CIVIL AVIATION GUIDANCE MATERIAL – 8401

# DESIGN ORGANISATION APPROVAL

## CAAM PART 21 SUBPART J

CIVIL AVIATION AUTHORITY OF MALAYSIA

**ISSUE 01**
REVISION 00 – 1ST OCTOBER 2021

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# Introduction

This Civil Aviation Guidance Material 8401 – Design Organisation Approval (CAGM 8401 – CAAM Part 21 Subpart J) is issued by the Civil Aviation Authority of Malaysia (CAAM) to provide guidance for the application of Design Organisation Approval, pursuant to Civil Aviation Directives 8401 – Design Organisation Approval (CAAM Part 21 Subpart J).

Organisations may use these guidelines to demonstrate compliance with the provisions of the relevant CAD's issued. Notwithstanding Regulation 204 and Regulation 205 of the Malaysian Civil Aviation Regulations 2016 (MCAR 2016), when the CAGMs issued by the CAAM are used, the related requirements of the CAD's are considered as met, and further demonstration may not be required.

**(Captain Chester Voo Chee Soon)**
Chief Executive Officer
Civil Aviation Authority of Malaysia

## Civil Aviation Guidance Material Components and Editorial practices

This Civil Aviation Guidance Material is made up of the following components and are defined as follows:

**Standards:** Usually preceded by words such as *"shall"* or *"must"*, are any specification for physical characteristics, configuration, performance, personnel or procedure, where uniform application is necessary for the safety or regularity of air navigation and to which Operators must conform. In the event of impossibility of compliance, notification to the CAAM is compulsory.

**Recommended Practices:** Usually preceded by the words such as "*should"* or "*may*", are any specification for physical characteristics, configuration, performance, personnel or procedure, where the uniform application is desirable in the interest of safety, regularity or efficiency of air navigation, and to which Operators will endeavour to conform.

**Appendices:** Material grouped separately for convenience but forms part of the Standards and Recommended Practices stipulated by the CAAM.

**Definitions:** Terms used in the Standards and Recommended Practices which are not self-explanatory in that they do not have accepted dictionary meanings. A definition does not have an independent status but is an essential part of each Standard and Recommended Practice in which the term is used, since a change in the meaning of the term would affect the specification.

**Tables and Figures:** These add to or illustrate a Standard or Recommended Practice and which are referred to therein, form part of the associated Standard or Recommended Practice and have the same status.

**Notes:** Included in the text, where appropriate, Notes give factual information or references bearing on the Standards or Recommended Practices in question but not constituting part of the Standards or Recommended Practices;

**Attachments:** Material supplementary to the Standards and Recommended Practices or included as a guide to their application.

It is to be noted that some Standards in this Civil Aviation Guidance Material incorporates, by reference, other specifications having the status of Recommended Practices. In such cases, the text of the Recommended Practice becomes part of the Standard.

The units of measurement used in this document are in accordance with the International System of Units (SI) as specified in CAD 5. Where CAD 5 permits the use of non-SI alternative units, these are shown in parentheses following the basic units. Where two sets of units are quoted it must not be assumed that the pairs of values are equal and interchangeable. It may, however, be inferred that an equivalent level of safety is achieved when either set of units is used exclusively.

Any reference to a portion of this document, which is identified by a number and/or title, includes all subdivisions of that portion.

Throughout this Civil Aviation Guidance Material, the use of the male gender should be understood to include male and female persons.

# Record of Revisions

Revisions to this CAGM shall be made by authorised personnel only. After inserting the revision, enter the required data in the revision sheet below. The *'Initials'* has to be signed off by the personnel responsible for the change.

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# Table of Contents

# 1 Application for the Issuance of a Certificate of Approval (CAD 8401 2)

1.1.1 An applicant for DOA is strongly recommended to seek a preliminary discussion with CAAM to discuss the applicant's application for Design Organisation Approval requirements prior to the applicant's submission.

1.1.2 The formal application package for a grant of a DOA should consist of the following:

a) Letter of application;

b) Application fees;

c) CAAM/AW8401-01 – Application form;

d) CAAM/AW/0105-01 - Application for Initial Approval of Authorised Signatory;

e) Draft copy of Design Organisation Manual (DOM) which shall include the scope of work and limitations;

f) Company registration or equivalent;

g) Documentary evidence showing that the applicant has and can obtain the use of appropriate facilities for the scope of work (e.g. lease agreement);

h) Any proposed manual, as applicable;

i) Personnel training programmes, as applicable;

j) Matrix of Compliance against the applicable paragraphs of CAD 8401;

k) A Schedule of Events detailing the anticipated timescales for the approval process.

1.1.3 As required under paragraph 6 of CAD 8401, the applicant shall provide the draft DOM, or an outline, including company flow-charts and, as relevant, description and information on design activities and organisation of partners or subcontractors.

1.1.4 DOA Categories are as follows:

| | ***Nature:*** | ***Cases:*** |
|---|---|---|
| **1A** | Type Certificate applicant or holder of highly complex or large product(s) | • Large Aeroplanes<br>• Small and Large Rotorcraft<br>• UAS (Large)<br>• Turbine Engines |

| | | |
|---|---|---|
| **1B** | Type Certificate applicant or holder of complex or small-medium product(s) APU TSO (large) | • Small Aeroplanes<br>• Very Light Rotorcraft<br>• Gyroplanes<br>• UAS (above 25kg)<br>• Piston Engines<br>• Large APU |
| **1C** | Type Certificate applicant or holder of less complex or very small product(s) APU TSO (small) | • Sailplanes, powered Sailplanes<br>• Very Light Aeroplanes<br>• Airships<br>• Balloons<br>• Propeller<br>• Small APU |
| **2A** | Design Changes / Repairs, unrestricted | Scope including at least structure, installation of avionics, hydro-mechanical systems, electrical systems, cabin interiors, |
| **2B** | Design Changes / Repairs, restricted (technical fields) | Scope with restricted technical fields |
| **2C** | Design Changes / Repairs, restricted (aircraft size) | Scope limited to one category of product only |
| **3A** | Minor Changes / Repairs, unrestricted | Scope including at least structure, installation of avionics, hydro-mechanical systems, electrical systems, cabin interiors, |
| **3B** | Minor Changes / Repairs, restricted (technical fields) | Scope with restricted technical fields |
| **3C** | Minor Changes / Repairs, restricted (aircraft size) | Scope limited to one category of product only |

### 1.1.5 Scope of Work

1.1.6 Should identify the product type, the activities for each product type and the related technical field(s) for each activity, such as:

**a) Product types:**

- Large aeroplane
- Small aeroplane
- Sailplane/ powered Sailplane
- Very light aeroplane
- Small rotorcraft
- Large rotorcraft
- Very light rotorcraft

- Unmanned Aircraft System
- Gyroplane
- Airship
- Balloon
- Turbine engine
- Piston engine
- Auxiliary Power Unit
- Propeller

**b) Activity**

- Type Certificates/ APU TSO
- Supplemental Type Certificates/ APU TSO
- Changes to type design by TC holders and continued airworthiness
- Repairs
- Minor changes only
- Minor repairs only

**c) Technical fields**

- All (in case of Type Certificates)
- Avionics
- Installation of avionics equipment
- Structure
- Performance
- Environmental systems
- Hydro mechanical systems
- Electrical systems
- Cabin interiors
- Galleys or other interiors equipment
- Powerplant/Fuel system
- Software
- Transmissions
- Noise
- FADEC (Full Authority Digital Engine Control)
- Non-critical engine parts
- Thrust reversers

1.1.7 Applications to the CAAM for a variation to an existing DOA shall be made in the same manner as an application for a new DOA with the exception that unchanged documentation need not be resubmitted.

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# 2 Design Assurance System (CAD 8401 5)

*Note. – Design Assurance System for MINOR changes to type design or MINOR repairs to products – please refer to APPENDIX 1*

## 2.1 Definitions

2.1.1 *Design Assurance System* is the organisational structure, responsibilities, procedures and resources to ensure the proper functioning of the design organisation. It is described in the DOM directly or by cross reference to relevant procedures.

2.1.2 *Design Assurance* means all those planned and systematic actions necessary to provide adequate confidence that the organisation has the capability:

a) to design products or parts in accordance with the applicable airworthiness requirements and environmental protection requirements.

b) to show and verify the compliance with the applicable airworthiness requirements and environmental protection requirements.

c) to demonstrate this compliance to CAAM.

2.1.3 *Type Investigation* means task of the organisation in support of the Type Certificate or other design approval processes necessary to show and verify and to maintain compliance with the applicable airworthiness and environmental protection requirements.

## 2.2 Design Assurance

2.2.1 The complete process, starting with the airworthiness requirements, environmental protection requirements and product specifications, and culminating with the issuing of a type-certificate, is shown in the diagram on Figure 1. This identifies the relationship between the design, the Type Investigation and design assurance processes.

2.2.2 Effective Design Assurance demands a continuing evaluation of factors that affect the adequacy of the design for intended applications, in particular that the product, or part, complies with applicable airworthiness and environmental protection requirements and will continue to comply after any change.

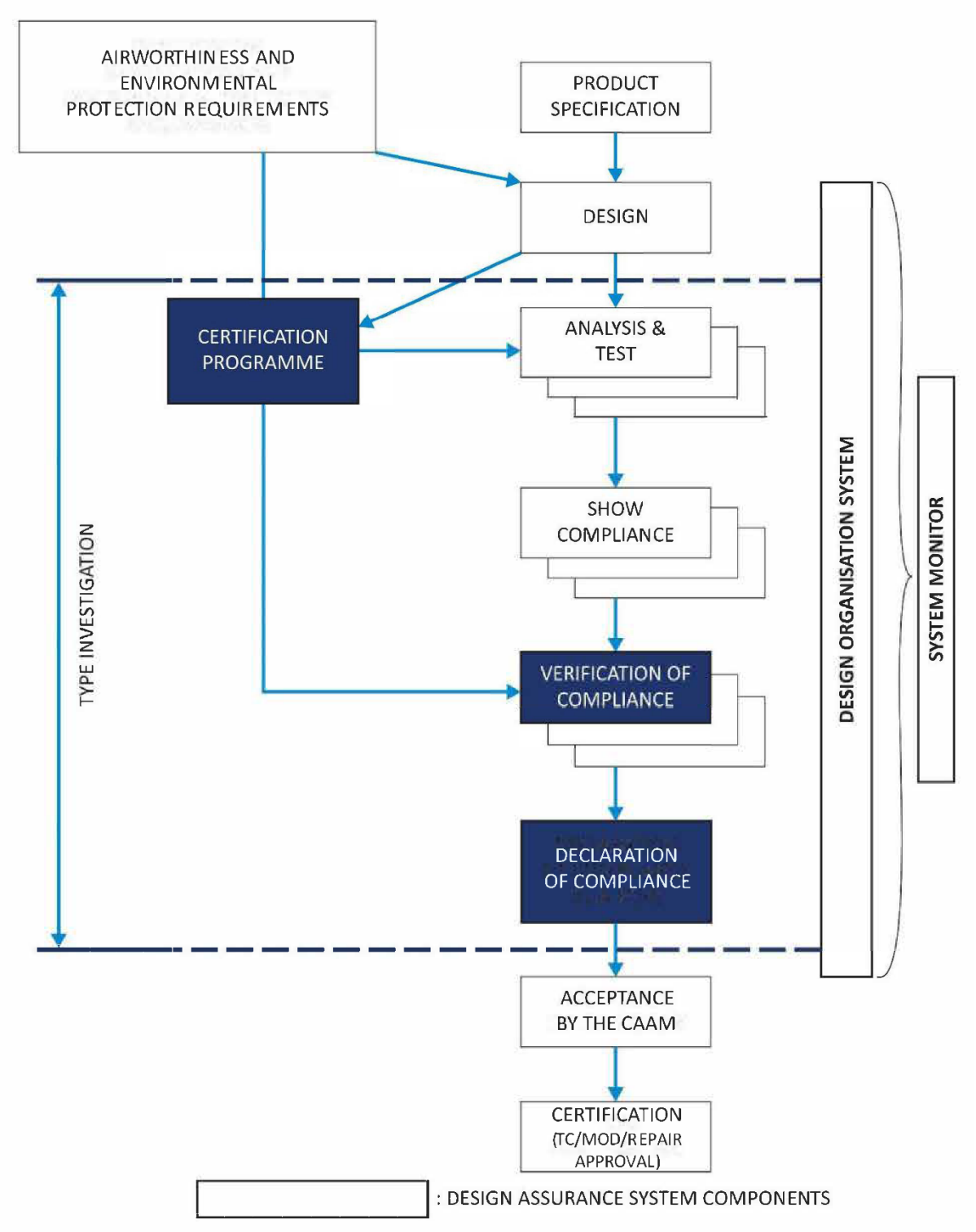


*Figure 1 – Relationship Between the Design, Design Assurance and Type Investigation*

2.2.3 Two main aspects should therefore be considered;

a) How the planned and systematic actions are defined and implemented, from the very beginning of design activities up to continued airworthiness activities.

b) How these actions are regularly evaluated and corrective actions implemented as necessary.

## 2.3 Planned and Systematic Actions

2.3.1 For design organisations carrying out type investigation of products, the planned and systematic actions should cover the following tasks and procedures should be defined accordingly.

2.3.2 General

a) To issue or, where applicable, supplement or amend the DOM in accordance with CAD 8401, paragraph 6, in particular to indicate the initiation of design activities on a product.

b) To ensure that all instructions of the DOM are adhered to.

c) To conduct type investigation.

d) To nominate staff as Compliance Verification Engineers (CVE) responsible to approve compliance documents as defined in paragraph 2.3.5.

e) To nominate personnel belonging to the Office of Airworthiness responsible as defined in paragraph 2.3.6.

f) In the case of an applicant for a supplemental type-certificate, to obtain the

g) agreement of the type-certificate holder for the proposed supplemental type certificate to the extent defined in CAD 8105.

h) To ensure full and complete liaison between the type design organisation and related organisations having responsibility for products manufactured to the type certificate.

i) To provide the assurance to the CAAM that prototype models and test specimens adequately conform to the type design.

2.3.3 Chief Executive

a) The Chief Executive is accountable to the CAAM and shall ensure that all production of design documents are performed to the required standards and that the design organisation is continuously in compliance with the data and procedures identified in the DOM.

b) The Chief Executive should provide the necessary resources for the proper functioning of the design organisation.

c) The Chief Executive needs to have sufficient knowledge and authority to enable him or her to respond to the CAAM regarding major issues of the design approval and implement necessary improvements.

d) The Chief Executive needs to be able to demonstrate that he or she is fully aware of and supports the design assurance policy and maintains adequate links with the Chief of the Office of Airworthiness.

2.3.4 Head of Design Organisation (or deputy)

a) The Head of the Design Organisation, or an authorised representative, should sign a declaration of compliance with the applicable airworthiness and environmental protection requirements after verification of satisfactory completion of the type investigation. The signature by the Head of the Design Organisation on the Declaration of Compliance confirms that the procedures as specified in the DOM have been followed.

b) The functions of Chief Executive and Head of the design organisation may be performed by the same person.

2.3.5 Compliance Verification

a) Approval by signing of all compliance documents, including test programme and data, necessary for the verification of compliance with the applicable airworthiness and environmental protection requirements as defined in Type Investigation programme.

b) Approval of the technical content (e.g. completeness, technical accuracy, etc.), including any subsequent revisions, of the manuals approved by CAAM (Aircraft Flight Manual, the Airworthiness Limitation section of the Instructions for Continued Airworthiness and the Certification Maintenance Requirement (CRM) document, where applicable).

2.3.6 Office of Airworthiness

Of the three mandatory elements of DOA (Design, Airworthiness and Independent Monitoring Functions), Office of Airworthiness is responsible for the Airworthiness and Independent Monitoring Functions. Some of its functions are:

a) Liaison between the design organisation and CAAM with respect to all aspects of Type Investigation.

b) Ensuring that a DOM is prepared and updated as required in CAD 8401, paragraph 6.

c) Co-operation with CAAM in developing procedures to be used for the type certification process.

d) Issuing of guidelines for documenting compliance.

e) Co-operation in issuing guidelines for the preparation of the manuals required by the applicable requirements, Service Bulletins, drawings, specifications, and standards.

f) Ensuring procurement and distribution of applicable airworthiness and environmental protection requirements and other specifications.

g) Co-operating with CAAM in proposing the type-certification basis.

h) Interpretation of airworthiness and environmental protection requirements and requesting decisions of CAAM in case of doubt.

i) Advising of all departments of the design organisation in all questions regarding airworthiness, environmental protection approvals and certification.

j) Preparation of the Type Investigation programme and co-ordination of all tasks related to Type Investigation in concurrence with CAAM.

k) Regular reporting to CAAM about Type Investigation progress and announcement of schedule tests in due time.

l) Ensuring reporting to CAAM about Type Investigation programmes needed for demonstration of compliance.

m) Establishing the compliance checklist and updating for changes.

n) Checking that all compliance documents are prepared as necessary to show compliance with all airworthiness and environmental protection requirements, as well as for completeness, and signing for release of the documents.

o) Checking the required type design definition documents in accordance with CAAM requirements and ensuring that they are provided to CAAM for approval when required.

p) Preparation, if necessary, of a draft for a type-certificate data sheet and/or changes to type-certificate data sheet.

q) Providing verification to the head of design organisation that all activities required for Type Investigation have been properly completed.

r) Approving the classification of changes and granting the approval for minor changes in accordance with CAAM requirements in CAD 8104 (CAAM Part 21 Subpart D)

s) Monitoring of significant events on other aeronautical products as far as relevant to determine their effect on airworthiness of product being designed by the design organisation.

t) Ensuring co-operation in preparing Service Bulletins and the Structural Repair Manual, and subsequent revisions, with special attention being given to the manner in which the content affect airworthiness and environmental protection.

u) Ensuring the initiation of activities as a response to failure (accident/ incident/ in-service experience) evaluation and complaints from the operation and providing of information to CAAM in case of airworthiness impairment (continuing airworthiness).

v) Advising CAAM with regard to the issue of Airworthiness Directives in general based on Service Bulletins.

w) Ensuring that the manuals approved by CAAM, including any subsequent revisions (the Aircraft Flight Manual, MMEL, the Airworthiness Limitations section of the Instructions for Continued Airworthiness and the Certificate Maintenance Requirements (CMR) document, where applicable) are checked to determine that they meet the respective requirements, and that they are provided to CAAM for approval.

2.3.7 Maintenance and Operating Instructions

a) Ensuring the preparation and updating of all maintenance and operating instructions (including instruction for continued airworthiness and service bulletins) needed to maintain airworthiness (continuing airworthiness) in accordance with relevant airworthiness requirement. For that purpose, the applicant should:

1) establish the list of all documents it is producing to comply with relevant airworthiness requirement;

2) establish a system to collect in-service experience to be used for the improvement of the instructions; and

3) define procedures and organisation to produce and issue these documents, using where applicable and so elected CAD 8401 paragraph 15.3(c) privilege.

b) Ensuring all these documents are provided to all affected operators and affected national aviation authorities.

2.3.8 Operational Suitability Data (OSD)

a) Ensuring the preparation and updating of all OSD in accordance with relevant airworthiness requirement. For that purpose, the applicant should:

1) establish the list of all the documents it is producing to comply with MMEL, FCD, CCD, SIMD and MCSD, as applicable; and

2) define its procedures and the organisation to produce and issue these documents under the obligation of point CAD 8401 paragraph 15.3(c); these procedures should cover the aspects described in 2.3.7(a) above.

b) Ensuring all these documents are provided to all affected operators and all affected national aviation authorities.

## 2.4 Continued Effectiveness of The Design Assurance System

2.4.1 The organisation should establish the means by which the continuing evaluation (system monitoring) of the design assurance system will be performed in order to ensure that it remains effective.

## 2.5 Design Assurance System – Independent System Monitoring

2.5.1 The system monitoring function required in CAD 8401, paragraph 5.2(c) may be undertaken by the existing quality assurance organisation when the design organisation is part of a larger organisation.

## 2.6 Design Assurance System – Independent Checking Function of the Showing of Compliance.

2.6.1 The independent checking function of the demonstration of compliance shall consist of the verification by a person not creating the compliance data. Such person may work in conjunction with the individuals who prepare compliance data.

2.6.2 The verification shall be shown by signing compliance documents, including test programmes and data.

2.6.3 For a product, there is normally only one compliance verification engineer nominated for each relevant subject. A procedure shall cover the non-availability of nominated persons and their replacement when necessary.

2.6.4 For STC cases, when compliance statement and associated documentation are produced by the TC holder, and when these data are approved under the system of the authority of TC holder, then the STC applicant does not need to provide, within its own DOA, the independent checking function required in CAD 8401, para 5.3 for these data.

## 2.7 Design Assurance System – Partners/ Sub-contractors

2.7.1 In meeting the requirement of CAD 8401, para 5.4, the applicant for a DOA may adopt the following policy:

a) The satisfactory integration of the Partners/ Sub-contractors and applicant's design assurance systems should be demonstrated for the activities covered under the applicant's terms of approval.

b) In the event that a Partners/ Sub-contractor holds a DOA, then in accordance with CAD 8401, paragraph 5.4, the applicant may take this into account in demonstrating the effectiveness of this integrated system.

c) When any Partners/ Sub-contractors do not hold a DOA then the applicant will need to establish to its own satisfaction and the satisfaction of CAAM, the adequacy of that partner's/ sub-contractor's design assurance system in accordance with CAD 8401, para 6.3.

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# 3 Data (CAD 8401 6)

## 3.1 CAD 8401 6.1 – Design Organisation Manual (DOM) Content

*Note 1. – The example of Model Contents of a DOM – please refer to APPENDIX 10*

*Note 2. – Data requirement – Model content of DOM for organisations designing MINOR changes to type design or MINOR repairs to products – please refer to APPENDIX 2.*

3.1.1 The Design Organisation Manual (DOM) should provide the following information for each product covered by the design organisation approval.

a) A description of the tasks which can be performed under the approval, according to the following classification:

1) General areas, like subsonic turbojet aeroplanes, turbo propeller aeroplanes, small aeroplanes, rotorcraft.

2) Technologies handled by the organisation (composite, wood or metallic construction, electronic systems, etc.).

3) A list of types and models for which the design approval has been granted and for which privileges may be exercised, supported by a brief description for each product.

4) For repair design, classification and (if appropriate) approval activities it is necessary to specify the scope of activity in terms of structures, systems, engines, etc.

b) A general description of the organisation, its main departments, their functions and the names of those in charge; a description of the line management and of functional relationships between the various departments.

c) A description of assigned responsibilities and delegated authority of all parts of the organisation which, taken together, constitute the organisation's design assurance system together with a chart indicating the functional and hierarchical relationship of the design assurance system to Management and to other parts of the organisation also the chains of responsibilities within the design assurance system, and the control of the work of all partners and sub-contractors.

d) A general description of the way in which the organisation performs all the design functions in relation to airworthiness and environmental protection approvals including:

1) The procedures followed and forms used in the Type Investigation process to ensure that the design of, or the change to the design of, the product as applicable is identified and documented, and complies with the applicable airworthiness and environmental protection requirements, including specific requirements for import by importing authorities.

2) The procedures for classifying design changes as “major” or “minor” and for the approval of minor changes.

3) The procedures for classifying and approving unintentional deviations from the approved design data occurring in production (concessions or non-conformance’s).

4) The procedure for classifying and obtaining approval for repairs.

e) A general description of the way in which the organisation performs its functions in relation to the continuing airworthiness of the product it designs, including co-operation with the production organisation when dealing with any continuing airworthiness actions that are related to production of the product, part or appliance, as applicable.

f) A description of the human resources, facilities and equipment, which constitutes the means for design, and where appropriate, for ground and flight testing.

g) An outline of a system for controlling and informing the staff of the organisation of current changes in engineering drawings, specifications and design assurance procedures.

h) A description of the recording system for:

1) The type design, including relevant design information, drawings and test reports, including inspection records of test specimens.

2) The means of compliance.

3) The compliance documentation (e.g. compliance check list, reports, etc.).

i) A description of the record keeping system to retain all relevant design information, drawings and test reports, including inspection records for the product in order to provide the information necessary to ensure the continued airworthiness and compliance with applicable environmental protection requirements of the changed product.

j) A description of the means by which the organisation monitors and responds to problems affecting the airworthiness of its product during design, production and in service in particular to comply with the requirement related to failures, malfunctions and defects.

k) The names of the design organisation authorised signatories. Nominated persons with specific responsibilities.

l) A clear definition of the tasks, competence and areas of responsibilities of the Office of Airworthiness.

m) A description of the procedures for the establishment and the control of the maintenance and operating instructions.

n) A description of the means by which the continuing evaluation (system monitoring) of the design assurance system will be performed in order to ensure that it remains effective.

o) A description of the procedures for the establishment and the control of the operational suitability data.

## 3.2 CAD 8401 6.5 – Statement of Qualifications and Experience

*Note. – Data requirement - Statement of the qualifications and experience - Organisations that design MINOR changes to type design or MINOR repairs to products – please refer to APPENDIX 3.*

### 3.2.1 Purpose

This paragraph provides guidelines on the following points;

a) Who are the persons covered by CAD 8401, paragraph 6.5?

b) What are requested from the applicant for these persons?

### 3.2.2 Who are the persons?

Three different types of functions are named or implicitly identified in the requirements of CAD 8401, using qualified and experienced personnel;

a) the Chief Executive

b) The other management staff:

1) the Head of the Design Organisation (HODO)

2) the Chief of the Office of Airworthiness

3) the Chief of the independent monitoring function of the design assurance system

c) the personnel making decisions affecting airworthiness and environmental protection:

1) compliance verification engineers (CVE) – Minimum criteria for CVE as below:

- The CVE is cognizant of regulatory requirements and problems related to civil aircraft approvals and has direct experience requiring expertise in the general certification process.
- has a thorough working knowledge of the specific airworthiness and environmental protection requirements.
- has been in a responsible position in connection with the type of work for which the designation is being sought, and is cognizant of related technical requirements.

- has the basic engineering knowledge appropriate to the designation being sought, as demonstrated by 8 years of progressively responsible engineering experience for which an engineering degree may be substituted for up to 4 years of maximum credit. An applicant who has not earned an engineering degree may substitute 40 credit hours of successfully completed course work in engineering or related curriculum for 1 year of experience, up to 4 years of maximum credit.

2) personnel of the Office of Airworthiness making decisions affecting airworthiness, operational suitability and environmental protection, especially those linked with the CAD 8401 para 15 privileges (signing documents for release, approving classification of changes and repairs, and granting the approval of minor changes and minor repairs, granting the approval of SBs, and minor revisions to the aircraft flight manual).

3.2.3 Kind of statement

a) Chief Executive

1) The Chief Executive should provide the necessary resources for the proper functioning of the design organisation.

2) A statement of the qualification and experience of the Chief Executive is normally not required.

b) Other management staff

1) The person or persons nominated shall represent the management structure of the organisation and be responsible through the Head of Design Organisation to the Chief Executive for the execution of all functions as specified in CAD 8401. Depending on the size of the organisation, the functions may be subdivided under individual managers (and in fact may be further subdivided) or combined in a variety of ways.

2) The nominated managers shall be identified and their credentials furnished to the CAAM on CAAM/AW/0104-00 (CAAM Form 4) form in order that they may be seen to be appropriate in terms of relevant knowledge and satisfactory experience related to the nature of the design activities as performed by the organisation.

3) The responsibilities and the tasks of each individual manager should be clearly defined, in order to prevent uncertainties about the relations, within the organisation. Responsibilities of the managers should be defined in a way that all responsibilities are covered.

c) Personnel making decisions affecting airworthiness and environmental protection

1) For these personnel, no individual statement is required. The applicant shall show to CAAM that there is a system to select, train, maintain and identify them for all tasks where they are necessary.

2) The following guidelines for such a system are proposed.

   i) These personnel should be identified in the DOM, or in a document linked to the DOM. This, and the corresponding procedures, should enable them to carry out the assigned tasks and to properly discharge associated responsibilities.

   ii) The needs, in terms of quantity of these personnel to sustain the design activities, should be identified by the organisation.

   iii) These personnel should be chosen on the basis of their knowledge, background and experience.

   iv) When necessary, complementary training should be established, to ensure sufficient background and knowledge in the scope of their authorisation. The minimum standards for new personnel to qualify in the functions should be established. The training should lead to a satisfactory level of knowledge of the procedures relevant for the particular role.

   v) Training policy forms part of the design assurance system and its appropriateness forms part of investigation by CAAM within the organisation approval process and subsequent surveillance of persons proposed by the organisation.

   vi) This training should be adapted in response to experience gained within the organisation.

   vii) The organisation should maintain a record of these personnel which includes details of the scope of their authorisation. The personnel concerned should be provided with evidence of the scope of their authorisation.

   viii) The authorisation document must be in a style that makes its scope clear to these personnel and any authorised person who may require to examine the authorisation. Where codes are used to define scope, an interpretation document should be readily available.

   ix) These personnel are not required to carry the authorisation document at all times but should be able to make it available within a reasonable time of a request from an authorised person. Authorised persons include the CAAM.

   x) the following minimum information should be kept on record;
      - Name
      - Date of birth
      - Experience and training
      - Position in organisation

- Scope of the authorisation
- Date of first issue of the authorisation
- If appropriate, date of expiry of the authorisation
- Identification number of the authorisation.

*Note. – The record may be kept in any format and should be controlled*

xi) Persons authorised to access the system should be maintained at a minimum to ensure that records cannot be altered in an unauthorised manner or that such confidential records do not become accessible to unauthorised persons.

xii) Personnel should be given access to their own record.

xiii) Under the provision of CAD 8401, paragraph 12 the CAAM has a right of access to the data held in such a system.

xiv) The organisation should keep the record for at least two years after a person has ceased employment with the organisation or withdrawal of the authorisation, whichever is the sooner.

# 4 Approval Requirements (CAD 8401 7)

*Note. – Requirements or approval - Organisations designing MINOR changes to type design or MINOR repairs to products – please refer to APPENDIX 4.*

## 4.1 General

4.1.1 The data submitted in accordance with CAD 8401, paragraph 6.0 shall show that sufficient skilled personnel are available and suitable technical and organisational provisions have been made for carrying out the Type Investigation defined by paragraph 2.1.3.

## 4.2 Personnel

4.2.1 The applicant shall show that the personnel available to comply with CAD 8401 paragraph 7.1 are, due to their special qualifications and number, able to provide assurance of the design or modification of a product, as well as the compilation and verification of all data needed to meet the applicable airworthiness and environmental protection requirements while taking into account the present state of the art and new experience.

## 4.3 Technical

4.3.1 The applicant should have access to:

a) Workshops and production facilities which are suitable for manufacturing prototype models and test specimens.

b) Accommodation and test facilities which are suitable for carrying out tests and measurements needed to demonstrate compliance with the airworthiness and environmental protection requirements. The test facilities may be subjected to additional technical conditions related to the nature of tests performed.

## 4.4 Organisation

4.4.1 The data submitted in accordance with CAD 8401, Paragraph 6 should show that:

a) Head of the design organisation for which an application for approval has been made, has the direct or functional responsibility for all departments of the organisation which are responsible for the design of the product. If the departments responsible for design are functionally linked, the Head of the design organisation still carries the ultimate responsibility for compliance of the organisation with CAD 8401.

b) An Office of Airworthiness, or equivalent function, has been established and staffed on a permanent basis to act as the focal point for co-ordinating airworthiness, operational suitability and environmental protection matters (see paragraph 2.3.6); it reports directly to the Head of the design organisation

or is integrated into an independent quality assurance organisation reporting to the Head of the design organisation.

*c) RESERVED*

d) Responsibilities for all tasks related to Type Investigations are assigned in such a way that gaps in authority are excluded.

e) The responsibility for a number of tasks as in paragraph 4.4.1(d) may be assigned to one person especially in the case of simple projects.

f) Co-ordination between technical departments and the persons in charge of the system monitoring required by CAD 8401, paragraph 5.2(c) has been established:

1) to ensure quick and efficient reporting and resolution of difficulties encountered using the handbook and associated procedures

2) to maintain the design assurance system

3) to optimse auditing activities.

# 5 Changes in Design Assurance System (CAD 8401 8)

5.1.1 In addition to a change in ownership, the following changes to the design assurance system shall be considered as “significant” to the showing of compliance or to the airworthiness or environmental protection of the products.

5.1.2 Organisation

a) Relocation to new premises.

b) Change in the industrial organisation (partnership, suppliers, design work sharing) unless it can be shown that the independent checking function of the showing of compliance is not affected.

c) Change in the parts of the organisation that contribute directly to the airworthiness or environmental protection (independent checking function, office of airworthiness [or equivalent]).

d) Change to the independent monitoring principles.

5.1.3 Responsibilities

a) Change of the management staff.

- the Head of the design organisation;
- the Chief of the Office of Airworthiness;
- the Chief of the independent monitoring function of the design assurance system.

b) New distribution of responsibilities affecting airworthiness or environmental protection.

c) For organisations designing MINOR changes to type design or MINOR repairs to products, change of the persons identified in APPENDIX 3.

5.1.4 Procedures

Change to the principles of procedures related to:

a) the type certification;

b) the classification of changes and repairs as ‘major’ or ‘minor’;

c) the treatment of major changes and major repairs;

d) the approval of the design of minor changes and minor repairs;

e) the approval of the design of certain major repairs;

f) the approval of the conditions under which a permit to fly can be issued;

g) the issue of information and instructions under the privilege of DOA;

h) the approval of documentary changes to the Aircraft Flight Manual;

i) continued airworthiness or continued operational suitability;

j) the configuration control, when airworthiness or environmental protection is affected;

k) the acceptability of design tasks undertaken by partners or subcontractors.

l) the issue of data and information under the CAD 8401, paragraph 15.3(c).

5.1.5 Resources – A substantial reduction in number and/or experience of staff.

# 6 Non-Transferability (CAD 8401 9)

6.1.1 In the event of receivership there may be good technical justification for continuation of the approval provided that the company continues to function in a satisfactory manner. It is likely that at a later stage the approval might be surrendered by the receiver or transferred to another legal entity in which case the new legal entity shall apply for a new DOA per CAD 8401.

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# 7 Terms of Approval (CAD 8401 10)

*Note. – The terms of approval issued for organisations that design MINOR changes to type design or MINOR repairs to products – please refer to APPENDIX 5.*

7.1.1 The terms of approval are stated on the certificate of approval issued by CAAM. The certificate states the scope of work and the products, changes or repairs thereof, with the appropriate limitations for which the approval has been granted. For design organisation approval covering type certification or TSO authorisation for APU, the list of product types covered by the design assurance system would be included.

7.1.2 Approval of a change in the terms of approval in accordance with CAD 8401, paragraph 11.0 will be confirmed by an appropriate amendment of the certificate of approval.

7.1.3 The certificate references the DOM of the approved design organisation, provided in accordance with CAD 8401, paragraph 6.0. The DOM defines the tasks which may be performed under the approval.

7.1.4 Scope of work identifies the product types, the activities for each product type and the related technical field(s) for each activity, in accordance with paragraph 1.1.5.

7.1.5 For repair design activities, the certificate states the scope of work with the appropriate limitations for which the approval has been granted.

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# 8 Design Investigation (CAD 8401 12)

8.1.1 Arrangements that allow CAAM to make investigations include the complete design organisation including partners, sub-contractors and suppliers, whether they are in the state of the applicant or not, assisting and co-operation with the CAAM in performing inspection and audits conducted during initial assessment and subsequent surveillance.

8.1.2 Assistance to CAAM includes all appropriate means associated with the facilities of the design organisation to allow the CAAM to perform these inspections and audits, such as a meeting room and office support.

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# 9 Privileges (CAD 8401 15)

*Note 1. – Privileges – Organisations that design MINOR changes to a type certificate (TC) or a supplemental type certificate (STC) and MINOR repairs to products: classification procedure – please refer to APPENDIX 6.*

*Note 2. – Privileges – Procedure for the approval of MINOR changes and MINOR repairs to type certificate (TC), APU TSO or a supplemental type certificate (STC)– please refer to APPENDIX 7.*

*Note 3. – Privileges – Organisations that design MINOR changes to a type certificate (TC), APU TSO or a supplemental type certificate (STC) and MINOR repairs to products: procedure for the approval of MINOR changes to a TC, APU TSO or MINOR repairs – please refer to APPENDIX 8.*

*Note 4. – Procedure for the approval of MINOR changes to a type certificate (TC) which affect the aircraft flight manual (AFM) [CAD 8401, Para 15.3(b)] – Please refer to APPENDIX 9*

## 9.1 CAD 8401 15.3(a) – Procedure for the classification of changes to a Type Certificate (TC) or to a Supplement Type Certificate (STC), and of repairs designs as 'Minor' or 'Major'

9.1.1 INTENT

9.1.1.1 This paragraph provides the means to develop a procedure for the classification of changes to a TC, APU TSO or to that part of the product covered by an STC, and repair designs.

9.1.1.2 Each DOA applicant must develop its own internal classification procedure following this paragraph in order to obtain the associated CAD 8401, paragraph 15.3(a) privilege.

9.1.2 PROCEDURE FOR THE CLASSIFICATION OF CHANGES

9.1.2.1 Content

a) The procedure must address the following points:

1) the identification of changes to a TC, APU TSO or to that part of the product covered by an STC, and repair designs,

2) classification;

3) justification of the classification;

4) authorised signatories;

5) supervision of changes to a TC, APU TSO or to that part of the product covered by an STC, and repair designs initiated by subcontractors.

9.1.2.2 Identification of changes to a TC, APU TSO or to that part of the product covered by an STC, and repair designs.

a) The procedure must indicate how the following are identified:

1) items (consisting of areas, systems, parts, or appliances) to be affected by the change or repair following the definitions provided in CAGM 8104;

2) airworthiness directives which have, or might have, an impact on any of the identified items affected by the change or repair;

3) other constituents of the TC and of the pre-existing change(s) to the TC as applicable to the affected items (for instance, operating limitations, OSD constituents, manuals) to be affected by the change or repair;

4) the existing type-certification basis of the affected items containing, as applicable, the certification specifications, special conditions, deviations from the applicable certification specifications and the equivalent level of safety findings incorporated by reference in the TC of the product to be changed;

5) the existing OSD certification basis;

6) the definition of the change or repair to the affected items and to the other affected constituents of the TC and of the pre-existing change(s) to the TC, if applicable, in accordance with the provisions of CAD 8102 paragraph 15 and CAD 8104 paragraph 3;

7) the certification basis of the change or repair determined in accordance with CAD 8104 paragraph 8 with the support of CAGM 8104 (CAD 8106 paragraph 6 for repairs); this might lead to pre-classification of the change as 'major significant' as per the associated definitions (see paragraph 9.1.2.3 below).

b) The procedure should request the applicant to record a justification that the information, on which those identifications are based, is adequate. This may be done either by using the DOA holder's own resources, or through an arrangement with the TC holder, or any other design approval holder as relevant.

c) The procedure should address cases where the pre-existing configuration of the type design is the result of multiple changes or repairs applied to the same areas, systems, parts, equipment or appliances.

9.1.2.3 Classification

a) The procedure must show how the effects on airworthiness and environmental protection are analysed, from the very beginning, by reference to the specific applicable requirements of the affected items.

b) If no specific airworthiness or environmental protection requirements are applicable to the change or repairs, the above review must be carried out at the level of the part or system where the change or repair is integrated

and where specific airworthiness or environmental protection requirements are applicable.

c) For changes to a TC, the criteria used for the classification should be in compliance with CAD 8104 paragraph 3 and follow the guidelines provided in CAGM 8104.

d) For repairs, the criteria used for the classification should be in compliance with CAD 8106 paragraph 7 and follow the guidelines provided in CAGM 8106.

e) The procedure should define provisions to contact CAAM in case of doubts regarding the classification.

f) The procedure should take into consideration that a change to a TC may have been found to be significant according to CAD 8104 paragraph 8 and following the definitions provided in CAGM 8104 Therefore, it is already pre-classified at the stage of the determination of the certification basis (see paragraph 9.1.2.2 above).

9.1.2.4 Justification of the classification

All decisions of classification of changes to a TC, APU TSO or to that part of the product covered by an STC, and repairs designs as “major” or “minor” should be recorded and, for those which are not straightforward, also documented. These records must be easily accessible to the CAAM for sample checking.

9.1.2.5 Acceptance of classification by the authorised signatories

a) All classifications of changes to a TC, APU TSO or to that part of the product covered by an STC, and repairs designs should be accepted by an appropriate authorised signatory, belonging to or tasked by the Office of Airworthiness.

b) The procedure must indicate the authorised signatories for the various products listed in the terms of approval.

c) For those changes or repairs that are handled by subcontractors, as described under 9.1.2.6 below, a description should be provided of how the DOA holder manages its classification responsibility.

d) The final classification may be:

1) major changes not significant to a TC or major repairs;

2) major changes not significant to a TC or major repairs;

3) minor changes to a TC or minor repairs where additional work is necessary to demonstrate compliance with the certification basis, the operational suitability data certification basis, where applicable, and the environmental protection requirements; or

4) minor changes to a TC or minor repairs requiring no further demonstration of compliance.

e) The procedure should indicate how the above four classes of changes/repairs are identified, taking into consideration the requirements laid down in CAD 8102 paragraph 15.

9.1.2.6 Supervision of changes to a TC, APU TSO or to that part of the product covered by an STC, and repairs designs initiated by subcontractors.

The procedure must indicate, directly or by cross-reference to written procedures, how changes to a TC, to that part of the product covered by the STC, and repair designs may be initiated and classified by subcontractors, and are controlled and supervised by the DOA holder, taking into consideration the requirements laid down in CAD 8401, para 5.4 and the associated CAGM 8401.

## 9.2 CAD 8401 15.3(g) – Procedure for the approval of the conditions for the issue of a Permit to Fly (PtF)

9.2.1 INTENT

9.2.1.1 This CAGM provides the means to develop a procedure to determine that an aircraft can fly, under the appropriate restrictions compensating for non-compliance with the certification specifications applicable to the specific aircraft category.

9.2.1.2 Each DOA applicant or DOA holder should develop its own internal procedure following this AMC, in order to obtain the privilege to make this determination and approve the associated conditions without CAAM's involvement, under CAD 8401, Para 15.3(g). When the privilege does not apply, the DOA applicant or the DOA holder will prepare all the necessary data required for the determination in accordance with the same procedure required for the privilege, and will apply for CAAM's approval.

9.2.1.3 The establishment of flight conditions may include conditions related to engines/propellers without a type certificate or with unapproved changes that are fitted to the aircraft, for which a permit to fly (PtF) is requested. These conditions (i.e. the installation, operating limitations, maintenance conditions or limitations) should be defined by the organisation responsible for the design of the engine/propeller and provided to the organisation responsible for the design of the aircraft.

9.2.1.4 These conditions should be established and substantiated under an arrangement between the organisation responsible for the design of the aircraft and the organisation responsible for the design of the engine/propeller. However, the establishment and substantiation of the flight conditions for the aircraft, including its engine(s), is ultimately the responsibility of the organisation responsible for the design of the aircraft.

## 9.2.2 PROCEDURE FOR THE APPROVAL OF THE CONDITIONS FOR THE ISSUE OF A PERMIT TO FLY (PtF)

### 9.2.2.1 Content

a) The procedure should address the following points:

1) the decision to exercise the privilege;

2) management of the aircraft configuration;

3) determination of the conditions that should be complied with to safely perform a flight;

4) documentation of substantiations of flight conditions;

5) approval under the DOA privilege, when applicable; and

6) the authorised signatories.

b) Decision to exercise the privilege of CAD 8401, Para 15.3(g)

The procedure should include a decision to determine the flights for which the privilege of CAD 8401, Para 15.3(g) will be exercised.

c) Management of the aircraft configuration

The procedure should indicate:

1) how the aircraft, for which an application for a permit to fly is made, is identified; and

2) how changes to the aircraft will be managed.

d) Determination of the conditions that should be complied with to safely perform a flight.

The procedure should describe the process used by the DOA holder to justify that the aircraft can perform the intended flight(s) safely. This process should include:

1) with reference to CAD 8305 paragraph 2.2, identification of the applicable airworthiness requirements which the aircraft does not meet, or has not been shown to meet, if applicable, and of the purpose of the flight(s); for flight conditions raised to cover unapproved changes, the identification of the applicable airworthiness requirements which the aircraft does not meet, or has not been shown to meet, can be fulfilled by referring to the certification programme of the unapproved changes;

2) the analysis, calculations, tests or other means used to determine under which conditions or restrictions the aircraft can safely perform a flight (the flights);

3) the establishment of specific maintenance instructions and conditions to perform these instructions;

4) an independent technical verification of the analysis, calculations, tests or other means used to determine under which conditions or restrictions the aircraft can perform the intended flight(s) safely;

5) a statement by the office of airworthiness (or equivalent), that the determination has been made in accordance with the related procedure and that the aircraft has no features and characteristics that render it unsafe for the intended operation(s) under the identified conditions and restrictions; and

6) approval by an authorised signatory.

e) Documentation of flight conditions substantiations

1) The analysis, calculations, tests, or other means used to determine under which conditions or restrictions the aircraft can safely perform a flight (or the flights) should be compiled in compliance documents. These documents should be signed by the author and by the person performing the independent technical verification.

2) Each compliance document should have a number and an issue date. The various issues of a document should be controlled.

3) The data submitted and approved by the TC holder can be used as substantiations. In that case, the independent technical verification referred to paragraph 9.2.2.1(d)4) above is not required.

f) Approval under the DOA privilege

1) Initial approval

The procedure should include the example of Flight Conditions for a Permit to Fly – Approval Form as below to support the approval under the DOA privilege:

When the privilege of CAD 8401, para 15.3(g) is not applicable, the signed form should be presented by the office of airworthiness (or equivalent) to CAAM.

2) Approval of changes

Except for changes that do not affect the conditions approved for the issue of the permit to fly, the procedure should specify how changes will be approved by the DOA holder. The Flight Conditions for a Permit to Fly – Approval Form should be updated.

g) Authorised signatories

The person(s) authorised to sign the approval form should be identified (name, signature and scope of authority) in the procedure, or in an appropriate document linked to the DOM.

| FLIGHT CONDITIONS FOR A PERMIT TO FLY — APPROVAL FORM | |
|---|---|
| **1. Applicant:**<br>**Approval No:**<br>*[Name and organisation approval number of the organisation providing the flight conditions and associated substantiations]* | **2. Approval form No:**<br>**Issue:**<br>*[Number and issue, for traceability purposes]* |
| **3. Aircraft manufacturer/type** | **4. Serial number(s)** |
| **5. Purpose**<br>[Purpose in accordance with CAD 8305] | |
| **6. Aircraft configuration**<br>The above aircraft, for which a permit to fly is requested, is defined in *[add reference to the document(s) identifying the detailed configuration of the aircraft]*<br>*[For change(s) affecting the initial approval form: a description of the change(s). This form must be reissued]* | |
| **7. Substantiations**<br>*[References to the document(s) justifying that the aircraft (as described in block 6) can perform the intended flight(s) safely under the defined conditions or restrictions.]*<br>*[For change(s) affecting the initial approval form: reference(s) to additional substantiation(s). This form must be reissued]* | |
| **8. Conditions/Restrictions**<br>The above aircraft must be used with the following conditions or restrictions:<br>*[Details of these conditions/restrictions, or a reference to the relevant document, including specific maintenance instructions and conditions to perform these instructions.]* | |
| **9. Statement**<br>The determination of the flight conditions has been made in accordance with the relevant DOA procedure agreed by CAAM.<br>The aircraft, as defined in block 6 above, has no features or characteristics that render it unsafe for the intended operation(s) under the identified conditions and restrictions. | |
| *[strike through what is not applicable]*<br>**10a. Approved under the authority of DOA ref. no [xxxxxx]** [when the privilege of CAD 8401, para 15.3 (g) applies]<br>**10b. Submitted under the authority of DOA ref. no [xxxxxx]** [when the privilege of CAD 8401, para 15.3 (g) does not apply] | |
| **11. Date of issue** | **12. Name and signature**<br>*[Authorised signatory]* |
| **13. CAAM approval and date**<br>[when the privilege of CAD 8401, para 15.3 (g) does not apply] | |

## 9.3 CAD 8401 15.3(e) – Scope and Criteria

9.3.1 Definition of privilege may be granted as per CAD 8401, Para 15.3(e) are:

a) major repairs to products or auxiliary power units (APUs) for which the design organisation approval (DOA) holder holds the type certificate (TC) or the supplemental type certificate (STC) or the technical standard order authorisation (TSOA); or

b) major repairs to products or APUs for which the DOA holder does not hold the TC or the STC or TSOA and that meet the criteria of paragraph 9.3.3(a), (b) and (c) below.

9.3.2 Criteria for limitations on eligibility

CAAM approval may be required in cases of major repairs proposed by DOA holders who are the TC, STC or APU TSOA holders if the major repair is:

a) related to a new interpretation of any item of the certification basis as used for the type certification (such as the certification specifications (CSs), certification review items (CRIs) for special conditions, equivalent safety findings, deviations or ‘elect to comply); and

b) related to the application of airworthiness requirement that is different from the one used for type certification. Note: This should be established at the time of granting the privilege to the DOA holder, or later through an CAAM-agreed procedure.

9.3.3 Criteria for major repairs for which the privileges of CAD 8401, Para 15.3(e) may be granted.

The following criteria need to be met:

a) Similarity

The installation on the product, the design, the operation, and the equipment qualification are basically the same as in projects for which EASA has already been involved and issued an approval for the same DOA holder.

b) Repetitiveness of the certification process

The whole certification process is repetitive, i.e. identical to, or part of, an already approved referenced process. For a major repair the certification process is still identical to the one for the affected change. This is the case when each compliance demonstration is performed to the same extent in accordance with the same requirements, CAGM, and content of the interpretative material, as well as with the same means and method of compliance (not only the same means-of-compliance (MoC) code).

c) Performance and experience in previous projects

CAAM should have classified as ‘medium’ or ‘high’ the level of performance of the organisation during at least the latest project referenced, to demonstrate ‘similarity’ and ‘repetitiveness’.

In addition, EASA should have classified as ‘low’ or ‘very low’ the likelihood of an unidentified non-compliance for all the included compliance demonstration items (CDIs) identified in at least the latest project referenced, to demonstrate ‘similarity’ and ‘repetitiveness’.

## 9.4 CAD 8401 15.3(e) – Procedure for the approval of a major repair by DOA under their privileges

### 9.4.1 PROCESS FOR OBTAINING A PRIVILEGE

9.4.1.1 A DOA holder that applies for the privileges referred to CAD 8401, Para 15.3(e) should do the following:

a) Submit to CAAM an application for a significant change in the design assurance system.

b) Establish internal procedures for the application of the privilege covering the following elements, and add them to the application:

1) The definition of the ‘list associated with the privilege’ of major repair. The ‘list associated with the privilege’ is a list of all major repairs plus the associated ‘justification document’ references for which the privileges as CAD 8401, Para 15.3(e) has been granted.

2) A ‘justification document’ for a major repair as applicable. The ‘justification document’ should contain:

i) The reference(s) to the CAAM-approved major repair(s), which is (are) used to demonstrate the DOA holder’s experience and performance.

*Note: The number of already CAAM-approved major repair(s) used to demonstrate the DOA holder’s experience and performance is based on an assessment of the scope of the ‘major repairs’, which is requested to be added to the ‘list associated with the privilege’, as well as on the performance of the DOA holder during previous projects.*

ii) The certification programme(s) of the major repair(s), accepted by CAAM, used to demonstrate the applicant’s experience and performance.

iii) The applicable product configuration(s).

The applicant should list the type(s) and model(s) to which the major repair(s) applies (apply) or may apply. Exceptionally, this may be done for a dedicated product, system or equipment if the type or model has no technical influence on the major repair(s).

iv) The list of ‘requirements’ for the demonstration of compliance, if not identical to the ones referenced in the certification programme.

v) The certification process, if not identical to the one referenced in the certification programme.

vi) A detailed description with all the technical data relevant to the installation of the product, the design, the operation and the qualification which ensures the proper use of the privilege for future major repairs. This description should include the criteria defining the conditions that should be met in order to apply the privileges.

vii) Any other limits on the use of the privilege.

3) The assessment of the acceptability of using the privilege for major repairs against the ‘list associated with the privilege’ and the ‘justification document’ of major repairs.

4) The approval process, including the templates to be used, the authorised signatories, records management and the provision of a ‘summary list’ of major repairs approved under the privilege of CAD 8401, Para 15.3(e). This process should clarify that the approval is issued under the DOA holder’s privilege.

The persons authorised under the privilege of CAD 8401, Para 15.3(e) should be identified by their names, signatures and scopes of authority in the appropriate documents and referenced in the procedure.

A ‘summary list’ of all the major repairs approved under a privilege should be provided to CAAM on a regular basis, as agreed with CAAM.

5) Extension of the ‘list associated with the privilege’ after the privilege is granted.

After the granting of the privilege, the initial list of major repairs, under the privilege may be further extended by an CAAM agreement, as shown in paragraph 9.4.2 as well as in Figure 3 below.

c) Identify in the ‘list associated with the privilege’ the eligible major repairs proposed for inclusion in the scope of the privilege.

d) Provide a ‘justification document’ for each proposed major repair identified under paragraph 9.4.1.1(c) above.

*Note. – The ‘list associated to the privilege’ identifying all major repairs and the associated ‘justification document(s)’ are to be referenced in the DOA holder procedure mentioned under (b) above.*

The process for obtaining the privilege, referred to in CAD 8401, Para 15.3(e) summarised in Figure 2 below:

The privilege referred to in CAD 8401, Para 15.3(e) may be used by a DOA holder for the approval of major repairs as applicable, under the following conditions:

1) the privilege has already been granted by CAAM;

2) the major repair to be approved falls under the 'List associated with the privilege' agreed by CAAM; and

3) the criteria established in the relevant 'Justification document' are met and the relevant assessment is recorded.

If all the above conditions are met, the privilege may be used and the approval of major repairs as applicable, can be obtained by the DOA holder without CAAM's involvement.

*Note. – If a DOA holder applies for a third-country validation after having approved a modification under its DOA holder privilege, CAAM may review some of the compliance demonstration data in order to support the validation activity.*

9.4.2 EXTENSION OF THE 'PRIVILEGE LIST' OF MAJOR REPAIRS AFTER THE PRIVILEGE IS GRANTED

9.4.2.1 When the DOA holder intends to update the 'List associated with the privilege', a 'Justification document' needs to be provided to CAAM, as described in paragraph 9.4.1.1(b)2) above. After CAAM agrees with the updated 'privilege list' as part of the DOA holder's procedure, the DOA holder may proceed as per para 9.4.4 below.

9.4.3 TC, STC OR APU TSOA HOLDER APPROVAL OF A MAJOR REPAIR UNDER A MAJOR REPAIR PRIVILEGE — SPECIFIC CONSIDERATIONS

9.4.3.1 TC, STC or APU TSOA DOA holders that intend to approve a major repair design under the privilege of point CAD 8401, Para 15.3(e) should ensure that:

a) the type-certification basis for the product, part or appliance to be repaired is identified, together with all the other relevant requirements;

b) all the records and substantiation data, including the documents that demonstrate compliance with all the relevant requirements, are provided to CAAM for review; and

c) for repair designs created for a specific product serial number, an assessment is made as to whether or not the repair design is affected by the presence of any embodied STC, change or repair.

9.4.4 DOA HOLDER'S APPROVAL BASED ON THE PRIVILEGE FOR A MAJOR REPAIR— SPECIFIC CONSIDERATIONS

9.4.4.1 For the approval of major repairs by DOA holders that are not the TC, STC or APU TSO authorisation holders, the following should be considered.

a) Eligibility of the proposed major repair

The DOA holder should assess the proposed major repair against the 'list associated with the privilege' and the 'justification document' of major repairs' in order to determine whether the criteria of paragraph 9.3 are met.

b) Forms for approval certificates

The DOA holder should use the major repair form as per APPENDIX 11 for the issuance of an approval under their privilege:

For the numbering of major repairs approved under the privilege of CAD 8401, Para 15.3(e), please refer to APPENDIX 12.

c) Approval under the DOA holder's privilege

When the DOA holder makes use of the privilege of CAD 8401, Para 15.3(e) they should include the following in the certification data package:

1) a record of the assessment as described in paragraph 9.4.4.1(a) above;
2) the reference to the 'justification document';
3) the applicable product configuration;
4) the applicable airworthiness or environmental protection requirements and methods of compliance;
5) the compliance documents;
6) the effects, if any, on limitations and on the approved documentation;
7) the evidence of the independent checking of the compliance demonstration;
8) the approval document containing the statement of the approval under the privilege of CAD 8401, Para 15.3(e) by an authorised signatory; and
9) the date of approval.

In any case, before the major repair is approved under the DOA privilege, the DOA holder should ensure that the Part 21 requirements, in particular CAD 8106 paragraph 6 are met.

d) Authorised signatories

An authorised person that is identified and authorised as described in paragraph 9.4.1.1(b)4) above should sign the approval under the privilege of CAD 8401, Para 15.3(e).

e) Summary list

The DOA holder should add to the ‘summary list’ as described in paragraph 9.4.1.1(b)4) above the major repair approved under the privilege of CAD 8401, Para 15.3(e).

*Figure 2*

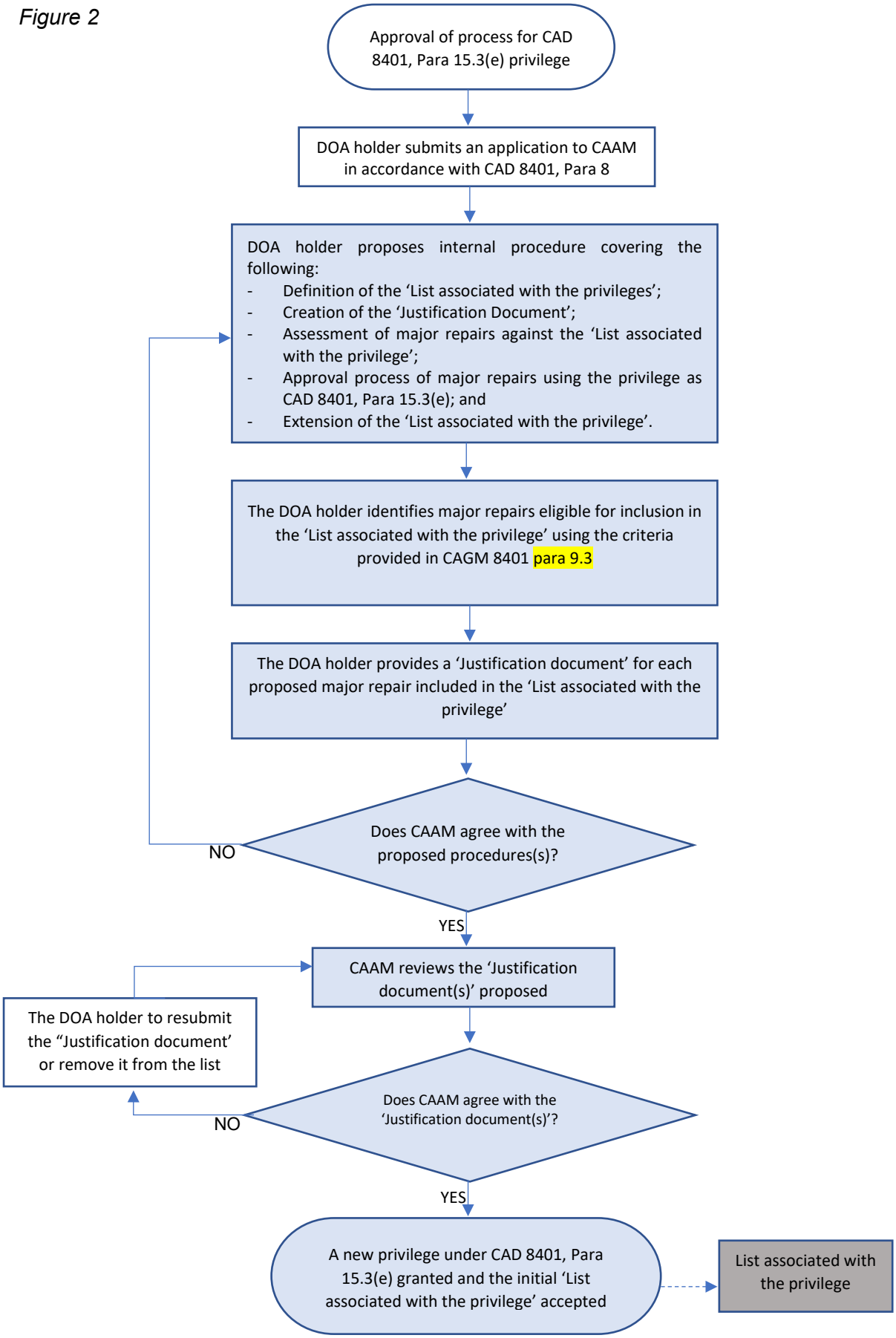
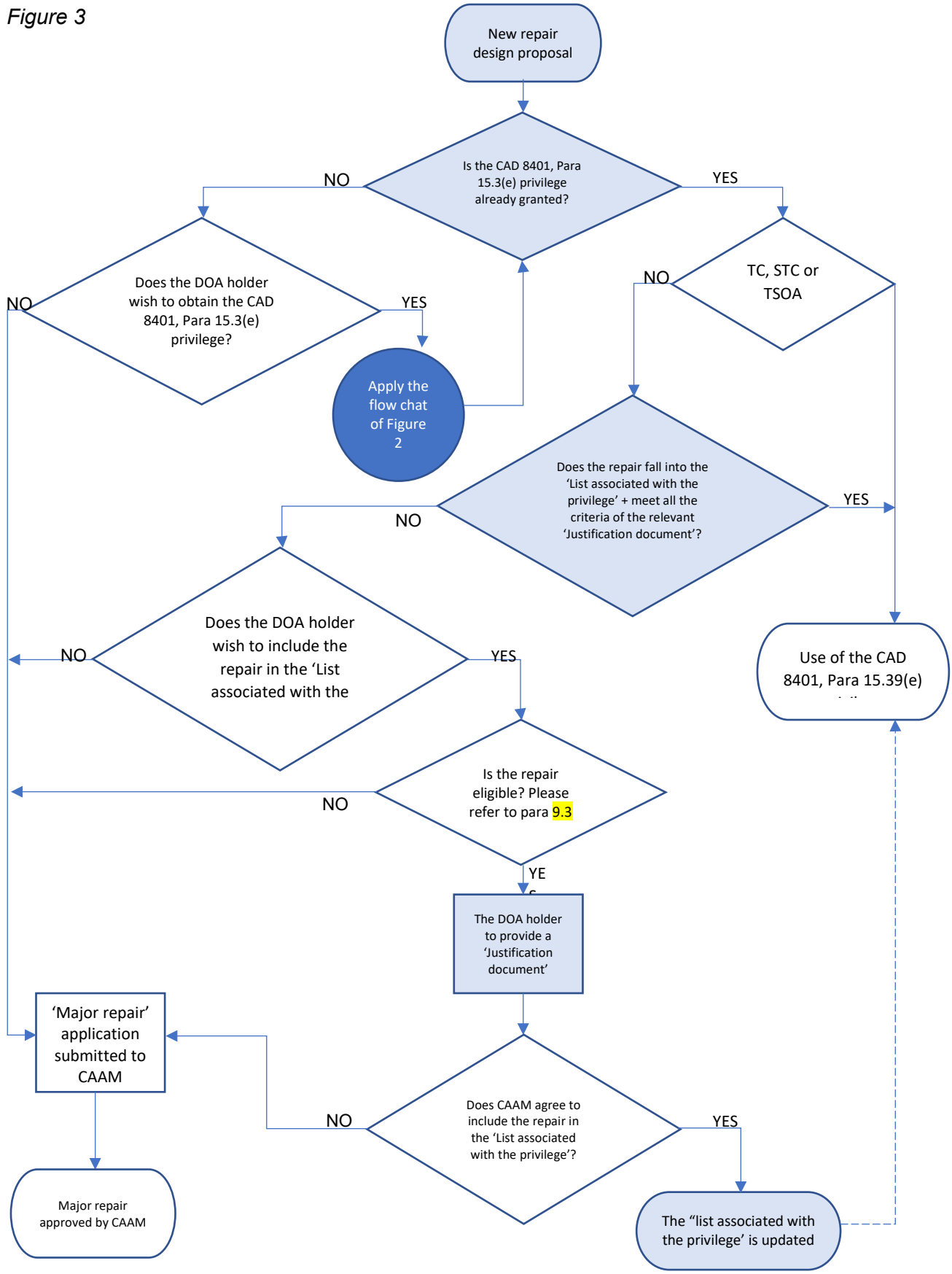

Approval of process for CAD 8401, Para 15.3(e) privilege
DOA holder submits an application to CAAM in accordance with CAD 8401, Para 8
DOA holder proposes internal procedure covering the following:
- Definition of the 'List associated with the privileges';
- Creation of the 'Justification Document';
- Assessment of major repairs against the 'List associated with the privilege';
- Approval process of major repairs using the privilege as CAD 8401, Para 15.3(e); and
- Extension of the 'List associated with the privilege'.
The DOA holder identifies major repairs eligible for inclusion in the 'List associated with the privilege' using the criteria provided in CAGM 8401 para 9.3
The DOA holder provides a 'Justification document' for each proposed major repair included in the 'List associated with the privilege'
Does CAAM agree with the proposed procedures(s)?
NO
YES
CAAM reviews the 'Justification document(s)' proposed
The DOA holder to resubmit the "Justification document' or remove it from the list
Does CAAM agree with the 'Justification document(s)'?
NO
YES
A new privilege under CAD 8401, Para 15.3(e) granted and the initial 'List associated with the privilege' accepted
List associated with the privilege

*Figure 3*


New repair design proposal
Is the CAD 8401, Para 15.3(e) privilege already granted?
NO
YES
Does the DOA holder wish to obtain the CAD 8401, Para 15.3(e) privilege?
NO
YES
Apply the flow chat of Figure 2
TC, STC or TSOA
NO
Does the repair fall into the 'List associated with the privilege' + meet all the criteria of the relevant 'Justification document'?
NO
YES
Use of the CAD 8401, Para 15.39(e)
Does the DOA holder wish to include the repair in the 'List associated with the
NO
YES
Is the repair eligible? Please refer to para 9.3
NO
YE
The DOA holder to provide a 'Justification document'
'Major repair' application submitted to CAAM
Does CAAM agree to include the repair in the 'List associated with the privilege'?
NO
YES
Major repair approved by CAAM
The "list associated with the privilege' is updated

## 9.5 CAD 8401 15.3(c) – Issue of information or instructions

9.5.1 This Chapter outlines some basic principles and objectives of CAD 8401, paragraph 15.3(c) and provides guidelines to address the various aspects the DOA should cover in order to have a comprehensive procedure for the issue of information or instructions.

9.5.2 SCOPE

9.5.2.1 The information or instructions are issued by a DOA holder to make available to the owners or operators of a product with all necessary data to implement a change on the product or a repair, or to inspect it. Some are also issued to provide maintenance organisations and other interested persons with all necessary maintenance data for the performance of maintenance, including implementation of a change on the product or a repair, or inspection, in accordance with the requirements for Instructions for Continued Airworthiness (ICA).

9.5.2.2 This information or instructions may be issued in a format of a Service Bulletin as defined in ATA 100 system, or in Structural Repair Manuals, Maintenance Manuals, Engine and Propeller Manuals etc. The preparation of this data involves design, production and inspection. As the overall responsibility, through the privilege, is allocated to the DOA holder, the three aspects should be properly handled under the DOA to obtain the privilege "to issue information or instructions containing a statement that the technical content is approved", and a procedure should exist.

9.5.3 PROCEDURE

9.5.3.1 For the information and instructions issued under CAD 8401, paragraph 15.3(c), the DOA holder shall establish a procedure addressing the following points:

a) Preparation;

b) verification of technical consistency with corresponding approved change(s), repair(s) or approved data, including effectivity, description, effects on airworthiness and environmental protection, especially when limitations are changed;

c) verification of the feasibility in practical applications;

d) authorised signatories.

9.5.3.2 The procedure should include the information or instructions prepared by subcontractors or vendors, and declared applicable to its products by the DOA holder

9.5.4 STATEMENT

9.5.4.1 The statement provided in the information or instructions should also cover the information or instructions prepared by subcontractors or vendors and declared applicable to its products by the DOA holder.

9.5.4.2 The technical content is related to the design data and accomplishment instructions, and its approval means that:

a) the design data has been appropriately approved; and

b) the instructions provide for practical and well-defined installation/ inspection methods, and, when accomplished, the product is in conformity with the approved design data.

*Note. – Information and instructions related to required actions under requirements related to Airworthiness Directive, are submitted to CAAM to ensure compatibility with Airworthiness Directive content and contain a statement that they are, or will be, subject to an Airworthiness Directive issued by CAAM.*

## 9.6 CAD 8401 15.3(d) – Approval of minor revisions to the Aircraft Flight Manual (AFM) and supplements (AFMS)

9.6.1 This Chapter outlines some basic principles and objectives of CAD 8401, paragraph 15.3(d) and provides guidelines to develop a procedure for the approval of minor revision to the AFM and AFMS limited to documentary changes only.

9.6.2 Each DOA applicant should develop its own internal procedure, based on these guidelines, in order to obtain the associated privilege.

9.6.3 Examples of documentary changes to the AFM and AFMS that may be approved under the DOA privilege:

a) for AFM Issued by the TC holder

1) editorial changes or corrections to the AFM.

2) changes to weight limitations that are within all previously CAAM approved limitations (e.g., structural, noise, etc.).

3) the addition of compatible and previously CAAM approved AFM temporary changes, appendices or supplements.

4) conversions of previously CAAM approved combinations of units of measurement added to the AFM in a previously approved manner.

5) the addition of aircraft serial numbers to an existing AFM where the aircraft configuration, as related to the AFM, is identical to aircraft already in that AFM.

6) the removal of reference to aircraft serial numbers no longer applicable to that AFM.

b) For AFMS issued by the DOA

1) editorial changes or corrections to the AFMS.

2) changes to weight limitations that are within all previously CAAM approved limitations (e.g., structural, noise, etc.).

3) conversions of previously CAAM approved combinations of units of measurement added to the AFMS in a previously approved manner.

4) the addition of aircraft serial numbers to an existing AFMS where the aircraft configuration, as related to the AFMS, is identical to aircraft already in that AFMS.

5) the removal of reference to aircraft serial numbers no longer applicable to that AFMS.

9.6.4 Procedure for the approval of documentary changes.

9.6.4.1 Content. The procedure should address the following points:

a) assessment of the change on the AFM or AFMS;

b) preparation of revisions or supplements to the AFM or AFMS;

c) classification of the AFM or AFMS change;

d) verification by the airworthiness function, especially regarding the classification of the AFM or AFMS change;

e) control of the configuration of the AFM or AFMS;

f) approval of the revision or supplements to the AFM or AFMS; and

g) the approval statement.

9.6.4.2 Assessment of a change for its impact on the AFM or AFMS, the procedure should include an assessment of whether or not the AFM or AFMS is impacted by the change.

9.6.4.3 Preparation.

The procedure should indicate how revisions or supplements to the AFM or AFMS are prepared and how the coordination among the persons in charge of design changes is performed.

9.6.4.4 Classification.

The procedure should indicate how AFM or AFMS changes are classified as documentary changes, in accordance with the criteria of paragraph 10.6.2.

Changes to the AFM or AFMS of an editorial nature should be non-technical and should normally only affect existing approved data.

9.6.4.5 Verification by Office of Airworthiness function.

The procedure should indicate how people in charge of Office of airworthiness function will:

a) verify the classification as documentary changes

b) review the content of the AFM or AFMS changes.

9.6.4.6 Approval.

Any change to the AFM or AFMS should be approved, either by CAAM, or under the privilege of DOA for documentary AFM or AFMS changes.

For documentary AFM or AFMS changes, the procedure should indicate how the approval under the privilege will be formalised.

9.6.4.7 Approval statement and authorised signatories.

a) Revisions of the AFM or AFMS containing only documentary changes should be issued with the approval statement of CAD 8401, paragraph 15.3.

b) When approval status is shown on each page, a simplified statement such as "Approved under the authority of the DOA ref. no. [xxxxxx] " may be used.

c) The authorised signatories should be identified (name, signature), together with the scope of authorisation, in a document that can be linked to the DOA DOM.

9.6.4.8 Maintaining, updating and distribution.

The procedure should indicate how the master copy of the AFM or AFMS is maintained and updated, and how approved revisions are distributed.

## 9.7 Designation of data and information issued under the authority of a design organisation approval (DOA) holder

9.7.1 INTENT

9.7.1.1 To provide guidance for complying with the obligation of CAD 8401, paragraph 15.3(c), and addresses the various aspects that the DOA holder should cover in order to have a comprehensive procedure for the designation of data and information.

9.7.2 SCOPE

9.7.2.1 The term ‘data and information’ as used in point CAD 8401, paragraph 15.3(c) also includes instructions.

9.7.2.2 Data and information referred to in point CAD 8401, paragraph 15.3(c), are issued by a DOA holder and cover the following:

a) embodiment instructions for design changes or repairs (usually in the form of a service bulletin, a modification bulletin, repair instructions or engineering order, etc.);

b) manuals required by Part 21 or the applicable airworthiness requirements (such as the aircraft flight manual (AFM), rotorcraft flight manual, instructions for continuing airworthiness (ICAs), etc.);

c) operation suitability data (OSD);

d) continued-airworthiness instructions (usually in the form of service bulletins) which may be covered by airworthiness directives (ADs);

e) additional data to be defined by the DOA holder (e.g. alternative maintenance instructions that are not, per se, ICAs).

*Note. – This data and information may be issued in a digital or paper format.*

f) The obligation does not apply to, and the statement provided with the data and information should not be used on, the following documents:

g) certification documents (e.g. the certification programme, compliance checklist, etc.);

h) compliance documents;

i) design data transferred to production organisations; and

j) production deviations (also referred to as ‘unintended deviations’ or ‘concessions’).

9.7.3 RATIONALE

9.7.3.1 The purpose of this obligation is to give certainty to the end users about the approval status of the data and information issued by the DOA holder.

9.7.4 STATEMENT

9.7.4.1 The statement provided with the data and information should also cover those items prepared by subcontractors or vendors that the DOA holder has declared as applicable to their products. The technical content of the statement is related to the type certificate data and information.

9.7.4.2 The approval included in the statement means that:

a) the type certificate data has been appropriately approved; and

b) the information contains practical and well-defined installation or inspection methods, and, when those methods are implemented, the product is in conformity with the approved type certificate data.

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# 10 Obligations of the Holder (CAD 8401 16)

*Note. – This Chapter outlines some basic principles and objectives of CAD 8401, paragraph 16.1(a).*

## 10.1 Administration of the DOM

10.1.1 The DOM of the applicant must be in the language which will permit the best use of it by all personnel charged with the tasks performed for the purpose of the design organisation.

10.1.2 The DOM must be produced in a concise form with sufficient information to meet CAD 8401, Para 6 relevant to the scope of approval sought by the applicant. The DOM must include the following:

a) Organisation name, address, telephone, telex and facsimile numbers.

b) Document title, and company document reference No (if any).

c) Amendment or revision standard identification for the document.

d) Amendment or revision record sheet.

e) List of effective pages with revision/ date/ amendment identification for each page.

f) Contents list or index.

g) A distribution list for the DOM.

h) An introduction, or foreword, explaining the purpose of the document for the guidance of the organisation's own personnel. Brief general information concerning the history and development of the organisation and, if appropriate, relationships with other organisations which may form part of a group or consortium, must be included to provide background information for the CAAM.

i) The certificate of approval must be reproduced in the document.

j) Identification of the department responsible for administration of the DOM.

*Note. – In the case of an initial or revised approval it is recognised that certificate will be issued after CAAM agreement to the DOM content in draft form. Arrangements for formal publication in a timely manner must be agreed before the certificate of approval is issued.*

10.1.3 An updating system must be clearly laid down for carrying out required amendments and modifications to the DOM.

10.1.4 The DOM may be completely or partially integrated into the company organisation manual. In this case, identification of the information required by CAD 8401,

paragraph 6 must be provided by giving appropriate cross references, and these documents must be made available, on request, to the CAAM.

## 10.2 The DOM Format and Publication Means

10.2.1 The term 'DOM' is meant to describe a means to document the design organisation's processes and procedures. This may be in an electronic or paper format, as a stand-alone document or integrated in a management system. It may consist of:

a) an online integrated management system with flowcharts and descriptions embedded in it;

b) an online system referring to single documents;

c) a classic DOM with references to online procedures;

d) or any other combination of the above.

10.2.2 In any case, as required by CAD 8401, Para 6.4, independently of the system chosen by the design organisation, the relevant content and the means to update the system should be clearly identified.

## 10.3 Use of the DOM

10.3.1 The DOM should be signed by the Chief Executive and the Head of the design organisation and declared as a binding instruction for all personnel charged with the development and type investigation of products.

10.3.2 All procedures referenced in the DOM are considered as parts of the DOM and therefore as basic working documents.

# 11 Appendices

## 11.1 Appendix 1 – Design assurance system for MINOR changes to type design or MINOR repairs to products

1 Purpose

1.1 This Appendix outlines some basic principles and objectives in order to comply with the CAD 8401, paragraph 5 for organisations designing only minor changes to type design or minor repairs to products.

2 Design Assurance System

2.1 The design assurance system should include the following:

a) An organisation structure to:

1) Control the design.

2) Show compliance with applicable airworthiness and environmental protection requirements.

3) Independently check showings of compliance.

4) Liaise with CAAM.

5) Continuously evaluate the design organisation.

6) Control of sub-contractors.

b) Procedures and responsibility associated with the functions listed above, taking due account of CAAM requirements applicable to design and approval of minor changes to type design or minor repairs to products.

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## 11.2 Appendix 2 – Data requirement – Model content of DOM for organisations designing MINOR changes to type design or MINOR repairs to products

1 Part 1. Organisation

1.1 Objective of manual and binding statement.

1.2 Responsible person for administration of manual.

1.3 Amendment procedure.

1.4 List of effective pages.

1.5 Distribution list.

1.6 Presentation of design organisation (including locations).

1.7 Scope of work (with identification of type and models of products).

1.8 Organisation charts.

1.9 Human resources.

1.10 Management staff.

1.11 Certifying personnel

1.12 Independent system monitoring.

2 Part 2. Procedures

2.1 Management of changes to type design and design of repairs.

a) configuration control;

b) classification;

c) approval of minor changes to type design and minor repairs.

2.2 Control of design subcontractors.

2.3 Collecting/Investigating of failures, malfunctions and defects.

2.4 Co-ordination with production.

2.5 Documentation control;

a) in relations with the changes and repairs;

b) in relation with failures, malfunctions and defects (i.e. Services Bulletins).

2.6 Record keeping.

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## 11.3 Appendix 3 – Data requirement - Statement of the qualifications and experience - Organisations that design MINOR changes to type design or MINOR repairs to products

1 For organisations designing minor changes to type design or minor repairs to products, the statement of the qualifications and experience required by CAD 8401 paragraph 6.5, should be addressed as follows:

1.1 The nominated managers should be identified and their credentials submitted to the CAAM on CAAM/AW/0105-01 form in order that they may be seen to be appropriate in terms of relevant knowledge and satisfactory experience related to the nature of the design activities as performed by the organisation.

1.2 The persons responsible to the following should be selected by the organisation in accordance with a procedure and criteria agreed with the CAAM:

a) classify changes to type design or repairs in accordance with CAD 8401, paragraph 15.3(a).

b) verify compliance in accordance with CAD 8401 paragraph 5.3.

c) approve minor changes to type design and minor repairs in accordance with CAD 8401 paragraph 15.3(b).

d) issue information or instructions in accordance with CAD 8401 paragraph 15.3(c).

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## 11.4 Appendix 4 – Requirements or approval - Organisations designing MINOR changes to type design or MINOR repairs to products

1 The data submitted in accordance with CAD 8401 paragraph 6 should show that:

1.1 The manager responsible for design has the direct or functional responsibility for all departments of the organisation which are involved in the design of minor changes to type design or minor repairs to products.

1.2 Person(s) have been nominated to liaise with CAAM and to coordinate airworthiness and environmental protection matters. Their position in the organisation should allow direct report to the manager responsible for design.

1.3 Responsibilities for all tasks related to the design and approval of minor changes to type design or minor repairs to products are assigned to ensure that all areas are covered.

1.4 The responsibility for a number of tasks as in paragraph 1.3 above may be assigned to one person especially in the case of simple projects.

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## 11.5 Appendix 5 – The terms of approval issued - organisations that design MINOR changes to type design or MINOR repairs to products

1 The terms of approval issued for organisations designing minor changes to type design or minor repairs to products should contain:

1.1 Scope of work

This design organisation approval has been granted for:

a) designing minor changes to type design or minor repairs to (aircraft, engine, propeller) in accordance with the applicable airworthiness and environmental protection requirements.

b) Showing and verifying the compliance with these airworthiness and environmental protection requirements.

1.2 Category of products

Any other indication if CAAM has found a limitation related to aircraft systems or technologies and reducing the scope as defined in paragraph 1.1 above.

1.3 Privileges

The holder of this approval is entitled to list the privileges granted with the approval, pursuant to CAD 8401, paragraph 15.3(a) and (b).

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## 11.6 Appendix 6 – Privileges – Organisations that design MINOR changes to a type certificate (TC) or a supplemental type certificate (STC) and MINOR repairs to products: classification procedure

1 Content

The procedure should address the following points:

a) the configuration control rules, especially the identification of changes to a TC, APU TSO or to that part of the product covered by the STC, and repairs designs;

b) classification, in compliance with CAD 8104 paragraph 3 and considering CAGM 8104 for changes and CAGM 8106 for repairs;

c) the justification of the decisions for the classification; and

d) the acceptance of the classification by authorised signatories.

2 Identification of changes to a TC, APU TSO or to that part of the product covered by the STC, and repair designs

The procedure should indicate how the following are identified:

a) the items (consisting of areas, systems, parts, or appliances) to be affected by the change or repair as per the definitions provided in CAGM 8104; these include the parts, appliances, systems or areas affected, and also the other TC constituents (see definitions in CAGM 8104; for instance, operating limitations, OSD constituents, manuals, etc.);

b) airworthiness directives which have, or might have, an impact on any of the identified items affected by the change or repair;

c) the existing type-certification basis of the affected items containing, as applicable, the certification specifications, special conditions, deviations from the applicable certification specifications and the equivalent level of safety findings incorporated by reference in the TC of the product to be changed;

d) the existing OSD certification basis;

e) the definition of the change or repair to the affected items in accordance with the provisions of point CAD 8102 paragraph 15;

f) the certification basis of the change or repair determined in accordance with point CAD 8104 paragraph 8 with the support of CAGM 8104 (CAD 8106 paragraph 6) for repairs); this might lead to pre-classification of the change as ‘major significant’ as per the associated definitions (See paragraph 3 below).

3 Classification

3.1 The procedure should show how the effects on airworthiness, operational suitability and environmental protection are analysed, from the very beginning, by reference to the specific applicable requirements of the affected items.

3.2 If no specific airworthiness or environmental protection requirements are applicable to the affected items, the above review should be carried out at the level of the part or system where the affected items are integrated and where specific airworthiness or environmental protection requirements are applicable.

3.3 For repairs, the criteria used for the classification should be in compliance with CAD 8106 paragraph 7 and follow the guidelines provided in CAGM 8106.

3.4 The procedure should define provisions to contact CAAM in case of doubts regarding the classification.

4 Justification of the classification

4.1 All decisions on the classification of changes to a TC, APU TSO or to that part of the product covered by an STC, and repair designs as 'minor' should be recorded and, for those which are not straightforward, also justified according to the procedure and the criteria defined in paragraph 3 above.

4.2 These records should be easily accessible to CAAM for sample checking.

4.3 The justification may be in the format of meeting notes or a register.

5 Acceptance of the classification by the authorised signatories

5.1 All classifications of changes to a TC, APU TSO or to that part of the product covered by an STC, and repair designs should be accepted by an appropriately authorised signatory.

5.2 The procedure should indicate the authorised signatories for the various products listed in the terms of approval.

5.3 The final classification may be:

a) minor changes to a TC or minor repairs where additional work is necessary for the demonstration of compliance with the certification basis, the operational suitability data certification basis (where applicable), and the environmental protection requirements; or

b) minor changes to a TC or minor repairs that require no further demonstration of compliance.

## 11.7 Appendix 7 – Privileges – Procedure for the approval of MINOR changes and MINOR repairs to type certificate (TC), APU TSO or a supplemental type certificate (STC)

1 INTENT

1.1 This appendix provides the means to develop a procedure for the approval of minor changes to a TC, APU TSO or to that part of the product covered by an STC, and minor repairs.

1.2 Each design organisation approval (DOA) applicant should develop its own internal procedures following this appendix in order to obtain the associated privilege under CAD 8401, paragraph 15.3(b).

2 PROCEDURE FOR THE APPROVAL OF MINOR CHANGES TO A TC, APU TSO OR TO THAT PART OF THE PRODUCT COVERED BY AN STC, AND MINOR REPAIRS

2.1 Content

2.1.1 The procedure should address the following points:

a) compliance documentation;

b) approval under the DOA privilege;

c) authorised signatories; and

d) supervision of minor changes to a TC, APU TSO or to that part of the product covered by an STC and minor repairs handled by subcontractors.

2.2 Compliance documentation

2.2.1 For those minor changes to a TC, APU TSO or to that part of the product covered by an STC, and minor repairs where additional work to demonstrate compliance with the applicable airworthiness and environmental protection requirements is necessary, compliance documentation should be established and independently checked as required by point CAD 8401, Paragraph 5.3.

2.2.2 The procedure should describe how the compliance documentation is produced and checked.

2.3 Approval under the DOA privilege

2.3.1 For those minor changes to TC, APU TSO or to that part of the product covered by an STC, and minor repairs where additional work to demonstrate compliance with the applicable Airworthiness and environmental protection requirements is necessary, the procedure must define a document to formalise the approval under the DOA privilege.

2.3.2 This document should include at least:

a) brief description of the change or repair and the reasons for the change or repair;

b) identification of the initial configuration of the affected area and other items (which determines the eligibility for installation of the change or repair into an aircraft);

c) identification of the final configuration of the affected area, and of supplements to manuals and to OSD constituents;

d) the applicable airworthiness or environmental protection requirements and methods of compliance;

e) references to the compliance documents;

f) effects, if any, on limitations and on the approved documentation;

g) evidence of the independent checking function of the demonstration of compliance;

h) evidence of the approval under the privilege of point CAD 8401, paragraph 15.3(b) by an authorised signatory; and

i) the date of the approval.

2.3.3 For repairs, refer to CAGM 8106.

2.3.4 For the other minor changes to a TC, APU TSO or to that part of the product covered by an STC, and minor repairs, the procedure should define a means to identify the change or repair and the reasons for the change or repair, and to formalise its approval by the appropriate engineering authority under an authorised signatory. This function may be delegated by the Office of Airworthiness but should be controlled by the Office of Airworthiness, either directly or through appropriate procedures of the DOA holder's design assurance system.

2.4 Authorised signatories

2.4.1 The persons authorised to sign for the approval under the privilege of point CAD 8401, paragraph 15.3(b) should be identified (name, signature and scope of authority) in appropriate documents that may be linked to the DOM.

2.5 Supervision of minor changes to a TC, APU TSO or to that part of the product covered by an STC, and minor repairs handled by subcontractors.

2.5.1 For the minor changes to a TC, APU TSO or to that part of the product covered by an STC, and minor repairs described in paragraph 2.3.4 above which are handled by subcontractors, the procedure should indicate, directly or by cross reference to written procedures, how these minor changes to a TC, APU TSO or to that part of the product covered by an STC, and minor repairs are approved at the subcontractor level and the arrangements made for the control and supervision by the DOA holder.

## 11.8 Appendix 8 – Privileges – Organisations that design MINOR changes to a type certificate (TC), APU TSO or a supplemental type certificate (STC) and MINOR repairs to products: procedure for the approval of MINOR changes to a TC, APU TSO or MINOR repairs

1 Content

1.1 The procedure should address the following points:

a) compliance documentation;

b) approval under the DOA privilege;

c) authorised signatories.

2 Compliance documentation

2.1 For those minor changes to a TC, APU TSO or to that part of the product covered by an STC, and minor repairs where additional work to demonstrate compliance with the applicable airworthiness and environmental protection requirements is necessary, compliance documentation should be established and independently checked as required by CAD 8401, Paragraph 5.3.

2.2 The procedure should describe how the compliance documentation is produced and checked.

3 Approval under the DOA privilege

3.1 For those minor changes to a TC, APU TSO or to that part of the product covered by an STC, and minor repairs where additional work to demonstrate compliance with the applicable airworthiness or environmental protection requirements is necessary, the procedure should define a document to formalise the approval under the DOA privilege.

3.2 This document should include at least:

a) a brief description of the change or the repair and the reason for change or repair;

b) identification of the initial configuration of the affected area and other items (which determines the eligibility for installation of the change or repair into an aircraft);

c) identification of the final configuration of the affected area, and of supplements to manuals and to OSD constituents;

d) the applicable airworthiness or environmental protection requirements and methods of compliance;

e) references to the compliance documents;

f) effects, if any, on limitations and on the approved documentation;

g) evidence of the independent checking function of the demonstration of compliance;

h) evidence of the approval under the privilege of point CAD 8401, paragraph 15.3(b) by an authorised signatory; and

i) the date of the approval.

3.3 For repairs, refer to CAGM 8106.

3.4 For the other minor changes to a TC, APU TSO or to that part of the product covered by an STC, and minor repairs, the procedure should define a means to identify the change or repair and the reasons for the change or repair, and to formalise its approval by the appropriate engineering authority under an authorised signatory. This function should be controlled through appropriate procedures of the DOA holder's design assurance system.

4 Authorised signatories

4.1 The persons authorised to sign for the approval under the privilege of CAD 8401, paragraph 15.3(b) should be identified (name, signature and scope of authority) in appropriate documents that may be linked to the DOM.

## 11.9 Appendix 9 – Procedure for the approval of MINOR changes to a type certificate (TC) which affect the aircraft flight manual (AFM) [CAD 8401, Para 15.3(b)]

1 Intent

1.1 This appendix provides additional guidance for developing a procedure for the approval of minor changes to a TC which affect the aircraft flight manual (AFM).

1.2 Each design organisation approval (DOA) applicant/holder should develop its own internal procedure, based on these guidelines. For guidance on the classification of changes to a TC which affect the AFM, see CAGM 8104.

2 Procedure for the approval of minor changes to a TC which affect the AFM

2.1 Content

2.1.1 The procedure should address the following points:

a) assessment of any change to a TC for the impact of the change on the AFM;

b) preparation of revisions or supplements to the AFM;

c) classification of the change to a TC, taking into account the impact on the AFM;

d) classification of stand-alone revisions or supplements to the AFM;

e) control of the configuration of the AFM;

f) approval of the revisions or supplements to the AFM; and

g) the approval statement.

2.2 Assessment of a change for its impact on the AFM

2.2.1 The procedure should include an assessment of whether the AFM is impacted by the change.

2.3 Preparation

2.3.1 The procedure should indicate how revisions or supplements to the AFM are prepared and how the coordination among the persons in charge of design changes is performed.

2.4 Classification

2.4.1 The procedure should indicate how changes to a TC which affect the AFM are classified, in accordance with the criteria of CAGM 8104.

2.4.2 The procedure should indicate how classification decisions are recorded, documented and signed.

2.4.3 Easy accessibility of these records to CAAM for sample checking should be ensured. All classifications should be accepted by an appropriately authorised signatory. The procedure should indicate the authorised signatories for the various products listed in the terms of approval.

2.5 Configuration control of the AFM

2.5.1 The procedure should explain the traceability of changes in order to understand who has approved what. Especially if a given page or data module has been revised several times, it should be traceable which part(s) of the page or data module has (have) been approved directly by CAAM under which approval, and which part(s) has (have) been approved under the privilege of a DOA holder.

2.6 Approval

2.6.1 The procedure should indicate how the approval under the privilege of CAD 8401, para 15.3(b) is formalised.

2.6.2 The authorised signatories should be identified (name, signature), together with the scope of the authorisation, in a document that is linked to the DOM.

2.7 Approval statement

2.7.1 The amended AFM, or the supplement to the AFM, approved under the privilege of CAD 8401, para 15.3(b) should be issued under the obligation of CAD 8401, para 15.3(c) with respective statement in the log of revisions.

## 11.10 Appendix 10 – Model Contents of a DOM

**Preface**

- Title page
- Content
- List of effective pages
- Revision highlights
- Corporate Commitment
- Introduction to the DOM
- Abbreviations & Definitions
- Referenced documents
- Cross reference list with CAD 8402 requirements

**Chapter 1 The Design Organisation**

- Organisational Structure, description and charts
    - Chief Executive
    - Head of the Design Organisation
    - Head of the Design Assurance Department
    - Head of the Office of Airworthiness
    - Staff of the Office of Airworthiness
    - Compliance Verification Engineers
    - Other responsible managers/staff in Design Assurance and Engineering
    - Operational responsibilities
    - Functional responsibilities
    - Human resource management
    - Qualifications of nominated staff
    - Training
    - Vendors; outsourcing

**Chapter 2 Terms of Approval**

- DOA certificate
- Scope of Work
- Privileges

- Changes in the Scope of Work
- Surrender or revocation of the DOA

**Chapter 3 The Design Assurance System (DAS)**

- Introduction
  - Definition of the DAS
  - Purpose of the DAS
  - Integration into the organisation
  - Changes to the DAS
  - Functional relationship with Third Parties
  - Audit Functions
  - Audit Procedures
  - Audit Programme

**Chapter 4 Type Certification Procedures**

- Introduction
  - Definition of the Type Design
  - Determination of the Type Certificate Basis
  - Certification Review Item (CRI) Procedure
  - Action Item (AI) Procedure
  - Certification Programme definition
    - Proposed Means of Compliance determination
    - Involvement of CAAM
  - CVE approval procedure
  - Coordination with production
  - Coordination with CAAM
  - Test preparation and witnessing
  - Report preparation and approval, including CVE statement
  - Data submittal to CAAM
  - Preparation of the Compliance Checklist
  - Final Statement of Compliance Procedure

- Issuance of approved data; manuals etc.

**Chapter 5 Changes to the Type Design**

- Introduction
  - Definition of the Change to the Type Certificate
  - Classification procedure minor/major
  - Approval Procedure for Minor Changes
    - Minor changes requiring certification substantiation
    - Minor changes not requiring certification substantiation
  - Approval procedure for Major Changes
    - Determination of the TC basis
    - Proposed means of compliance determination
    - Involvement of CAAM
    - Involvement of TC/STC Holder
  - Report preparation and approval, including CVE statement
  - Data submittal to CAAM
  - Preparation of the Compliance Checklist
  - Final Statement of Compliance Procedure
  - Amendment procedure of approved data; manuals etc.
  - Issuance of approved data; manuals etc.

**Chapter 6 Repairs**

- Introduction
  - Definition of the Repair, e.g. damage assessment
  - Classification procedure
  - Approval Procedure for Minor Repairs
    - Minor repairs requiring certification substantiation
    - Minor Repairs not requiring certification substantiation
  - Approval procedure for Major Repairs
    - Determination of the TC basis
    - Proposed means of compliance determination

    - Involvement of CAAM (not applicable for Repairs designed by TC/SCT Holder)
    - Involvement of TC/STC Holder
  - Report preparation and approval, including CVE statement
  - Data submittal to CAAM
  - Final Statement of Compliance Procedure
  - Amendment procedure of approved data; manuals etc.
  - Issuance of approved data; manuals etc.

**Chapter 7 Continued Airworthiness**

- Introduction
  - Service Difficulty Reporting and processing
  - Incident/accident investigation
  - Service Bulletin preparation
  - Coordination with CAAM

**Chapter 8 Third parties (Partners, subcontractors, vendors.)**

- Introduction
  - Scope of work
  - Interface procedure
    - With usage of Third Party DOA
    - Third Party without DOA
  - Direct Delivery Authorisation
  - Continued Airworthiness procedures
  - Support procedure for Service Difficulties; Incidents; Accidents
  - Amendment procedure of approved data; manuals etc.
  - Issuance of approved data; manuals etc.
  - Audit Programme

**Appendix 1 Personnel Data (confidential)**

- Introduction
  - Curriculum Vitae of responsible staff
  - Training needs and training performed

## 11.11 Appendix 11 – Major Repair Form

# MAJOR REPAIR DESIGN APPROVAL

# Approval No. (xxxxxx)

This Major Repair Design Approval is issued by the Design Organisation:

# [DOA Name]
# [DOA.xxxxxx]

in accordance with CAD 8401, Para 15.3(e).

The DOA certifies that the repair design for the product listed below with the limitations and conditions specified re-establishes compliance with the applicable Type Certification Basis and, if applicable, environmental protection requirements when operated within the conditions and limitations specified below:

| | |
|---|---|
| **Original Type Certificate Number:** | [Original Product TC Number] |
| **Type Certificate Holder:** | [Type Certificate Holder] |
| **Type:** | [Type Name] |
| **Model:** | [Applicable Model Designation] |

**Description of Repair Design:**
[Description]

**Certification Basis:**
[Certification Basis]

**Associated Technical Documentation:**
[Repair Definition Document]
[ICA]
[Airworthiness Limitation Section (ALS) of the ICA]
[Aircraft Flight Manual or Aircraft Flight Manual Supplement]

**Limitations/Conditions:**
[Limitations]/[Conditions]

**For the Approved Design Organisation,**

Date of issue: [DD Month YYYY]

[Signatory]
[Title]

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## 11.12 Appendix 12 – Numbering system for major repairs issued by design organisation approval (DOA) holders, and information to CAAM.

Major repairs issued by a DOA holder under their privilege of CAD 8401, Para 15.3(e) should each be given a unique and consecutive reference number.

The following numbering system may be considered:

| DOA holder reference | Type of certificate | Year of approval | Dash | Sequential number | Issue reference |
|---|---|---|---|---|---|
| DOA.xxxxxx | MRE | 21 | — | 001 | A |

*Note. – 'MRE' refers to 'major repairs'.*

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