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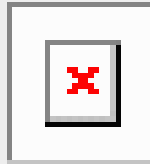
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[civilavi@malawi.net](mailto:civilavi@malawi.net)**AIC for Malawi****AIC****A 05/2007****Effective from 10 DEC 2007****Published on 10 DEC 2007**

## **OPERATIONAL OF AIRCRAFT IFR APPROVAL TO USE THE GLOBAL NAVIGATION SATELLITE SYSTEMS FOR EN-ROUTE OPERATIONS AND RNAV (GNSS) PROCEDURE IN MALAWI**

### **1 NOTICE**

This AIC is only available in PDF. Please click the PDF link in the commands pane.

#### **1.1 Introduction.**

- a. This Aeronautical Information Circular (AIC) becomes effective on 14 February, 2008 and specifies the terms and conditions associated with the approval to use the Global Navigation Satellite Systems (GNSS) (GPS/GLONASS) for en route and RNAV (GNSS) Procedures for Instrument Flight Rules (IFR) Operations in Malawi. The applicable airports and procedures are published in AIRAC AIP Supplement S002/2007.
- b. International standards for the use of GNSS for the above IFR Operations are published in ICAO Annex 10 and in the ICAO PANS-OPS Volume II. All terminal and approach procedures authorised by this AIC meet these ICAO Standards.

Proposed GNSS national regulations pertaining to requirements for:

- Airworthiness
- Maintenance
- Pilot licensing
- Operations
- Air Traffic Services
- Aeronautical Telecommunication

Are described in the proposed regulations and can be obtained from the AIS office, DCA headquarters

#### **1.2 Terms and Conditions**

##### **1. En route Operations**

GNSS navigation may be used for IFR flight guidance for en route operations subject to the following provisions and limitations:

- i. The GNSS navigation equipment must be approved in accordance with the requirements specified in Technical Standard Order (TSO) C129 or C129a (Class A1, A2, B1, B2, B3, B4, C1, C2, C3 or C4), installed and approved in accordance with the aircraft flight manual or flight manual supplement.
- ii. Aircraft using GNSS equipment under IFR must be equipped with another approved and operational means of navigation. Should GNSS navigation capability be lost, this equipment must allow navigation along the planned route or suitable alternate route.
- iii. For flight plan purposes, the COM/NAV equipment suffix "G" must be used to indicate area navigation (RNAV) capability.

##### **2. RNAV (GNSS) Terminal and Approach Operations**

GNSS shall be used for IFR flight guidance during RNAV (GNSS) Procedures subject to the following terms and conditions:

- a. All aircraft operators SHALL BE AUTHORISED BY THE STATE OF REGISTRY to conduct terminal and approach procedures using GNSS.
  - b. GNSS avionics shall meet FAA TSO C129 or C129a (Class A1, B1, B3, C1 or C3) or C145/C146 requirements or equivalent criteria and shall be installed and approved in accordance with accepted standards and regulations. The GNSS avionics shall be operated in accordance with the aircraft flight manual or applicable flight manual supplement, both of which take precedence over the terms and conditions specified in this AIC.
  - c. The avionics navigation database shall be current. All RNAV (GNSS) Procedures shall be retrieved from the avionics navigation database, which shall store the location of all way points required to define the procedure and present the in the order depicted on the published procedure chart. Pilots shall verify procedure waypoints either by verifying coordinates or by ensuring that bearings and distances between waypoints are consistent with charted data.
  - d. Receiver Autonomous Integrity Monitoring (RAIM) shall be available upon commencement of an RNAV (GNSS) procedure and throughout the procedure to provide integrity for the navigation guidance. If a RAIM warning is displayed when the aircraft is established on the final approach course, the pilot shall not continue the approach using GNSS guidance. Aircraft with integrated GNSS/IRS systems may meet this requirement by alternate means if such means are authorised by the State of Registry. In the case of an instrument approach procedure, if an avionics RAIM predictions indicates that RAIM will not be available at the expected approach time, the pilot shall advise ATC of his/her intentions as soon as possible.
  - e. Aircraft using GNSS equipment under IFR shall be equipped with another approved and operational means of navigation. Should GNSS navigation capability be lost, this equipment shall allow navigation along the planned route or a suitable alternate route.
  - f. GNSS may be used to identify all DME and ADF fixes that are part of any instrument approach procedure, when the applicable named and charted DME or ADF fix is selected as a GNSS waypoint. Where ATC requests a position based on a distance from a DME facility for separation purposes the pilot may report GNSS (GPS) distance from that DME facility name but omitting the term "DME" (e.g. "20 miles GPS from Lilongwe VOR")
  - g. Where a take-off and or en route alternate is required, at least one non – GNSS based approached procedure shall be available at the alternate (s).
  - h. When communicating with ATC Pilots shall identify and request a procedure by its published name.
3. **Submission of Application for Approval**  
Application for approval to use RNAV (GNSS) should be made to:

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Director of Civil Aviation  
Private Bag B 311  
Lilongwe 3

Fax: +265 (0) 1 773 279

+265 (0) 1 774 986

Email: [avitionhq@malawi.net](mailto:avitionhq@malawi.net)

[civilavi@malawi.net](mailto:civilavi@malawi.net)

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This circular is issued for information, guidance and necessary action and replaces AIC A7/2004.

**A.C. Mtilatila**

**Director of Civil Aviation**