Guidance Material for Designated Engineering Representatives (Authorised Persons)

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Subject: Guidance Material for Designated Engineering Representatives (Authorised Persons)

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1. INTRODUCTION

1.1. Purpose

The purpose of this Technical Guidance Material (TGM) is to provide guidelines concerning the delegation process of Authorised Persons to conduct verification of compliance and approval of aeronautical product designs and changes thereof. In accordance with the Civil Aviation Act no 13 of 2009, chapter 6 section 88, the SACAA may on behalf of the Director of Civil Aviation, delegate some of the functions normally carried out by authorised officers to other individuals who are not employees of the SACAA. It is intended that the Authorised Person will review and approve minor modifications and minor repair of aeronautical product within the scope of authorisation as detailed in their Letter of authorisation (LOA).

1.2. Applicability

The Guidance Material is applicable to individuals who are employees of approved design organisations (ADO) and approve maintenance organisation (AMO) who seek to be designated by the Director of Civil Aviation as Authorised Persons.

1.3. Definitions and Abbreviations

The following terms and definitions used in this guidance material meaning are as detailed below:

Applicant -- means the person who with the support an approved design organization, submits an application for authorisation as an Authorised Engineering Person.

ADO- Approved Design Organisation

AMO- Aircraft Maintenance Organisation

Approved data – For the purpose of this delegation system approved data refers to STC, approved repair schemes (not forming part of the original SRM) issued by a competent Civil Aviation Authority).

Authorised Person - A person authorized in line with the Civil Aviation Act no 13 of 2009, Chapter 6 Section 88 to perform functions on behalf of the Director of Civil Aviation subject to the requirements of CAR Part 21, 43 and 147 regulations.

Continuous Professional Development (CPD) – Refers to the process of tracking and documenting the skills, knowledge and experience that is attained both formally and informally during the normal work activity, beyond any initial training.

CMR - Certification Maintenance Requirements

Delegation Manual - Engineering Procedures Manual approved by SACAA, which governs the delegation holder’s activities.

Designee Oversight File - A file maintained at the SACAA that contains all information pertinent to the delegation holder's professional records.
Finding of Compliance - A determination that a specific element of the design or design change satisfies the applicable airworthiness standards.

ICAO - International Civil Aviation Organisation

Letter of Authorisation - A document issued by the Director of Civil Aviation to a successful applicant attesting designation and that the individual is empowered to exercise the powers entrusted upon him or her in terms of the Civil Aviation Act 13 of 2009.

Repair - The restoration of an aeronautical product to an airworthy condition to ensure that the aircraft continues to comply with the design aspects of the appropriate airworthiness requirements used for the issuance of the type certificate for the respective aircraft type, after it has been damaged or subjected to wear.

SACAA - South African Civil Aviation Authority

SACATS - South African Civil Aviation Technical Standards

TCDS - Type Certificate Data Sheet

2. DATA APPROVAL FOR MODIFICATIONS AND REPAIRS

This part introduces an organizational level approval within Approved Design Organisations (ADO) as one of the system used by the SACAA to approve design data to accomplish modification and repair within the aviation industry.

Any prospective authorised person shall be a full-time employee of ADO and shall satisfy the designated minimum eligibility standards which include specific qualifications and relevant experience and training. In the event that the authorised person delegation holder ceases to be an employee of ADO, such delegation shall be deemed invalid and terminated.

2.1. Qualifications

The qualifications for authorised person under this part shall not be less than those of certification engineers employed by the CAA. The applicant for the delegation as authorised person under this category shall possess the following qualification:

a) Degree or diploma in electrical, mechanical or aeronautical engineering

2.2. Knowledge and work Experience

Authorised person under this category shall have accumulated at least 8 years of general and practical aviation design work experience in product design environment for which the authorisation is sought, including the following:
a) A thorough knowledge and understanding of the CARs, CATS, TGMs and applicable Aviation Design Standards.

b) Have experience in the actual performance of modification and repair design on aircraft, engines and aircraft systems or components.

c) Have experience in certifying as airworthy an aircraft or parts after design changes has been performed in accordance with national regulations.

d) An activity log, detailing any certification activities/projects and including the compliance reports that the individual prepared, checked or approved or participation in certification tests, could be used to document the involvement by the applicant.

e) A minimum of two verifiable technical references to substantiate the relevant technical expertise for the delegation sought.

f) Knowledge of SACAA product design approval procedures, processes, means and methods of compliance.

g) Ability to find and interpret information relating to South African Civil Aviation legislation for type certificate, airworthiness, supplemental type certificate, modification and repairs design aspects of the aircraft.

h) Knowledge of ICAO requirements in relation to aircraft type certification requirements including ICAO Annexes 8 and ICAO Airworthiness Technical Manual.

i) Ability to interpret and apply relevant information contained in the following documents relating to the issue of Airworthiness Approval:
   
   i. The Type Certificates and Type Certificate Data Sheets
   ii. Airworthiness Limitations and Certification Maintenance Requirements,
   iii. Aircraft Flight Manuals,
   iv. Airworthiness Directives
   v. The weight and balance report for the aircraft
   vi. Any test flight report for the aircraft
   vii. Electrical load analysis report for the aircraft
   viii. Any report providing details of the maintenance carried out on the aircraft such as modification and repair
   ix. Manufacturer instructions for continuing airworthiness, primarily the airworthiness limitations including CMR’s

2.3. Training

The minimum training required for all authorised persons irrespective of their scope of authorisation are:

a) Civil Aviation Regulations
b) Government Safety Inspector (GSI)
c) Modification and Repair
d) Aircraft Systems safety assessment
SACAA will conduct orientation workshops to designated individuals after issuance of letter of authorisation and before the designee can review and approve any data.

2.4. Technical Disciplines for the scope of authorisation

The following are categories of technical specialties on which authorizations shall be granted to applicants who meet the requirements as stipulated in this document. Other categories on which privileges may be granted will be added to the list as necessary.

2.4.1. Structural modification and repair

The holder of this authorization shall have the authority to approve structural engineering data, inclusive of reports, drawings, drawing lists, and data relating to material strength and related including other related structural applications. The following information must also form part of the design data, test program, airframe fatigues and damage tolerance analysis (if applicable) and approvals of load limits.

2.4.2. Mechanical modification and repair (Power plant)

An authorised person who holds the Power Plant data approval authorisation shall have the authority to make findings of compliance and approved related data.

2.4.3. Mechanical Modification and repair (Airframe mechanical & hydraulic systems)

An authorised person who holds this authorisation shall have the authority to make findings of compliance on aircraft mechanical and hydraulic systems and approve related data.

2.4.4. Electrical modification (Avionics and electrical systems)

An Authorised Person who holds this authorisation shall have the authority to review and approve design data, inclusive of reports, drawings and technical data relating to any subcategories like electrical, communication and navigation, cockpit display, flight control, aircraft instruments, TCAS and TAWS systems.

3. APPROVAL FOR INSTALLATIONS OF MODIFICATIONS AND REPAIRS

This part introduces an organizational level approval within Approved Maintenance Organisation (AMO) as one of the means used by the SACAA to approve modification and repair installations where an AMO is in possession of approved modification and repair design data.

3.1. Qualifications & Licenses

The qualifications for authorised person shall not be less than those of Airworthiness inspectors employed by the SACAA. The applicant for the delegation as authorised person under this category and apart from being an appropriately authorised quality inspector within the AMO concerned shall possess the following qualification and licences:
3.2. Knowledge and work Experience

The applicant for the authorised person delegation under this category shall have accumulated at least 8 years of general and practical aviation maintenance experience after completion of the relevant trade test and will be asked to demonstrate during the interview, the following relevant maintenance requirements and variation of those requirements:

a) A thorough knowledge and understanding of the CARs, CATS, TGMs and applicable Aviation Design Standards

b) Have experience in the actual performance of maintenance, repair and modification of aircraft, engines and aircraft systems or components

c) Have experience in certifying as airworthy an aircraft or parts after maintenance has been performed in accordance with national regulations.

d) An activity log, detailing any certification activities/projects and including the compliance reports that the individual prepared, checked or approved or participation in certification tests, could be used to document the involvement by the applicant.

e) A minimum of two verifiable technical references to substantiate the relevant technical expertise for the delegation sought.

f) Knowledge of SACAA product design approval procedures, processes, means and methods of compliance.

g) Ability to find and interpret information relating to South African Civil Aviation legislation for type certificate, airworthiness, supplemental type certificate, maintenance, modification and repairs aspects of the aircraft.

h) Knowledge of ICAO requirements in relation to aircraft type certification requirements including ICAO Annexes 8 and ICAO Airworthiness Technical Manual.

i) Ability to interpret and apply relevant information contained in the following documents relating to the issue of Airworthiness Approval:

   i. The Type Certificates and Type Certificate Data Sheets
   ii. Airworthiness Limitations and Certification Maintenance Requirements,
   iii. Aircraft Flight Manuals,
   iv. Airworthiness Directives
   v. The weight and balance report for the aircraft
   vi. Any test flight report for the aircraft
   vii. Electrical load analysis report for the aircraft
viii. Any report providing details of the maintenance carried out on the aircraft such as modification and repair
ix. Manufacturer instructions for continuing airworthiness, primarily the airworthiness limitations including CMR’s

3.3. Training

This section describes the training requirements for industry personnel wishing to become authorised person and their currency. The following is a minimum list of short training required for all authorised persons under this category over and above the training and qualification related to the authorisation for the discipline sought:

a) South African Civil Aviation Regulations
b) Government Safety Inspector (GSI)
c) Modification and Repair

SACAA will conduct orientation workshops to designated individuals after issuance of letter of authorisation and before the designee can review and approve any installations. Delegates may also be required to attend seminars that familiarise the delegate with SACAA procedures and publications in the interest of standardisation. The relevant SACAA managing office reserves that right to require a delegate to attend any or all seminars deemed necessary as part of continuous professional development (CPD).

3.4. Technical Disciplines for the scope of authorisation

The following are categories of technical specialties on which authorizations shall be granted to applicants who meet the minimum requirements as stipulated in this document. Other categories on which privileges may be granted will be added to the list as and when necessary.

3.4.1. Structural modification and repair

The holder of the authorization shall be delegated the authority to approve structural engineering reports, drawings, drawing lists, data relating to material strength and related including other related structural applications. The approval of the following items shall be retained within the CAA.

3.4.2. Mechanical modification and repair (Power plant)

An authorised person who holds the Power Plant installation delegation shall have the authority to make findings of compliance.

3.4.3. Mechanical Modification and repair (Airframe mechanical & hydraulic systems)

An authorised person who holds the Power Plant installation delegation shall have the authority to make findings of compliance on aircraft mechanical and hydraulic systems.
3.4.4. **Electrical modification (Avionics and electrical systems)**

An Authorised Person holding the Systems and Equipment Engineering delegation shall have the authority to review and approve engineering reports, drawings and technical data relating to any subcategories like avionics, electrical, communication and navigation systems.

4. **ADMINISTRATION AND COMPLIANCE**

4.1. **Application for Authorised Person**

Application for issuing or amendment of an authorised person designation shall be made in the prescribed form and manner accompanied by -

(a) Proof of employment to the approved design organisation concerned
(b) Copy of identity document or card
(c) Appropriate fee prescribed in part 187
(d) Current Curriculum Vitae
(e) Formal letter of nomination for authorised person candidacy by an approved design organisation concerned.
(f) Copy of the procedure for appointment of individuals to conduct authorised person functions within the approved design organisation concerned.
(g) Any such further particulars relating to the applicant as may be required by the Director.

4.2. **Scope of Authorisation**

A successful applicant shall be issued with a Letter of Authorisation (LOA). The letter shall specify the effective date of authorisation, defines scope of authorization including the specialty (Technical Discipline), applicable aeronautical products, general limitations and additional limitations that may be deemed necessary by the Director.

The scope of authorization shall be defined using the following elements:

(a) Specialty (e.g. Systems and Equipment—Mechanical etc.);
(b) Authorized Functions (e.g. finding of compliance and design data or installation approval);
(c) Limitations (e.g. Composite structure, airframe etc.).

4.3. **Limitations, Transferability and Duration of authorisation**

The authorisation may be limited to any definable part of the subject matter of a particular function according to the applicant's qualifications, knowledge and experience.

An authorisation may be granted for a period of not exceeding 12 months.

The delegation or authorisation is not transferable.
4.4. Renewal of authorisation

This section provides requirements for the renewal of an engineering designation, covering the responsibilities of both SACAA and the delegate. Information regarding renewal of delegations of other technical disciplines is contained in the documents referred to within the Industry Delegate Appointment section of this guidance material.

An application for the renewal of an authorisation must be made by the authorised person on applicable form and accompanied by the appropriate fee. The application must be submitted to the Director not less than 60 days before the authorisation letter expires. The authorised person is responsible for submitting an application to the SACAA managing office for renewal.

To be eligible for renewal the applicant must be a holder of a current authorisation and must not have changed employment within the current authorisation period. A new application for authorisation shall be required should the holder change employers.

The applicant must also provide evidence of activity done within the scope of authorisation during the current and preceding period of authorisation.

The SACAA managing office will process the renewal application in accordance with their documented processes and procedures.

The SACAA managing office will determine that the need for the appointment still exists, and that SACAA has the ability to continue to manage the delegate, in liaison with the appropriate overseeing office.

A designation may be renewed based solely on existing, projected or anticipated need.

The SACAA managing office will review the delegate’s file for completed activity. Lack of activity may be used as justification for termination.

When determining whether to renew an appointment, the SACAA managing office must verify that the delegate attended any required standardisation or recurrent seminar(s), and has performed sufficient activities consistent with authorised functions to ensure continued proficiency in those functions.

If the SACAA managing office approves the delegate for renewal will issue a new authorisation letter.

If the renewal application is denied, the SACAA managing office will issue a letter to the applicant advising of the decision.

4.5. Suspension and cancellation or revocation of authorisation

An authorised officer delegated by the SACAA managing office which has a primary responsibility for engineering and design aspects of any airworthiness data may suspend or cancel the authorisation in terms Part 185, subpart 4, if -

a) The authorised person has not exercised the delegated functions in accordance with the scope of delegation, regulations and specified guidelines.

b) The authorised person resigns from the design organisation through which the delegation was obtained.

c) Lack of sufficient activity within the scope of authorisation to justify the continued delegation.
d) Unsatisfactory performance – when SACAA finds that the delegate has not properly exercised or satisfactorily performed the duties of the delegation.

e) The authorised person contravenes any of conditions of authorisation.

f) Misconduct or misrepresentation by the authorised person during performance of any of the delegated functions.

g) The authorised person prevents the SACAA authorised officer/s from carrying out any inspection or audit or oversight on any of the functions or records of activities accomplished by the authorised person concerned.

h) Lapse of qualifications – when SACAA finds the delegate’s qualifications for a specific activity have lapsed.

i) By request – at the request of the delegate or the delegate’s employer

j) Insufficient activity – when SACAA finds that the delegate has not had sufficient activity to warrant continuance of the delegation.

The holder of the authorisation which is cancelled or revoked shall surrender the authorisation letter to the Director within seven (7) days from the date on which the authorisation was cancelled or revoked.

4.6. Oversight

These activities (supervision, monitoring and tracking) are not necessarily separate activities; they are generally conducted together as part of the on-going oversight. The overseeing office will provide supervision to ensure the delegate is performing assigned authorised functions in accordance with the appropriate regulations, policies and procedures. The regulatory oversight of the delegate is designed to:

a) Ensure that the delegate has obtained and maintains all guidance material necessary to perform the authorised function(s).

b) Determine that the delegate is performing within the scope of their authorised function(s).

c) Verify that the delegate has attended appropriate standardisation seminar(s) as required.

d) Verify that the delegate has on-going activities to justify continuance of the delegation.

e) Ensure the delegate has direct communication to appropriate authorities within SACAA, including the assigned overseeing office.

f) Emphasise that the delegate should seek SACAA’s assistance in relation to any concerns connected with their authorised function(s).

g) Verify that the delegate has appropriately recorded and reported activities in relation to the exercise of his delegation.

h) Determine that the designee is performing within the scope of their delegated function(s).

i) Verify the designee has on-going activities within the scope of delegation to justify continuance of the designation.

j) Determine whether the delegation holder duly upholds the required independent checking function and verification of compliance on technical data compiled by other persons.

The audit review will include sampling of the approvals accomplished by the relevant delegation holder. Feedback in the form of audit report will be provided pertinent to the quality of the approvals and action required to correct any deficiencies identified during the review audit.

In accordance with relevant specific oversight guidelines, the overseeing office will conduct a one-on-one meeting to discuss the delegate’s performance. Appropriate corrective action (e.g. additional training or counselling) will be determined and initiated if the delegate fails to demonstrate acceptable methods, techniques and practices. After completion of corrective action, a follow-up session will be conducted to
determine if the delegate’s performance is acceptable. If it remains unsatisfactory, possible revocation will be considered. Unsatisfactory performance issues and the date of follow-up will be documented.

4.7. Responsibilities and Obligations of Designee

The delegation holder has a responsibility to ensure that he/she carries out his/her delegated activities strictly in accordance with the terms and provisions of the delegation and shall not exceed the statutory powers delegated to him/her. The designee shall be responsible for approving minor modification and minor repair data or installations in technical areas that they are competent and within their designated scope as outlined below.

a) The designee must at all times ensure that the design data which she/he has reviewed and approved is complete, accurate and complies with the relevant airworthiness standards, procedures and existing guidelines.

b) The designee shall exercise due care and diligence in carrying out their delegated functions and must avoid involvement in any irresponsible, negligent and unethical conduct in the process of carrying out their delegated functions.

c) The designee shall provide a certificate of compliance of technical data attesting to its compliance to the regulatory and airworthiness requirements and may as well be used as an instrument of design approval.

d) Due to the fact that delegation holders are considered as representatives of SACAA and act on behalf of the Director when overseeing compliance to specific airworthiness regulations, due consideration must be taken to ensure that organizational commercial pressures and interests do not influence decisions on their oversight responsibilities.

e) The designee must at all times ensure that in performing their duties within their delegated technical scopes, they shall not approve their own designs and development work. i.e. the principle of independent checking shall always be adhered to.

f) The designee must ensure that they keep abreast of current SACAA policies, procedures and regulations and to attend seminars, conferences and workshops relevant to their delegated functional areas.

g) Notify the Director within 7 days of any change of employment with the design organisation through which the existing delegation was obtained. Any other proposed change having a direct effect on the performance of authorized functions shall be subject to prior approval by the Director before implementation.

5. RECORDS AND REPORTS

Each designee shall establish and maintain a record keeping system to ensure that all activities related to the delegated functions are traceable and retrievable. This shall include the following:

a) Records of design data for all the aeronautical product designs approved by the delegation holder, including drawings photographs, specifications and reports pertinent to the substantiation of the relevant design approvals.

b) Record by make, model and where applicable, serial number, those products for which design data
has been approved by the delegation holder.

Delegates will be required to report their activity to SACAA using different methods and at different frequencies depending on the nature of the power or function being exercised.

Upon receipt of activity reports from delegates, SACAA will ensure that the report is recorded promptly and appropriately into SACAA systems, and if not submitted directly to the appropriate overseeing office will be made available to that office in a timely manner.

The overseeing office will monitor the delegate’s activity by reviewing the work records and reports for accuracy, and by observing the delegate’s activity to ensure that they use proper procedures and satisfactory techniques or methods:

a) As required by relevant specific oversight guidelines, witness the delegate exercising their delegated power or function to ensure satisfactory techniques are used.

b) Ensure that all documentation initiated by a delegate is processed in accordance with the appropriate regulations, guidance material and any direction provided by SACAA. Review a sample of the delegate’s documentation and discuss any discrepancies.

c) Review completed documentation of authorised function(s) performed by the delegate.

d) Document and record all oversight actions undertaken, including any feedback to the delegate, documents reviewed and interviews undertaken.

5.1. Delegation Manual

Each organisation nominating applicant for designation is required to establish submit two copies of delegation manuals or procedures. The delegation manual or procedures is the cornerstone of the delegation system as it provides a complete framework within which the authorised person will exercise the delegated functions within the organisation concerned.

The manual outlines the procedures for the performance of the delegated functions and will be used to achieve the following objectives:

a) Define the Responsibilities, Privileges and Limitations of the delegation of authority;
b) Provide information on the procedures governing the conduct of the delegated functions;
c) Identify communication procedures with SACAA;
d) Enhance the efficiency and effectiveness of the aeronautical product approval process;
e) Promote a shared commitment to aviation safety.

The content of the delegation manual shall cover but not be limited to the following key areas:

a) The name and address of the design organisation, where the applicant is an employee.
b) The statement by the applicant that she/he meets the minimum eligibility requirements to ensure effective performance of the functions and duties that is integral to the prospective field/s of delegation.
c) Outline the procedures to be followed to fulfil the intended delegated functions and responsibilities.
d) Detail how the liaison with the SACAA will be carried out in relation to the conduct of flight test programs and issuance of experimental certificates of airworthiness.

e) A system for record keeping ensuring that all the important activities relating to the delegation are traceable.

For any queries or feedback regarding this General Notice please contact:

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(Website version, original signed)

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