



NPA No. 05/2011
COMMUNICATION, NAVIGATION AND SURVEILLANCE MAINTENANCE

Release Date 15/05/2011

The General Civil Aviation Authority (GCAA) is to amend regulations related to communication, navigation and surveillance maintenance organizations within the United Arab Emirates (UAE).

The amended regulations are to be under Subpart 5 of CAR PART VIII, Air Navigation Regulations and shall be known as "COMMUNICATION, NAVIGATION AND SURVEILLANCE MAINTENANCE REGULATIONS".

Present regulations pertaining to this subject, will be amended by this revision when finalized after the consultation period.

Pursuant to Article 27 of the UAE Civil Aviation Law which states that "no institute, club or other organisation shall engage in flying, flying instruction or training, or perform any other aviation activity without a license from the Competent Authority, and in accordance with the terms thereof," the GCAA, as the Competent Authority of the UAE, is responsible to develop and oversee compliance with the promulgated regulations related to the civil aviation activities in the territory of the UAE.

The amendment to the regulation contains the name change for the department within which the ANA section, regulator for these regulations, now resides, as well as changing the certificate renewal from every 5 years, to an open ended concept based on ongoing compliance audits with a full certification audit every 3 years.

This notice is published to announce to the public this amendment to the regulation and to entitle all concerned parties, especially appropriate local authority in each emirate and air navigation service providers, to:

1. Review the attached proposed regulations;
2. E-mail their comments to the below address:

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The comments on the proposal must be received at the above addresses within ("30") days of publishing this notice.


FOR/Director General
Omar Bin Ghaleb



**CAR PART VIII
SUBPART 5**

**COMMUNICATION, NAVIGATION
AND SURVEILLANCE MAINTENANCE**

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AMENDMENTS TO CAR PART VIII SUBPART 5

Initial issue
November
2009

Introduction of Civil Aviation Regulation VIII – Subpart 5 - CNS Maintenance based upon ICAO Annex 10 Amendment 84 and ICAO DOC 8071

Revision 2

Civil Aviation Regulation VIII – Subpart 5 - CNS Maintenance based upon ICAO Annex 10 Amendment 85 and ICAO DOC 8071

Section A General

1. Applicability

1.1 Civil Aviation Regulations VIII is issued by the General Civil Aviation Authority in pursuit of its obligations to ensure enforcement of accepted international regulations and standards at ANSP units in operation within the United Arab emirates and to follow up their execution in coordination with the local aerodrome license holder (as applicable).

1.2 CAR Part VIII, subpart 5 has been framed in such a way that the specifications for CNS technology can be adopted for use by CNS Maintenance service providers. The specifications contained herein are considered to be minimum acceptable standards

1.3 This Subpart details:

1. Operating and technical standards for CNS services and facilities; and
2. Rules governing the certification and operation of organisations providing CNS services in support of civil IFR flight or an air traffic service.

1.4 Civil Aviation Regulation VIII Subpart 5 apply to the Maintenance arrangements of ANS Service providers.

These Regulations govern the certification and operation of organisations providing a Maintenance service to ANS providers and aerodromes serving civil IFR flight, relating to any or all of the following safety related equipment.

1. Communication Facilities:
 - a. HF Air/Ground voice communication facilities;
 - b. VHF Air/Ground voice communication facilities;
 - c. Voice switching and control facilities;
 - d. ATS point to point communication facilities;
 - e. Voice and Data Recording facilities;
 - f. Controller Pilot Data Link Communication (CPDLC);
2. Flight information facilities;
 - a. Electronic briefing and flight plan lodgment service for the use of pilots
 - b. Aeronautical databases used in or by a facility.
3. Aeronautical Fixed Telecommunication Network (AFTN/CIDIN)-ATCMHS
4. Dedicated Satellite Communication Network (DSCN).
5. Navigation Facilities:
 - a. Instrument Landing System (ILS);
 - b. Distance Measuring Equipment (DME);
 - c. VHF Omni-range (DVOR);
 - d. Non-directional beacons (NDB) / Locators;
 - e. VHF Markers.
 - f. GNSS related facilities.

6. Surveillance Facilities:
 - a. Primary surveillance radar (PSR);
 - b. Secondary surveillance radar (SSR);
 - c. Surface movement radar (ASDE);
 - d. Airport Surface Movement and Guidance Control System (ASMGCS);
 - e. Automatic dependent surveillance (ADS);
 - f. Multilateration systems
7. Human Machine Interface systems, including Tower Consoles, ATS;
8. Other CNS Facilities:
 - a. ATC Automation system consisting of;
 - b. Flight Data Processing system
 - c. Radar Data Processing system
 - d. Repetitive Flight Plan (RPL) System
9. Airport Terminal Information Service (ATIS);
10. Master / Slave clock system;
11. Uninterruptible and emergency power supplies;
12. Meteorological Display Systems used for ATS;
13. Meteorological sensor systems

1.5 These Regulations represent the minimum requirements to achieve an acceptable level of safety.

2 Definitions and acronyms

2.1. Definitions and acronyms are contained in Subpart 1 to CAR Part VIII.

3 Common reference systems

3.1 Horizontal reference system: World Geodetic System - 1984 (WGS-84) shall be used as the horizontal (geodetic) reference system. Reported aeronautical geographical coordinates (indicating latitude and longitude) shall be expressed in terms of the WGS-84 geodetic reference datum.

Vertical reference system: Mean sea level (MSL) datum, which gives the relationship of gravity-related height (elevation) to a surface known as the geoid, shall be used as the vertical reference system.

Temporal reference system: The Gregorian calendar and Coordinated Universal Time (UTC) shall be used as the temporal reference system.

4 Standards and Recommended Practices

4.1. The CNS Maintenance unit shall comply with the standards and practices contained in the applicable Civil Aviation Regulations, Civil Aviation Advisory Publications, and Information Bulletins published by the Authority. The CNS Maintenance unit shall also comply with any conditions that may be endorsed in the CNS Maintenance Services Certificate.

The specifications contained herein are based upon the Standards and Recommended Practices of Annex 10 Volumes 1 - 5, to the Convention

on International Civil Aviation in so far as they have been adopted by the United Arab Emirates.

4.2 Guidance material applicable to these Regulations is contained in the following documents:

1. Manual on Testing Radio Navigation Aids (Doc 8071)
2. Volume I - Testing of Ground-Based Radio Navigation Systems
3. Volume II - Testing of Satellite-Based Radio Navigation Systems
4. Volume III - Testing of Surveillance Radar Systems
5. Manual of Surface Movement Guidance and Control Systems (SMGCS) (Doc 9476)
6. Advanced Surface Movement Guidance and Control Systems (A-SMGCS) Manual (Doc 9830)

4.3. The methodologies and specifications contained in the above Manuals shall be considered to represent an acceptable form of compliance unless otherwise indicated by the Authority.

Section B Certification Process

5 Requirements to hold a CNS Maintenance Certificate

5.1 No person or organisation shall provide a CNS Maintenance service used for supporting an ANSP unit providing air navigation services or operate an aeronautical facility supporting IFR flight except under the authority of, and in accordance with the provisions of, a CNS Maintenance Certificate issued under this Part.

6 Application for Certificate

6.1 Each applicant for a CNS Maintenance Certificate shall complete CNS 01 form provided in Attachment 1, and submit it to the Director of Aviation Safety Affairs, GCAA.

6.2. In the interests of aviation safety, only one certificate relating to the provision of a CNS Maintenance service for the same equipment at the same location shall be current at any time.

6.3 The submission shall include the exposition and manual required by paragraphs 30 and 31, and payment of the appropriate application fee specified by the GCAA Board under Article 10.7 of the GCAA Law.

7 Grant of a CNS Maintenance Certificate

7.1. Each applicant is entitled to a CNS Maintenance service certificate if;

1. The applicant meets the requirements of Section B of the Rule; and
2. The applicant and persons holding positions listed in paragraph 14. 1.1 to 14.1.3 inclusive are acceptable to the Authority; and
3. The organisation's exposition as required by paragraph 31 is acceptable to the Authority; and
4. The organisation's CNS Maintenance Procedures manual, as

required by paragraph 32 is acceptable to the Authority.

5. The Authority is satisfied that the granting of the certificate is not contrary to the interests of aviation safety.
- 7.2. Before granting a CNS Maintenance Certificate, the Authority must be satisfied that:
1. The unit facilities, services and equipment are in accordance with these Regulations and other relevant ICAO standards and recommended practices; and
 2. The CNS Procedures Manual prepared for the applicant's unit and submitted with the application along with any applicable fee contains all the relevant information; and
 3. The unit's operating procedures make satisfactory provision for the safety of aircraft; and
 4. The applicant will be able to competently operate and maintain the unit properly.
- 7.3. The Authority may refuse to grant a CNS Maintenance Certificate to an applicant.

8 Privileges of Certificate

- 8.1 A CNS Maintenance Certificate shall specify the aeronautical facilities that the certificate holder is authorised to provide in support of IFR flight or an ANSP unit.
- 8.2 The holder of a CNS Maintenance Certificate may operate any of the aeronautical facility types specified on the holder's certificate provided:
1. Each aeronautical facility operated is listed in the certificate holder's exposition; or
 2. If the aeronautical facility is not listed in the exposition, its operation is for site test purposes controlled by the procedures required under paragraph 18.4; and
 3. Where necessary for the safety of aircraft operations, the holder of a CNS Maintenance Certificate establishes and appropriately promulgates any limitations on the use of the system or services maintained by the holder's organisation. These limitations shall be documented in Part 1 of the CNS Maintenance Procedures Manual.

9 Duration of a CNS Maintenance Certificate

- 9.1. A CNS Maintenance Certificate remains in force until it expires, or is suspended or revoked
- The holder of a CNS Maintenance Certificate that expires or is revoked shall surrender the certificate to the Authority immediately.
- The holder of a CNS Maintenance Certificate that is suspended shall produce the certificate to the Authority for appropriate endorsement immediately.
- The validity of the Certificate is based upon the continued operation in accordance with Civil Aviation Regulations, Civil Aviation Advisory Publications, and Information Bulletins as published by the Authority.

10 Validity of Certificate

10.1

10.2

The CNS Maintenance Certificate shall remain valid subject to periodic surveillance audits conducted at the discretion of the Director **Aviation Safety Affairs** confirming ongoing compliance with the Civil Aviation Regulations.

The Authority shall undertake a complete CNS Maintenance **Certification** inspection at least once in every **three** year period following the issue of a CNS Maintenance Certificate.

11 Changes to a CNS Maintenance Certificate Holder's Organisation

11.1

Each holder of a CNS Maintenance certificate shall:

1. Ensure that their exposition is amended so as to remain a current description of the holder's organisation, services and **operational capabilities**.
2. Ensure that any amendments made to the holder's exposition meet the applicable requirements of this Subpart; and
3. Comply with the amendment procedures contained in the holder's exposition; and
4. Provide the Director, Aviation **Safety Affairs** Department of the GCAA, with a copy of each amendment to its exposition, prior to its incorporation into the exposition; and
5. Make such amendments to its exposition as the Authority may consider necessary in the interests of aviation safety.

11.2

The certificate holder shall provide the **Air Navigation and Aerodromes** section of the Department of **Aviation Safety Affairs** of the GCAA with a copy of each amendment to the holder's CNS manual as soon as practicable after its incorporation into the CNS Maintenance **Procedures Manual**.

11.3

Where the certificate holder proposes to make a change to any of the following, prior notification to and acceptance by the Director of **Aviation Safety Affairs** is required:

1. The persons listed in paragraphs 14.1.1 to 14.1.3 inclusive; or
2. The CNS maintenance service provided by the certificate holder; or
3. The organisation's security programme.
4. **Operational service level**

11.4

An application to make any of the changes under paragraph 11.3 shall be made on form CNS 01.

11.5

The Director of **Aviation Safety Affairs** may prescribe conditions under which a certificate holder may operate during or following any of the changes specified in paragraph 11.3.

11.6

A certificate holder shall comply with any conditions prescribed in paragraph 11.5.

- 11.7 Where any of the changes referred to in paragraph 11.3 requires an amendment to the certificate, the certificate holder shall forward the certificate to the Director, **Aviation Safety Affairs** as soon as practicable.
- 11.8 The certificate holder shall make such amendments to the holder's CNS Maintenance **Procedures** Manual as the Director, **Aviation Safety Affairs** may consider necessary in the interests of aviation safety.

12 Documentation

- 12.1 The applicant for a CNS Maintenance Service certificate shall hold copies of the CNS Maintenance Service Manual, relevant technical manuals and all other documents necessary for the provision and operation of the services listed in its exposition.
- 12.2 The applicant shall establish a procedure to control all the documentation required by paragraph 12.1, and any other applicable Rule Part. The procedure shall ensure that –
1. Appropriate arrangements are in place to ensure receipt of amendments to documents held by the unit; and
 2. All incoming documentation is reviewed and actioned as required by authorised personnel; and
 3. All documentation is reviewed and authorised before issue; and
 4. Current issues of all relevant documentation are available to personnel at all locations where they need access to such documentation for the provision and operation of CNS Maintenance services; and
 5. All obsolete documentation is promptly removed from all points of issue or use; and
 6. Any obsolete documents retained as archives are suitably identified as obsolete; and
 7. The current version of each item of documentation can be identified to preclude the use of out of date documents; and
 8. A regular document audit is made of the amendment status of controlled documents held on the unit.

13 Withdrawal or Transfer of Service

- 13.1 A CNS Maintenance Certificate holder shall give the Director **Aviation Safety Affairs** not less than 3 months written notice of the date on which the Certificate is to be surrendered, and include in that notice a summary of factors considered in arriving at the decision to withdraw the service, in order that suitable promulgation action can be taken.
- The Director **Aviation Safety Affairs** will cancel the Certificate on the date specified in the notice.
- 13.2 The Director **Aviation Safety Affairs** may approve, and issue an instrument of transfer of a CNS Maintenance Certificate to a transferee where:
1. The current holder of the CNS Maintenance Certificate notifies the Director **Aviation Safety Affairs** in writing at least 3 months before ceasing to operate the unit, that the current holder will cease to operate the unit as of the date specified in the notice **and,**

2. The current holder of the CNS Maintenance Certificate notifies the Director **Aviation Safety Affairs** in writing, the name of the transferee; and
3. The transferee applies to the Director **Aviation Safety Affairs** on form CNS 01, at least 3 months before the current holder of the CNS Maintenance Certificate ceases to operate the unit, for the issuance of a CNS Maintenance Certificate; and
4. The application required in paragraph 13.2.3 meets the requirements of paragraph 6.1.

13.3 The holder of a CNS Maintenance service certificate who is the outgoing provider of a CNS service shall not hinder the preparation and execution of the transitional arrangements required by paragraph 13.4.

13.4 The applicant for a CNS Maintenance service certificate intending to assume responsibility for providing any CNS maintenance service from an existing certificate holder, shall include with its application, full details of transitional arrangements endorsed by the Heads of CNS of both organisations.

14 Personnel Requirements

14.1 The applicant for a CNS Maintenance Service certificate shall engage, employ or contract:

1. A Head of CNS Maintenance who;
 - a. has the authority within the applicant's organisation to ensure that each CNS Maintenance service listed in its exposition can be financed and provided in accordance with the requirements of this Part; and
 - b. is responsible for ensuring that the organisation complies with the requirements of this Subpart; and
2. A Head of training responsible for ensuring that the organisation complies with the training requirements of this Part; and
3. An accountable manager responsible for the provision of a safety management system according to the requirements of CAR Part X; and
4. Sufficient personnel to manage, supervise, provide and support the CNS Maintenance service and any associated training or assessment listed in the applicant's exposition, plus meet the requirements of CAR Part X to develop and maintain an effective SMS.

Qualifications and experience details for the persons nominated by the applicant for the positions listed in paragraphs 14.1.1 to 14.1.3 inclusive shall be forwarded to the Authority for acceptance prior to the person being named in that position by the applicant.

The persons listed in paragraphs 14.1.2 to 14.1.4 inclusive above shall ultimately be responsible to the Head of CNS Maintenance.

14.2 An applicant for a CNS Maintenance Service certificate shall establish procedures to:

1. Ensure the competence of those personnel who –
 - a. provide the CNS Maintenance services listed in the applicant's exposition; and
 - b. supervise personnel providing CNS Maintenance

services listed in the exposition; and

- c. provide training and assessment for those staff providing the CNS Maintenance services listed in the exposition; and
2. Provide personnel listed in paragraph 14.2.1 with written evidence of the scope of their authorisation; and
3. Ensure that no person whose function is critical to the safety of aviation (safety sensitive personnel) shall undertake that function while under the influence of any psychoactive substance, by reason of which human performance is impaired and that they shall not engage in any problematic use of substances.

15 CNS Maintenance Training

- 15.1 An applicant for a CNS Maintenance Certificate shall establish procedures and programmes for the training and assessment of those staff who provide the CNS Maintenance services.

16 Security Programme

- 16.1 An applicant for a CNS Maintenance service certificate shall establish a security programme for the facilities listed in the applicant's exposition.

- 16.2 The security programme required under paragraph 16.1 shall specify the physical security requirements, practices, and procedures to be followed to:

1. Minimise the risk of destruction of, damage to, or interference with the operation of any aeronautical facility operated under the authority of the CNS Maintenance Service certificate; and
2. Protect personnel on duty.

Where relevant, signs warning of hazardous radiation shall be erected at appropriate locations.

- 16.3 The security programme required under paragraph 16.2 shall include such physical security requirements, practices and procedures as may be considered necessary by the applicant and the Director, **Aviation Safety Affairs**.

17 Periodic Inspection and Testing

- 17.1 An applicant for a CNS Maintenance Service certificate shall establish a procedure for the periodic inspection and testing of the aeronautical facilities listed in the applicant's exposition to verify that each aeronautical facility meets the applicable operational requirements and performance specifications for that facility.

- 17.2 The procedure required under paragraph 17.1 shall—

1. Include ground inspections and tests and, where necessary, flight tests; and
2. Include the criteria for establishing or changing the interval between the periodic tests for each aeronautical facility listed in the exposition, having regard to—
 - a. any applicable information published by ICAO; and
 - b. any applicable reliability data for the aeronautical

facility; and

- c. information on the proven reliability performance of the aeronautical facility, and of similar aeronautical facilities, and the stability of the aeronautical facilities.

3. Ensure that the grounds for establishing or changing the interval between the periodic tests for each aeronautical facility listed in the applicant's exposition are documented.

17.3 An applicant for a CNS Maintenance service certificate shall establish –

1. A programme of periodic ground inspections for each aeronautical facility listed in the applicant's exposition; and
2. A programme of periodic ground tests for each aeronautical facility listed in the applicant's exposition; and
3. A programme of periodic flight testing and flight calibration for each radio navigation aid listed in the applicant's exposition unless the applicant can establish from the criteria under paragraph 17.2 that periodic ground tests can replace the periodic flight tests for the particular aeronautical facility without affecting the safety of air navigation.

17.4 The programmes required by paragraphs 17.3.2 and 17.3.3 shall be based on the criteria required under paragraph 17.2.2 and shall specify the maximum interval between the tests for each aeronautical facility.

17.5 The design and application of the Maintenance programme should observe Human Factors principles.

17.6 A holder of a CNS Maintenance Service certificate shall notify the Director, Aviation Safety Affairs, of any radio navigation aid that is not subjected to periodic flight tests

18 Provision of Appropriate Infrastructure, Facilities and Services

18.1 The CNS Maintenance unit shall ensure that the systems, equipment, installations and services required for the ANS service provider or the airport are commensurate with the level of service and appropriate to meet agreed target levels of safety as determined in the safety management system.

The requirements shall comply with the minimum specifications outlined in paragraph 4 and or ICAO Annex 10 as applicable.

18.2 An applicant for a CNS Maintenance Service certificate shall establish a procedure to ensure that no aeronautical facility listed in the applicant's exposition is placed into operational service unless—

1. The person placing the aeronautical facility into operational service is assessed as competent and authorised according to the procedures required under paragraph 14.2; and
2. The appropriate checks detailed in the operating and maintenance instructions required ~~under paragraph 32~~ have been carried out to verify the performance of the aeronautical facility; and
3. The aeronautical facility record has been completed according to the procedures required under paragraph 26.

18.3 The CNS Maintenance unit shall establish procedures to ensure that:

1. The systems, equipment, installations and services required for the ANS service provider or aerodrome operator are commensurate with the level of service and appropriate to meet agreed target levels of safety as determined in the safety management system; and
2. Each aeronautical facility listed in the applicant's exposition-
 - a. is designed, installed and commissioned to meet the applicable operational specification for that facility; and
 - b. conforms with the applicable system characteristics and specification standards prescribed in ICAO Annex 10, Volumes I, III and IV; and
 - c. conforms with the applicable specifications and requirements of paragraph 4; and
 - d. has been allocated an identification code or callsign, if a code or callsign is required under paragraph 20.
3. Information on the operational status of each radio navigation aid listed in the applicant's exposition, that is essential for the take-off, approach and landing at an aerodrome, is provided to meet the operational requirements of –
 - a. the ATC unit providing an aerodrome control service for that aerodrome while that service is being provided; and
 - b. the ATC unit providing an approach control service for that aerodrome while that service is being provided;
 - c. the aerodrome operator where no ATC unit is involved, or the ATC unit is no longer on duty.
4. Each aeronautical facility listed in the applicant's exposition is installed with suitable power supplies and means to ensure continuity of operation appropriate to the needs of the ATC unit or radio navigation service being supported; and
5. Each aeronautical facility listed in the applicant's exposition is installed in accordance with the security programme required under paragraph 16 to minimise any risk of destruction, damage or interference with the operation of the facility; and
6. When necessary to ensure the integrity of the signal in space of all radio navigation aids, protected by written agreements with the site owner, aerodrome operator and ATC unit, as appropriate, to ensure that site restrictions are not infringed by buildings, fences, vehicles, machinery or aircraft; and
7. Any critical site area of any aeronautical facility listed in the applicant's exposition is –
 - a. clearly identified on the site drawings for the aeronautical facility; and
 - b. physically protected by suitable signposts on the site; and
8. A list of which facilities and systems shown in paragraph 1.4 of this subpart is maintained by the applicant's organisation is provided to the Director of Aviation Safety Affairs, and to maintain this list.

18.4

An applicant for a CNS Maintenance Service certificate who intends to operate a temporary aeronautical facility to carry out on site tests shall establish a procedure for carrying out these tests.

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- 18.5 The procedure required under paragraph 18.4 shall require that—
1. The operation of the temporary facility does not cause any interference with any other operating aeronautical facility; and
 2. Appropriate information regarding the operation of the temporary facility is forwarded to the provider of the AIS for the issue of a NOTAM, and if appropriate, the publication of a Supplement to the AIP; and
 3. An appropriate NOTAM has been issued.
- 18.6 An applicant for a CNS Maintenance Service certificate shall ensure that appropriate inspection, measuring and test equipment is available for personnel to maintain the operation of each aeronautical facility listed in the applicant's exposition.
- 18.7 An applicant for a CNS Maintenance Service certificate shall establish a procedure to control, calibrate and maintain all the inspection, measuring and test equipment required under paragraph 18.6 to ensure that each item of equipment has the precision and accuracy that is necessary for the measurement and tests to be performed.
- 18.8 The procedure required under paragraph 18.7 shall require that each item of test equipment required for the measurement of critical performance parameters is—
1. Calibrated before use and at prescribed intervals with the calibration traceable to an appropriate international standard or manufacturers recommended interval; and
 2. Identified with a suitable indicator to show its calibration status; and
 3. Controlled to –
 - a. safeguard against adjustments that would invalidate the calibration setting; and
 - b. ensure that the handling, preservation and storage of the test equipment are such that its accuracy and fitness for use is maintained.
- 18.9 If hardware and software systems are used for the performance testing of any aeronautical facility, the procedures under paragraph 18.7 shall require the functions of those testing systems to be checked before being released for use and at prescribed intervals, to establish that those testing systems are capable of verifying the true performance of the aeronautical facility.
- 18.10 An applicant for a CNS Maintenance Service certificate shall establish a procedure to ensure that equipment spares shall be—
1. Maintained at a level appropriate to the level of service desired; and
 2. Be stored under suitable environmental conditions.
- Spares having a lifetime, or requiring regular Maintenance or calibration shall be suitably identified to that effect.
- 18.11 An applicant for a CNS Maintenance Service certificate shall establish procedures for the control, repair and return to service of equipment or modules. The procedures shall show which modules may be repaired on-site and which should be returned to the manufacturer or recognized repair facility.

19 Operating Approval

- 19.1 An applicant for a CNS Maintenance Service certificate shall establish a procedure to ensure that, in addition to the requirements of paragraph 28 with respect to the SMS, approval for changes to equipment and systems is received from the Director, Aviation Safety Affairs prior to introduction into service, according to the CAAP 25 approval process.

20 Identification Codes and Callsigns

- 20.1 An applicant for a CNS Maintenance Service certificate shall establish procedures to ensure that no person associated with facilities maintained by the applicant's organisation shall operate:

1. A radio navigation aid unless it has been allocated an identification code by the Authority under paragraph 20.1-3; or
2. A radio communication transmitter on an aeronautical radio frequency unless it has been allocated and authorised by the Telecommunication Regulation Authority (TRA) of the UAE.

The Authority may allocate an identification code for a radio navigation aid or a callsign for a radio communication transmitting aeronautical facility if the Director, Aviation Safety Affairs is satisfied that the allocation of a code or callsign is not contrary to the interests of aviation safety.

Codes and Callsigns in place at the date this Subpart becomes effective, shall remain effective.

21 Notification of Aeronautical Facility Information

- 21.1 A person operating an aeronautical facility must establish procedures to ensure that:

1. Information concerning any change in the operational status of the aeronautical facility and information on the operational details of the aeronautical facility, is forwarded to the operator of the aeronautical facility; and
2. The Director, Security and Infrastructure is notified if incorrect information has been published.

- 21.2 An applicant for a CNS Maintenance Service certificate shall establish a procedure to ensure that the requirements of paragraph 21.1 are met for each applicable aeronautical facility listed in the applicant's exposition.

- 21.3 Validation and verification procedures required under paragraphs 21.1 and 22.2 shall include a means to confirm that –

1. Information to be issued as part of the integrated AIP shall be thoroughly checked and coordinated with the appropriate services before it is submitted to the AIS, in order to ensure that all necessary information has been included and that it is correct prior to distribution; and
2. Any change of a temporary nature to the operational status of the aeronautical facility has been promulgated by NOTAM.

- 21.4 Information provided by the CNS Maintenance organisation shall meet the requirements of the UAE AIP sections: GEN 2.5, ENR 4.1, 4.2, 4.3 AD 2.18, 2.19, 3.17, 3.18 as detailed in Appendix 1 to ICAO Annex 15.

22 Notifying and Reporting Information to Air Traffic Services

- 22.1 A CNS Maintenance unit shall establish procedures to report significant information relating to the operational status of any facility or service that may affect the safety of air navigation to the relevant Air Traffic Service Unit.
- 22.2 Information requiring immediate notification to the Air Traffic Service unit include:
1. Failure or irregular operation of part or all of the CNS systems; and
 2. Failure of the normal or secondary power supply.

23 Aeronautical Facility Check after Accident or Incident

- 23.1 An applicant for a CNS Maintenance Service certificate must establish a procedure to check and accurately record the operating condition of any aeronautical facility operated under the authority of the certificate that may have been used by an aircraft, or an air traffic service, that is involved in an accident or incident.
- 23.2 The procedure required by paragraph 23.1 shall require that—
1. The check of the aeronautical facility's operating condition is carried out as soon as practicable after notification to the holder of the CNS Maintenance service certificate of the accident or incident; and
 2. The record of that check, and the recorded history of the aeronautical facility, is kept secure for possible use by any subsequent accident or incident investigation; and
 3. The records required to be secured under paragraph 23.2 are retained for a period of 3 years from the date of the last entry made on that record.

24 Facility Malfunction Incidents

- 24.1 An applicant for a CNS Maintenance Service certificate shall establish procedures to –
1. Notify, investigate and report facility malfunction incidents in accordance with the requirements of paragraph 27.1; and
 2. Implement corrective actions to eliminate the cause of a facility malfunction incident and prevent its recurrence.

25 Records

- 25.1 An applicant for a CNS Maintenance Service certificate shall establish procedures to identify, collect, index, store, maintain and dispose of the records that are necessary to record the –
1. Safe provision of the CNS Maintenance Services; and
 2. Safe operation of each aeronautical facility listed in the applicant's exposition.
- 25.2 The procedures required under paragraph 25.1 shall require that

accurate records of the following are maintained:

1. For each aeronautical facility, a record—
 - a. documenting the operating performance of the aeronautical facility; and
 - b. providing a history of the maintenance and the periodic inspections and tests of the aeronautical facility that are traceable to the person or persons responsible for each of the recorded activities; and
2. Of the establishment of, or change in, the periodic tests required under paragraph 17.1; and
3. For each item of test equipment required under paragraph 18.6 that is used for the measurement of an aeronautical facility's critical performance parameters, a record that includes a traceable history of the location, maintenance and the calibration checks for the item of test equipment ; and
4. For each aeronautical facility and item of test equipment, a record of the build and configuration state, updated whenever changes or modifications are made. All modifications shall be accurately documented and cross referenced to modification strikes or numbers on the equipment; and.
5. For each facility malfunction incident a record that includes:
 - a. details of the nature of the malfunction; and
 - b. the findings of the investigation; and
 - c. the corrective actions taken; and
 - d. if applicable, a copy of the report submitted to the Authority; and
 - e. a record of each internal audit required under paragraph 27.1.6 and of each management review required under paragraph 27.1.7 and
6. For each person who is authorised in accordance with paragraph 14.2 to place aeronautical facility into operational service, a record that includes details of the person's experience, qualifications, training, competency assessments and current authorisations.

- 25.3 The procedures required under paragraph 25.1 shall require—
1. All written records to be legible and of a permanent nature; and
 2. All aeronautical facility records required under paragraph 25.2 to be retained for a period of at least 3 years unless a longer period is required—
 - a. by the Authority; or
 - b. to establish a performance history for the aeronautical facility.

- 25.4 A CNS Maintenance unit shall provide statistical information to the Director **Aviation Safety Affairs** to ensure monitoring of SMS performance over time. ~~Information detailed in CAAP.~~

26 Protection of Electronic Aeronautical data

- 26.1 An applicant for a CNS Maintenance Service certificate shall establish procedures to ensure that the protection of electronic aeronautical data while stored or in transit shall be totally monitored by the cyclic

redundancy check (CRC).

To achieve protection of the integrity level of critical and essential aeronautical data as specified below, a 32 or 24 bit CRC algorithm shall apply respectively.

To achieve protection of the integrity level of routine aeronautical data as specified below and in Appendix 6 of ICAO Annex 4, a 16 bit CRC algorithm shall apply.

1. Critical data, integrity level 1×10^{-8} : there is a high probability when using corrupted critical data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe;
2. Essential data, integrity level 1×10^{-5} : there is a low probability when using corrupted essential data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe;
3. Routine data, integrity level 1×10^{-3} : there is a very low probability when using corrupted routine data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe.

27 Quality Assurance System (QAS) Requirements

27.1

The applicant for a CNS Maintenance Service certificate shall establish an internal quality assurance system (QAS) to ensure compliance with, and the adequacy of, the procedures required by these Regulations. The QAS shall, include –

1. A quality assurance policy and procedures that are relevant to the applicant's organisational goals and the expectations and needs of its customers; and
2. Procedures to ensure that data at any moment is traceable to its origin so as to allow any data anomalies or errors, detected during maintenance phases or in operational use, to be corrected; and
3. Procedures to ensure quality indicators, including equipment availabilities, malfunctions, faults, and personnel and customer feedback, are monitored to identify existing problems or potential causes of problems within the system; and
4. A procedure for corrective action to ensure existing problems that have been identified within the system are corrected; and
5. A procedure for preventive action to ensure that potential causes of problems that have been identified within the system are remedied; and
6. An internal quality audit programme to audit the applicant's organisation for conformity with its quality assurance system; and
7. An external quality program including letters of agreement with suppliers and adjacent CNS units and an supplier audit program; and
8. Management review procedures that may, where appropriate, include the use of statistical analysis, to ensure the continuing suitability and effectiveness of the internal quality assurance system in satisfying the requirements of this Subpart.

27.2

The internal quality audit programme shall:

1. Specify the frequency and location of the audits taking into

account the nature of the activity to be audited; and

2. Ensure audits are carried out by trained auditing personnel who are independent of those having direct responsibility for the activity being audited; and
3. Ensure the results of audits are reported to the personnel responsible for the activity being audited and the manager responsible for internal audits; and
4. Require preventive or corrective action to be taken by the personnel responsible for the activity being audited if problems are found by the audit; and
5. Ensure follow up audits to review the effectiveness of any preventive or corrective action taken; and
6. **Ensure** all audit findings and observations shall be evidenced and properly recorded.

28 Safety Management System (SMS) Requirements

28.1 An applicant for a CNS Maintenance Service certificate shall establish a safety management system acceptable to the GCAA that, as a minimum –

1. Identifies safety hazards, **and**
2. Ensures that remedial action necessary to maintain an acceptable level of safety is implemented, **and**
3. Provides for continuous monitoring and regular assessment of the safety level achieved, and
4. Aims to make continuous improvements to the overall level of safety.

A safety management system shall clearly define lines of safety accountability throughout the CNS Maintenance Service organisation, including a direct responsibility for safety on the part of senior management.

For compliance requirements refer to CAR Part X, Safety Management Systems (SMS) Regulations.

28.2 A CNS Maintenance Service provider shall ensure that any significant change to the aeronautical facility system, shall be subject to a safety assessment, indicating that an acceptable level of safety shall be met, prior to implementation.

User consultation shall form part of the safety assessment.

The safety assessment shall be presented to, and accepted by, the ANS Regulation section of the **Aviation Safety Affairs** Department of the GCAA prior to implementation of the change

28.3 A CNS Maintenance Service provider shall, as part of their SMS, establish target levels of safety/key performance indicators for at least the following safety areas:

1. Aeronautical facility reliability,
2. MTBO,
3. Others (to be determined)

28.4 The safety policy procedures shall ensure that the safety policy is understood, implemented, and maintained at all levels of the organization.

- 28.5 The procedure for corrective action shall specify how:
1. To correct an existing problem; and
 2. To follow up a corrective action to ensure the action is effective; and
 3. Management will measure the effectiveness of any corrective action taken.
- 28.6 The procedure for preventive action shall specify how:
1. To correct a potential problem; and
 2. To follow up a preventive action to ensure the action is effective; and
 3. To amend any procedure required by this Regulation as a result of a preventive action; and
 4. Management will measure the effectiveness of any preventive action taken.

29 Safety Inspections and Audits

- 29.1 The Director **Aviation Safety Affairs** may, in writing, require the holder of CNS Maintenance certificate to undergo or carry out such inspections and audits of the holder's maintenance offices, facilities, documents and records as the Director consider necessary in the interests of civil aviation safety and security in accordance with Article 7.10 of the GCAA Law.
- 29.2 The Director **Aviation Safety Affairs** may require from the holder of a CNS maintenance certificate such information as the Director considers relevant to the inspection or audit.
- 29.3 A CNS Maintenance unit shall arrange for the issue of permanent security passes to personnel authorised by the Authority to enable access to any part of the unit, tenant company premises, equipment, records, documents and operator's personnel.
- 29.4 Personnel authorised by the Authority may:
1. Inspect and carry out tests on the facilities, services and equipment; and
 2. Inspect CNS Maintenance unit's documents and records and verify the CNS Maintenance unit's safety management system before the CNS Maintenance Certificate is granted or renewed, and at any other time, for the purpose of ensuring safety at the unit; and
 3. Take photographs of the unit facilities and equipment, for certification, audit and approval purposes.

30 CNS Maintenance Organisation's Exposition

- 30.1 The applicant for a CNS Maintenance service certificate shall provide the Authority with an exposition containing –
1. A statement signed by the Head of CNS Maintenance on behalf of the applicant's organisation confirming that the exposition and any included manuals –
 - a. define the organisation and demonstrate its means and methods for ensuring ongoing compliance with this and

- any other applicable Part; and
 - b. are required to be complied with by its personnel at all times; and
2. A statement signed by the Head of CNS Maintenance on behalf of the applicant's organisation confirming that:
 - a. the organisation has sufficient financial strength to provide the services contained within the organisation's exposition; and
 - b. the organisation has sufficient liability and insurance cover to meet any claims that could be made relating to the services contained within the organisation's exposition; and
 3. The titles and names of the person or persons required by paragraphs 14.1.1 to 14.1.3. inclusive; and
 4. The duties and responsibilities of the person or persons specified in paragraph 30.1.3 including matters for which they have responsibility to deal directly with the Authority on behalf of the organisation; and
 5. An organisation chart showing lines of responsibility of the persons specified in paragraph 30.1.3, and extending to each location listed under paragraph 30.1. 6.a; and
 6. In the case of an organisation providing CNS Maintenance services from more than one CNS Maintenance unit, a table listing –
 - a. locations of CNS Maintenance units; and
 - b. the services provided at each location; and
 7. Details of the applicant's staffing structure for each CNS Maintenance unit; and
 8. A synopsis and a document matrix detailing how and where the requirements of paragraphs 11 to 29 are contained within the organisation's operational manuals.
 9. Procedures to control, amend and distribute the exposition.
- 30.2 The applicant's exposition must be acceptable to the Director, Aviation Safety Affairs.

Section C Maintenance Procedures Manual

31 CNS Maintenance Organisation's Procedures Manual

- 31.1 The CNS Maintenance Procedures Manual is a fundamental requirement of the certification process. It shall contain all the pertinent information concerning the CNS Maintenance unit, facilities, services, equipment, operating procedures, organisation, including the quality management system and the safety management systems
- .. The information presented in the CNS Maintenance Procedures Manual shall demonstrate that the CNS Maintenance unit complies with the certification standards and practices and that there are no apparent shortcomings that would adversely affect safety

- 31.2 The CNS Maintenance Procedures Manual shall:
1. Be either an electronic version or printed and signed by the accountable manager responsible for the CNS Maintenance unit;
 2. Be in a format that is easy to revise;
 3. Have a system for recording the currency of pages and amendments, thereto, and should include a page for logging revisions; and
 4. Be organised in a manner that will facilitate the preparation, review and approval process.
- 31.3 The Manual shall contain the following:
1. The procedures required by paragraph 12.2 regarding the control of documentation; and
 2. The procedures required by paragraph 13.2 regarding the transfer process between providers of the CNS Maintenance Service; and
 3. The procedures required by paragraph 14.2 regarding the competence of personnel; and
 4. The procedures and programmes required by paragraph 15.1 regarding the training and assessment of personnel; and
 5. The programme required by paragraph 16.2 regarding security of the facilities; and
 6. The procedures required by paragraph 17.1 regarding the periodic inspection and testing; and
 7. The programmes required by paragraph 17.3 regarding periodic inspections and tests; and
 8. The procedures required by paragraph 18.2 regarding the placing of equipment into operational service
 9. The procedures required by paragraph 18.3; and
 10. The procedures required by paragraph 18.4 regarding the operation of temporary facilities for site tests; and
 11. The procedures required by paragraph 18.7 regarding the control, calibration and maintenance of inspection, measuring and test equipment; and
 12. The procedures required by paragraph 18.10 regarding the provision of equipment spares; and
 13. The procedures required by paragraph 18.11 regarding the control, repair and return to service of equipment or modules; and
 14. The procedures required by paragraph 19.1 regarding the requirement to obtain operational approval for changes to equipment or systems; and
 15. The procedures required by paragraph 20.1 regarding the allocation requirements for codes or Callsigns; and
 16. The procedures required by paragraph 21.2 regarding the AIS notification requirements; and
 17. The procedures required by paragraph 22.1 regarding the ATS notification requirements; and
 18. The procedures required by paragraph 22.3 regarding the

validation and verification of information; and

19. The procedures required by paragraph 23.1 regarding facility checking after an accident or incident; and
20. The procedures required by paragraph 24.1 regarding the notification, investigation, and reporting of facility malfunctions; and
21. The procedures required by paragraph 25.1 regarding the identification, collection, indexing, storage, maintenance and disposal of records; and
22. The procedures required by paragraph 26.1 regarding the protection of electronic aeronautical data; and
23. The detailed procedures required under paragraph 27.1 regarding the internal quality assurance system; and
24. The detailed procedures required under paragraph 28.1 regarding the safety management system; and
25. The detailed procedures required under paragraph 30.9 regarding the control amendment and distribution of the exposition.

ATTACHMENT1

APPLICATION FOR A CNS CERTIFICATE

GENERAL CIVIL AVIATION AUTHORITY

P.O. Box 6558
Abu Dhabi - UAE



GENERAL CIVIL AVIATION AUTHORITY

P.O. Box 6558
Abu Dhabi - UAE

APPLICATION FOR CNS MAINTENANCE CERTIFICATE

Name of Unit	
Administrative Authority	

One copy of the CNS Organisation's Exposition and Maintenance Procedures Manual, prepared in accordance with the Civil Aviation Regulations, is enclosed with this application.

The Certificate will be based on the particulars contained in the CNS Maintenance Organisation Exposition

On behalf of the Administrative Authority named above, I certify that the information contained in the CNS Maintenance Organisation Exposition is correct in every respect and that no relevant information has been withheld.

Name

Signature

Date

CNS FORM 01: