TECHNICAL ARRANGEMENT FOR AIRWORTHINESS AND ENVIRONMENTAL CERTIFICATION UNDER THE MEMORANDUM OF UNDERSTANDING BETWEEN THE CIVIL AVIATION AUTHORITY OF THE UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND AND THE CIVIL AVIATION AUTHORITY OF SINGAPORE

Contents

1. General 3

2. Design Approval, General 10

3. Approvals – UK (CA) to Singapore (VA) 14

4. Approvals – Singapore (CA) to UK (VA) 17

5. Administration of Design Approvals 19

6. Production Approval, General 23

7. Continuing Airworthiness – Obligations for Design and Production 25

8. Export Airworthiness Approval 29

9. Technical assistance 33

10. Signature and coming into operation date 36

Appendix A — Contact Points for Coordination of Amendments 37

Appendix B — Validation Procedures 38

1. General Principles 38
2. Safety Elements 38
3. Application Processes 39
4. Technical Validation Process – Supplemental Type Certificate 40
5. Streamlined Validation Process – Supplemental Type Certificates 47
6. Major Repair Designs 47
7. Operational and maintenance considerations 49
8. Manuals approval 49

Appendix C — Acronym List 50

Appendix D — UK (CA) to Singapore (VA) 51

Appendix E — Singapore (CA) to UK (VA) 52

Appendix F — Record of Revisions 53

1. General

1.1 Purpose

The purpose of this Technical Arrangement is to:

1) facilitate and outline cooperation in the field of initial and continued airworthiness between the Civil Aviation Authority (UK CAA) of the United Kingdom of Great Britain and Northern Ireland (United Kingdom) and the Civil Aviation Authority of Singapore (CAAS), hereinafter referred to as the "Participants";

2) enable the reciprocal acceptance or facilitate the recognition of findings of compliance made and certificates issued by either Participant or approved organisations within the United Kingdom of Great Britain and Northern Ireland (United Kingdom) and Singapore; and

3) facilitate and promote the free flow of civil aeronautical products and services.

The UK CAA and the CAAS will conduct their certification and validation activities consistent with the Memorandum of Understanding between the Civil Aviation Authority of Singapore and the Civil Aviation Authority of the United Kingdom of Great Britain and Northern Ireland (MoU), signed at Singapore and London on 18 December 2020 and this Technical Arrangement.

Note: Appendix C lists all acronyms used in this document.

1.2 Basis of Authority for Technical Arrangement

This Technical Arrangement is established in accordance with the MoU.

1.3 Governance

1) The governance of this Technical Arrangement will be carried out jointly by the person holding the designated office in the CAAS and the UK CAA as specified below:

   a) For the CAAS: Director Flight Standards Division, and

   b) For the UK CAA: Bilateral Aviation Safety Agreements Team, CAA Strategy and Policy

2) The contact points identified in Appendix A will be responsible for the effective functioning, implementation, and continued validity of this Technical Arrangement, including revisions and amendments thereto and will report progress on a regular basis to the designated office.

3) Both Participants will keep this Technical Arrangement under review, with a view to updating and amending it from time to time and as confidence in each other grows.

1.4 **Basis of arrangement**

1) This Technical Arrangement is based on mutual confidence and trust between the Participants. When a finding of compliance is made by the Certifying Authority (CA) in accordance with the laws and regulations of the Validating Authority (VA), that finding is given the same validity as if it were made by the VA. A fundamental principle of this Technical Arrangement is to maximise the use of the CA's aircraft certification system to ensure that the airworthiness requirements and environmental requirements of the VA are satisfied. The Participants understand that if there are overwhelming reasons to go outside this general principle, such reasons will be discussed between them.

2) The Participants understand that:

a) their regulations, standards, aircraft certification systems, airworthiness of civil aeronautical products and components identified in this document are sufficiently compatible in structure and performance to support this Technical Arrangement;
b) they need to remain capable of carrying out their roles under this Technical Arrangement; and
c) the designated office will define and accept the activities required to promote continued understanding and compatibility of each Participant's systems and to ensure the maintenance of confidence between the Participant's technical competence and ability to perform regulatory functions within the scope of this Technical Arrangement.

1.5 Communications

1) The Participants are expected, within the framework of their regular meetings, to discuss draft advisory and guidance materials within the scope of this Technical Arrangement.

2) This Technical Arrangement is based upon similar certification and approval systems for civil aeronautical products being in place at the time of signing. The Participants will keep each other informed of significant changes within those systems as soon as reasonably practicable.

3) The Participants will meet to review this Technical Arrangement at least once every two years.

4) Revision by either Participant of its certification or approval system may affect the basis and the scope of this Technical Arrangement. Accordingly, upon notice of

such changes, the other Participant may request a meeting to review the need to amend this Technical Arrangement. The Participants are expected to consult with each other on new or proposed changes to the certification standards or specifications for civil aeronautical products.

5) The Participants will ensure that the data and documents exchanged under this Technical Arrangement are in the English language.

6) The Participants understand that there may be occasional situations where one Participant needs to interact directly with an approved organisation of the other Participant. In such cases, the Participant initiating the contact will notify the other as soon as possible. Any such direct communication will be limited to information exchange. The Participants are expected to always consult one another on significant validation program decisions.

7) The Participants will consult as necessary to provide input when requested on technical issues and to resolve technical differences. The frequency of these exchanges will depend on the number and significance of the issues to be discussed.

8) The Participants will:

   a) resolve differences in the interpretation and implementation of this Technical Arrangement through consultation or any other jointly accepted means. The Participants are expected to make every effort to resolve differences at the lowest possible level; and

   b) expeditiously raise differences that cannot be satisfactorily resolved at the working level to their respective managements, on a progressive level, until a resolution is reached.

9) In the case of conflicting interpretations by the Participants of national laws, airworthiness or environmental regulations, standards, specifications, requirements, or acceptable means of compliance pertaining to certifications, approvals, or acceptance under this Technical Arrangement, the interpretation of the Importing Participant whose national laws, airworthiness or environmental regulations, standards, specifications, requirements, or acceptable means of compliance are being interpreted will prevail.

1.6 Definitions

In this Technical Arrangement:

a) “Acoustical Change” means a change in the type design of an aircraft or aircraft engine that results in an increase in the noise emission levels of that aircraft.

b) “Airworthiness Requirements” mean regulations, airworthiness standards or other certification specifications governing the design and performance of civil aeronautical products.

c) “Article” means any sub-assembly, appliance, part, or component installed or to be installed on any civil aircraft, aircraft engine or aircraft propeller.

d) “Approved Manual” means any manual, or section of a manual, requiring approval by the CAAS or UK CAA. These include the approved sections of the Flight Manual, the airworthiness limitation section of the Instructions for Continued Airworthiness (ICA), the structural repair manual, the engine and propeller installation and operating manuals, and the certification maintenance requirements, where applicable.

e) “Certifying Authority (CA)” means the CAAS or the UK CAA, as the case may be, when the CAAS or the UK CAA is fulfilling the responsibilities under the Chicago Convention of a State of Design (SoD) or a State of Design of Modification (SoDM) to regulate the design, production, and airworthiness approval and environmental certification of civil aeronautical products and components that originated in its territory.

f) “Certification Basis” consists of the applicable airworthiness and environmental requirements established by a Participant as the basis by which the type design of a civil aeronautical product, or a change to that type design was approved or accepted. The certification basis may also include Special Conditions, Findings of Equivalent Level of Safety, and Exemptions or Deviations when determined by a Participant to apply to the type design approval. For the UK CAA, the certification basis may also include Operational Suitability Data (OSD) requirements.

g) “Civil Aeronautical Product” means any civil aircraft, aircraft engine, or aircraft propeller or sub-assembly, appliance, part, or component installed or to be installed thereon.

h) “Compliance Determination” means the determination, by either the CAAS’s system or the UK CAA’s system, that the applicant has demonstrated compliance with identified requirements.

i) “Design change” means a modification that is new to a product or article and approved under a major or minor change determination within the applicable Participant’s regulations.

j) “Deviation” is a grant of relief from the requirements of a certification specification when processed through the appropriate regulatory procedure by the CAA.

k) “Emissions Change” in respect of an aircraft means a change in the type design of an aircraft or aircraft engine that results in an increase in fuel venting or exhaust emissions of a turbine engine.

l) “Environmental Requirements” mean regulations, environmental standards, or certification specifications governing the certification of designs with regard to noise characteristics, exhaust emissions, and fuel venting of civil aeronautical products.

m) “Exemption” means a grant of relief from requirements of a regulation when processed through the appropriate regulatory procedure.

n) “Export” means the process by which a civil aeronautical product is released from one regulatory system for subsequent use in another regulatory system.

o) “Exporting Participant” means the CAAS or the UK CAA as charged by the laws of the exporting State, to regulate the airworthiness and environmental certification, approval, or acceptance of civil aeronautical products, parts, and appliances

p) “Finding of Equivalent Level of Safety” means a finding by a Participant that alternative action taken provides a level of safety equal to that provided by the airworthiness requirements for which equivalency is being sought.

q) “Import” means the process by which an exported civil aeronautical product is accepted by the CAAS or the UK CAA for use and is subsequently placed under that authority’s regulatory system.

r) “Importing Participant” means the CAAS or the UK CAA as charged by the laws of the importing Participant with regulating the airworthiness and environmental certification, approval, or acceptance of civil aeronautical products.

s) “Minor repair design” means a repair on a civil aeronautical product which has no appreciable effect on the mass, balance, structural strength, reliability, operational characteristics, operational suitability data, or other characteristics affecting the airworthiness of the product or its environmental characteristics.

t) “Major repair design” means any repair on a civil aeronautical product which is not classified as minor.

u) “Minor change” means a design change in the type design which has no appreciable effect on the mass, balance, structural strength, reliability,

operational characteristics, operational suitability data, or other characteristics affecting the airworthiness of the product or its environmental characteristics.

v) “Major change” means any design change which is not classified as minor.

w) “Manufacturer” means a person who, under Singapore or United Kingdom regulations, is responsible for determining that all products, parts, or appliances produced within its production quality system conform to a CAAS or UK CAA approved design or established state or industry standard and are in a condition for safe operation, and includes a production organisation.

x) “Not significant change” means a change that does not meet the criteria for a significant change.

y) "Operational Suitability Data (OSD)” means the suite of data required to be established by aircraft manufacturers under (UK) Part 21 that is considered important for the safe operation of the aircraft type; OSD is approved by the UK CAA under the type certificate to be used by operators and training Organisations.

z) “Participant” means either the Civil Aviation Authority of Singapore, or the Civil Aviation Authority of the United Kingdom of Great Britain and Norther Ireland, as the case may be.

aa) “Production Quality System” means a systematic process, which meets the requirements of the Exporting Participant, to ensure that products, parts, and appliances intended for export conforms to the approved design and will be in a condition for safe operation.

bb) “Significant change” is a design change, which is categorised by the UK CAA in accordance with the criteria outlined in UK Part 21.A.101.

cc) “Special Condition” means an additional detailed technical specification prescribed by a Participant when the airworthiness design standards for the category of civil aeronautical product does not contain adequate or appropriate safety standards due to novel or unusual design features, unconventional use of the product, or experience in service with similar products showing that unsafe conditions may develop. Special Conditions contain such safety standards as the relevant Participant finds necessary to establish a level of safety equivalent to that intended in the applicable airworthiness design standards ~~code~~.

dd) “Standard Part” means a part that is manufactured in accordance with an established state or industry-accepted specification, which includes design, manufacturing, and uniform identification requirements. The specification must

include all information necessary to produce and conform the part and must be published so that any person or organisation may manufacture it.

ee) "State of Design" means the State having jurisdiction over the organisation responsible for the type design.

ff) "State of Design of Modification" means the State having jurisdiction over the individual or organisation responsible for the design of the modification or repair of an aircraft, engine or propeller.

gg) "State of Manufacture" means the State having jurisdiction over the organisation responsible for the manufacturing of the civil aeronautical products and articles.

hh) "Singapore Technical Standard Order (STSO)" or "UK Technical Standard Order (UKTSO)" means a minimum performance standard for specified articles. Each TSO covers a certain type of article.

ii) "STSO Design Approval" means a design approval of an article issued by the CAAS as CA. The article will be manufactured by CAAS production organisation. "STSO Design Approval" is not an approval to install and use the article in the aircraft.

jj) "UK Technical Standard Order Authorisation (UKTSOA)" means a design and production approval issued UK CAA as CA to the manufacturer of an article that has been found to meet a specific UKTSO. A UKTSOA is not an approval to install and use the article in the aircraft. It means that the Article meets the specific UKTSO and the applicant is authorized to manufacture it.

kk) "Validating Authority (VA)" means either the CAAS or the UK CAA as charged by the laws of the importing Participant, with regulating the design, production, and airworthiness approval and environmental certification of civil aeronautical products and components.

ll) "Validation" means the process for compliance determination of a design, or a design change.

2. Design Approval, General

2.1 Purpose

1) This section will apply to the initial design approval of civil aeronautical products and articles, the approval of subsequent design changes, and approval of design data used in support of repairs.

2) Any design approvals or data certified or validated by the CAAS and the European Union Aviation Safety Agency (EASA) immediately before the date of the UK's exit from the EU will continue to remain valid for the CAAS and the UK CAA under this Technical Arrangement.

3) The validation procedures described in the Appendix B to this Technical Arrangement will be followed by the Participants when validating each other's products.

2.2 Limitations of Design or Design Change Approvals

1) Civil aeronautical products and articles that form part of, or are intended to be installed in or fitted or supplied to, an aircraft used in the military, customs or police services, search and rescue, coastguard or other similar activities or services of a Participant will not be eligible for certification or approval under this Technical Arrangement. A Participant may accept an application for these products under this Technical Arrangement where they perform a dual role and the civil aeronautical product has a civil certification basis.

2) An applicant may only submit an application for validation through its Participant to the other Participant. Applications for validations made directly from the applicant to the other Participant will not be accepted.

2.3 Submission of an Application

1) The Participants understand that when specified by this Technical Arrangement, an application for approval of a design or a design change will be made using the forms required by the VA, duly completed by the applicant. The relevant application forms are available from the following websites:

   For the UK CAA: https://www.caa.co.uk/Commercial-Industry/Aircraft/Airworthiness/

   For the CAAS: https://www.caas.gov.sg/operations-safety/design-production/certification-of-products-articles

Note: It may be necessary for the applicant to complete a declaration or acknowledge its commitment to the appropriate financial requirements before the application can be processed.

2) An application will:

   a) be accompanied by the applicable technical data package necessary for the VA to conduct preliminary administrative and technical assessments of the application;
   b) be forwarded by the CA to the VA along with a cover letter stating that the application is within the scope of this Technical Arrangement; and
   c) be acknowledged formally by the VA, who will provide contact points for the purpose of further communication on the application itself.

2.4 Sequential or Concurrent Certification/Validation

1) For some projects, it is beneficial for the Participants to undertake a concurrent certification/validation process. When doing so, the VA will conduct its activities using the validation procedures outlined in Appendix B, modified if necessary by the requirements of the particular project.

2) The Participants will document their decision to undergo a concurrent certification/validation and any design changes mentioned in sub-paragraph 1) above.

2.5 Projects Involving a Separate State of Design/State of Design of Modification and State of Manufacture

1) The Participants understand that some of their aviation industry's projects may involve articles designed under one Participant's jurisdiction and manufactured under the other Participant's jurisdiction. In such cases, the Participants will work together to develop and document procedures for assistance in accordance with Section 9 of this Technical Arrangement.

2) Any procedures drafted in accordance with Section 9 of this Technical Arrangement will follow the guidance provided for by Annex 8 to the Convention on International Civil Aviation ("Chicago Convention").

2.6 Communications during a Certification, Approval or Validation Project

The Participants will identify primary contact offices or persons, to accommodate early exchange of information and discussion between the Participants and promote continued communications throughout the certification, approval or validation project.

2.7 The Participants' Validation Process

1) The Participants will conduct validation activities using the validation procedures contained in Appendix B and with the general principles outlined in Appendix B, paragraph 1 in mind.

2) The Participants understand that this Section is intended to reduce the number of compliance determinations retained by the VA as much as practicable while respecting regulatory requirements. The validation process is intended to allow:

   a) the VA to issue its design approval based on the CA's design approval and declaration that the type design has been examined and found to comply with the VA's certification basis; and

   b) the VA to review selected aspects of a type design presented for design approval, due to the origin and nature of the civil aeronautical product and the validation criteria defined in Appendix B.

3) Certificates and design approvals are accepted or validated by the VA using one of the following three procedures:

   a) Acceptance
      - Where the VA accepts the CA's approval without issuance of its own approval document.
      - No application for validation is required.

   b) Streamlined Validation
      - An approval issued by the VA following a review of technical documents in order, at most, to become familiar with the approval.
      - This applies to, for instance, design change approvals not impacted by the Safety Elements outlined in paragraph 2 of Appendix B.

   c) Technical Validation
      - An approval issued by the VA following a review of technical documents which is more in depth than a review for a streamlined validation.
      - This applies to all design approvals not eligible for Acceptance or Streamlined Validation.

2.8 Repair Design Approvals

1) The Participants understand that a repair design is intended for the restoration of a civil aeronautical product to an airworthy condition. The references to an approved repair design under this Technical Arrangement are:

   a) for the UK CAA, a repair design approval issued by UK CAA or a repair design approval granted by a holder of a UK CAA Design Organisation Approval; and

b) for the CAAS, a repair design approval issued by the CAAS or a repair design approval granted by a holder of a CAAS Design Organisation Approval.

2) The Participants understand that major repair designs that are not eligible for automatic acceptance under this Technical Arrangement will be validated and approved by the VA pursuant to paragraph 6 of Appendix B.

2.9 Completion of Validation

Except when this Technical Arrangement provide for the automatic acceptance of an approval issued by the CA, the completion of the validation process by the VA, which includes the resolution of all issues raised during the validation activity, will result in the issuance of a corresponding approval, or an indication of its acceptance of the CA's approval as equivalent to its own. Any issued approval will be forwarded directly to the holder and a copy provided to the CA.

3. Approvals – UK (CA) to Singapore (VA)

3.1 TCs

1) The CAAS will issue a "Letter of Acceptance of Type Certificate" following the CAAS validation process under the provisions of SAR-21 Subpart A in respect of a Type Certificate issued by the UK as a State of Design for a civil aeronautical product imported into the Republic of Singapore that meets the applicable airworthiness design standards of SAR-21 Subpart I. Refer to the CAAS Advisory Circular AC21-6 for guidance on the application for a Letter of Acceptance of Type Certificate.

   Note*:* The reference to SAR-21 in this Technical Arrangement includes a reference to the ANR-21 which, when published, will replace the SAR-21.

2) A significant major design change by a TC Holder, who had been issued with a Letter of Acceptance of Type Certificate, to their own TC will be validated by the CAAS using the Technical Validation process, through a "Letter of Acceptance of Type Certificate" that will supersede the original Letter of Acceptance of Type Certificate.

3) A not significant major design change by a TC Holder to their own TC will be accepted by the CAAS.

4) A major repair design by a TC Holder, who had been issued with a Letter of Acceptance of Type Certificate, to their own TC will be validated by the CAAS using the Streamlined Validation process.

5) A minor design change or minor repair design by the TC Holder, who had been issued with a Letter of Acceptance of Type Certificate, to their own TC will be accepted by the CAAS.

3.2 STC – Major Design Changes

1) The acceptance or validation by the CAAS of STCs issued by the UK CAA as certifying authority or by an approved organisation under UK law will follow the validation procedure outlined in Appendix B. A Streamlined Validation process will be followed unless one or more of the Safety Elements outlined in paragraph 2 of Appendix B are applicable, in which case a Technical Validation process will be followed.

2) A major design change by a holder of a UK STC, which had been validated by the CAAS, will lead to a new UK STC for the purposes of this Technical Arrangement, and will be validated by the CAAS using the Streamlined Validation process unless one or more of the Safety Elements outlined in paragraph 2 of Appendix B are applicable, in which case a Technical Validation process will be used.

3.3 STC – Minor design changes

1) A minor design change by a holder of a UK STC, which had been validated by the CAAS, approved by the UK CAA will be accepted by the CAAS.

2) A minor design change by a person other than the holder of a UK TC or STC and approved by the UK CAA as certifying authority or by an approved organisation under UK law will be accepted by the CAAS.

3.4 UKTSOAs

1) A UKTSOA issued by the UK CAA as certifying authority will be accepted by the CAAS.

2) Any design change or repair design by an UKTSOA holder, which had been accepted by the CAAS, will be accepted by the CAAS.

3.5 Repair designs

1) A minor repair design by a holder of a UK STC, which had been validated by the CAAS, approved by the UK CAA will be accepted by the CAAS.

2) A major repair design by a holder of an UK CAA STC, which had been validated by the CAAS, approved by UK CAA will be validated by the CAAS using the Streamlined Validation process.

3) A major repair design by any person other than the TC or STC holder and approved by the UK CAA or by an approved organisation under UK law, in respect of a TC granted with a “Letter of Acceptance of Type Certificate” or a STC validated by the CAAS will be validated by the CAAS using the Streamlined Validation process.

4) A minor repair design by any person other than the TC or STC holder and approved by the UK CAA or by an approved organisation under UK law, in respect of a TC granted with a “Letter of Acceptance of Type Certificate” or a STC validated by the CAAS, will be accepted by the CAAS.

3.6 Minor and major design changes to repair designs by all holders

1) Minor design changes to repair designs by TC or STC holders and others that had been approved by UK CAA or by an approved organisation under UK law will be accepted by the CAAS.

2) Major design changes to a repair design are considered to be a new repair design and will be processed under paragraph 3.5 of this Section accordingly.

3.7 Authorised Release Certificates (ARCs)

A UK CAA Form 1 for new civil aeronautical products and articles issued by the UK CAA or by an approved organisation under UK law will be accepted by the CAAS.

Note: A UK CAA Form 52 (Aircraft Statement of Conformity) is issued for new aircraft. Procedures by which a new aircraft is exported from the UK are outlined in Section 8.

Note: Refer to Appendix D for the table of acceptance, Streamlined Validation and Technical Validation criteria for UK approvals.

Note*:* The reference to SAR-21 in this Technical Arrangement includes a reference to the ANR-21 which, when published, will replace the SAR21.

4. Approvals – Singapore (CA) to UK (VA)

4.1 TCs

The CAAS does not approve or issue TCs.

4.2 STCs – Major Design Changes

1) The acceptance or validation by the UK CAA of STCs issued by the CAAS as certifying authority or by an approved organisation under Singapore law will follow the validation procedure outlined in Appendix B. A Streamlined Validation process will be followed unless one or more of the Safety Elements outlined in paragraph 2 of Appendix B are applicable, in which case a Technical Validation process will be followed.

2) A major design change by a holder of a CAAS STC, which had been validated by the UK CAA, will lead to a new CAAS STC for the purposes of this Technical Arrangement, and will be validated by the UK CAA using the Streamlined Validation process unless one or more of the Safety Elements outlined in paragraph 2 of Appendix B are applicable, in which case a Technical Validation process will be used.

4.3 STCs – Minor Design Changes

1) A minor design change by a holder of a CAAS STC, which had been validated by the UK CAA, approved by the CAAS will be accepted by the UK CAA.

2) A minor design change by a person other than the holder of a CAAS STC and approved by the CAAS as certifying authority or by an approved organisation under Singapore law will be accepted by the UK CAA.

4.4 CAAS STSO Design Approval

1) A STSO Design Approval issued by the CAAS as certifying authority will be accepted by the UK CAA.

2) Any design change or repair design by a STSO Design Approval holder, which had been accepted by UK CAA, will be accepted by the UK CAA.

4.5 Repair designs

1) A minor repair design by a holder of a CAAS STC, which had been validated by UK CAA, approved by the CAAS will be accepted by the UK CAA.

2) A major repair design by a holder of a CAAS STC, which had been validated by UK CAA, approved by the CAAS will be validated by the UK CAA using the Streamlined Validation process.

3) A major repair design by any person other than the STC holder and approved by the CAAS or by an approved organisation under Singapore law will be validated by the UK CAA using the Streamlined Validation process.

4) A minor repair design by any person other than the STC holder and approved by the CAAS or by an approved organisation under Singapore law will be accepted by the CAA.

4.6 Minor and major design changes to repair designs by all holders

1) Minor design changes to repair designs by TC or STC holders and others that had been approved by the CAAS or by an approved organisation under Singapore law will be accepted by the UK CAA.

2) Major design changes to a repair design are considered to be a new repair design and will be processed under paragraph 4.5 of this Section accordingly.

4.7 Authorised Release Certificates (ARCs)

A CAAS(AW)95 form for new civil aeronautical products and articles issued by the CAAS or by an approved organisation under Singapore law will be accepted by the CAA.

Note: Refer to Appendix E for the table of acceptance, Streamlined Validation and Technical Validation criteria for Singapore approvals.

5. Administration of Design Approvals

5.1 General

The Participants understand that this Section addresses the procedures for the transfer, surrender, withdrawal, revocation or suspension of certificates or approvals on civil aeronautical products that have been validated or accepted by a Participant under this Technical Arrangement.

5.2 Transfer of a TC or STC

1) The Participants understand that the transfer of a certificate will comply with their respective requirements:

    a) For Singapore, the CAAS will approve a transfer of a certificate only when it is satisfied that the applicant is able to meet the eligibility requirements outlined in SAR-21.350; and

    b) For the United Kingdom, the UK CAA will approve a transfer of a certificate only when it is satisfied that the applicant is able to take over the responsibilities outlined in UK-Part 21.

2) The Participants understand that the responsibilities of the State of Design (SoD) / State of Design of Modification (SoDM) referred to in this Section are those contained in Annex 8 to the Convention on International Civil Aviation, Airworthiness of Aircraft. Any other responsibilities on civil aeronautical products assigned to the Participants are derived from their respective regulations.

3) The Participants understand that they need to jointly accept the transfer of the State of Design (SoD) / State of Design of Modification (SoDM) responsibilities. If acceptance cannot be reached, then the affected certificate may be revoked by the incumbent State of Design and the affected ICAO Contracting States notified of such an action.

4) Each Participant will administer the procedures for the transfer of certificates only where an applicant, who is to become the holder, accepts to fulfil responsibilities for both the Participants certificates, and the affected operating fleet. Otherwise, sub-paragraph (3) above applies.

5) The Participants understand that the design data are the property of the certificate holder.

5.3 Transfer without a Change in State of Design (SoD) / State of Design of Modification (SoDM) Functions

The Participants understand that the transfer of a certificate between persons located in the UK or within Singapore, which does not involve a change in the State of Design (SoD) / State of Design of Modification (SoDM) functions for the Participants, will be administered according to the requirements of the incumbent State of Design (SoD) / State of Design of Modification (SoDM). The Participants will notify each other of any formally completed transfer of a certificate, so that the corresponding certificate issued by the other can be re-issued to reflect the change. The Participants will provide assistance where necessary so that either is satisfied that the new certificate holder is able to fulfil the roles of a certificate holder under the requirements of the other Participant.

5.4 Transfer with a Change in State of Design (SoD) / State of Design of Modification (SoDM) Functions

The Participants understand that the transfer of a certificate between persons of different jurisdictions, which involves a transfer of the State of Design functions from one Participant to the other Participant, will be administered according to a transfer plan acceptable to both Participants. The purpose of the transfer plan is to describe the process that will be used by the Participants to satisfactorily complete the transfer of a certificate and its associated roles to the new certificate holder and the new State of Design (SoD) / State of Design of Modification (SoDM). The transfer plan will be:

a) specific to the certificate being transferred;

b) initiated by the incumbent State of Design (SoD) / State of Design of Modification (SoDM); and

c) terminated upon issuance of a certificate by the new State of Design (SoD) / State of Design of Modification (SoDM).

5.5 Transfer Plan and Notification

1) The transfer plan referred to in 5.4 above is expected to be drafted at the beginning of the process and will cater to the size and scope of the certificate being transferred.

   The plan is expected to establish, but is not limited to:

   a) points of contact for the transfer;
   b) the transfer of design data to the new holder;
   c) the roles of each Participant during the transfer process;
   d) the roles of the holder and applicant during the transfer process;
   e) the civil aeronautical products or type design being transferred;
   f) transfer of knowledge on continuing airworthiness issues;

g) production issues;
h) the needed resources and project timelines;
i) the transfer schedule;
j) how a request between the Participants for assistance in making additional compliance determinations on the other's behalf will be accomplished;
k) how to enhance a Participant's understanding of the design;
l) how procedural differences will be resolved, and how those resolutions will be recorded;
m) how differences between the original certification basis and the one under consideration may be minimised; and
n) details about the manufacturing of parts related to the type design.

2) Upon transfer of a certificate, the Participant of the new State of Design (SoD) / State of Design of Modification (SoDM) will notify all affected ICAO Contracting States of the transfer, the new certificate, the new person in charge of the type design, and the mailing address for submitting reports of failures, malfunctions and defects and other service difficulties.

5.6 Surrender of a TC or STC

If a certificate holder voluntarily surrenders a TC or STC issued by either Participant, that Participant will immediately notify the other in writing. This notification is required to include information on the known civil aeronautical products operating in the UK or in Singapore, as applicable. The Participant will continue to exercise its continuing airworthiness roles as the State of Design (SoD) / State of Design of Modification (SoDM) for the surrendered certificate, and inform the other of any identified unsafe conditions until such time as they:

a) reissue the TC or STC to a new holder after the new holder demonstrates competence to fulfil the necessary obligations; or
b) revoke the TC or STC. Prior to termination, the CA will notify the VA of the pending revocation.

5.7 Revocation or Suspension of a TC or STC

1) The Participants understand that if they, as State of Design (SoD) / State of Design of Modification (SoDM), take action to revoke or suspend a TC or STC, they will immediately notify the other Participant of their action. Upon such notification, the VA will determine for itself if a corresponding action is warranted.

2) The Participants understand that the CA in revoking or suspending a certificate will provide the VA information on the known civil aeronautical products operated or used in the State of the VA.

5.8 Surrender of an Approval (UKTSOA, STSO Design Approval, Part Design Approval or Repair Design)

If the holder of a UKTSOA, STSO Design Approval, part design approval or repair design approval surrenders such an approval, the responsible Participant will immediately notify each other of the action. The Participant that issued the approval will inform the other when an unsafe condition has been identified, until such time as the issuing Participant formally withdraws the surrendered approval.

5.9 Withdrawal of an Approval (UKTSOA, STSO Design Approval, Part Design Approval or Repair Design)

If a UKTSOA, STSO Design Approval, part design approval or repair design approval is withdrawn, the Participants will immediately notify each other of the action. The Participant that issued the approval will inform the other when an unsafe condition or a non-compliance situation has been identified. The issuing Participant will investigate the unsafe condition or non-compliance situation for corrective action and notify the other of the corrective action.

5.10 Continued responsibility following withdrawal or surrender of an approval

In the case of either a surrender or withdrawal of a UKTSOA, STSO Design Approval, part design approval or repair design approval, the Participant that granted the approval will still oversee the continued airworthiness of the repair design and those parts and articles manufactured under its authority.

6. Production Approval, General

6.1 CAAS Production Approval

1) All new civil aeronautical products exported to the United Kingdom under the provisions of this Technical Arrangement are expected to be produced in accordance with a CAAS SAR-21 Subpart J production approval.

2) A CAAS production approval is identified by the issuance of an Authorised Release Certificate (CAAS(AW)95) that contains an approval number and approved limitation record.

6.2 UK CAA Production Approval

1) All new civil aeronautical products exported to Singapore under the provisions of this Technical Arrangement are expected to be produced in accordance with a (UK) Part 21 production approval.

2) A UK CAA production approval is identified by the issuance of a UK CAA Form 1 production approval with approval number and any appropriate limitations.

6.3 Extensions of Production Approvals

As the Authority of the State of Manufacture or State overseeing the manufactured article, the Participants may authorise approved production organisations whose principal place of business is located in the other Participant's country to extend their production manufacturing sites and facilities in a third country. The authority of the State of Manufacture or State overseeing the manufactured article remains in charge of the surveillance and oversight of these manufacturing sites and facilities.

6.4 Split State of Design/State of Design of Modification and State of Manufacture

Please refer to Section 2 paragraph 2.5.

6.5 Supplier Surveillance outside the Exporting Country

1) The CAAS will oversee surveillance and oversight of CAAS production organisation approval holders' suppliers located in Singapore. Surveillance and oversight may be performed by the CAAS on behalf of the UK CAA through technical assistance by the Participants.

2) The UK CAA will oversee surveillance and oversight of UK CAA production approval holders' suppliers located in the UK. Surveillance and oversight may be performed by the UK CAA on behalf of the CAAS through technical assistance by the Participants.

6.6 Coordination between Design and Production

When a Participant grants a production approval for a civil aeronautical product in its jurisdiction based on design data obtained from a design approval holder in the other Participant's jurisdiction, the Participant will ensure that the design organisation collaborates with the production organisation as required under Part 21.A.4 or SAR-21.675 (as applicable), to ensure:

a) satisfactory coordination of design and production as appropriate:

b) correct and timely transfer of up-to-date applicable design data (e.g., drawings, material specifications, dimensional data, processes, surface treatments, shipping conditions, quality requirements, etc.) to the production Organisation;

c) provision of statement(s) of approved design data;

d) production deviations and non-conforming parts are appropriately handled in accordance with the applicable procedures of the design organisation and the production organisation approval holder;

e) adequate configuration control of manufactured parts (to enable a production organisation to make a final determination and identification for conformity or airworthiness release); and

f) the proper support of the continued airworthiness of the civil aeronautical product.

7. Continuing Airworthiness – Obligations for Design and Production

7.1 General

The Participants will each fulfil the applicable continuing airworthiness obligations assigned to ICAO Contracting States under Annex 8 to the Convention on International Civil Aviation. The functions of the State of Design (SoD) / State of Design of Modification (SoDM), and where appropriate, State of Manufacture or State of Registry will be carried out by the appropriate Participant. These procedures are intended to facilitate the fulfilment of those obligations and for the timely resolution of in-service safety issues arising from time to time on civil aeronautical products in their respective jurisdictions.

7.2 Continuing Airworthiness Obligations

1) Under ICAO Annex 8, the State of Design (SoD) / State of Design of Modification (SoDM) is responsible for resolving in-service safety issues related to a civil aeronautical product's design or production. The Participants understand that the State of Design (SoD) / State of Design of Modification (SoDM) will provide applicable information, which it has found to be necessary for mandatory modifications, required limitations and/or inspections to the VA to ensure continued operational safety of the civil aeronautical product. The VA will review and normally accept corrective actions taken by the State of Design in the issuance of, or as part of, its own mandatory corrective actions.

2) The Participants understand that the State of Design (SoD) / State of Design of Modification (SoDM) will, upon request, assist in determining any actions considered necessary by the VA for the continued safety of civil aeronautical products operating under its jurisdiction. The VA decides the final action to be taken with respect to these civil aeronautical products.

7.3 Failure, Malfunction and Defect Reporting

1) The Participants will perform the following functions for those civil aeronautical products for which they are the State of Design (SoD) / State of Design of Modification (SoDM):

    a) tracking of reports on failures, malfunctions and defects, other service difficulty reports, and accident/incidents;
    b) evaluating failures, malfunctions and defects, and the results and/or conclusions drawn from accident or incident investigations;
    c) investigating and resolving unsafe conditions;
    d) advising the other Participant of known unsafe conditions and necessary corrective actions (see 7.4);

e) providing the other Participant, upon request, with the following:

   a. Reports of failures, malfunctions and defects;
   b. status of investigations into failures, malfunctions and defects and accidents/incidents
   c. copies of final reports reached in its investigation into failures, malfunctions and defects, if available; and
   d. making reasonable efforts to resolve issues raised by the VA concerning matters of safety for civil aeronautical products operated or used in its jurisdiction.

Note:
For the CAAS, this information is provided through the CAAS Safety Reporting system, which can be accessed at : https://www.caas.gov.sg/operations-safety/safety-reporting

For the CAA, much of this information is provided through the Airworthiness Directive publishing tool, which can be accessed at: https://www.caa.co.uk/Commercial-industry/Aircraft/Airworthiness/Continuing-airworthiness/Airworthiness-Directives/

For the CAA, obligations to report actual or potential defects or malfunctions are contained within the occurrence reporting regulations.

2) The Participants, when acting as the VA, will perform the following functions:

   a) beyond the normal reporting requirements of ICAO Annex 8 4.2.3 (f) for the State of Registry, provide upon request to the CA information on failures, malfunctions, defects and occurrences relating to civil aeronautical products for which the Exporting Participant is the State of Design (SoD) / State of Design of Modification (SoDM);
   b) support the CA in investigations of unsafe conditions and their occurrences on the imported aircraft; and
   c) advise the CA, if as a result of investigations made by the VA into failures, malfunctions and defects and accidents/incidents, it has determined that it will implement its own mandatory corrective action(s).

3) The Participants understand that failure, malfunction and defect reports will be transmitted in the manner required by the State of Design (SoD) / State of Design of Modification (SoDM), as follows:

   a) for the CAAS, to the DOA/POA holders, which will forward the failures, malfunctions and defects reports to the CAAS point of contact; and

   b) for the CAA, directly to the TC or STC holders, who then oversee reporting to the UK CAAPCM as per the applicable UK CAA procedures.

7.4 Unsafe Conditions and Mandatory Continuing Airworthiness Information

1) The Participants will perform the following activities for the civil aeronautical products for which they function as the State of Design (SoD) / State of Design of Modification (SoDM):

   a) issue mandatory continuing airworthiness information (such as an airworthiness directive) whenever the Participant determines that an unsafe condition exists in a civil aeronautical product, or is likely to exist or develop in a product of the same type design. This may include a civil aeronautical product that has another product installed on it and the installation causes the unsafe condition. The contents of such a mandatory continuing airworthiness information are expected to include, but are not limited to, the following:

      (i) make, model, and serial numbers of affected civil aeronautical products;
      (ii) description of the unsafe condition, reasons for the mandatory action, and its impact on the overall aircraft and continued operation;
      (iii) description of the cause of the unsafe condition (e.g. stress corrosion, fatigue, design problem, quality control, suspected unapproved part);
      (iv) the means by which the unsafe condition was detected and, if resulting from in-service experience, the number of occurrences may be provided; and
      (v) corrective actions and corresponding compliance times, with a list of the relevant manufacturer's service information including reference number, revision number and date.

   b) issue a revised or superseding mandatory continuing airworthiness information whenever the CA finds any previously issued mandatory continuing airworthiness information was incomplete or inadequate to fully correct the unsafe condition;

   c) notify the VA of the unsafe condition and the necessary corrective actions by transmitting by e-mail or other mutually accepted means a copy of the mandatory continuing airworthiness information at the time of publication;

   Note: The Participants are encouraged to provide an advance copy of the mandatory continuing airworthiness information to each other.

   d) notify the VA of any emergency airworthiness information;

   e) assist the VA in defining the appropriate actions to take in the issuance of its own mandatory continuing airworthiness information; and

   f) provide the VA with a summary index list of mandatory continuing airworthiness information issued by the State of Design (SoD) / State of Design of Modification (SoDM) for civil aeronautical products operated or used by the VA.

2) The Participants understand that they may differ as to the finding of an unsafe condition. If such a difference arises, the VA will normally consult with the CA prior to issuing its own airworthiness directive. The CA will work with the TC holder to provide sufficient information, e.g. service bulletins, to the VA in a timely manner for its use in issuing this unilateral airworthiness directive.

3) The Participants understand that the VA may issue its own mandatory continuing airworthiness information to address all unsafe conditions on affected products that have been certified, approved or otherwise accepted by the VA. The VA will respond quickly when the CA issues a mandatory continuing airworthiness information.

8. Export Airworthiness Approval

8.1 General

1) This section addresses the procedures by which a civil aeronautical product being exported from the UK to Singapore or Singapore to the UK will be accepted. That acceptance is based on of an export airworthiness approval issued by the Exporting Participant. The Importing Participant will recognise and accept the export airworthiness approval of the Exporting Participant when issued in accordance with this Technical Arrangement.

2) The Participants understand that for civil aeronautical products exported from the UK or Singapore, the following export airworthiness approvals are recognised and accepted when issued by an authorised natural or legal person in a form and manner they have jointly prescribed, as follows:

    a) for complete aircraft only, an Export Airworthiness Certificate (for the CAAS) or an Export Certificate of Airworthiness (for the CAA); and
    b) for aircraft engines, propellers, articles, and parts other than Standard Parts, an Authorised Release Certificate.

8.2 Certification for Export of New Aircraft

1) The Exporting Participant will certify that a new aircraft being exported to the UK or Singapore:

    a) conforms to the type design approved by the Importing Participant, as specified in the Importing Participant's type certificate data sheet and any additional STCs approved by the Importing Participant;
    b) is in a condition for safe operation; and
    c) complies with the applicable airworthiness directives and additional import requirements of the Importing Participant, where notified.

2) The Exporting Participant will provide a statement or declaration on either the Export Airworthiness Certificate or the Export Certificate of Airworthiness of its certification in respect of sub-paragraph (1) immediately above and will include the identification of any exception from the identified approved type design of the Importing Participant. The exception from the identified type design will be coordinated in accordance with sub-paragraph (3) below.

3) The Exporting Participant will also provide information on the acoustical configuration of the new aircraft and its noise and emission characteristics necessary for the Importing Participant to establish compliance with its environmental requirements and to complete the certificate of noise compliance or equivalent record.

8.3 Export of New Aircraft Engine, Propeller, Article, and Part other than a Standard Part

1) A new aircraft engine, propeller, article, and any part other than a Standard Part being exported to the UK or Singapore will need to demonstrate that it:

   a) conforms to the applicable approved design data;
   b) is in a condition for safe operation; and
   c) complies with the applicable airworthiness directives and additional import requirements of the Importing Participant, where notified.

2) The Participants understand that the approved manufacturer of a new aircraft engine, propeller, article, and part other than a Standard Part being exported will provide a statement or declaration on the Authorised Release Certificate of its certification in respect of (1) above, including the identification of any exception from the identified approved type design of the Importing Participant.

8.4 Export of Used Aircraft

1) A used aircraft under the jurisdiction of the UK or Singapore is eligible for export to the other only where the used aircraft, regardless of State of Design (SoD), has a design approval granted by the Importing Participant.

2) The Exporting Participant will certify that a used aircraft eligible under (1) above being exported to the UK or Singapore:

   a) conforms to the type design approved by the Importing Participant, as specified in the Importing Participant's type certificate data sheet and any additional STCs approved by the Importing Participant;
   b) is in a condition for safe operation; and
   c) is properly maintained using approved procedures and methods (evidenced by logbooks and maintenance records); and
   d) complies with the applicable airworthiness directives and additional import requirements of the Importing Participant, where notified.

3) The Exporting Participant will also provide information on the acoustical configuration of the used aircraft and its noise and emission characteristics necessary for the Importing Participant to establish compliance with its environmental requirements and to complete the certificate of noise compliance or equivalent record.

4) The Exporting Participant will provide a statement or declaration on the Export Airworthiness Certificate or Export Certificate of Airworthiness of its certification in respect of sub-paragraph (3) above, including the identification of any or all exceptions from the identified approved type design of the Importing Participant. The exception from the identified type design will be coordinated in accordance with 8.5 below.

5) In the case of (2)(c) above, the Importing Participant may request inspection and maintenance records, which include but are not limited to:

   a) the original or certified true copy of the Export Airworthiness Certificate or Export Certificate of Airworthiness, issued by the Exporting Participant;
   b) records, which verify that all overhauls, major design changes, and major repair designs were accomplished in accordance with data approved in accordance with Section 2 of this Technical Arrangement;
   c) maintenance records and logbook entries which substantiate that the used aircraft is properly maintained by fulfilling the requirements of an approved maintenance program by an authorised person or Organisation; and
   d) where major design changes or STCs are embodied in a used aircraft, all necessary data for subsequent maintenance are expected to be provided, such as the data describing the installation, the materials and parts used, wiring diagrams for installation on avionic and electrical systems, drawings or floor plans for installations in the cabin, fuel or hydraulic systems, structural changes.

6) In the case where the UK or Singapore is the State of Design (SoD) of the used aircraft, and such aircraft is being imported from a third country, the Participants will, upon request, assist each other in obtaining information regarding the configuration of the aircraft at the time it left the manufacturer. In addition, they will provide assistance in obtaining information regarding subsequent installations on the used aircraft that have been approved by the State of Design (SoD).

8.5 Coordination of Exceptions on Export Airworthiness Certificate or Export Certificate of Airworthiness

1) Where the Exporting Participant identifies a non-compliance to the approved type design of the Importing Participant and intends to identify these as exceptions to its export certification, the Exporting Participant will, prior to issuing its Export Airworthiness Certificate or Export Certificate of Airworthiness, notify the Importing Participant of such non-compliance. This notification by the Exporting Participant is expected to help resolve all issues concerning the aircraft's eligibility for an airworthiness certificate.

2) In all cases, the Importing Participant will provide a written confirmation of its acceptance of the non-compliance notified under (1) before the Exporting Participant issues its Export Certificate of Airworthiness.

8.6 Identification and Marking Requirements

The Participants jointly accept each other's identification and marking of civil aeronautical products as being compliant with their own regulatory requirements, when such identification and marking are accomplished in accordance with the regulations of the Exporting Participant.

8.7 Additional Requirements for Import

An Importing Participant may have additional requirements, which are to be complied with as a condition of acceptance of the civil aeronautical product being imported. The following are required, but this may not be an exhaustive list:

a) Instructions for continued airworthiness (ICA) and maintenance manuals having airworthiness limitation sections are required to be provided by the TC or STC holder, as applicable.
b) An approved Aircraft Flight Manual, including all applicable supplements, to accompany each aircraft.
c) Appropriate operating placards and markings, a current weight and balance report and a list of installed equipment.
d) Logbooks and maintenance records, to accompany each aircraft (including the aircraft engine, propeller, rotor, or article).

9. Technical assistance

9.1 General

1) A Participant may request assistance from the other when significant activities are conducted in either the UK or Singapore. The request will be subject to mutual consent and resource availability of the assisting Participant.

2) The Participants are expected to make every effort to have these certification and validation tasks performed locally on each other's behalf. Technical assistance activities will help with regulatory surveillance and oversight functions at locations outside of the requestor's territory. These supporting technical assistance activities will in no way relieve the requestor's roles for regulatory control and environmental and airworthiness certification of civil aeronautical products manufactured at facilities located outside of the requestor's territory.

3) The Participants will use their own policies and procedures when providing such technical assistance to the other, unless it is understood that other technical arrangements take precedence. Types of assistance may include, but are not limited to, the following:

    a) Certification and Validation Support; or
    b) Conformity and Monitoring Support; or
    c) Airworthiness Certification Support.

9.2 Witnessing of Tests during Design Approval

1) A Participant may request assistance from the other for the witnessing of tests that are performed in the other's jurisdiction.

2) Only requests between Participants are permissible and the Participants will not respond to a test-witnessing request made directly from the manufacturer or supplier. Witnessing of tests will be conducted only after consultations between the Participants on the specific work to be performed and consent has been obtained from the other Participant. The Participants, as appropriate for the country in which the design approval applicant is located, will make the written request for witnessing of tests.

3) Unless otherwise delegated, the Participants remain in charge of the approval of the applicant's test plans, test procedures, test specimens, and hardware configuration, as appropriate for the country in which the design approval applicant is located. The applicant will oversee establishing the conformity of each test article prior to the conduct of the test.

4) Test witnessing activities may require the development of a technical arrangement based on the complexity and frequency of the requested certifications. At the discretion of the Participants in receipt of such requests, these activities may be delegated to authorised persons or approved organisations.

5) When there is no technical arrangement, requests for witnessing of individual tests will be required to be specific enough to provide for identification of the location, timing, and nature of the test to be witnessed. An approved test plan will be required to be provided by a Participant, as appropriate, at least two weeks prior to each scheduled test.

6) A Participant's request for conformity of the test set-up and/or witnessing of tests will be sent electronically to the other.

7) Upon completion of test witnessing, the Participants will send a report stating that the test was conducted in accordance with approved test plans, including the identification of any variations from those test plans, and confirming the test results, as well as any other documentation as notified in the request.

9.3 Compliance Determinations

1) A Participant may request that specific compliance determinations be made, which are associated with the witnessing of tests or other activities. Such statements of compliance will be made to the airworthiness or environmental standards of the requesting Participant.

2) The Participants' statement of conformity will be sent in a formal letter, transmitted electronically, to the requesting UK CAA or CAAS office.

9.4 Conformity Certifications during Design Approval

1) A Participant, depending upon the country in which a supplier is located, may request prototype part conformity certifications from the other as appropriate.

2) Only requests from a Participant are permissible and the Participants will not respond to a conformity certification request made directly by the manufacturer or supplier. Conformity certifications will be conducted only after consultations and a joint decision to perform the work have taken place. Requests for conformity certifications are expected to be limited to test specimens or prototype parts that are of such complexity that they cannot be inspected by the manufacturer or its regulatory authority prior to installation in the final civil aeronautical product. Conformity certifications may require the development of a technical arrangement based on the complexity of the requested certifications. Conformity certifications may be delegated to authorised delegates or approved organisations.

3) Upon completion of each conformity certification conducted on each other's behalf, the Participants will complete and return all documentation as notified. The Participants, depending upon the country in which the supplier is located, will note all deviations from the requirements notified by them on the conformity certification for the particular part. Any non-conformity described as a deviation is expected to be brought to the attention of the Participants for evaluation. The Participants expect to receive a report about each deviation before the appropriate CAAS or UK CAA form is issued.

9.5 Airworthiness Determination

Neither conformity certification on prototype parts as per paragraph 9.4 above, nor inspections on production parts (per paragraph 7.1) are expected to be construed as being an export airworthiness approval, since a conformity certification does not constitute a determination of airworthiness. Airworthiness determinations remain the responsibility of the design holder and/or manufacturer and the exporting authority.

9.6 Request for Information

Each Participant may request the disclosure or review of any data concerning any organisation participating in this arrangement from the other Participant from time to time. Disclosure of information is subject to applicable statutory or other requirements relating to privacy or confidentiality, or both.

9.7 Investigation and Enforcement

1) The Participants have decided, subject to applicable laws and regulations, to provide mutual co-operation and assistance in any investigation or enforcement proceedings of any alleged or suspected violation of any laws or regulations under the scope of this Technical Arrangement. In addition, each Participant will notify the other promptly of any investigations when mutual interests are involved.

2) The Participants retain the right to take enforcement action within their jurisdiction. However, in some cases, a Participant may choose to review a remedial action taken by the other Participant. The enforcement consultation process under this Technical Arrangement will be subject to a regular joint review.

3) Where it is not otherwise inappropriate to do so, the Participants may jointly investigate any serious airworthiness issues, including major defects and related incidents and accidents for matters within the scope of this Technical Arrangement, by mutual consent, and with reasonable prior notice.

10. Signature and coming into operation date

This Technical Arrangement will become effective on 19th February 2024.

This Technical Arrangement may be amended by the Participants upon their mutual consent; and

Administrative and editorial changes may be made by the contact points after mutual consultation.

Either Participant may terminate this Technical Arrangement by giving sixty days written notice to the other Participant. Termination will not affect the validity of activities conducted under these procedures prior to termination.

Signed by	Signed by
HAN KOK JUAN Director-General of Civil Aviation for and on behalf of the Civil Aviation Authority of Singapore	TENDAI MUTAMBIRWA Director of Safety and Airspace Regulation Group (interim) for and on behalf of the Civil Aviation Authority of the United Kingdom of Great Britain and Northern Ireland

Signed in duplicate in Singapore on this 19th day of February 2024.

Appendix A — Contact Points for Coordination of Amendments

The designated contact point offices for coordination of amendments to this Technical Arrangement are:

For the CAAS:

Airworthiness Certification
Flight Standards Division
Civil Aviation Authority of Singapore
Room 047-029, 4th Storey Terminal 2
Singapore Changi Airport
Singapore 819643
Fax: (65) 6545 6519

www.sgdi.gov.sg/ministries/mot/statutory-boards/caas/departments/srg/departments/fs/departments/ac

For the UK CAA:

Bilateral Aviation Safety Agreements Team
Aviation House
Beehive Ring Road
Crawley, West Sussex
RH6 0YR
United Kingdom

BilateralSafetyArrangements@caa.co.uk

Appendix B — Validation Procedures

1. General Principles

1.1. General Principles – Level of Involvement

1) The purpose of this Technical Arrangement is to provide a route by which a design or design change which has been determined as compliant by one Participant may be approved by the other without the need for a detailed, exclusive and in-depth re-examination of the airworthiness of the design.

2) Where it has been determined that the design will be automatically accepted by the VA, there should be no need to issue any documentation.

3) The Participants understand that the main objective of this Appendix is to enable them, when acting as the VA, to satisfy their respective import requirements by placing greater reliance on the approval or findings of compliance by the CA. To achieve this objective and without prejudice to their own obligations under their respective regulations and policies, the Participants will:

   a) work to eliminate redundant reviews of reports, duplication of inspections, tests and test demonstrations, evaluations and approvals; and

   b) directly accept or give full credit to enable maximum acceptance of the compliance determinations made by the other.

2. Safety Elements

2.1. Safety Elements review

1) The VA will establish the scope of its technical review based upon the applicability of the Safety Elements provided below. The VA will rely, to the maximum extent possible, on the CA to make compliance determinations on its behalf.

2) If one or more of the following Safety Elements is applicable, the VA will conduct a Technical Validation:

   a) novel technology or features or a novel application of existing technology;

   b) new Means of Compliance (MOCs), or novel application of existing MOCs;

   c) significant standards differences;

d) sensitive issues usually associated with an accident or incident on a civil aeronautical product with similar design features;

e) unconventional use of a civil aeronautical product, for which it was not originally designed;

f) significant major change in aircraft type;

g) application of certification review items or issue papers (this includes for example, Special Conditions, bespoke MOCs, deviations, exemptions or Equivalent Safety Finding/ Equivalent Level of Safety (ESF/ELOS)); or

h) acoustical or emissions changes.

3. Application Processes

All validation processes require an application to the VA and issuance of a VA design approval. However, the intermediate steps between application and VA approval vary depending on which process (Streamlined or Technical Validation) is applied. Early coordination with the Participants is encouraged to facilitate development of scope and timeline of validation projects.

3.1. Application

1) Upon receipt of an application for validation from an applicant, the CA will send it to the VA after the CA has verified that:

   a) the civil aeronautical product, design change or repair design is within the scope of Section 3 or 4 of this Technical Arrangement, and

   b) is not eligible for acceptance.

2) All applications must be submitted by the CA, who will ensure that the package (named the “Data Package”) contains the following information, as applicable:

   a) Cover letter from the CA identifying the following:
      i. applicant requested timeline;
      ii. if it is a Streamlined or Technical validation; and
      iii. a description of the criteria that led to the Streamlined or Technical Validation categorisation.

   b) Completed VA application form

c) Issue papers or Certification Review Items (CRIs) raised during the CA's certification activities related to the Safety Elements (paragraph 2 of Appendix B);

3) Acknowledgement of Application: The VA will notify the CA of the subsequent procedures for the validation and its proposed certification basis. Upon payment of any applicable fees, the VA will begin working on the project.

4) If proposing a joint certification/validation project, the CA will contact the relevant contact using the details outlined in Appendix A above.

4. Technical Validation Process – Supplemental Type Certificate

The Participants understand that the VA will use the following procedures for its approval of a design change to a civil aeronautical product that is type certified, or has been previously validated, in both the UK and Singapore. The Participants will use this procedure as a guide and may decide to vary it depending on project complexity and applicant/CA capability.

4.1 Application for a validation of a Supplemental Type Certificate

1) An application for a validation of an STC may be submitted for a civil aeronautical product:

   a) that has been issued a TC by a Participant regardless of the State of Design (SoD) / State of Design of Modification (SoDM) of the product;

   b) for which one of the Participants is the State of Design (SoD) / State of Design of Modification (SoDM) for the design change; and

   c) for which one of the Participants has approved the design change through the issuance of its own STC.

2) Prior to communication with the VA, the CA will ensure that each application contains the following information (this is known as the Data Package):

   a) the data required and a description of the design change, in accordance with Part 21.A.113(a) and (b) for the UK CAA and SAR 21.305 for the CAAS, including information outlining a link to the TC holder or adequacy of the applicant's own resources;

   b) a copy of the CA's STC that identifies the certification basis upon which the design approval was based. In the absence of the STC, the CA should submit the document that defines the certification basis;

c) the date of application for an STC to the CA;

d) the applicant's requested date for completion of the STC;

e) the applicant's proposed certification basis, which includes the amendment level of the applicable airworthiness and environmental requirements;

f) any other technical data requested by the VA in order to proceed with the application, including but not limited to the following:

i. Compliance Checklist;
ii. Aeroplane/Rotorcraft Flight Manual Supplement;
iii. Master Documentation List/Master Drawing List;
iv. Manufacturing and Installation Instruction Drawings;
v. Weight and Balance data; and
vi. Instructions for Continued Airworthiness.

The Participants and the applicant may accept that additional technical data be submitted directly by the applicant to the VA.

3) If known at the time of application, the CA will ensure that an application contains the following:

a) a description of all novel or unusual design features known to the applicant or the CA, which might necessitate issuance of Special Conditions or may require a review of the acceptable means of compliance;

b) all known or expected exemptions or deviations, or equivalent level of safety findings relative to the CA's standards for design approval that might affect compliance with the applicable VA's airworthiness and environmental standards; and

c) available information on Singapore or United Kingdom based customers and delivery schedules.

4) An application may only be submitted electronically by the CA to the VA using the details listed in paragraph 4.1 (2) above.

4.2 Review of Initial Documentation

The VA's appointed Project Certification Manager (PCM) will review the application package outlined in paragraph 4.1 (2) above for completeness and consult with the CA and applicant for additional information as necessary.

4.3 Establishing the Certification Basis for the Supplemental Type Certificate

1) For the purpose of supplemental type certification by the VA, the certification basis will be developed:

   a) using the VA's procedures and its applicable requirements as determined in a manner that is consistent with the criteria that is used to establish the certification basis for a domestic STC of similar design and service history. These requirements are defined for the UK CAA in Part 21.A.101 and for the CAAS in SAR-21.315;

   b) using the date of application to the CA for the STC, as the date that is to be used for the purpose of determining the VA's certification basis;

   c) using, in the case of a design change involving an acoustical or emissions change, the applicable environmental requirements of the VA in effect on the date of application to the CA for the STC.

2) The VA may elect to include Special Conditions in the certification basis based on its knowledge of new technologies and any unique or unconventional features or intended unconventional usage of the civil aeronautical product as presented by the applicant. The certification basis may need to be changed during the validation process as the VA's knowledge of the design increases.

4.4 Operational Suitability Data (OSD)

1) The Participants acknowledge that, according to the UK regulatory framework, OSD is a component of the UK type certification and it is recorded as part of the certification basis within the Type Certificate Data Sheet (TCDS). Design changes can also impact the approved OSD. The Participants further acknowledge that the CAAS does not utilise OSD and instead uses Instruction for Continued Airworthiness (ICA). The UK CAA and the CAAS therefore accept that the relevant components of OSD, if applicable, will be provided directly to the UK CAA for approval, without CAAS involvement.

2) UK Part 21 identifies the OSD as consisting of the following:

   a) the minimum syllabus of pilot type rating training, including determination of type rating;

   b) the definition of scope of the aircraft validation source data to support the objective qualification of simulator(s) associated to the pilot type rating training, or provisional data to support their interim qualification;

   c) the minimum syllabus of maintenance certifying staff type rating training, including determination of type rating;

d) determination of type or variant for cabin crew and type specific data for cabin crew;

e) the master minimum equipment list; and

f) other type-related operational suitability elements.

4.5 Technical Familiarisation

1) An STC validation requires that the VA familiarise itself with the civil aeronautical product in detail, the applicant, and the certification activity of the CA.

2) A technical familiarisation session will be held when requested by the VA. It may include a briefing (remote or in-person) to obtain initial detailed information regarding the characteristics of the design, the certification conducted or proposed, and the certification basis by the CA. It will be used to:

   a) determine whether an on-site review will be required (i.e. the applicant's site will be visited);

   b) the depth of VA technical familiarisation within each applicable Safety Element is guided by paragraph 2 of Appendix B.

   c) VA review of compliance determinations, including review of any compliance documents, must be identified in the Work Plan along with the associated justification, and approved by VA management.

   d) if the VA, upon completion of its review of a compliance document(s), finds the document(s) acceptable, the VA will provide a written statement to the CA verifying that the document(s) is acceptable for demonstration of compliance to the VA certification basis.

   e) provide an opportunity for the VA's aircraft certification personnel to brief the applicant and the CA about the VA's airworthiness and environmental requirements applicable to the given civil aeronautical product, its certification and validation procedures and policies.

3) The PCM of the VA, in consultation with the CA, will draw up an agenda for the familiarisation meeting, and coordinate the necessary arrangements for conducting the familiarisation meeting.

4.6 Establish a Validation Work Plan

1) Following the completion of the technical familiarisation, the PCM of the VA will prepare a plan that outlines what the validation will consist of. A validation work plan will, as a minimum:

    a) identify who the accountable technical specialists of the VA, CA and the applicant are;
    b) identify the validation schedule or milestones;
    c) identify areas for VA general and/or technical familiarisation including the identification of any unique features of the product;
    d) for in-service products, identify any applicable Airworthiness Directives and service history;
    e) identify the CA's certification basis (airworthiness and environmental requirements as applicable);
    f) identify the VA's proposed certification basis;
    g) identify any Special Conditions, issued or proposed, and understand the means of compliance;
    h) identify any findings of Equivalent Level of Safety, issued or proposed, and determine acceptability;
    i) identify any Exemptions or Deviations, issued or proposed, and determine acceptability;
    j) with reference to the applicable Safety Elements, identify areas for Technical Validation;
    k) identify areas the VA wishes to retain compliance determination and those that may be delegated to the CA;
    l) outline the manner or method by which the VA will conduct its validation. These may include ground or flight testing/witnessing, environmental testing and data review;
    m) request the Flight Manual for acceptability;
    n) request Instructions for Continued Airworthiness including the Structural Repair Manual as applicable;
    o) request information on any Airworthiness Limitations; and
    p) request the OSD, as applicable.

2) An initial validation work plan will be provided to the PCM of the CA, who in turn will coordinate with the applicant to undertake requested activities or provide the requested information. The validation work plan may be revised at any time.

4.7 Environmental Testing and Approval

1) The VA will review compliance demonstration plans and reports necessary to make a determination of compliance with its environmental requirements, giving due consideration to any compliance determination that the CA has already made, or is

able to make, on its behalf. The VA may delegate to the CA any or all of its functions related to environmental testing and approval, subject to mutual decision.

2) In the absence of any delegation of its functions related to environmental testing and approval to the CA, the VA may:

   a) review and approve environmental certification compliance demonstration plans for noise, fuel venting and exhaust emissions;
   b) evaluate the measurement and analysis methods and practices, and data correction procedures of the applicant for aircraft noise and emission certification;
   c) review and approve any equivalent procedures to be used by the applicant during testing, data processing, data reduction, and data analysis;
   d) verify the conformity of the test article;
   e) witness the compliance demonstration test; and
   f) review and approve compliance demonstration reports.

4.8 Review of CA and applicant documentation and visits

1) In accordance with the Validation Plan, the VA's technical specialists will review the technical documentation supplied by the applicant, and communicate, as necessary, with their counterpart specialists from the CA and the applicant through its PCM.

2) Items of concern or requiring further clarification on the applicant's substantiation or the conduct of the certification activity by the CA will be documented and notified by the VA to the CA through the PCM.

3) The PCMs of the Participants will coordinate the resolution of these items to the satisfaction of the VA, and document the decision reached between them. Differences on technical issues are expected to be resolved at the technical level as much as possible, but are expected to be raised promptly to the Participants' management on a progressive level to avoid potential delays in the validation schedule.

4) When the PCM of the VA finds that significant technical or documentation concerns persist and resolution is not possible, the PCM may consider amending the validation plan to include, for example, an on-site review of the specific area of concern. A revision to the validation plan to include an on-site review of the specific area of concern will be required to be coordinated with the CA.

5) In any case, during a review of the documentation, it may become apparent that a visit to the applicant's facility by a team of technical specialists from the VA is required. The aim should be for the VA to conduct its activities during a single comprehensive visit.

6) The PCM of the VA will coordinate any visits with the applicant and the CA, and relay team composition, the schedules and specific goals. The counterpart specialists from both the CA and the applicant will be made available to the visiting validation team for

the duration of the visit(s). Visits should take place as early as possible in the validation schedule in order to permit timely design changes.

7) Items of concern or requiring further clarification on the applicant's substantiation or the conduct of the certification activity by the CA will be documented and notified by the VA to the CA through the PCM. A formal debrief should take place at the conclusion of any visit or if not possible, findings or observations should be communicated to the applicant and the CA shortly thereafter. The PCMs of the Participants will coordinate the resolution of any outstanding findings or observations to the satisfaction of the VA and document the decision reached.

4.9 Concluding the Validation

1) The VA will notify the CA upon completion of its validation exercise and indicate its readiness to issue a corresponding approval of the design change. The VA will then issue its corresponding approval for the STC in accordance with this Technical Arrangement.

2) The PCMs of both CA and VA, including the applicant, may meet after the conclusion of the validation if there are areas of further discussion or if sharing of information would be beneficial.

4.10 Major Design Changes to an STC (including revisions to Approved Manuals) by the design approval holder

1) Design changes will be classified by the STC holder as either Major or Minor in accordance with the criteria and procedures of the CA and these classifications will be accepted by the VA without further investigation.

2) Design changes that are classified as major will require an applicant to follow the Streamlined Validation process outlined in paragraph 5 of Appendix B. In most instances, the VA will issue the corresponding amended STC. Further discussions may be required between the VA and the CA to determine if a Technical Validation is a more appropriate process to validate the major design changes for the approved STC.

3) Design changes classified as minor are automatically accepted for STCs that have been validated by the relevant Participant.

4.11 Issuance of the Supplemental Type Certificate

The VA will issue an STC for a civil aeronautical product when:

a) the applicant has demonstrated and declared compliance to the VA's certification basis;
b) the CA has issued a statement of compliance to the VA's certification basis;

c) the CA has issued its own STC for the product; and
d) the VA has completed its validation procedures for an STC outlined above.

4.12 Supplemental Type Certificate for Special-Purpose Operations

The Participants understand that when an STC intended for an aircraft to be reconfigured for use in a special-purpose operation, and the proposed configuration is not eligible for a standard Certificate of Airworthiness, the VA may validate such a design change on a case-by-case basis. In such a case, the Participants will decide on a procedure.

5. Streamlined Validation Process – Supplemental Type Certificates

The Streamlined Validation process is an administrative action conducted by the VA to issue its design approval based on the corresponding CA approval.

5.1. Streamlined Validation Process

1) The applicant will apply through their CA for a validation of their design by the VA. In that application it will include a Data Package to be reviewed by the VA.

2) The VA will acknowledge the application and if the VA is satisfied that the data package contains complete information so as to ensure that the purpose of the technical familiarisation is fulfilled, it may issue its own approval without further involvement.

3) If the data package is incomplete or the VA needs a more thorough understanding of the design, then it may request that the applicant present suitable and satisfactory information to the VA in order for it to fully understand the design. This presentation may take the form of meetings or submitted documentation. A meeting may be required between the VA and the CA, if further consideration of whether a Technical Validation is a more appropriate process for the applicant's design.

4) In most instances and immediately after the steps outlined in sub-paragraphs 2) and 3) above are complete, the VA will issue the corresponding design approval or letter of acceptance, as appropriate.

6. Major Repair Designs

6.1. Validation of Major Repair Design Approvals

1) The CA will submit a repair design approval application of a major repair design on behalf of the applicant to the VA. The application will be made in the manner prescribed on the VA's website.

2) In cases where the applicant has entered into an arrangement with the TC or STC holder, the CA will confirm this to the VA. The repair design approval may be issued based on this confirmation without further technical review through the Streamlined Validation process in paragraph 5 of Appendix B.

3) In cases where the applicant has not entered into an arrangement with the TC or STC holder, the application will go through a Streamlined Validation process outlined in paragraph 5 of Appendix B. If one or more of the Safety Elements in paragraph 2 of Appendix B is found to be applicable during the data package review, the VA will validate this application using the Technical Validation process outlined in paragraph 4 of Appendix B.

4) If the application must go through a Technical Validation process, the data package will contain, but not limited to the following:

    a) drawings, specifications and other data necessary to define the configuration and design features of the repair;
    b) a compliance summary that identifies the applicable airworthiness standards, methods of compliance, and compliance results;
    c) substantiation for continued applicability of existing ICAs, or supplemental ICAs, if any;
    d) in the case of applications from the UK, the applicant's justification, and CAA's concurrence, that an arrangement is not necessary as the information on which the application is based is adequate from the applicant's own resources; and
    e) a copy of the repair design issued by the CAA.

5) The VA will issue a repair design approval based on the declaration from the CA that the applicant has met the VA's requirements.

7. Operational and maintenance considerations

7.1 Evaluation of Operational and Maintenance Aspects

1) The Participants will evaluate the operational and maintenance aspects of the TC, STC, and repair design using their own internal procedures, or using a common procedure that provides for a single assessment acceptable to both Participants.

2) Acceptance or validation, as appropriate, of ICA, will be determined by the VA. The CA will review the ICA unless the VA indicates otherwise. Changes to ICA which have not been approved by the CA will be validated by the VA using the Technical Validation procedures above.

8. Manuals approval

8.1 Initial Approval of Manuals

The Participants understand that the CA will submit to the VA for review and acceptance all Approved Manuals as part of the validation procedures outlined in this Appendix.

8.2 Changes to Approved Manuals

Changes to Approved manuals are accepted without further showing by both Participants where the relevant design has been validated by one or the other.

8.3 Authorisation to Approve

The authorisation of a Participant to sign on behalf of the other will be required to be documented clearly between the appropriate persons or offices in charge of the Approved Manuals.

Appendix C — Acronym List

ANR	Air Navigation Regulation
ARC	Authorised Release Certificates
CA	Certifying Authority
CAAS	Civil Aviation Authority of Singapore
CRIs	Certification Review Items
DOA	Design Organisation Approval
EASA	European Union Aviation Safety Agency
ELOS	Equivalent Level of Safety
ESF	Equivalent Safety Finding
EU	European Union
ICA	Instructions for Continued Airworthiness
ICAO	International Civil Aviation Organisation
IPC	Illustrated Parts Catalogue
MOCs	Means of Compliance
OSD	Operational Suitability Data
PCM	Project Certification Manager
POA	Production Organisation Approval
SAR	Singapore Airworthiness Requirements
SoD	State of Design
SoDM	State of Design of Modification
STC	Supplemental Type Certificate
STSO	Singapore Technical Standard Order
STSOA	Technical Standard Order Authorisation
TC	Type Certificate
TCDS	Type Certificate Data Sheets
UK CAA	Civil Aviation Authority of the UK
UK	United Kingdom of Great Britain and Northern Ireland
UKTSO	Technical Standard Order
UKTSOA	United Kingdom Technical Standard Order Authorisation
VA	Validating Authority

Appendix D — UK (CA) to Singapore (VA)

Type of approval	Acceptance	Streamlined Validation	Technical Validation	Remarks
Type Certificate (TC)			√	CAAS Letter of Acceptance of Type Certificate (LOATC) may be issued
Major design change to TC by Holder	√		√	A superseding CAAS LOATC may be issued for significant major design change
Minor design change to TC by Holder	√			
Supplemental Type Certificate (STC)		√	√	CAAS STC may be issued
Major design change to STC by Holder of STC		√		Require new CAAS STC application
Minor design change to STC by Holder of STC	√			
Minor design change to STC by Third Party	√			
UKTSOA	√			
Major design change to UKTSOA	√			
Minor design change to UKTSOA	√			
Major repair design to UKTSOA, with UK CAA Repair Design Approval issued.	√			
Minor repair design to UKTSOA	√			
Major repair design by TC/STC Holder		√		CAAS repair design approval may be issued
Minor repair design by TC/STC Holder	√			
Major repair design by Third Party		√		CAAS repair design approval may be issued
Minor repair design by Third Party	√			
Minor design change to repair design by holder of repair (TC/STC/Third Party)	√			
Major design change to repair design by holder of repair (TC/STC/Third Party)		√		CAAS repair design approval may be issued
Authorised Release Certificate UK CAA Form 1	√			For a part that was published in IPC or its design was approved/validated by CAAS

Appendix E — Singapore (CA) to UK (VA)

Type of approval	Acceptance	Streamlined Validation	Technical Validation	Remarks
Type Certificate (TC)	NA	NA	NA	Singapore does not issue TC
Supplemental Type Certificate (STC)		√	√	UK CAA STC may be issued
Major design change to STC by Holder of STC		√		Require new UK CAA STC application
Minor design change to STC by Holder of STC	√			
Minor design change to STC by Third Party	√			
Singapore Technical Standard Order (STSO) Design Approval	√			
Major design change to STSO	√			
Minor design change to STSO	√			
Major repair design to STSO, with CAAS Repair Design Approval issued.	√			
Minor repair design to STSO	√			
Major repair design by STC Holder		√		UK CAA repair design approval may be issued
Minor repair design by STC Holder	√			
Major repair design by Third Party		√		UK CAA repair design approval may be issued
Minor repair design by Third Party	√			
Minor design change to repair design by holder of repair (STC/Third Party)	√			
Major design change to repair design by holder of repair (STC/Third Party)		√		UK CAA repair design approval may be issued
Authorised Release Certificate CAAS(AW)95	√			For a part that was published in IPC or its design was approved/validated by CAA

Appendix F — Record of Revisions

Revision no.	Date	Details of Revision