

AFI/ASI/TF/3 – Nairobi July 2013

INTERNATIONAL CIVIL AVIATION ORGANIZATION



Third Meeting of the AFI Aeronautical Surveillance Task Force

(AFI/ASI/TF/3)

(Nairobi, Kenya, 25 – 26 July 2013)

FINAL REPORT

Prepared by ICAO Secretariat

July 2013

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PART I – HISTORY OF THE MEETING

1. Introduction

1.1 The Third Meeting of the Africa-Indian Ocean Planning and Implementation Regional Group (APIRG) Aeronautical Surveillance Implementation Task force (AFI/ASI/TF/3) was held at the ICAO Regional Office of Nairobi, Kenya from 25 to 26 July 2013.

2. Objectives

2.1 The main objective of the meeting was inter alia to evaluate the status of implementation of the Draft conclusions and decisions of the second meeting of AFI/ASI/TF, assess the status of implementation and operation of surveillance systems in the AFI Region. The meeting also reviewed the outcome of ICAO 12th Air Navigation Conference pertaining to the area of aeronautical surveillance and examined the Draft conclusions and decisions of APIRG 17&18 meetings dealing with the subjects within the competence of the Task Force.

2.2 Based on its deliberation, the meeting reviewed the Terms of Reference Composition and Work Programme of the Task Force.

3. Attendance

3.1 The meeting was attended by twenty one (21) participants from seven (7) Contracting States, two (2) Regional Air Navigation Service Providers (ASECNA, representing 18 Contracting States) and ATNS (South Africa) and a representative of Industry (Thales) as observer. A list of participants is provided at **Appendix A**.

4. Officers and Secretariat

4.1 The meeting elected **Mr. Carel GERSBACH**, South Africa as Rapporteur and Chairperson. **Mr. Francois-Xavier SALAMBANGA**, Regional Officer, Communications, Navigation and Surveillance (CNS) from the ICAO Regional Office for Western and Central Africa (Dakar), acted as Secretary of the AFI Aeronautical surveillance Implementation Task Force, and was assisted by **Mr. Prosper ZO'O MINTO'O**, Regional Officer, Communications, Navigation and Surveillance from the ICAO Eastern and Southern Africa Office (Nairobi), Secretary of the APIRG Communications, Navigation and Surveillance Sub-Group (CNS/SG).

5. Working language

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

6. Opening

6.1 The meeting was opened by Mr. **Prosper ZO'O MINTO'O** on behalf Mr. **Boitshoko SEKWATI**, ICAO Deputy Regional Director for Eastern and Southern Africa.

7. Agenda

7.1 The meeting adopted the following agenda:

Agenda Item 1: Review of the Terms of Reference of AFI/ASI/TF and election of the Rapporteur for the Task Force

Agenda Item 2: Review of the status of implementation of the Draft conclusions and decisions of AS/I/TF/2

Agenda Item 3: Review of the current Surveillance Systems in AFI Region

Agenda Item 4: Review of APIRG/17&18 Draft conclusions pertaining to Aeronautical surveillance

Agenda Item 5: Review of the Recommendations of ICAO 12th Air Navigation Conference pertaining to Aeronautical Surveillance

Agenda Item 6: Implementation of AFI Aeronautical Surveillance systems in the framework of ICAO ASBU concept

Agenda Item 7: Updating the draft strategy and the implementation plan of AFI Aeronautical Surveillance

Agenda Item 8: Review of the Terms of Reference Composition and Future Work Programme of AS/I/TF

Agenda Item 9: Any other business

8. Summary of Draft conclusions & decisions

8.1 The following Draft conclusions and decisions were formulated by AFI/ ASI/TF/3 meeting:

| Number | Title |
|------------------------------|---|
| Agenda Item 1 | Review of the Terms of Reference of AS/I/TF and election of Rapporteur for the Task Force |
| Draft Decision 3/01 | Election of the Rapporteur <i>That:</i> <i>South Africa is maintained as Rapporteur of the Africa-Indian Ocean (AFI) Planning and Implementation Regional Group (APIRG) Aeronautical Surveillance Implementation Task Force (ASI/TF).</i> |
| Agenda Item 2 | Review of the status of implementation of the Draft conclusions of AFI/ASI/TF/2 |
| Draft conclusion 3/02 | Establishment of Local Teams for Traffic data collection <i>That:</i> <i>a) States establish local Teams involving all stakeholders (ATM, AIM, ATSEP...) and designate focal points of contact tasked with collecting traffic data for aerodromes and airspace categorization no later than 30 November 2013; and</i> <i>b) The contact details of the designated focal points of contact be forwarded to the ICAO Regional Offices, the Team Leaders (ASECNA and Seychelles) with copy to the Rapporteur (ATNS of South Africa).</i> |
| Draft Conclusion 3/03 | Coordination between stakeholders for traffic data collection <i>That:</i> <i>The secretariat of the APIRG CNS and the ATM/AIM/SAR Sub- Groups carry out the necessary coordination in order to facilitate the collection for the traffic data required for the categorization of the airspace and the completion of the AFI Aeronautical Surveillance Plan.</i> |
| Agenda Item 3 | Review of the current Surveillance Systems in AFI Region |
| Draft conclusion 3/04 | Completion and maintenance of the table on the status of implementation of surveillance Systems in the AFI Region <i>That:</i> <i>In order to facilitate coordination of the implementation of surveillance systems:</i> <i>a) The Secretariat continue to regularly update the table on the status of implementation of surveillance Systems in the AFI Region;</i> <i>b) States/Organizations provided the secretariat with the evolving implementation status of their Surveillance Systems</i> |
| Agenda Item 4 | Review of APIRG/18 Draft conclusions pertaining to Aeronautical surveillance |
| | NILL |
| Agenda Item 5 | Review of the Recommendations of ICAO 12th Air Navigation Conference pertaining to Aeronautical Surveillance |
| Draft conclusion 3/05 | Surveillance Technology Roadmap <i>That:</i> <i>When planning and implementing aeronautical surveillance systems, AFI States/Organizations take due account of the Surveillance Technology Roadmaps contained in the ICAO Global Air Navigation Plan (Doc 9750) and give consideration to the following aspects, among other considerations:</i> |

| Number | Title |
|-----------------------|---|
| | <p>a) <i>The effective operational requirements determined by a detailed assessment of the capacity needs of the regional ATM system (Airspace structure, Traffic flow, applicable separation criteria; Air Traffic Service constraints; Fleet equipage and equipage trend);</i></p> <p>b) <i>The availability and sustainability of candidate technologies to support effective provision of aeronautical surveillance;</i></p> <p>c) <i>Case by case cost/benefit analyses including safety maintenance criteria; and.</i></p> <p>d) <i>Interoperability of systems offering opportunities for shared costs</i></p> |
| Draft conclusion 3/06 | ADS-B Trials |
| | <p><i>That:</i></p> <p><i>In the framework of the consolidation of ICAO Aviation System Block Upgrades (ASBU) Block 0 Modules enabled by surveillance systems, AFI States/Organizations conduct trials on ADS-B in collaboration with the users taking into consideration the emerging ADS-B space based technology.</i></p> |
| Agenda Item 6 | Implementation of AFI Aeronautical Surveillance systems in the framework of ICAO ASBU concept |
| Draft conclusion 3/07 | Interoperability of AFI Aeronautical Surveillance Systems |
| | <p><i>That:</i></p> <p><i>In order to enable a seamless ATM operation within the AFI Region;</i></p> <p>a) <i>States/Organizations make necessary arrangements through Memoranda of Understanding (MoU) to ensure the interconnection and the interoperability of the existing aeronautical surveillance systems and facilitate surveillance data exchange and sharing;</i></p> <p>b) <i>When assisting States, AFCAC be requested to support the continuous provision of aeronautical surveillance services along ATS routes within all AFI Areas of Routing (AR-1 to AR-6) as one of the key enablers to a safer and integrated air transport system in the AFI region.</i></p> <p>c) <i>The Secretariat continue to assist States/Organizations in their efforts toward the implementation of an integrated aeronautical surveillance capability throughout the AFI region</i></p> |
| Agenda Item 7 | Updating the draft strategy and the implementation plan of AFI Aeronautical Surveillance Systems |
| Draft Decision 03/08 | Alignment of the strategy and plan of implementation of AFI aeronautical surveillance systems with the ASBU Concept |
| | <p><i>That:</i></p> <p><i>In line with the Surveillance Technology Roadmap, taking into consideration ICAO Aviation System Block Upgrade (ASBU) Block 0 Modules relevant to surveillance and based on the related Air Navigation Reporting Forms (ANRFs), the AFI/AS/I/TF Working Groups continue their assigned task through electronic correspondence no later than 30 September 2013 by:</i></p> <p>a) <i>Completing the update of the AFI aeronautical surveillance systems implementation Strategy and plan;</i></p> <p>b) <i>Establishing priorities for ASBU Blocks 0 Modules and reviewing the airspace categorization criteria.</i></p> |
| Agenda Item 8 | Review of the Terms of Reference and Future Work Programme of AS/I/TF |
| Draft Decision 03/09 | <p>Revised Terms of Reference, composition and Future Work programme of the AFI/ AS/I/TF</p> <p><i>That;</i></p> <p><i>Taking into consideration the provision of the 4th Edition of the Global Air Navigation Plan (GANP,</i></p> |

| Number | Title |
|----------------------|---|
| | <i>Doc.9750), the Terms of Reference, Composition and Work Programme of the AFI/AS/I/TF be revised as presented in Appendix D</i> |
| Agenda Item 9 | Any other business |

PART II: REPORT ON AGENDA ITEMS

Agenda Item 1: Review of the Terms of Reference of AS/I/TF and election of Rapporteur for the Task Force

1.1 Under this agenda item the meeting reviewed the Terms of Reference of the Task Force and elected **Mr. Carel Gersbach** from ATNS, South Africa as Chairperson for its sessions.

The following decision was formulated:

Decision 3/01: Election of the Rapporteur

That:

South Africa is maintained as Rapporteur of the Africa-Indian Ocean (AFI) Planning and Implementation Regional Group (APIRG) Aeronautical Surveillance Implementation Task Force (ASI/TF).

Agenda Item 2: Review of the status of implementation of the Draft conclusions of AS/I/TF/2

2.1 Under this agenda item, the meeting reviewed the status of implementation of the conclusions and decisions of the second meeting of AS/I/TF held in Dakar on April 2011.

2.2 It was agreed by the meeting to continue the implementation of the outstanding conclusions and decisions.

2.3 The meeting also noted that the process of categorizing of terminal and en-route airspaces is encountering barriers due to lack of collection of traffic data.

Seychelles tasked to compile traffic data for en route airspaces was not represented in this Task Force meeting and no report was available when ASECNA tasked for terminals air data collection reported to have not received any data from States and organizations.

2.4 The meeting agreed on the nomination of focal points of contact by States/Organizations attending this current meeting and tasked the Secretariat to extend the request to AFI States.

The Secretariat was also requested to amend and circulate once again the template for the data collection.

2.5 In order to ensure a successful data collection the meeting proposed the establishment by States/Organizations of Local Teams involving all stakeholders tasked to collect Traffic data.

The following Draft conclusion was formulated:

Draft conclusion 3/02: Establishment of Local Teams for Traffic data collection

That:

a) States establish local Teams involving all stakeholders (ATM, AIM, ATSEP...) and designate focal points of contact tasked with collecting traffic data for aerodromes and airspace categorization no later than 30 November 2013; and

b) The contact details of the designated focal points of contact be forwarded to the ICAO Regional Offices, the Team Leaders (ASECNA and Seychelles) with copy to the Rapporteur (ATNS of South Africa).

2.6 The meeting also noted that the information pertaining to traffic data in both Terminal and En Route airspaces was generally owned by ATM staff. It was therefore proposed that coordinating actions should be conducted towards the ATM Sub Group in order to facilitate the collection of the traffic data required for the categorization of the airspaces and to determine the additional surveillance requirements.

The following Draft conclusion was formulated:

Draft Conclusion 3/03: Coordination between stakeholders for traffic data collection

That:

The secretariat of the APIRG CNS and the ATM/AIM/SAR Sub- Groups carry out the necessary coordination in order to facilitate the collection for the traffic data required for the categorization of the airspace and the completion of the AFI Aeronautical Surveillance Plan.

Agenda Item 3: Review of the current Surveillance Systems in AFI Region

3.1 The secretariat updated the meeting with a table summarizing the status of implementation of surveillance systems within the AFI Region. This table is attached at **Appendix B** to this report.

3.2 The meeting noted a good pace of implementation of Secondary Surveillance Radars and ADS-C/CPDLC. States and organizations which have not yet done so were strongly encouraged to implement surveillance systems in order to enhance air navigation safety within the AFI Areas of Routing (A-R) presented in **Appendix C** to this report.

3.3 The meeting encouraged States/Organizations to continuously update the Secretariat with the evolving status of implementation of surveillance systems in order to complete and maintain the table.

The following Draft conclusion was formulated:

Draft conclusion 3/04 Completion and maintenance of the table on the status of implementation of surveillance Systems in the AFI Region

That:

In order to facilitate coordination of the implementation of surveillance systems:

- a) The Secretariat continue to regularly update the table on the status of implementation of surveillance Systems in the AFI Region;**
- b) States/Organizations provided the secretariat with the evolving implementation status of their Surveillance Systems**

Agenda Item 4: Review of APIRG/18 Draft conclusions pertaining to Aeronautical surveillance

4.1 Under this agenda item the meeting reviewed APIRG/17 &18 Draft conclusions and decisions pertaining to Aeronautical surveillance systems. The meeting reminded the relevance of APIRG/17 Draft conclusion 17/31 calling upon for the implementation of ADS-C/CPDLC in Oceanic and continental remote airspaces and strongly encouraged States that have not yet done so, to endeavor to implement APIRG/17 conclusion 17/31 calling upon for the implementation of ADS-C in oceanic and remote airspace in AFI Region.

Agenda Item 5: Review of the Recommendations of ICAO 12th Air Navigation Conference pertaining to Aeronautical Surveillance

5.1 Under this agenda item the meeting was provided with the seven (7) Recommendations of the ICAO 12th Air Navigation Conference pertaining to Aeronautical Surveillance Systems.

The meeting noted that the Conference agreed that a wide range of drivers are contributing to the manner in which CNS infrastructure would need to operate in the future and those specific to the surveillance environment include amongst others:

- a) Increasing traffic densities;
- b) New construction techniques for aircraft and all new types of aircraft (VLJs and UAS) that may place new requirements both for ground surveillance (integration of UAS in non-segregated airspace) and for airborne surveillance (support to “detect and avoid”);
- c) Increasing use of secondary and tertiary airports;
- d) New operational improvements stemming from initiatives (SESAR, CARATS, NextGen, etc.);
- e) Obsolescence of old/existing technology and availability of new technologies and techniques offering superior performance at reduced cost.

5.2 After analyzing the current surveillance systems deployed within the region the meeting came to the view that planning, implementing and operating surveillance systems within the AFI airspace should take due consideration of the surveillance Roadmap developed by the 12th Air Navigation Conference and included in the Global Air Navigation Plan.

5.3 The planning and implementation of surveillance systems in AFI region in the framework of the provision of ICAO Aviation System Blocks Upgrades (ASBU) concept should consider inter alia:

- Effective operational requirements determined by a detailed assessment of the capacity needs of the regional ATM system
- Airspace structure, Traffic flow, separation criteria;
- Air Traffic Service constraints;
- Fleet equipage and equipage trend;
- Availability and sustainability of technologies candidate to provide surveillance function effectiveness
- Case to case cost/benefit assessment with regards to safety maintenance criteria;

The following Draft conclusion was formulated:

Draft conclusion 3/05: Surveillance Technology Roadmap

That:

When planning and implementing aeronautical surveillance systems, AFI States/Organizations take due account of the Surveillance Technology Roadmaps contained in the ICAO Global Air Navigation Plan (Doc 9750) and give consideration to the following aspects, among other considerations:

- a) **The effective operational requirements determined by a detailed assessment of the capacity needs of the regional ATM system (Airspace structure, Traffic flow, applicable separation criteria; Air Traffic Service constraints; Fleet equipage and equipage trend);**
- b) **The availability and sustainability of candidate technologies to support effective provision of aeronautical surveillance;**
- c) **Case by case cost/benefit analyses including safety maintenance criteria; and.**
- d) **Interoperability of systems offering opportunities for shared costs**

5.4 The meeting was also provided with the ongoing development on ADS-B technology.

It was noted that the future space based ADS-B systems under trials in some region may provide similar SSR quality of data in oceanic and continental remote spaces where the deployment of ground based surveillance systems cannot currently be envisaged.

5.5 South Africa reported to be planning trials on MLAT and ADS-B and ASECNA presented the results on trials on ADS-B conducted in the Indian Ocean in collaboration with the airlines.

The meeting applauded such initiatives and noted the benefit which can be obtained from the implementation of ADS-B. States/Organizations were encouraged to conduct trials on ADS-B and share the results.

The meeting formulated the following conclusion:

Draft conclusion 3/06: ADS-B Trials

That:

In the framework of the consolidation of ICAO Aviation System Block Upgrades (ASBU) Block 0 Modules enabled by surveillance systems, AFI States/Organizations conduct trials on ADS-B in collaboration with the users taking into consideration the emerging ADS-B space based technology.

Agenda Item 6: Implementation of AFI Aeronautical Surveillance systems in the framework of ICAO ASBU concept

6.1 Under this Agenda Item, a presentation of ICAO Aviation System Blocks Upgrades (ASBU) concept and methodology was provided to the meeting with emphasis on Block 0 modules. The Surveillance technologies roadmaps for ICAO Aviation System Block Upgrades defined by the 12th Air Navigation Conference was also presented and discussed.

6.2 The meeting noted that surveillance systems will be one of the key enablers to achieve the seamless air navigation service within the Areas of Routing (A-R) within the AFI region.

6.3 The meeting also noted that considering the Area of Routing for seamless air navigation service provision will contribute to building an AFI Single Sky pending the ATM systems and its supported technologies including surveillance systems are interoperable.

6.4 As regional issue the meeting agreed on the necessity to bring the interconnection and interoperability requirements to the attention of sub regional bodies under the leadership of AFCAC.

The following conclusion was formulated:

Draft conclusion 3/07 Interoperability of AFI Aeronautical Surveillance Systems

That:

In order to enable a seamless ATM operation within the AFI Region;

- a) **States/Organizations make necessary arrangements through Memoranda of Understanding (MoU) to ensure the interconnection and the interoperability of the existing aeronautical surveillance systems and facilitate surveillance data exchange and sharing;**
- b) **When assisting States, AFCAC be requested to support the continuous provision of aeronautical surveillance services along ATS routes within all AFI Areas of Routing (AR-1 to AR-6) as one of the key enablers to a safer and integrated air transport system in the AFI region.**
- c) **The Secretariat continue to assist States/Organizations in their efforts toward the implementation of an integrated aeronautical surveillance capability throughout the AFI region**

Agenda Item 7: Updating the draft strategy and the implementation plan of AFI Aeronautical Surveillance

7.1 Under this agenda item the meeting started to review the Strategy and Plan of implementation of surveillance systems and the criteria of airspaces categorization as well.

7.2 The secretariat provided the meeting with the Air Navigation Reporting Forms (ANRFs) for the alignment of the Strategy and Plan of AFI surveillance systems with the ASBU concept.

7.3 It was noted the necessity to establish priorities on ASBU Blocks Modules in the AFI surveillance Plan in line with the guidance materials derived from the ICAO Global Air Navigation Plan (GANP Doc.9750 4th Ed.) taking into consideration the requirements of the users and the current planning and implementation scheme of the States/Organizations and industry.

7.4 Two Working Groups were established by the meeting to respectively revise the strategy and Plan and the airspace categorization criteria and set priorities for ASBU Blocks 0 Modules. They were tasked to complete its work by end of August 31 for submission to CNS/SG/5th meeting.

The following draft decision was formulated:

Draft Decision 03/08 Alignment of the strategy and plan of implementation of AFI aeronautical surveillance systems with the ASBU Concept

That:

In line with the Surveillance Technology Roadmap, taking into consideration ICAO Aviation System Block Upgrade (ASBU) Block 0 Modules relevant to surveillance and based on the related Air Navigation Reporting Forms (ANRFs), the AFI/AS/I/TF Working Groups continue their assigned task through electronic correspondence no later than 31 August 2013 by:

- a) **Completing the update of the AFI aeronautical surveillance systems implementation Strategy and plan;**
- b) **Establishing priorities for ASBU Blocks 0 Modules and reviewing the airspace categorization criteria.**

Agenda Item 8: Review of the Terms of Reference and Future Work Programme of AS/I/TF

8.1 The Secretariat provided the meeting with a draft Terms of Reference and Future Work Programme of AS/I/TF developed in line with ICAO ASBU concept.

8.2 The meeting discussed amended and agreed on the draft Term of Reference.

The following Draft Decision was formulated:

Draft Decision 03/09: Revised Terms of Reference, Composition and Future Work Programme of the AFI/AS/I/TF

That:

Taking into consideration the provision of the 4th Edition of the Global Air Navigation Plan (GANP, Doc.9750 4th Ed.), the Terms of Reference, Composition and Work Programme of the AFI/ AS/I/TF be revised as presented in **Appendix D**

Agenda Item 9: Any other business

9.1 Under this Agenda Item, the meeting noted the low pace of participation of States and organization and encouraged the Secretariat to continue organizing seminars and workshops on surveillance systems.



APPENDIX A

Third meeting of AFI Aeronautical Surveillance Implementation Task Force (AS/I/TF/3) (Nairobi, Kenya, 25-26 July 2013)

LIST OF PARTICIPANTS

| STATES | NO | NAMES | OFFICIAL TITLE / DESIGNATION / EMAIL / CONTACTS |
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APPENDIX B

Table of implementation of Surveillance systems in the AFI Region

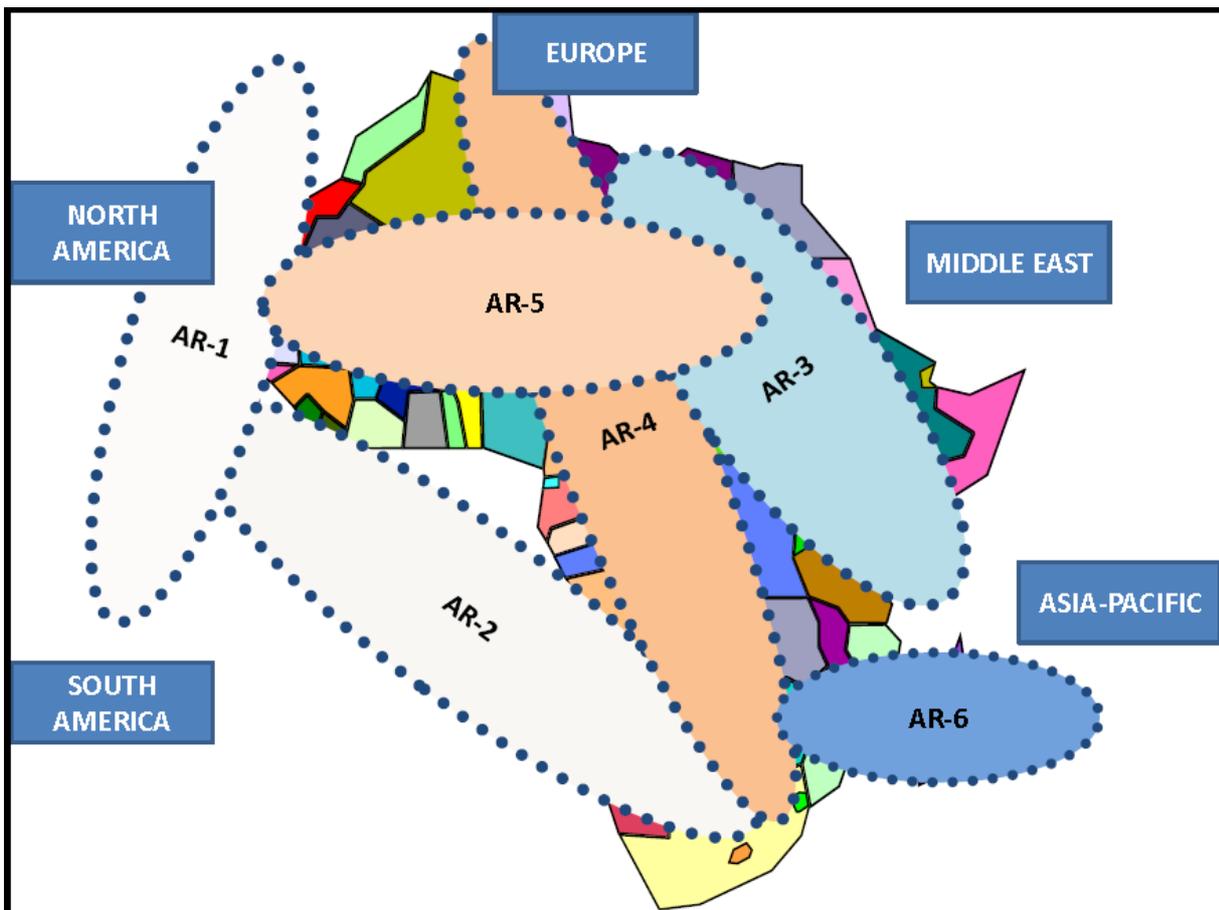
(See Separate attachment)

APPENDIX C

AFI Areas of Routing

HOMOGENEOUS AREAS AND MAJOR TRAFFIC FLOWS *(to be checked before publication)*

ATM HOMOGENEOUS AREAS IN THE ICAO AFI REGION (Charts to be replaced to reflect AFI)



MAJOR TRAFFIC FLOWS - AFI REGION

| <i>Areas of routing (AR)</i> | <i>Traffic Flows</i> | <i>Areas involved</i> | <i>Type of area covered</i> | <i>Remarks</i> |
|---|---|---|---|--|
| Africa-Indian Ocean (AFI) Region | | | | |
| AR1 | Europe — South America (EUR/SAM) (oceanic) | Atlantico ¹ , Canarias, Casablanca, Dakar Oceanic, Recife, Sal Oceanic | Oceanic en route low density in southern part and oceanic high density in northern part | Major traffic flow EUR/SAM |
| AR2 | Atlantic Ocean interface between the AFI, NAT and SAM Regions | Accra, Dakar, Johannesburg, Luanda, Sal | Oceanic en route low density | Homogeneous ATM area AFI/NAT/SAM |
| AR3 | Europe — Eastern Africa routes including the area of the Indian Ocean | Addis Ababa, Antananarivo, Asmara, Cairo, Dar es-Salaam, Entebbe, Khartoum, Mauritius, Mogadishu, Nairobi, Seychelles, Tripoli | Continental en route/ oceanic low density | Major traffic flow AFI/EUR |
| AR4 | Europe to Southern Africa | Algiers, Beira, Brazzaville, Cape Town, Gaborone, Harare, Johannesburg, Kano, Kinshasa, Lilongwe, Luanda, Lusaka, N'Djamena, Niamey, Tripoli, Tunis, Windhoek | Continental en route low density | Major traffic flow AFI/EUR |
| AR5 | Continental Western Africa including coastal areas | Accra, Addis Ababa, Brazzaville, Dakar, Dar-es-Salaam, Entebbe, Kano, Khartoum, Kinshasa, Nairobi, Ndjamen, Niamey, Roberts | Continental/oceanic low density | Homogeneous area AFI (this is a growing traffic, developing into major traffic flow) |
| AR6 | Trans-Indian | Antananarivo, Bombay ¹ , Johannesburg Male ¹ , Mauritius, Melbourne ¹ , Seychelles | Oceanic high density | Homogeneous ATM area AFI/ASIA |

APPENDIX D

DRAFT TERMS OF REFERENCE OF THE AFI AERONAUTICAL SURVEILLANCE TASK FORCE (AFI ASI/TF)

Terms of Reference:

- 1) Ensure that the implementation and operation of aeronautical surveillance systems meet ICAO Standards and Recommended Practices as specified in Annex 10 Volume IV[4]-*Surveillance and collision avoidance Systems*, the provision of the *Aeronautical Surveillance Manual, Doc. 9924* and those of relevant ICAO Manuals related to surveillance operation and systems;
- 2) Develop the AFI regional criteria for the planning and implementation of aeronautical surveillance systems as key enablers to the improvement of the Performance of the Air Navigation System as defined in the *Manual on Global Performance of the Air Navigation System (Doc. 9883)*;
- 3) Ensure that the AFI regional aeronautical surveillance implementation strategy and plans consider the regional ATM operational performance requirements along the AFI Routing Areas in line with the provisions contained in the *Manual on ATM System Requirements (Doc. 9882)*;
- 4) Conduct timely assessment of the status of implementation, operation and sustainability of aeronautical surveillance systems in the AFI region for growth and technology development to support safety and operational effectiveness for current and future surveillance systems and allow for the transition between present and next generation technologies;
- 5) Ensure that appropriate mechanisms (Technical/operational interfaces, procedures, agreements) are developed to facilitate interconnectivity and interoperability of surveillance systems within and across the AFI region;
- 6) On the basis of the above and in the framework of the implementation of ICAO Aviation System Blocks Upgrades (ASBU), revise and coordinate AFI strategy and plan for the provision, the operation and the interoperability of aeronautical surveillance systems within the AFI Region in accordance with the Roadmap for the surveillance systems contained in the *Global Air Navigation Plan (GANP, Doc.9750)* and taking into account relevant additional ICAO provisions.

Considerations:

In addressing these terms of reference, the Task Force should consider, inter alia, the following aspects:

- a) Operational performance requirements for aeronautical surveillance in the AFI Region, en-route, terminal areas (TMAs) and aerodromes operations;
- b) Near term and long term benefits of relevant candidate surveillance systems.
- c) Strategy from legacy to future system including specific demand during transition
- d) Inter and intra-regional issues taking into consideration ICAO Aviation System Block Upgrades (ASBU) planning requirements (Interconnectivity, interoperability, Data sharing...);
- e) Personnel training for safe aeronautical surveillance system operation and maintenance;
- f) Minimized impact of market mechanism on aeronautical surveillance systems procurement and operation.

3-WORK PROGRAMME

| Task No. | ASBU Performance Improvement Area | ASBU Applicable Block 0 Modules | Subject | Target date |
|----------|--|--|--|--------------------------|
| 1 | PIA: 1-2-3-4 | All that apply | <p>Review of ICAO SARPs and Guidance Material</p> <p><i>Team Leader: Secretariat</i> <i>Team members: All AFI/ASI Core members</i> <i>References:</i></p> <ul style="list-style-type: none"> • ICAO Annex 10 (Vol. 4), Docs.4444 • ICAO Docs.: 8071; 9684; 9688; 9694; 9750; 9863. 9871;9882;9883;9924 | CNS/SG/5 Deliverable: |
| 2 | PIA-1: Airport Operations | <p>APTA: Optimization of Approach Procedures including vertical guidance ACDM: Improved Airport Operations through Airport-CDM</p> | <p>Categorization of Aerodromes and Terminal Areas</p> <ul style="list-style-type: none"> ▪ Data Collection: Statics parameters, Movement figures; ▪ Statistics modeling and categorization <p><i>Team Leader: ASECNA</i> <i>Team members: All AFI States/ANSPs</i> <i>References:</i></p> <ul style="list-style-type: none"> • <i>Surveillance Data collection Template</i> • <i>Statistics models</i> | CNS/SG/5 Deliverable: |
| 3 | PIA 2: Globally Interoperable Systems and Data - Through Globally Interoperable System Wide Information Management | <p>FICE: Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration</p> <p>FRTO: Improved Operations through Enhanced En-Route Trajectories</p> | <p>Categorization of en Route Airspaces</p> <ul style="list-style-type: none"> ▪ Data Collection: Statics parameters, Movement figures; ▪ Statistics modeling and categorization <p><i>Team Leader: Seychelles-CACAS</i> <i>Team members: All AFI States/ANSPs</i> <i>References:</i></p> <ul style="list-style-type: none"> • <i>Surveillance Data collection Template</i> • <i>Statistics models</i> | CNS/SG/5 Deliverable: |
| 4 | PIA 2: Globally Interoperable Systems and Data - Through Globally Interoperable System Wide Information | <p>FICE: Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration</p> | <p>Development of guidelines for surveillance data sharing & exchange; Models of MoU and draft agreements <i>Team Leader: Nigeria</i> <i>Team members: All AFI States/ANSPs</i></p> | |

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|---|---|---|---|------------------------------|
| | Management | FRTO: Improved Operations through Enhanced En-Route Trajectories | <i>References:</i> <ul style="list-style-type: none"> • <i>Current models in other regions (EUR, SAM)</i> • <i>Technical interface documents</i> | |
| | PIA 2: Globally Interoperable Systems and Data - Through Globally Interoperable System Wide Information Management | FICE: Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration FRTO: Improved Operations through Enhanced En-Route Trajectories | Development of regional strategies for coordination between States and stakeholders 1. Coordination with AFCAC <i>Team Leader: Secretariat</i> <i>Support:</i> 2. Coordination with Sub Regional Economic Unions a) ECOWAS/UEMOA <i>Team Leader: Nigeria/Ghana?</i> <i>Support: ECOWAS/UEMOA AFI/FMG Members</i> b) CEMAC <i>Team Leader: Cameroon/Congo?</i> <i>Support: CEMAC AFI/FMG Members</i> c) SADC <i>Team Leader: South Africa/Botswana</i> <i>Support: SADC ASI Members</i> d) EAC <i>Team Leader: Kenya/Uganda</i> <i>Support: EAC ASI Members</i> India Ocean | CNS/SG/5 Deliverable: |
| | PIA 3 Optimum Capacity and Flexible Flights – Through Global Collaborative ATM | ASUR: Initial capability for ground surveillance ASEP: Air Traffic Situational Awareness(ATSA) OPFL: Improved access to Optimum Flight Levels through Climb/Descent Procedures using ADS-B ACAS: ACAS Improvements SNET: Increased Effectiveness of Ground-Based Safety Nets | | |
| 5 | PIA 2: Globally Interoperable Systems and Data - Through Globally Interoperable System Wide Information Management | FICE: Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration FRTO: Improved Operations through Enhanced En-Route Trajectories | Review and update Status of deployment of Surveillance systems <i>Team Leader: Secretariat</i> <i>Team members: All AFI/ASI States members</i> <i>References:</i> <ul style="list-style-type: none"> • <i>Template on the collection of Status of current AFI surveillance systems</i> | CNS/SG/5 Deliverable: |

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|---|--|--|---|-----------------------------------|
| | <p>PIA 3 Optimum Capacity and Flexible Flights – Through Global Collaborative ATM</p> | <p>ASUR: Initial capability for ground surveillance</p> <p>ASEP: Air Traffic Situational Awareness(ATSA)</p> <p>OPFL: Improved access to Optimum Flight Levels through Climb/Descent Procedures using ADS-B</p> <p>ACAS: ACAS Improvements</p> <p>SNET: Increased Effectiveness of Ground-Based Safety Nets</p> | | |
| 4 | <p>PIA: 1-2-3-4</p> | <p>All that apply</p> | <p>Training on Surveillance Systems Organization of seminars/workshops on surveillance, Team Leader: Secretariat <u>Support: ANSPs (ASECNA, ATNS, GCAA, NAMA)</u> Regional /International Organization (ECOWAS/UEMOA, CEMAC, SADC, ITU, ATU, AFCAC) Industry (Intelsat, SITA, IATA..) References:</p> <ul style="list-style-type: none"> • Report on previous ASI TF and APIRG meetings • ICAO Annex 10 (Vol. 4) • ICAO Training Manual (Doc. 7192 Part E-2 - Air Traffic Safety Electronic Personnel (ATSEP)) | <p>CNS/SG/5 Deliverable:</p> |

3-COMPOSITION

Cores members:

Working Group for the development of the AFI ENROUTE Surveillance strategy

Team Leader: *Seychelles/CACAS*

Members: *South Africa-Nigeria-Ghana-DRC -Mauritius-Angola-IATA*

Working Group for the development of the AFI TERMINAL AREA Surveillance strategy

Team Leader: ASECNA

Members: *Zambia-South Africa- Tanzania- IATA*

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