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

Agenda Item 2: Performance Framework for Regional Air Navigation Planning and Implementation

2.3   UPDATE ON CNS MATTERS

(Presented by the Secretariat)

SUMMARY
This paper presents the updates on the implementation of Communication, Navigation and Surveillance (CNS) systems in the AFI Region.   **Action by the meeting is at paragraph 3**: *Paragraph 3*
REFERENCE(S):   ▪ Doc 9750, *Global Air Navigation Plan*   ▪ Doc 7474, *Air Navigation Plan — Africa-Indian Ocean Region*   ▪ *APIRG Procedural Handbook*   ▪ Report on APIRG 21ˢᵗ Meeting
Related ICAO Strategic Objective(s): A *– Safety,* **B** *– Air Navigation Capacity and Efficiency,* **D** *– Economic Development of Air Transport, and* **E** *– Environmental Protection.*   **Related ASBU KPIs & B0 Modules:** All applicable to CNS and Spectrum

1.   INTRODUCTION

1.1   The Twenty First APIRG meeting held in Nairobi, Kenya, from 9 to 11 October 2017 reviewed the status of implementation of Communication Navigation and Surveillance (CNS) systems in the AFI Region and encouraged the APIRG Infrastructure and Information Sub Group (IIM/SG) to take the appropriate actions for their implementation in the framework of the APIRG Projects Approach.

1.2   Since then, States and Organizations have conducted various implementation actions in the field of Communication Navigation and Surveillance Systems.

2.   DISCUSSION

Aeronautical Fixed Service

2.1   In the area of Ground/Ground Communication, the status of implementation of the Aeronautical Fixed Telecommunication Network (**AFTN**) remains standing since this legacy system is assumed to be gradually replaced by the ATS Message Handling System (**AMHS**).

2.2   Although the operation of AFTN remains major in the AFI Region the pace of implementation of AMHS is more and more increasing. The implementation of AMHS should be coordinated through the AFI IIM COM Project.2: *Implementation of Ground/Ground communication (AFTN, AMHS)* led by Nigeria. Unfortunately, the Team for this regional project is experiencing difficulties to meet even by Teleconferences. However, the progress in implementing AMHS is on-going in the AFI Region as shown in the table in **Appendix 1** to this Working Paper.

2.3   The status of implementation of the AFI regional Plan for Air Traffic Service-Direct Speech (**ATS-DS**) is satisfactory since most of the circuits have been successfully implemented except those identified unserviceable due to non-technical reasons.

Aeronautical Mobile Service

2.4   Aeronautical Mobile Service in the AFI region is provided by High Frequency (HF) radio systems within oceanic and continental remote airspace. However, the implementation of Controller/Pilot Data Link Communication (**CPDLC**) has been increased in particular in the major Air Traffic Control Units (**ATSUs**).

2.5   In the same time Administrations and Organizations continue to implement and sustain within continental airspaces, remote Very High Frequency (VHF) radio systems to extend VHF coverage. In this regard, the satellite based VSAT technics used to operate remote VHF is now mature in the AFI Region offering a good opportunity to reinforce the quality of Air Ground Communication. IATA regularly conduct surveys on the status of implementation and the quality of Air Ground communication. The coordination of the project on Aeronautical Mobile Service is led by South Africa and the project Team made some progress in its work.

Aeronautical Radio Navigation Service

2.6   The table of deficiencies in the implementation of conventional aeronautical radio navigation stations (VOR, DME, ILS) reviewed by APIRG 21 still stands to have not evolved notably due to lack of reporting of concerned States. This meeting is an opportunity to update this table.

2.7   In the area of Global Navigation Satellite Service (GNSS), Phase I and Phase II -a) of the AFI GNSSS Strategy are implemented since Basic GNSS is widely used within Continental En-route, Oceanic and Remote Continental En-route airspaces. Initiatives are being undertaken for the implementation of augmented GNSS systems. These initiatives need to be aligned with the AFI GNSS Strategy in order to ensure that collaborative decision Making approach is used to ensure the adherence of all stakeholders.

2.8   The coordination of the regional navigation projects led by Cameroon is also experiencing challenges in effective implementation.

Aeronautical Surveillance Service

2.9   Amongst the four sensors (SSR, ADS-C, ADS-B, MLAT) identified by the AFI aeronautical surveillance strategy the pace of implementation of SSR Mode S and ADS-B was increased during these last years. The status of implementation of SSR, ADS-C and ADS-B is presented in **Appendix 2.**

2.10   As illustrated in the map below mixed SSR Mode S & ADS-B overlapping surveillance coverages offer the opportunity to ensure a seamless surveillance service within and across Flight Information Regions in Area of Routing 5.
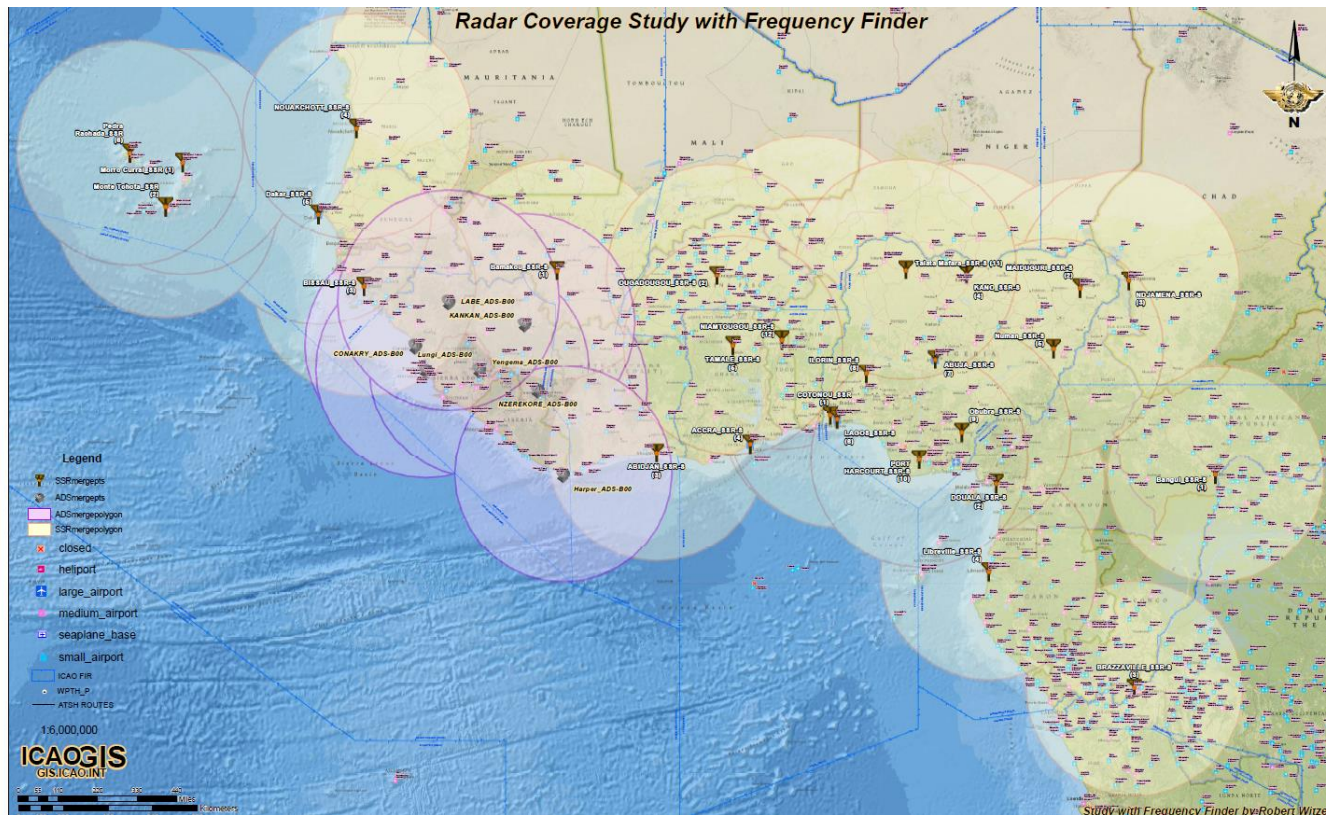
2.11   This seamlessness should be achieved by sharing ground based surveillance data (SSR & ADS-B) amongst neighboring Air Traffic Service Units (ATSUs). As an example in this, regard, a cooperation framework has been initiated with the assistance of ICAO, in order to develop and implement a regional project on surveillance data sharing amongst four main ANSPs in WACAF (ASECNA, GCAA (Ghana), NAMA and The Roberts FIR).

2.12   The AFI surveillance project coordination was tasked to Ghana and the project Team is working successfully.

Aeronautical Spectrum issues

2.13   In the area of aeronautical spectrum, the aviation community in the Region is following up the discussions between the African National Authorities of Telecommunication within the African Telecommunication Union (**ATU**) activities in preparation of the International Telecommunication Union World Radio Communication Conference 2019 (**ITU-WRC-19**) scheduled to take place in **Sharm el-Sheikh**, Egypt, from 28 October to 22 November 2019.

2.14   In this regards strategies and coordination have been developed to encourage the participation of CAAs in the ATU preparatory meetings to the conference. Moreover, some AFI Administrations ensured the attendance of their specialized staff to the Study Groups established by ITU-R to discuss key technical issues emanating from particular agenda items of the Conference while some of them endeavor to fully participate in the ICAO Frequency Management Panel.

2.15　　　　These efforts should be kept and reinforced to ensure the full support of the AFI Group to ICAO Position for WRC-19.

3　　ACTION BY THE MEETING

3.1　　　　The meeting is invited to:

　　　a)　　Take note of the information presented in this working paper, highlighting the updates on CNS matters in the AFI Region;

　　　b)　　Provide the Secretariat with any updated information on the implementation of CNS systems

　　　c)　　Endorse the following Conclusions and Decisions:

Draft Conclusion xxxx: Implementation of AMHS in the AFI Region	
That; **In order to ensure a robust and sustainable operation of the future ATM systems in compliance with the timeframe of the technology roadmap for the implementation of ICAO ASBU threads,** **Administrations/Organizations are urged to speed up the planning, implementation, operation and monitoring of AMHS.**	**Expected impact:** ☐ **Político / Global** ☒ **Inter-regional** ☐ **Economic** ☐ **Environmental** ☒ **Technical/Operational**
Why: Improve the aeronautical message system	
When: Before 2023	**Status: Valid**
Who: ☐ Coordinators ☒ States ☐ ICAO Secretariat ☐ ICAO HQ ☒ Others: ANSPs	

Draft Conclusion xxxx: Interconnection and interoperability of AIDC systems in the AFI Region	
That; **In order to ensure effective operation of the AFI Aeronautical Fixed Service, Administrations/Organizations develop and sign with their interested counterparts, Memoranda of Understanding (MoUs) encompassing a regulatory, technical, procedural framework, to ensure that the interconnection of the Aeronautical ground ATN component (AMHS) and its main applications (AIDC) meet the requirements for systems full interoperability.**	**Expected impact:** ☐ **Político / Global** ☐ **Inter-regional** ☐ **Economic** ☐ **Environmental** ☒ **Technical/Operational**
Why: Facilitate the implementation of AMHS and AIDC	
When: Before any interconnection exercise	**Status: Valid**
Who: ☐ Coordinators ☒ States ☐ ICAO Secretariat ☐ ICAO HQ ☒ Others: ANSPs	

Draft Conclusion xxxx: Seamless Aeronautical Surveillance Service	
That; 1. **Administrations/Organizations plan and implement ground base surveillance sensors (SSR Mode S, ADS-B) data shearing in order to provide a seamless aeronautical surveillance Service through within and across FIRs in concerned Area of Routing;** 2. **ICAO and AFCAC, provide the continue desirable support for project development, training, mobilization of funding**	**Expected impact:** ☐ **Political / Global** ☐ **Inter-regional** ☐ **Economic** ☐ **Environmental** ☒ **Technical/Operational**
Why: Ensure seamless surveillance service	
When: Before end of 2023	**Status: Valid**
Who: ☒ Coordinators ☒ States ☐ ICAO Secretariat ☐ ICAO HQ ☒ Others: ANSPs	

Draft Conclusion xxxx: Support to ICAO Position for ITU WRC-19	
That; **Administrations are urged to intensify the supporting initiative and actions towards their national Authority of Regulation of Telecommunication to ensure that the ICAO position for WRC-19 is shared understood and reflected in the national position of the State to the Conference.** **In doing so, they will ensure as well as possible their participation in the national coordination meetings and in the Conference itself, coordinating between the CAA with the aviation industry to identify the national concerns on spectrum and promoting ICAO policy in the matter prior to the Conference.**	**Expected impact:** ☐ **Political / Global** ☐ **Inter-regional** ☐ **Economic** ☐ **Environmental** ☒ **Technical/Operational**
Why: To protect the aetronautical spectrum	
When: Before ITU CMR-19	**Status: Valid**
Who: ☒ Coordinators ☒ States ☐ ICAO Secretariat ☐ ICAO HQ ☒ Others: ANSPs	

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