meetings of the PIRGs and their sub-groups concerned. Reports of these groups are to be brought to the attention of the Air Navigation Commission (ANC) and the Council for their action, as required.

5.7 It also indicated that the key work programme tasks of the SAT Group, in particular, those that could benefit from the experience and expertise well vested in a specific PIRG (e.g. data link services and performance-based operations in the NATSPG), can be advanced more efficiently through the establishment of an inter-regional coordination group. To consider the establishment

of such a group between NATSPG and the SAT Group, namely “Atlantic Coordination Group (ACG)”, the paper proposed that a coordination meeting with the key players from the NATSPG and the SAT Group, be convened as early as possible, but no later than at the end of 2018

5.8 Four Draft Decisions were submitted to the approval of the meeting and during their review by the meeting the following opinions were raised up:

- The idea of reinforcing collaboration and cooperation with the NAT SPG is well adhered to, and such collaboration mechanism should be based on mutual assistance/support through sharing of experience, expertise and information, common projects, etc.
- The SAT has already embraced a project based approach with a number of on-going projects. As such, there was no need to take a new Decision on it.
- In absence of any Term of Reference (**ToRs**) and Work programme of the proposed Atlantic Coordination Group (**ACG**), it is difficult to make an informed decision without a clear understanding of its scope, mandate and goals. Detailed Terms of Reference are awaited.

Participants in the meeting also expressed concerns through questions amongst which the following:

- Does the proposal to establish an ACG mean that the SAT Group is going to be dismantled, mindful that the Group was established by the LIM /AFI RAN meeting in 1988?
- What are the strengths, weaknesses, opportunities and threats of the current SAT organizational structure that may inform the restructuring of the Group?
- What would be the mandate and the role of the ACG Focal Point proposed by WP 25?
- Will the WACAF Regional Office continue to be the Secretariat of the SAT Group?

After discussion, the meeting agreed on the following three decisions that were formulated:

Decision 23/18: Coordination between SAT Group and the PIRGs concerned	
That: The SAT requests that the ICAO Secretariat communicate all activities of the SAT Group through regular reports to all involved PIRG meetings	Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Technical/Operational
Why: To improve coordination between SAT Group and PIRGs	
When: Before the end of 2018	Status: Valid
Who: <input type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: ANSPs	

Decision 23/19: Improvement of coordination and cooperation with adjacent PIRGs
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That: The SAT supports the improvement of coordination and cooperation with the adjacent PIRGs, especially with the NATSPG	Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Technical/Operational
Why: To improve coordination between SAT Group and PIRGs	
When: SAT/23	Status: Valid
Who: <input type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: ANSPs	

Decision 23/20: Preparation for the convening of the Atlantic Coordination meeting	
That: The SAT invites the ICAO Secretariat (WACAF Office with support from the other involved ROs) to prepare the convening and to develop the necessary working arrangements for a Atlantic Coordination meeting before the end of 2018.	Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Technical/Operational
Why: To improve coordination between SAT Group and PIRGs	
When: Before the end of 2018	Status: Valid
Who: <input type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: ANSPs	

5.9 The meeting reviewed and updated the Terms of Reference and future workprogramme of the SAT ATM Working Group (ATM/WG), SAT Study Group on the Improvement of the Airspace Structure in the EUR/SAM Corridor (IAS/SG), SAT CNS Working Group (CNS/WG). These Term of Reference are presented in **Appendices P.1; P.2 & P.3** to this report.

Decision 23/21: Terms of Reference and Future work programme	
That; The Terms of Reference and Future work programme of the SAT ATM Working Group (ATM/WG), SAT Study Group on the Improvement of the Airspace Structure in the EUR/SAM Corridor (IAS/SG), SAT CNS Working Group (CNS/WG) are adopted as attached at Appendices P.1; P.2 & P.3	Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Technical/Operational
Why: Update terms of reference and work program of SAT	
When: SAT/23	Status: Valid
Who: <input type="checkbox"/> Coordinators <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO Secretariat <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Others: ANSPs	

Agenda Item 6: Adoption of the Conclusions/Decisions of the SAT/23 meeting

Under this agenda item, the meeting reviewed the draft conclusions and Decisions emanating from of the SAT ATM/WG, the SATCNS WG and the SAT plenary Sessions. These Conclusions/Decisions are presented in Part I Paragraph 6 above.

Agenda Item 7: Any other business

7.1 Under this agenda item the meeting received the kind invitation of ENANA, Angola to host the 9th CNMC, the 14th SAT/FIT and the 24th SAT meetings in Luanda. The meeting applauded this invitation and tasked the Secretariat to finalize with ENANA the organization of these events.

7.2 The meeting expressed its gratitude to ATNS and to the Government and People of South Africa for the efforts deployed to facilitate the successful holding of the SAT events.

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