

**GUIDANCE MATERIAL FOR DESIGN
ORGANIZATION APPROVAL**

SOUTH AFRICAN



***CIVIL AVIATION
AUTHORITY***

DESIGN ORGANIZATION APPROVAL

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3. APPLICABILITY

3.1 Part 147 of the Civil Aviation Regulations (CAR) of 2011 as amended.

3.2 Technical guidance material details the five-phase process followed by an organisation that intends on applying for an approved Design Organisation under SACAR part 147.

4. DEFINITIONS AND ABBREVIATIONS

ABBREVIATION	DESCRIPTION
ADO	Approved Design Organisation
AED	Airworthiness Engineering
E: ASO	Executive: Aviation Safety Operations
M:AE	Manager: Airworthiness Engineering
MOP	Manual of Procedure
POPS	Prospective Operator's Pre-assessment Statement
QMS	Quality Management Systems
SACAA	South African Civil Aviation Authority
SACAR	South African Civil Aviation Regulations
SACATS	South African Civil Aviation Technical Standards
SM: AW	Senior Manager: Airworthiness
STC	Supplemental Type Certificate
TC	Type Certificate
TSO	Technical Standard Order

5. INTRODUCTION

This guidance document has been developed for use by applicants for SACAR Part 147 Design Organization approval. Its intent is to guide the applicants through the certification process that would be undertaken to certify the prospective applicant. The five-phase process consists of the following: -

- a. First Phase - Pre-application
- b. Second Phase - Application
- c. Third Phase - Document Evaluation
- d. Forth Phase - Demonstration & Audit
- e. Fifth Phase – Issuance of approval

The Certification process will be followed sequentially, some phases may overlap. After successful completion of each phase, the SACAA team will formally close each phase, this will be communicated to the applicant in a form of a letter.

NOTE: Every phase of the certification process is invoiced, the team will invoice each phase before the next phase can commence. An hourly rate in accordance to SACAR Part 187 will be charged for every hour spent reviewing documentation.

5.1 PRE-APPLICATION PHASE

5.1.1 Letter of Intent

The prospective applicant must make an initial inquiry in a form of a letter referred to as "Letter of Intent," stating the applicant's intended scope of work and contact details for organisation. The letter must be submitted at the SACAA offices addressed to the Manager: Airworthiness Engineering (M: AE)

5.1.2 Application Allocation

The project will be allocated to a team that will be conducting the certification process. Once the team is allocated the application, a written acknowledgement of the letter of intent will be sent and a pre-application meeting will be scheduled.

5.1.3 Pre-Application Meeting

The meeting will be held at a SACAA office and the organization's key management personnel will be required to attend this meeting. Should the applicant be unable to attend the meeting at the SACAA's offices, the SACAA team can be requested to conduct the meeting at the applicant's premises at the applicant's expense. For the meeting the applicant will be expected to give a presentation of the organisation that will include the following: -

- a. Key management personnel, their roles and responsibilities, their experience and qualifications; Organisational background;
- b. The intended scope of work (SACAR Part 21) and the organisation' experience (Projects); Certifying personnel, their roles and responsibilities, experience and qualifications;
- c. Intended SACAA Part 21 approval project (Demonstration project) and projected timelines

The SACAA team will also give a presentation that outlines and clarifies the requirements of certification process.

5.2 APPLICATION PHASE

Once the Pre-Application is concluded, an organisation must submit an application form with the proof of payment to SACAA, addressed to the AED manager and allocated team. For fees please refer to SACAR Part 187 for fees.

The team allocated will acknowledge the application and request for following documents to be submitted: -

5.2.1 Certificate of Company Registration

The prospective ADO must be a registered organisation with a premise that is not personal/residential dwelling.

5.2.2 Curriculum Vitae & Qualifications

The ADO's design activities must be carried out by persons with appropriate qualifications, knowledge and experience relevant to their individual roles and the organisation's scope of work to ensure that the technical airworthiness requirements and the safety requirements are met. The requirements for key personnel are listed below: -

5.2.2.1 Accountable manager

To be eligible for appointment as the accountable manager of an ADO an individual must be able to demonstrate to the SACAA that they have a good understanding of the following: -

- a. Responsibilities of the position of accountable manager
- b. Obligations of the ADO
- c. Scope of the ADO's approval;
- d. Organisational structure and high-level operational arrangements of the ADO.

The individual's level of understanding must be sufficient to satisfy the SACAA that they would be able to fulfil the responsibilities of the position.

5.2.2.2 Head of design

To be eligible for appointment as the head of design of an ADO an individual must be able to demonstrate to SACAA that they possess the following qualifications, experience and knowledge: -

Qualifications:

Tertiary qualifications in an engineering discipline or equivalent qualification that is relevant to the ADO's scope of approval.

Experience:

- a. At least 3 years of progressively responsible experience in an engineering discipline that is relevant to the ADO's scope of approval
- b. At least 3 years' experience as Certifying Personnel to carry out design activities that are relevant to the ADO's scope of approval (either under SACAA Part 21 or a similar role)
- c. Experience in certification processes relevant to the ADO's scope of approval
- d. Experience working with other technical disciplines
- e. Experience in project management related to aircraft or aeronautical product certification, including experience dealing with the kinds of management issues that may be encountered in certification projects and obtaining approvals, relevant to the ADO's scope of approval.

Knowledge:

- a. Comprehensive knowledge of the responsibilities of the position of Head of Design

- b. Comprehensive knowledge of the regulations and standards applicable to ADOs
- c. Good working knowledge of the regulations and standards applicable to the design activities that the ADO is approved to carry out
- d. Comprehensive knowledge of the ADO's MOP

The individual's qualifications, experience and knowledge must be enough to satisfy SACAA that they would be able to fulfil the responsibilities of the position.

5.2.2.3 Quality Assurance Manager

To be eligible for appointment as the Quality Manager of an ADO an individual must be able to demonstrate to SACAA that they possess the following qualifications, experience and knowledge: -

Qualifications:

Successfully completed a course in Quality Management enough to gain certification as a lead auditor.

Experience:

Minimum of 3 years' experience in quality management in an aviation environment, preferably in aircraft design and certification.

Knowledge:

- a. Comprehensive knowledge of Quality Management systems (QMS)
- b. Comprehensive knowledge of the responsibilities of the position
- c. Knowledge of the regulations and standards applicable to design assurance
- d. Knowledge of the regulations and standards applicable to ADOs generally
- e. Knowledge of the regulations and standards applicable to the relevant design activities
- f. Good working knowledge of the ADO's MOP

5.2.2.4 Certifying Personnel

To be eligible to be Certifying Personnel by an ADO to carry out a design activity on behalf of the ADO, an individual must be able to demonstrate that they have the qualifications, experience and knowledge required by the ADO for the position. The qualifications, experience and knowledge required by the ADO must be specified in the ADO's MOP. The minimum qualifications, experience and knowledge specified in the ADO's MOP must be sufficient to satisfy the SACAA that an individual who met those requirements would be able to fulfil the responsibilities of the position.

Qualifications:

An individual authorised to approve technical data under regulation part 21 and part 43 should have tertiary qualifications in an engineering discipline that is relevant to the individual's scope of authorization: -

Experience:

An individual authorised to approve technical data under regulation part 21 and part 43 should have:

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- a. A minimum of 3 years of progressively responsible experience in an engineering discipline that is relevant to the individual's scope of authorisation, including at least 12 months in a civil aviation environment
- b. Experience in certification processes relevant to the particular design activity
- c. Experience working with other technical disciplines.

Knowledge:

- a. An individual authorised to approve technical data under SACAR part 21 should have:
- b. Comprehensive knowledge of the responsibilities of the position
- c. Good working knowledge of the regulations and standards applicable to ADO
- d. Good working knowledge of the regulations and standards applicable to approval of technical data generally
- e. Comprehensive knowledge of the regulations and standards applicable to the individual's scope of authorisation
- f. Comprehensive knowledge of the technical subject matter applicable to the individual's scope of authorisation
- g. Good working knowledge of the ADO's MOP and design assurance system manual generally, and a comprehensive knowledge of the sections that are directly applicable to approval of technical data.

5.2.2.5 Training programme completed and planned

The organization must submit a training plan for personnel that is in line with their intended scope of authorization.

Continuous effectiveness of the quality assurance system relies on ongoing professional development appropriate to personnel's functions. Authorised personnel must be kept up-to-date with technical, procedural and regulatory requirements of the functions they perform.

Note: A certification process may not run longer than twelve months from the date of the application, proper planning and due diligence must be exercised by the applicant. Depending on the complexity of the demonstration project, extensions may be discussed and granted by the SACAA.

5.3 DOCUMENT EVALUATION PHASE

The following documents must be submitted to the SACAA: -

In this phase the applicant will be required to submit a set of completed SACAA forms and Organisational documents listed below;

5.3.1 Prospective Operator's Pre-assessment Statement (POPS)

This is a SACAA form, the form will be made available to an applicant. The form must be fully completed and submitted the SACAA.

5.3.2 Statement of Compliance

This is a SACAA form, the form will be made available to an applicant. The form must be fully completed and submitted the SACAA.

5.3.3 Classification procedure

An organisation must submit a document that details the process of classifying modifications and repairs as major or minor.

5.3.4 Manual of Procedures (MOP)

SACAR part 147 details high level requirements for the contents of the MOP. In practice, the detailed procedures necessary to comply with the requirements will depend on the size and scope of work of the organisation. The organisation must submit an electronic and hard copy of the MOP.

The SACAA team will review all the submitted documentation, to ensure that the documents meet the SACAA SACAR part 147 & 140 and SA-CATS requirements. Once the documents are reviewed, a report will be provided to the applicant. Should documents be incomplete or deficient, a letter will be sent to the applicant noting all non-compliances. An applicant must rectify all non-compliances and resubmit the SACAA for review of rectifications.

Note: Only three attempts (for all documentation) will be given for submission of documents by the applicant, failure to submit documents that are suitable to the SACAA will result in the application being cancelled.

5.4 DEMONSTRATION AND AUDIT PHASE

5.4.1 Demonstration project

In this phase the applicant will be required to demonstrate its ability to comply fully with SACAR part 147, the elected section of SACAR part 21 requirements and their Manual of Procedure (MOP) as required in regulation 147.02.2. The applicant will be required to demonstrate the above mentioned under the observation of the SACAA team.

The applicant must select and apply for a demonstration project that will be allocated to SACAA team. Capability may only be shown through SACAR part 21 approval only; namely: -

- a. Type Certificate (TC)
- b. Supplemental Type Certificate (STC)
- c. Technical Standard Oder (TSO)

These applications (ADO approval application and Part 21 approval application) will progress simultaneously, as the two approvals must be issued alongside each other. Both applications are dependent on each other, failure of one application

will result in failure of the other. It is the responsibility of the applicant to constantly keep the SACAA project team updated on the progress of ADO and Part 21 application.

5.4.2 On-site Audit

In this phase the applicant will be required to demonstrate their ability to comply fully with SACAR part 147 and 140, their MOP as required in regulation 147.02.2 and SA-CATS. An on-site audit of facility, policies, procedures, quality system and methods & instructions as described in the applicant's manual and other documentations, SACAR and/or other standards that are applicable. At the least there must be one project falling within the intended scope of approval, which is running or being undertaken to demonstrate capability by the applicant to carry out design work within such scope of approval.

The audit will be planned and conducted with enough time and customised to take into consideration the size and scope of the organization. Should the facilities be outside the country the applicant will be responsible for the all the cost incurred by the SACAA for the audit, payment must be made prior to the audit taking place. A report of the audit will be provided to the applicant, if non-conformities are noted the applicant must rectify the non-conformities before the next phase can commence.

5.5 ISSUANCE OF APPROVAL PHASE

Once the applicant has met all the regulatory requirements and all non-compliances are addressed the Design Organization Approval and Terms of Approval will be issued to the applicant, this completes the certification process. Once the approval is issued the applicant will be responsible for continued compliance with the SACAA regulations, limitations and privileges of the certificate and Terms of Approvals.

The SACAA will conduct periodic audits and oversight of Part 147 Approval holders' operations to ensure that approval holders continued compliance to the SACAR Part 140 & 147 and SA-CATS-DO requirements, limitations & privileges of the certificate and Terms of Approval.

These periodic audits and oversight include surveillance audits and renewal audits as per SACAA internal procedures and processes. procedures and processes.

5.6 DUTIES AND RESPONSIBILITIES OF ADO

Holders of SACAA Part 147 approval have a high level of responsibility, the duties of an ADO are specified in SACAR 147.02.14.




Over and above the duties of ADO, Part 147 approval holders have a responsibility to:

- a. Ensure that the capabilities and competencies that are in line with the SACAA issued terms of approval are maintained within the organisation.

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- b. Notification within 15 days to the SACAA should any change in the organisation affect the terms of approval and Part 21 approval.

6. DOCUMENT AUTHORISATION

DEVELOPED BY:		
	JABULANE NGCONGWANE	18 MAY 2020
SIGNATURE OF M: AW: ENG	NAME IN BLOCK LETTERS	DATE
REVIEWED & VALIDATED BY:		
	LOBANG THABANTSO	18 MAY 2020
SIGNATURE OF ACTING SM:AW	NAME IN BLOCK LETTERS	DATE
APPROVED BY:		
	SIMON SEGWABE	18 MAY 2020
SIGNATURE OF E: ASO	NAME IN BLOCK LETTERS	DATE