INTERNATIONAL CIVIL AVIATION ORGANISATION

WESTERN AND CENTRAL AFRICAN OFFICE

AFI SATELLITE NETWORK MANAGEMENT COMMITEE MEETING

(23RD MEETING)

Accra, Ghana 15 to 19 February 2016

Agenda Item 10: Any other business

Spectrum allocations for emerging aviation needs for safety of life aviation services

(**Presented by Ghana Civil Aviation Authority)**

SUMMARY

This paper presents on the WRC 15 allocation of 4MHz bandwidth for safety of life application Satellite base ADS-B.

Reference: Conclusions and recommendations of the ICAO special meeting on global airline flight tracking held in May 2014 in Montréal Canada.
WRC 15 GFT

1.0 Introduction

1.1 Following the tragic event of the Malaysian Airlines Flight 370, there was a special ICAO meeting on global airline flight tracking May 12-13, 2014 in Montreal, Canada which urged "States and International Telecommunication Union (ITU) to take action, at the earliest opportunity, to provide the necessary spectrum allocations as emerging aviation needs are identified" and encouraged ITU to place on the agenda for the upcoming ITU World Radio communication Conference 2015 spectrum for satellite and radio services used for safety of life aviation services.

1.2 Additionally, an Expert Dialogue on Real-time Monitoring of Flight Data facilitated by the International Telecommunication Union (ITU), 26-27 May 2014 in Kuala Lumpur, Malaysia called upon ITU to take action, at the earliest opportunity, to provide the necessary

spectrum allocations as emerging aviation needs are identified and encouraged ITU to make appropriate allocations at upcoming World Radio communication Conferences, including the conference in 2015.

1.3 As a result, Africa proposed a new resolution requesting the World Radio communication Conference (WRC) 2015, in accordance with CV119, to consider primary allocations to the aeronautical mobile satellite (route) service to enable the reception-only of automatic dependent surveillance-broadcast (ADS-B) signals via satellite and thus expand the operational benefits of the existing terrestrial use of ADS-B to oceanic and remote areas without ground infrastructure.

2.0 Background

2.1 ADS-B is a proven and standardized technology, supporting both ground-based and airborne aircraft surveillance applications. ICAO has developed Standards and Recommended Practices (SARP) on ADS-B systems that enable position determination and monitoring of aircraft and the safe airspace separation of aircraft by air traffic control management. However, in oceanic, polar and remote regions the installation of ground based facilities is either not feasible or practical; therefore ADS-B data from aircraft operating in these areas is unavailable to air traffic management. Currently a very high percentage of the Earth's surface is not covered by radar, including in Africa.

2.2 Extending ADS-B benefits to allow for worldwide coverage would require including uplinks from aircraft to satellites, which ICAO has determined would require a frequency allocation to the Aeronautical Mobile Satellite (R) Service (AMS(R)S) in the band already allocated to AM(R)S for terrestrial ADS-B.

2.3 Such allocation will facilitate access to this existing terrestrial technology to areas where ground infrastructure is limited, such as in Africa, thus helping to provide non-discriminatory access to a modern technology and meet specific aviation technology requirements in some developing and developed countries.

2.4 Considering that the issue of the allocation of spectrum for the reception-only of ADS-B signals via satellite was granted by the WRC 15 under the agenda item Global Flight Tracking (GFT) with full support of the conference and that 4 MHz bandwidth has been allocated within the 1090 MHz band. Given the recent tragic events, as well as technological advancements and studies by both ICAO and ITU-R, and the fact that manufacturers have benefitted to deliver a new technological product or system , actions should be taken to

encourage SNMC members states to conduct further studies on the suitability of satellite base ADS-B to the Afi – Regions.

3.0 Proposal

2.1 Considering the importance of the issue of flight safety, and that availability of existing and new technologies that will benefit aviation safety, the following is proposed:

a) That the spectrum for satellite and radio services used for safety of life aviation services be protected by registering with the National Telecommunication Regulators

b) That emerging aviation safety needs and the operational benefits of automatic dependent surveillance broadcast (ADS-B), including its expansion via satellite to oceanic and remote areas without ground infrastructure in the band 1089-1091MHz be protected from any interference going into the future.

c) that satellite-based ADS-B will enable those countries that do not have the ground infrastructure in place to benefit from ADS-B surveillance and tracking data

d) that continuously evolving technologies can enhance air safety and bridge the digital divide;

e) that SNMC members are encouraged to further study and research on the operational benefits and deficiencies relating to the satellite base ADS-B and report to SNMC.

4.0 Action Required

The meeting is invited to;

a. **Take note of the above paper**
b. **Discuss the contents of the paper and**
c. **Take a decision to encourage member states to share information on the satellite base ADS-B**