

**TECHNICAL ARRANGEMENT FOR AIRWORTHINESS
CERTIFICATION
BETWEEN THE
CIVIL AVIATION AUTHORITY OF SINGAPORE
AND THE
CIVIL AVIATION SAFETY AUTHORITY**

This Technical Arrangement for Airworthiness Certification (**Technical Arrangement**) dated 10 February 2014 is entered into between the CIVIL AVIATION AUTHORITY of SINGAPORE (**CAAS**) and the CIVIL AVIATION SAFETY AUTHORITY of AUSTRALIA (**CASA**) (hereinafter referred to singularly as "Party", and collectively as "Parties").

Whereas

(A) The Parties entered into a Memorandum of Understanding which came into force on 11 March 2013 and provides for technical arrangements to be developed to facilitate the issuance of approvals and certificates by either Party for the other Party's products.

(B) The Parties agree that after taking into account the obligations of each Party under its regulations, standards, practices, procedures and systems, the purpose of this Technical Arrangement is to outline a mechanism for the assessment of various airworthiness-related applications.

(C) The Parties will work in accordance with this Technical Arrangement from the date on which it is signed, until such time as it is replaced by some other arrangement, revised by mutual consent, or terminated by either of the Parties.

IT IS AGREED as follows:—

1 DEFINITIONS AND INTERPRETATION

In this Technical Arrangement, the following words have the following meanings:

"Airworthiness standards" mean the legal requirements of each Party governing the design and performance of civil aeronautical products and articles;

"Article" means a material, part, process or appliance used on civil aircraft;

"Article manufacturer" means a person who controls the design and quality of the article produced (or to be produced, in the case of an application), including the parts of them and any processes or services related to them that are procured from an outside source;

"Australian Technical Standard Order" (ATSO) means the minimum performance standards issued by CASA for specified articles;

"Australian Technical Standard Order Authorisation" (ATSO Authorisation) means:

- (a) a design and production approval issued by CASA to an article manufacturer of an article that has been found to meet a specific ATSO or TSO; or
- (b) a production approval issued by CASA to an article manufacturer of an article manufactured in accordance with a Federal Aviation Authority (FAA) letter of TSO design approval;

"CAAS production organisation" means the organisation approved by CAAS under SAR 21 Subpart J (or equivalent legal requirements which replace the SAR 21 Subpart H) to produce articles;

"FAA letter of TSO design approval" means a design approval issued by the FAA to an article manufacturer of an article manufactured outside the United States that has been found to meet a specific TSO in accordance with the procedures set out in section 21.621 of the Federal Aviation Regulations;

"Product" means an aircraft or an engine or a propeller of an aircraft;

"Prototype" means an aircraft or an engine or a propeller of an aircraft that has been modified and the modification is in the process of being approved by CAAS or CASA, as the case may be;

"SAR 21" means the Singapore Airworthiness Requirements Part 21 issued under the Air Navigation Order (or the equivalent legal requirements which replace the SAR 21);

"Singapore Technical Standard Order" (STSO) means the minimum performance standards issued by CAAS for specified articles;

"Singapore Technical Standard Order Certificate of Approval" ("STSO certificate") means:

- (a) a design approval issued by CAAS to an organisation that designed an article that has been found to meet a specific STSO or TSO; or



- (b) a design approval issued by CAAS to the holder of a FAA letter of TSO design approval issued under the provisions of the bilateral agreement between Singapore and United States of America;

"Supplemental Type Certificate" (STC) means the approval granted to an applicant under the respective laws of the Parties to signify approval of the design of a major modification to a type certified aircraft, aircraft engine or propeller, in accordance with the applicable airworthiness design standards;

"Technical Standard Order" (TSO) means the minimum performance standards for specified articles used on civil aircraft issued by the FAA.

2 SCOPE

The scope of this Technical Arrangement for Airworthiness Certification is as follows:

- (a) To describe a process for the grant by CASA or CAAS, as the case may be, of an STC after the applicant has demonstrated that the change in type design meets the applicable requirements;
- (b) To describe a process for the grant by CASA or CAAS, as the case may be, of design and production approvals for an article that meets a TSO;
- (c) To specify the process for determining that articles have been manufactured in accordance with requirements specified by CASA or CAAS, as the case may be (acceptance process);
- (d) To create procedures for co-operation and technical assistance when there are significant certification activities covered by this Technical Arrangement.

3 SUPPLEMENTAL TYPE CERTIFICATION PROCESS – CAAS

Section A – Issue of a Singapore STC

- 3.1 CAAS issues STCs under the provisions of SAR-21 Subpart C to signify the approval of major modifications to an aircraft that has been granted a letter of acceptance of type certificate by CAAS under the provisions of SAR-21 Subpart A. The applicable airworthiness standards used for issuing CAAS STCs are specified in SAR-21.755.

- 3.2 A person who is (a) a resident of Australia, or (b) a foreign corporation that is lawfully carrying on business in Australia (**the CAAS STC applicant**) may apply for a CAAS STC through CASA.
- 3.3 CASA will assess the application received and ensure that the application contains the following documents and information:
- (a) a completed CAAS Application Form CAAS (AW) 212;
 - (b) a description of the change, together with the make and model of the product;
 - (c) the CASA certification basis including all exemptions and equivalent level of safety findings granted or made by CASA;
 - (d) identification of the means of compliance and a list of the documentation required to show compliance; and
 - (e) a project schedule identifying when the modification will be carried out on a Singapore-registered aircraft.
- 3.4 Upon receipt of a complete application, CASA will notify CAAS of the application and provide CAAS with the application package as detailed in paragraph 3.3.
- 3.5 CASA will obtain from the CAAS STC applicant the following documents, if necessary, to conduct its assessment of the application:
- (a) Compliance checklist;
 - (b) Aircraft Flight Manual (AFM) Supplement;
 - (c) Master documentation list / master drawing list;
 - (d) Manufacturing, installation instruction drawings and conformity verification documentation;
 - (e) Maintenance / repair manual supplements;
 - (f) Weight and balance data;
 - (g) Technical Substantiation Data (such as Electrical Load Analysis, Structural Stress Analysis, Justification Report);
 - (h) Functional / Ground / Flight Test Reports;

- (i) Instructions for continuing airworthiness (such as Airworthiness Limitations, Maintenance Manuals, Wiring Diagram Manual, and other documents where necessary); and
 - (j) Electrical Wiring Interconnection System (**EWIS**) Analysis and EWIS Instructions for Continuing Airworthiness (**ICA**).
- 3.6 Unless CASA has already issued an Australian STC for the same type of design modification, it will conduct all necessary tests and review all relevant technical data in relation to the application to form a view whether the application meets the CAAS airworthiness requirements.
- 3.7 CAAS may carry out conformity and compliance inspections during the installation of a major modification on a Singapore-registered aircraft.
- 3.8 Upon the completion of its assessment, CASA will provide to the CAAS:
- (a) a complete package of documents, including the application and all documents considered by CASA in the course of making its assessment; and
 - (b) a letter and statement of compliance expressing CASA's views as to whether the application meets the CAAS airworthiness requirements.
- 3.9 CAAS will then:
- (a) if appropriate, in the case of a prototype aircraft, issue a letter of "Return to Service" to allow the prototype aircraft to return to service; or
 - (b) in any other case, issue an STC after its completion of the certification program and after having verified that:
 - (i) the CAAS STC applicant has demonstrated compliance with CAAS airworthiness requirements, and
 - (ii) CASA has issued an Australian STC for the same type of design modification and CASA has issued a statement of compliance with the CAAS airworthiness requirements.

Section B – Amendments to a CAAS STC

- 3.10 If the holder of a CAAS STC who is (a) a resident of Australia, or (b) a corporation that is lawfully carrying on business in Australia applies to CASA to amend the CAAS STC, CASA will assess the application and advise the



applicant whether the amendment is classified as a major or a minor modification of the STC. In a case of major modifications, CASA will follow the processes in Section A above (from paragraph 3.1). In a case of minor modifications, CASA will advise CAAS in writing of that determination along with the details of the relevant STC.

4 SUPPLEMENTAL TYPE CERTIFICATION PROCESS – CASA

Section A – Issue of an Australian STC

- 4.1 CASA issues Australian STCs under Part 21 of the *Civil Aviation Safety Regulations 1998 (CASR)* to signify the approval of major modifications to a type certified aircraft, aircraft engine or propeller. The airworthiness standards used for issuing Australian STCs are set out in regulation 21.115 of the CASR.
- 4.2 A corporation that is lawfully carrying on business in Singapore (the **Australian STC applicant**) may apply for an Australian STC through CAAS.
- 4.3 CAAS will ensure that the application contains the following documents and information:
 - (a) a completed CASA Application Form 733;
 - (b) a description of the change, together with the make and model of the product;
 - (c) the CAAS certification basis including all exemptions and equivalent level of safety findings granted by CAAS;
 - (d) identification of the means of compliance and a list of the documentation required to show compliance; and
 - (e) a project schedule identifying when the modification will be carried out on an Australian-registered aircraft.
- 4.4 Upon receipt of the complete application, CAAS will notify CASA of the application and provide CASA with the application package as detailed in paragraph 4.3.
- 4.5 CAAS will obtain from the Australian STC applicant the following documents, if necessary, to conduct its assessment:
 - (a) Compliance checklist;



- (b) Aircraft Flight Manual (**AFM**) Supplement;
- (c) Master documentation list / master drawing list;
- (d) Manufacturing, installation instruction drawings and conformity verification documentation;
- (e) Maintenance / repair manual supplements;
- (f) Weight and balance data;
- (g) Technical Substantiation Data (i.e. Electrical Load Analysis, Structural Stress Analysis, Justification Report, etc);
- (h) Functional / Ground / Flight Test Reports;
- (i) Instructions for continued airworthiness (Airworthiness Limitations, Maintenance Manuals, Wiring Diagram Manual, and other documents where necessary); and
- (j) Electrical Wiring Interconnection System (**EWIS**) Analysis and EWIS ICA.

4.6 Unless CAAS has already issued a CAAS STC for the same type of design modification, CAAS will conduct all necessary tests and review all relevant technical data in relation to an application to form a view whether the application meets the Australian airworthiness requirements.

4.7 Upon the completion of its assessment, CAAS will provide to CASA:

- (a) a complete package of documents, including the application and all documents considered by CAAS in the course of making its assessment;
- (b) a letter and statement of compliance expressing CAAS's views as to whether the application meets the Australian airworthiness requirements.

4.8 During its assessment of the application, CASA may carry out conformity and compliance inspections during the installation of a major modification on an Australian registered aircraft.

4.9 CASA will then:

- (a) if appropriate, in the case of a prototype aircraft, approve the major change on the prototype aircraft under CASR 21.435 and inform CAAS via an official letter; or
- (b) in any other case, issue an STC after its completion of the certification program and after having verified that:
 - (i) the Australian STC applicant has demonstrated compliance with Australian airworthiness requirements; and
 - (ii) CAAS has issued a CAAS STC for the design change and CAAS has issued a statement of compliance with the Australian airworthiness requirements.

Section B – Amendments to an Australian STC

4.10 If the holder of an Australian STC, who is a corporation that is lawfully carrying on business in Singapore, applies to CAAS to amend the Australian STC, CAAS will assess the application and advise the applicant whether the amendment is required to be approved by CASA in accordance with the conditions, limitations and other requirements stated in the Australian STC. If CASA's approval is required, CAAS will follow the processes in Section A above (from paragraph 4.1). If CASA's approval is not required, CAAS will advise CASA in writing of that determination along with the details of the relevant STC.

5 STSO CERTIFICATE

Section A – STSO certificate

- 5.1 CAAS approval for imported TSO articles is signified by the issue of a STSO certificate in accordance with the provisions contained in SAR-21 Subpart E.
- 5.2 CAAS will issue a STSO certificate when the TSO article meets the airworthiness design standards specified in SAR-21.760.
- 5.3 A person who is (a) a resident of Australia, or (b) a foreign corporation that is lawfully carrying on business in Australia (**the Australian STSO applicant**) may apply for a STSO certificate through CASA.
- 5.4 CASA will assess the application and ensure that it contains the following documents and information:
 - (a) a completed CAAS Application Form CAAS (AW) 205;



- (b) a copy of the technical data required by the applicable STSO or TSO;
- (c) a description of the Australian STSO applicant's quality system in the detail specified in SAR 21.1015 and 21.1020. To show compliance with these requirements, the Australian STSO applicant may refer to current quality system data filed with CAAS as part of a previous STSO Certificate application.

5.5 Upon the completion of its assessment, CASA will provide to the CAAS:

- (a) a complete package of documents, including the application and all documents considered by CASA in the course of making its assessment;
 - (b) a statement of compliance expressing that the Australian STSO applicant has met the requirements of Subpart E of SAR 21 and that the article concerned meets the applicable STSO or TSO that is effective on the date of application for that article;
 - (c) the ATSO Authorisation for the article; and
 - (d) a letter expressing CASA's views as to whether the application meets the requirements of SAR 21.1015 and 21.1020 for the production of the ATSO Authorisation article.
- 5.6 CAAS will issue a STSO certificate after the completion of its own assessment of the application and after it has verified that the CAAS STSO applicant has demonstrated compliance with the airworthiness design standards specified in SAR-21.760 with substantiation data supported by tests or analysis, or both tests and analysis;
- 5.7 A CAAS STSO certificate does not constitute an approval for the TSO article to be installed on an aircraft. The installer must obtain installation approval from CAAS for use of the article on a Singapore-registered aircraft.

Section B – Amendments to CAAS STSO certificate

- 5.8 If the holder of a CAAS STSO certificate who is (a) a resident of Australia, or (b) a foreign corporation that is lawfully carrying on business in Australia applies to CASA to amend the CAAS STSO, CASA will assess the application and advise the applicant whether the amendment is classified as a major or a minor modification of the STC.

- 5.9 In relation to major modifications, CASA will follow the processes in Section A above (from paragraph 5.1). In relation to minor modifications, CASA will advise CAAS in writing of that determination along with the details of the relevant STSO.
- 5.10 In relation to minor modification, the holder of the CAAS STSO Certificate must notify CAAS of any such change and provide CAAS with copies of any revised data.
- 5.11 The approval of any minor change introduced by any person other than the STSO certificate holder must be assessed by CASA in accordance with the application process described in Section A above (from paragraph 5.1).

6 ATSO Authorisation

Section A – Issue of an Australian ATSO Authorisation

- 6.1 A person who is (a) a corporation that is lawfully carrying on business in Singapore and holds a CAAS Production Organisation Approval, or (b) a corporation that is lawfully carrying on business in Singapore and has an arrangement with a CAAS Production Organisation Approval holder to produce the article (the **Australian ATSO Authorisation applicant**) may apply for an ATSO Authorisation through CAAS.
- 6.2 CAAS will assess the application and ensure it contains the following documents:
- (a) a copy of the technical data required by the applicable ATSO or TSO;
 - (b) a description of the Australian ATSO Authorisation applicant's quality system in the detail specified in regulations 21.143 and 21.144 of the CASR. To show compliance with these regulations, the Australian ATSO Authorisation applicant may refer to current quality system data filed with CASA as part of a previous ATSO Authorisation application or produce a CAAS Production Organisation Approval or inform with supporting documents that it has an arrangement with a CAAS Production Organisation Approval holder to produce the article;
 - (c) when a series of minor changes in accordance with regulation 21.611 of the CASR is anticipated – the basic model number of the article and the part number of the components with open brackets after it to denote



that suffix change letters or numbers (or combinations of them) will be added from time to time.

6.3 Upon the completion of its assessment, CAAS will provide to CASA:

- (a) a complete package of documents, including the application and all documents considered by CAAS in the course of making its assessment;
- (b) a statement of compliance certifying that the Australian ATSO Authorisation applicant has met the requirements of Subpart 21.O of the CASR and that the article concerned meets the applicable ATSO or TSO that is effective on the date of application for that article;
- (c) CAAS STSO certificate for the article; and
- (d) a letter expressing CAAS's views as to whether the application meets the requirements of regulations 21.143 and 21.144 of the CASR for the issue of an ATSO Authorisation.

6.4 CASA will then assess the application and issue an ATSO Authorisation after the completion of its own assessment of the application and after it has verified that the application meets the requirements of regulations 21.143 and 21.144 of the CASR for the issue of an ATSO Authorisation.

Section B – Amendments to ATSO Authorisation

Minor changes by a article manufacturer holding an ATSO Authorisation

- 6.5 An article manufacturer manufacturing an article under an ATSO Authorisation may make minor design modifications (any modification other than a major modification) without further approval by CASA. In this case, the changed article keeps the original model number (part numbers may be used to identify minor changes). However, the article manufacturer must notify CASA of any such changes and provide CASA with copies of any revised data that is necessary for compliance with subregulation 21.605(3) of the CASR.
- 6.6 Where the article manufacturer is a person who is (a) a corporation that is lawfully carrying on business in Singapore and holds a CAAS Production Organisation Approval, or (b) a corporation that is lawfully carrying on business in Singapore and has an arrangement with a CAAS Production Organisation Approval to produce the article, CAAS will accept such notifications with any revised data that is necessary for compliance with subregulation 21.605(3) of the CASR, and provide them to CASA.

Major changes by manufacturer holding an ATSO Authorisation

- 6.7 Any design change by the article manufacturer that is extensive enough to require a substantially complete investigation to determine compliance with an ATSO or TSO is a **major change**.
- 6.8 Before making such a change, the article manufacturer must assign a new type or model designation to the article and apply for an ATSO Authorisation under regulation 21.605 of the CASR.
- 6.9 CAAS will accept and process the application referred to in paragraph 6.8 from an applicant who is a corporation that is lawfully carrying on business in Singapore and holds a CAAS Production Organisation Approval in accordance with the process set out in Section A above (from paragraph 6.1)

7 Acceptance of Articles and Parts

- 7.1 CAAS will accept articles released with a CASA Form 1 for use on Singapore-registered aircraft after CAAS has issued an STC for the design change on the aircraft which covers these articles, or a STSO certificate which covers these articles.
- 7.2 CASA will accept articles released with a CAAS Form AW95 for use on Australian-registered aircraft after CASA has issued either an STC which covers these articles, or an ATSO Authorisation which covers these articles.

8 Acceptance of Prototype Articles and Parts

- 8.1 For the purpose of demonstrating compliance with an STC design, CAAS will accept articles released with CASA Form 1 (marked with non-approved data) for installation on board the STC prototype aircraft.
- 8.2 For the purpose of demonstrating compliance with an STC design, CASA will accept articles released with CAAS Form AW95 (marked with non-approved data) for installation on board the STC prototype aircraft.

9 Technical Assistance

- 9.1 Upon request and after mutual agreement, and as permitted by available resources, CAAS and CASA may provide technical assistance to each other



when significant certification activities related to this Technical Arrangement are conducted in Singapore or Australia, as the case may be.

- 9.2 Each Party will use its own policies and procedures when providing technical assistance to the other Party, unless otherwise agreed between them.
- 9.3 In relation to provisions concerning information exchange in this Technical Arrangement, neither Party will be limited in the manner in which it may use information or documents provided to it by the other, but such use is subject to applicable statutory requirements.

10 Continuing Airworthiness

- 10.1 Both Parties will co-operate in analysing the airworthiness data arising from accidents and incidents or investigations involving a STC or TSO article approved under this Technical Arrangement.
- 10.2 A Party will report to the other Party on specific occurrences involving any STC or TSO article approved under this Technical Arrangement, as soon as practicable, and will assist the other Party, if necessary, in analysing their effect on the safety of products installed with the specific STC or TSO article.
- 10.3 A Party will promptly inform the other Party of all mandatory airworthiness modifications, special inspections, special operating limitations or other actions in relation to an STC or TSO issued in accordance with the processes agreed to under this Technical Arrangement, which it considers necessary to ensure the continuing airworthiness of the affected products or articles in service.

11 Administration and implementation

- 11.1 The CAAS Director for Airworthiness / Flight Operations and the CASA Executive Manager Standards Division will be the responsible persons for the administration and implementation of this Technical Arrangement.
- 11.2 The Parties will also advise each other of any significant changes to their respective organisation that affect the administration and implementation of the provisions of this Technical Arrangement, including the holders of the posts mentioned in paragraph 11.1.
- 11.3 Any disagreement regarding the interpretation or application of this Technical Arrangement will be resolved by consultation between the Parties and no dispute arising under this Technical Arrangement will be referred to any court, international tribunal or any third party for settlement.

- 11.4 Each Party will inform their respective design and production organisations on any updates of their laws, regulations, standards, practices, procedures and systems that may impact the agreed arrangements under this Technical Arrangement.

12 Costs and Expenses

- 12.1 The Parties shall each bear their own costs and expenses incurred in connection with the preparation and implementation of this Technical Arrangement.

13 Legal and financial liabilities

- 13.1 Where it is not otherwise inappropriate to do so, the Parties agree to liaise with one another with a view to addressing any legal issues that may arise as a consequence of actions taken under this Technical Arrangement.
- 13.2 For actions taken in accordance with this Technical Arrangement, no Party shall hold the other Party liable for any claim in any suit or proceeding against the Party arising out of the issuance of any approval under this Technical Arrangement or seek an indemnity against the other Party and nothing in this Technical Arrangement operates to preclude or supersede liabilities otherwise arising as a matter of law.
- 13.2 The Parties agree that under this Technical Arrangement there will be no fees charged for the provision to each other of the material referred to in this Technical Arrangement.

14 Entry into force

This Technical Arrangement will come into operation upon signature by the persons holding the positions mentioned in paragraph 11.1.



15 Notices

In relation to any notice, request or other communication to be given or served pursuant to this Technical Arrangement, CASA will direct notices or other correspondence to the attention of Director of Airworthiness and Flight Operations Division of CAAS. CAAS will direct its notices and correspondence to the attention of the Executive Manager, Standards Division for CASA.

16 Dispute resolution

The Parties agree to attempt to resolve any disputes that may arise under this Technical Arrangement at the workplace level by consultations between the Director of Airworthiness and Flight Operations Division of CAAS and the Executive Manager, Standards Division for CASA.

17 Variation and review

- 17.1 It is important that this Technical Arrangement remains consistent, relevant and current. To that end, the Parties will review this Technical Arrangement on an annual basis or more frequently if the Parties agree to do so.
- 17.2 Should either Party seek to vary this Technical Arrangement, the Parties will negotiate in good faith.
- 17.3 This Technical Arrangement may be varied at any time by agreement in writing signed by the Director of Airworthiness and Flight Operations Division of CAAS and the Executive Manager, Standards Division for CASA.

18 Termination

- 18.1 Either party may terminate this Technical Arrangement at any time by giving written notice of its decision to the other Party.
- 18.2 This Technical Arrangement will terminate 90 days following the date of receipt of such notice, unless the said notice is withdrawn by mutual consent before the expiry of the 90-day period.

18.3 Such termination shall not affect the validity of any certificate and other approval granted by the Parties under the terms of this Technical Arrangement.

19 General

19.1 The designated offices for the technical implementation of this Technical Arrangement are:

For the CAAS:

Airworthiness & Flight Operations
Division
Civil Aviation Authority of Singapore
Room 047-029, 4th Storey Terminal 2
Singapore Changi Airport
Singapore 819643

For the CASA

Standards Division
Civil Aviation Safety Authority
GPO Box 2005
Canberra ACT 2601
Australia

Correspondence Address:

Airworthiness & Flight Operations
Division
Civil Aviation Authority of Singapore
P.O. Box 1
Singapore 918141

19.2 Any existing understanding, arrangements or approvals relating to the acceptance of aviation certification between CASA and CAAS, will be superseded by this Technical Arrangement.

19.3 CASA and CAAS acknowledge that nothing in this Technical Arrangement legally restricts or enlarges either Party's statutory functions, powers or duties.

19.4 The foregoing record represents the understanding reached between the Civil Aviation Authority of Singapore and the Civil Aviation Safety Authority upon the matters referred to therein.


Signed on 10 February 2014 in Singapore

On behalf of Civil Aviation Authority of Singapore



Director General
Civil Aviation Authority of Singapore

And on behalf of Civil Aviation Safety Authority



Director of Aviation Safety
Civil Aviation Safety Authority