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AIR NAVIGATION SERVICES

COMMUNICATION

ADS-B AND MODE S 1090 MHZ “EXTENDED SQUITTER” AIRCRAFT TRANSPONDER REQUIREMENTS IN SOUTH AFRICA

1. Purpose

The Purpose of this AIC is to communicate to the South African ATM community the enhancements necessary to improve Air Traffic Surveillance in South Africa and the region. It also serves to introduce the subject and encourage collaboration by all affected members of the ATM community and ensure awareness of the implementation of this additional surveillance service.

In the Republic of South Africa, transponder equipage while in CLASS A and CLASS C airspace is mandated according to SA-AIP ENR 1.6.1 to ENR 1.6.5. Furthermore, Regulation 91.05.1 of the Civil Aviation Regulations, 2011 (CAR 2011) read together with the SA-CATS 91.05.1; provides further clarity and support to this transponder mandate.

2. Introduction

For ATNS and other Air Navigation Service Providers (ANSP’s) to ensure that adequate conflict management and relevant navigational assistance is provided as mandated by the State and regulated by the appropriate CAA (Civil Aviation Authority), it is necessary to continuously review and appropriately update the enabling technologies that allow for improved Air Traffic Management Service Delivery (ATM SD), in line with Global, Regional and National plans.

It is expected that provision is made to supplement current surveillance systems as a matter of improvement and eventually replace certain of the current elements which may become obsolete or irrelevant in future, Automatic Dependent Surveillance-Broadcast (ADS-B) has been identified as such a technology. In addition, due to the increased traffic volumes, especially in complex terminal areas, the introduction of Mode Select (Mode S) Extended Squitter transponders are also required to ensure effective operational performance of the surveillance sensors.

ADS-B and Mode S enhanced surveillance enables the automatic provision of essential information fed to the automated Air Traffic Management (ATM) system required to meet the challenges posed by the global concepts and resultant plans.

3. General

It is recommended that all new transponder installations consist of an ADS-B / Mode S 1090 MHz Extended Squitter. It is envisaged that all aircraft required to carry transponders will need to upgrade in accordance with a schedule, consistent with Regional and National plans as defined.

The 25th meeting of the AFI Planning and Implementation Regional Group (APIRG 25) of November 2022 concluded that the AFI ADS-B mandate and compliance timelines as previously communicated shall remain in force as follows,


- *all aircraft operating in RVSM airspace should be equipped with ADS-B Mode S 1090 Extended Squitter transponder, by AIRAC EFF June 2023, and*
- *all aircraft operating in the AFI region be equipped by AIRAC EFF June 2025.*

Following consultation and deliberation regards ADS-B regulation development, the South African ATM community reached consensus to redefine the compliance timelines deemed appropriate for South Africa. Therefore, ADS-B / Mode S 1090 MHz Extended Squitter transponder will be mandated for all aircraft in South Africa by AIRAC EFF June 2025, while operating in Class A inclusive of RVSM and in designated CLASS C airspace as approved by the (DCA) Director Civil Aviation.

4. Conclusion

Implementation progression and installations carried out on South African registered aircraft will need to meet the specifications as laid down in the SA-CATS 91.05.1 in accordance with the schedule as defined by the SA-CARS 91.05.5.

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