

## **UAE GCAA Considerations related to Non-Destructive Testing (NDT) Certification of Aircraft, Engines, Components and Materials**

Sofema Aviation Services (SAS) [www.sassofia.com](http://www.sassofia.com) – considers the accepted processes to comply with Appendix X to CAR 145 issue 9 – (This document forms an overview and summary please also refer to the original document for additional details)

Note - Personnel holding a current UAE Aircraft Maintenance Engineer's type licence may undertake inspections, limited to colour contrast penetrant only.

### **Definitions**

**Approval:** The act of signing of NDT procedures by a responsible Level 3.

**Authorisation:** (of NDT personnel): Is issued by the Quality Manager after being qualified by the Responsible Level 3 based on the individual's competence as specified within the certificate.

**Certificate:** the named person is competent to perform specified NDT.

**NDT method:** Discipline applying a physical principle in NDT (e.g. ultrasonic method).

**NDT technique:** A specific way of utilizing an NDT method (e.g. ultrasonic immersion technique).

**NDT written practice:** A written description of all parameters and precautions to be observed when applying an NDT technique to a specific test following an established standard, code or specification.

**NDT instruction:** A written description of the precise steps to be followed in testing to an established standards, code or specification or NDT procedure.

**NDT Level 1:** This is strictly a limited approval and is specified in the organisations written practice/ inspection procedures manual.

**NDT Level 2:** An individual qualified to perform and direct NDT according to established and recognised procedures. This is to include, but not limited to, selection of appropriate technique for each method, to define the limitations of the method, to understand the limitation and application of the method, to set up and calibrate the specification, to prepare written test instructions and to organize and report the result of the tests.

**Responsible Level 3:** Certified Level 3 responsible to the Accountable Manager for the airworthiness aspects of NDT work undertaken by the organisation.

- The NDT Level 3 personnel are responsible for the technical and administrative functions of the NDT program. Their authority includes approving NDT procedures and techniques, interpreting codes and standards, evaluating NDT results, training and certifying NDT personnel, and providing technical guidance and support to NDT Level 1 and 2 personnel.

- NDT Level 3 personnel are also responsible for ensuring that the equipment used for NDT is calibrated, maintained, and operated correctly. They may also conduct audits of the NDT program to ensure that it is effective and meets regulatory requirements.

**Qualification:** The proven ability of NDT personnel to meet the requirements of a given specification in terms of physical requirements, training knowledge and experience necessary to perform the applicable NDT method.

**Type certificate:** Includes type certificates, supplementary type certificates, Joint Parts Approval (JPA) authorisation or Joint Technical Standard Orders (JTSO) authorization.

### Introduction

Non- Destructive Testing (NDT) personnel shall comply with the approved organization's written practice/procedures/exposition and any of the following standards;

- EN4179,
- ISO 9712
- NAS 410, and

Note – This Appendix is intended to recognise the competence of independent certified NDT level 3 personnel.

The term NDT is used to include,

- Liquid penetrant,
- Magnetic particle,
- Eddy current,
- Ultrasonic,
- Radiographic,
- Thermography
- Other recognised methods (applicable to all NDT methods used by approved organizations)

### Procedures for the Qualification of NDT Personnel

- All approved Organizations involved in any aspect of NDT shall develop and maintain a written practice for the qualification and authorisation of their NDT personnel.
- The Organisation's written practice/ procedures/ exposition as defined, shall be approved by the responsible Level 3

### Qualified Staff

Approved organisations undertaking NDT must satisfy the GCAA, that they have sufficient qualified staff to discharge the responsibilities of their approval.

- Organizations shall designate a Responsible Level 3, supported with evidence of certification, responsible to the Accountable Manager for the technical supervision of NDT.

- This individual will hold certification at Level 3 in the aerospace industry sector and will be referred to as the Responsible Level 3.
- This position shall be within the organisation's exposition, and any change in this position shall be advised to the GCAA.

Note - Where the Responsible Level 3 is not qualified in all methods used by the organisation, then the additional Level 3 personnel necessary to provide coverage shall be nominated.

- Additional Level 3 certification holders shall be listed in the MOE or referenced document.

### **Acceptance of External Level 3**

The GCAA may accept persons outside the organisation as the nominated Level 3, provided written agreement exists between the individual and the organisation.

### **Inspections and Certification of Inspections**

- NDT to be carried out by approved persons
- NDT to be carried out in accordance with approved procedures
- When inspection required lacks procedure – Must be developed and approved by Level 3 (qualified in the applicable method)
- Certification of inspections may be made by personnel who hold Level 2 or Level 3 authorisations.
- Level 3 may authorise Level 1 (As detailed within the written practice/ exposition.)

### **Level 3 Certification Requirements**

- Where Level 3 is required to carry out and certify an NDT inspection, then this person must either hold current Level 2 certification, or have successfully completed an appropriate Level 2 practical examination and maintained continuity in the application of practical testing, as defined in the referenced standards and detailed in the written practice/ exposition.

### **NDT Procedures and Instructions and their Approval**

- NDT procedures and instructions published and specified by the type certificate holder in NDT manuals, service bulletins, approved drawings etc., constitute airworthiness data.
- Where the airworthiness data published by the type certificate holder permits simple changes of equipment, probes etc., then such changes may be carried out by a Level 2 or Level 3 suitably qualified in the appropriate method.
- Changes not permitted in the airworthiness data require the written agreement of the type certificate holders responsible for the design of the product/ structure before such a change is implemented.
- NDT instructions shall be approved by a Level 3 holders qualified in the applicable method.

**Note The control of all NDT procedures and instructions. Including their preparation and authorisation within any GCAA approved organisation, shall be detailed in the organisation's written practice/ procedures/ exposition.**

## **Suppliers and Sub-Contractors to Approved Organisations**

- All suppliers and sub-contractors to an approved organisation where NDT processes are performed shall detail within their written practice/ procedures/ exception how the organisation ensures that training and approval of NDT personnel shall meet the requirements of this Appendix.

## **Next Steps**

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