

	TANZANIA CIVIL AVIATION AUTHORITY DIRECTORATE OF SAFETY REGULATIONS AIR NAVIGATION INSPECTORATE	Revision: 2 Advisory Circular
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1.0 PURPOSE

This Advisory Circular (AC) provides guidance on the approval of CNS facilities under the Civil Aviation Regulations.

2.0 REFERENCES

- 2.1 The Civil Aviation (Radio Navigation Aids) Regulations.
- 2.2 The Civil Aviation (Communication Procedures) Regulations.
- 2.3 The Civil Aviation (Communication Systems) Regulations.
- 2.4 The Civil Aviation (Communication Systems) (Amendment) Regulations.
- 2.5 The Civil Aviation (Surveillance and Collision Avoidance systems) Regulations.
- 2.6 The Civil Aviation (Surveillance and Collision Avoidance systems) Regulations.
- 2.7 The Civil Aviation (Certification of Air Navigation Services Provider) Regulations.
- 2.8 TCAA-QSP-SR-AC-ANS – 04 Guidance on Availability, Reliability, Continuity and Integrity Standards for CNS Facilities
- 2.9 TCAA-QSP-SR-AC-ANS- 14 Guidance on Flight Inspection of Radio Navigation Aids

3.0 GUIDANCE AND PROCEDURES

CNS facilities must meet regulatory requirements. The facilities must be capable of meeting the specific communication, navigation, and surveillance needs of the airspace in which they operate, ensuring safety and efficiency in operations.

3.1 Approval requirements

The applicable provisions in the Civil Aviation Regulations stipulates that;

- 3.1.1 No person shall install, operate, decommission, upgrade or re-locate a CNS facility/equipment in the designated airspace and aerodromes without the approval from the Authority.
- 3.1.2 CNS Provider shall ensure that the installation, operation and maintenance of CNS facilities are in accordance with the requirements specified in Civil Aviation Regulations and conform to the applicable system characteristics and specification standards prescribed in the;
 - a) Civil Aviation (Radio Navigation Aids) Regulations.
 - b) Civil Aviation (Communication Procedures) Regulations
 - c) Civil Aviation (Communication Systems) Regulations.

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- d) Civil Aviation (Surveillance and Collision Avoidance systems) Regulations.
- e) Civil Aviation (Aeronautical Radio Frequency Spectrum Utilization) Regulations.
- f) Civil Aviation (Certification of Air Navigation Services Provider) Regulations.

3.2 Approval Procedures

3.2.1 General

The approval procedure applies to CNS Provider requesting installation, operations, upgrading, commissioning, decommissioning or relocation of CNS facilities.

3.2.2 Approval request

CNS Provider wishing to obtain approval for installation, operations, upgrading, commissioning, decommissioning or relocation of CNS/ATM facilities shall send an application letter to the Authority providing details of the concept of the change (s), including any design, specifications, purpose of introducing the change and initial safety assessment performed, to facilitate assessment and approval before continuing with the process.

The following will be attached to the request from the CNS Provider;

- a) Cover letter signed by the Accountable Manager/Director
- b) Filled form TCAA-FRM-SR-ANS-05 Application for Approval of CNS/ATM Facilities
- c) Specifications for the respective CNS Facility/Equipment/Procedure
- d) **For Projects;** Evidence to ensure CNS Inspectors are involved in Project through Factory Training, Factory and Site acceptance tests prior to installation and commissioning of equipment and facilities. Furthermore, for any development of new procedures and the introduction of new technology should be subject to capacitation of safety oversight personnel.
- e) **Site Selection for Installation or Reallocation of CNS equipment;** Identification of optimal locations for the facilities based on factors like geography, air traffic density, and potential interference should be taken into consideration.
- f) Coverage survey for the equipment when applicable
- g) Confirmation statement to ensure adherence to the Policy Statement on Incorporation of ANS Inspectors in Training during acquisition and Upgrading of Air Navigation System/Equipment, New Technology and Procedures

3.2.3 Assessment Procedure

a) Evaluation:

The document(s) shall be evaluated to ensure it is compliant with applicable regulations and requirements.

Performance Testing: Before approval, With the involvement of CNS Inspectors, the facilities shall undergo rigorous testing to ensure they meet performance standards (e.g., coverage area, reliability, and functionality).

Safety and Security Standards: Testing also should include verifying that the systems are secure against cyber threats and that they adhere to safety standards.

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After successful testing, the regulatory part will assess and certify the CNS facilities. This can involve review by accepting the Site acceptance Test. Once the systems are certified, the facility receives **operational approval** to be used in real-world air traffic operations.

b) Equipment inspections:

CNS Inspector(s) shall have unrestricted access to CNS facilities to be approved for the purpose of inspecting it and record therein and for the purpose of testing or observing the operation of such facility.

The equipment shall be assessed by the Authority to ensure that it meets the requirements published in the Civil Aviation Regulations. The ANSP shall not conduct any Factory Acceptance Tests (FAT) without the involvement of the Regulator (CNS Inspector(s)). This is to enable the Regulator make appropriate evaluation prior to the acceptance of the equipment to ensure compliance with the Civil Aviation regulations (TCARS).

3.2.4 Installation and commissioning requirements

- a) The facility installed and commissioned shall meet the operational specifications.
- b) The facility shall conform with the applicable system characteristics and specification standards prescribed in Civil Aviation Regulations (TCARS).
- c) The facility shall have been allocated an identification code or call sign where applicable.
- d) Installation and implementation processes of new CNS/ATM equipment shall be monitored and assessed by the Authority's CNS Inspector(s) to ensure proper procedures are being adhered to for safety assurance.

3.2.5 Performance requirements of the facilities

The facility shall have an acceptable level of operational reliability and an acceptable standard of performance

3.2.6 Flight inspections

This must include details of the standards and procedures to be used for flight inspections, the time interval between flight inspections, and the identity of the flight inspection organization that will be contracted to carry out the flight inspections.

All these should be provided to the Authority in advance before the conduct of the Flight Inspection, if applicable.

3.2.7 Protected Power Supply system

Each facility listed in the application shall be installed with suitable power supplies and means to ensure continuity of operation appropriate to the needs of the air traffic service or radio navigation service being supported.

Standby power supplies and UPS systems of required capacities shall be provided in all the essential units to ensure continuous operation of communication facilities.

3.2.8 Adequate and accurate records

Records of installations, initial testing, commissioning and re-commissioning of the facility shall be prepared and submitted by the installation team while handing over the facility/equipment to the ANSP.

3.2.9 Reliability and Availability

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3.2.9.1 The CNS provider shall ensure that the availability and reliability of its services meet regulatory requirements. The inspector shall inspect the following during approval;

- a) Redundancy of equipment (main & stand by)
- b) The dedicated power supply and standby power supply/Battery backup
- c) Inherent reliability of equipment
- d) Controlled temperature & humidity
- e) Adequate test equipment
- f) Quality maintenance by trained/skilled personnel
- g) Availability of necessary spares

3.2.9.2 The facility listed in the application shall be installed in accordance with the applicable Civil Aviation Regulations to minimize any risk of destruction, damage or interference with the operations of the facility;

3.2.9.3 Upon completion of the assessment, CNS Provider shall receive written approval for the facility. The approval shall be subject to withdrawal at any time the facility fails to meet regulatory requirements.

3.2.9.4 CNS Provider must not conduct any Site Acceptance Tests (SAT) without the involvement of the Regulator (CNS Inspector(s)). This is to enable the Regulator to make appropriate evaluation prior to the acceptance of the equipment to ensure compliance with the Tanzania Civil Aviation Regulations (TCARS).

3.2.9.5 Upon completion of the assessment, CNS Provider shall receive written approval from the Authority for the facility. The approval shall be subject to withdrawal at any time the facility fails to meet the regulatory requirements.

3.2.9.6 CNS Provider shall establish procedures in their operations Manual to ensure the above requirements are met for efficiency, safety and regularity of air navigation.

4.0 Surveillance

Upon approval of the facilities, the Authority will conduct periodic inspections of CNS facilities to ensure continued compliance with the Regulations and Standards.

Tanzania Civil Aviation Authority