TECHNICAL AIRWORTHINESS AUTHORITY ADVISORY		
(TAA ADVISORY)		
Title	Contract Requirements for Airworthiness-Related In-Service Support (ISS) Services	
TAA Advisory Number	2017-04e	
Effective Date	15 January 2021	
References	TAM Part 1, Chapter 4, Section 2	
OPI / Telephone	DTAES 4-5 / 819-939-4757	
RDIMS File	218D-1027-812-6 – VOL 1 AEPM RDIMS #1522132 (English) AEPM RDIMS #2060612 (français)	

1. Purpose

- 1.1 This Technical Airworthiness Authority Advisory provides guidance to Project Management Office (PMO) staff and Weapon System Management (WSM) staff on the development of airworthiness contract clauses and associated contract deliverable requirements for contracting in-service support (ISS) services for DND-registered aircraft.
- 1.2 Contracted in-service support services typically form a significant portion of the In-service Support (ISS) requirements that are a prerequisite for obtaining Technical Airworthiness Clearance (TAC) for a DND-registered fleet under the Department of National Defence (DND) and the Canadian Forces (CF) Technical Airworthiness Program. As such, this Technical Airworthiness Authority Advisory includes guidance on developing airworthiness contract clauses and associated contract deliverable requirements for in-service support services procured to meet the In-service Support (ISS) requirements for TAC. The aircraft acquisition portion of the contractual process required for a fleet to obtain TAC (Type Design and Aeronautical Product) is addressed in TAA Advisory 2017-01 (reference 3.2.g).

2. Applicability

2.1 This TAA Advisory is applicable to all DND organizations seeking to develop or amend contract clauses and associated contract deliverable requirements (i.e., Statements of Work (SOW), Performance Work Statements (PWS), Data Item Descriptions (DID)) for the procurement of services that may affect the airworthiness of a DND-registered/operated aircraft. Staff preparing contracting documentation for inservice support (ISS) services are to ensure the guidance contained in this advisory is reflected in all relevant contracting documents, such as the Request for Proposal (RFP) or equivalent.

3. Related Material

- 3.1 Definitions:
 - a. **Airworthiness Support Structure.** The interdependent system of organizations that form the Weapon System Support Network in order to ensure the continuing airworthiness of the aircraft type.
 - b. **Contract Technical Authority (TA).** The person designated in the contract as the representative of the Government in matters concerning the technical aspects of the work.

c. TAA-Acceptable Organizations:

i. <u>Acceptable Maintenance Organization (AMO)</u>. An AMO is an organization deemed acceptable by the TAA to conduct the maintenance, or repair and overhaul, of aeronautical products. An AMO may also be deemed acceptable to conduct air operator responsibilities, such as maintenance control, aircraft technical record management, flight line and aircraft dispatch control. The Airworthiness Process Manual (APM) in an AMO is usually referred to

as the Maintenance Process Manual (MPM). The senior airworthiness manager, or person responsible for the airworthiness-related activities, in an AMO is the person designated as Senior Maintenance Manager (SMM).

- ii. <u>Acceptable Technical Organization (ATO)</u>. An ATO is an organization that is deemed acceptable by the TAA to conduct life cycle materiel management of an approved aeronautical product type during the in-service phase. Such activities include management of aeronautical product design changes, maintenance program, publications, configuration, as well as airworthiness monitoring activities, to ensure the aeronautical product is maintained at an acceptable level of safety. The Type Certificate Holder (TCH) for an approved type design is normally approved as an ATO. However, a contracted ATO may also be approved to support a DND TCH in the performance of their TCH responsibilities. The APM in an ATO is usually referred to as the Engineering Process Manual (EPM). The senior airworthiness manager, or person responsible for the airworthiness-related activities, in an ATO is the person designated as Senior Design Engineer (SDE).
- iii. <u>Acceptable Design Organization (ADO)</u>. An ADO is an organization that is deemed acceptable by the TAA to develop, generate and certify the design of aeronautical products including subsequent design changes and repairs. ADO personnel may also be approved to make specific findings of compliance as part of a compliance program, or provide engineering support to aeronautical products. The APM in an ADO is usually referred to as the Engineering Process Manual (EPM). The senior airworthiness manager, or person responsible for the airworthiness-related activities, in an ADO is the person designated as SDE.
- iv. <u>Acceptable Manufacturing Organization (AMfgO)</u>. An AMfgO is an organization deemed acceptable by the TAA to manufacture aviation parts. The APM in an AMfgO is usually referred to as the Manufacturing Process Manual (MfgPM). The senior airworthiness manager, or person responsible for the airworthiness-related activities, in a TAA-AMfgO is the person designated as Senior Manufacturing Manager (SMfgM).
- v. <u>Acceptable Materiel Support Organization (AMSO)</u>. An AMSO is an organization deemed acceptable by the TAA to conduct materiel support of aeronautical products including supply and distribution of aviation parts. The APM in an AMSO is usually referred to as the Materiel Support Process Manual (MSPM). The senior airworthiness manager, or person responsible for the airworthiness-related activities, in a TAA-AMSO is the person designated as Senior Materiel Support Manager (SMSM). Note that AMOs are already approved to manage and supply approved parts for internal use, therefore AMOs are generally not issued a separate AMSO approval unless they are required to provide materiel support to external organizations, including DND.

- 1. The definitions provided in paragraph 3.1.c for TAA-Acceptable Organizations are based and expand on the language contained in the Technical Airworthiness Manual (TAM) (reference 3.2.d), Part 1, Chapter 4, Section 1, paragraph 1.4.1.3.5. They are not meant to repeat the TAM Glossary definitions, but rather provide additional details to better understand the context of each organization for the purposes of this advisory.
- 2. These definitions are focused on organizations deemed acceptable by way of TAA Accreditation.
- 3. Organizations deemed acceptable by way of TAA Recognition will have a different context, and will not be required to develop a complete APM. Rather, they will be required to develop a DND Airworthiness Supplement (DAS) document to cover any and all gaps between their existing regulatory approval and the DND/CF Airworthiness Program requirements. The senior airworthiness

manager within a recognized organization will normally be the person deemed responsible under the existing regulatory approval.

- d. **TAA Accreditation**. A process that permits or approves an organization to assign technical airworthiness authority to competent individuals who perform Airworthiness Management Roles and/or conduct Technical Airworthiness Functions within the organization. Accreditation is required for organizations that do not hold any existing approvals from other regulatory bodies. Organizations are deemed Accredited when they have demonstrated compliance with the applicable requirements of the TAM.
- e. **TAA Recognition**. A process by which the TAA recognizes organizations that hold approvals from other airworthiness regulatory bodies recognized by the TAA. This process involves TAA staff reviewing the organization's existing policies and processes for compliance with the DND/CF Airworthiness Program, and identifying airworthiness requirements not covered within the existing policy and processes that require supplementary details for application within DND. Organizations are deemed Recognized when they have demonstrated compliance with the applicable requirements of the TAM.

f. Transport Canada-Approved Organizations:

- i. <u>AMO</u>. A Transport Canada Civil Aviation (TCCA)-Approved Maintenance Organization (AMO) is enabled to perform maintenance in accordance with their TCCA type rating and does not perform maintenance control.
- ii. <u>DAO</u>. A TCCA Design Approval Organization (DAO) is approved to issue Supplemental Type Certificates (STC) and issue Repair Design Approvals (RDA) in accordance with the scope defined in their Design Approval Process Manual (DAPM). The DAO is usually attached to an AMO, or an Original Equipment Manufacturer (OEM), or it can be a "standalone" organization.
- iii. <u>AEO</u>. Similar to a TCCA DAO, the Approved Engineering Organization (AEO) can issue Supplemental Type Certificates (STC) and issue Repair Design Approvals (RDA) in accordance with their Engineering Process Manual (EPM), however an AEO must be attached to a civilian air operator.
- iv. <u>AOC</u>. A TCCA Air Operating Certificate (AOC) or "Air Operator" performs maintenance control in accordance with their Maintenance Control Manual (MCM), manages maintenance schedules, and has enabling policy for planning and conducting civilian operations of the aircraft under their control.
- g. **Weapon System**. Within the context of this advisory, the term "Weapon System" refers to the combination of all aircraft delivered for a given type with all related equipment, materials, and services necessary to sustain the required operational capability. In other words, the combination of all aircraft delivered and associated In-Service Support (ISS) products and services.
- 3.2 Regulatory References:
 - a. Aeronautics Act (R.S.C., 1985, c. A-2)
 - b. Canadian Aviation Regulations (SOR/96-433)
 - c. A-GA-005-000/AG-001 Department of National Defence/Canadian Forces (DND/CF) Airworthiness Program
 - d. C-05-005-001/AG-001 Technical Airworthiness Manual (TAM)
 - e. A-PP-005-000/AG-002 *Procurement Administration Manual* (PAM), Para 3.6.3 Request for Proposal
 - f. Standard Acquisition Clauses and Conditions (SACC) Manual, PSPC P26-2E
 - g. TAA Advisory 2017-01 Technical Airworthiness Clearance Acquisition Contract Requirements
 - h. TAA Advisory 2013-01 TAA Accreditation Process
 - i. TAA Advisory 2016-04 *Recognition of Airworthiness Authorities*
 - j. TAA Advisory 2007-01 Electronic Record Keeping Systems and Electronic Signature Requirements

4. Discussion

- 4.1 **Background**. The Aeronautics Act (reference 3.2.a) has granted the responsibility for military airworthiness to the Minister of National Defence. Civil airworthiness is governed under federal regulations (reference 3.2.b), whereas DND manages airworthiness under a policy program entitled "The DND/CF Airworthiness Program" (reference 3.2.c). Unlike regulations, which are bound by law, the DND/CF Airworthiness Program is not strictly enforceable, and must be enabled and imposed through contract law. Therefore, this TAA Advisory provides guidance to DND and Public Services and Procurement Canada (PSPC) staff on how to develop clauses for contracts relating to airworthiness.
- 4.2 **Overview**. In order to develop and select a comprehensive set of airworthiness clauses, the TA, through and during the conduct of a Sustainment Business Case Analysis (SBCA), should perform the following steps to achieve a comprehensive Airworthiness Strategy:
 - a. Develop Sustainment Requirements (during SBCA Phase 1 work) that will inform proper selection of the most relevant Airworthiness Support Structure. Additional Guidance is provided at paragraph 4.3;
 - b. Generate the list of services that will be outsourced to Industry (during SBCA Phase 2A Option Analysis on Division of Enterprise Scope and Contract Services Grouping). Additional guidance is provided at paragraph 4.4;
 - c. Select an Airworthiness Support Structure that meets the Sustainment Requirements and enables the service delivery. Additional guidance is provided at paragraph 4.5;
 - d. Develop/Select proper Airworthiness Contract Clauses. Examples of airworthiness contract clauses are provided at paragraph 4.6; and
 - e. Develop Bid Evaluation Criteria (during SBCA Phase 2 Option Analysis on Evaluation Approach and Final Evaluation Methodology). The bid evaluation should be reflective of the airworthiness contract clauses chosen and the overall procurement strategy.
- 4.3 **Develop Sustainment Requirements**. In order to select the right airworthiness support structure and select the proper airworthiness clauses, the TA, through an SBCA analysis, should develop sustainment requirements against the four sustainment principles of Performance, Value for Money, Flexibility and Economic Benefits. Those will be used to design a tailored and optimized sustainment solution that will potentially include outsourcing services to Industry during the SBCA Phase 2 work.

NOTE

There is no DND airworthiness requirement that mandates that DND-owned civilian aircraft types be strictly maintained by TCCA-Approved organizations. This decision is purely a business driven requirement.

- 4.4 **Generate Service List.** The TA should generate a list of physical work that will be outsourced during the conduct of SBCA Phase 2A Option Analysis on Division of Enterprise Scope and Contract Services Grouping. The list of outsourced services should be driven from both the Fleet's support requirements and any additional airworthiness requirements. Although TAA staff support the development of airworthiness requirements, they do not develop fleet support requirements. Some examples of service statements include:
 - a. The contractor shall perform all maintenance and overhaul activities on the engine in accordance with the overhaul manual;
 - b. The contractor shall update and manage the aircraft technical record using an Electronic Record Keeping System;
 - c. The contractor shall maintain and manage the approved maintenance program produced during initial type certification;

- d. The contractor shall perform in-service configuration management of the aircraft in accordance with the approved in-service Configuration Management Plan (CMP);
- e. The contractor shall monitor and manage the Aircraft Structural Integrity Program in accordance with DID ASIP-1;
- f. The contractor shall monitor and manage the Engine Structural Integrity Program in accordance with DID ESIP-1;
- g. The contractor shall implement and manage an airworthiness monitoring program for all systems on the aircraft; and
- h. The contractor shall perform all systems engineering, design activities, and certification activities required to assure the continuing airworthiness of the aircraft type.

- 1. A key element of the In-Service Support (ISS) Statement of Work (SOW) is to clearly state what "services" DND wants the organization to do, what DND is contracting for.
- 2. Another important element is to ensure that the ISS SOW does not include initial "deliverables" that belong in the acquisition contract, such as Master Minimum Equipment List (MMEL), Aircraft Flight Manual/Aircraft Operating Instructions (AFM/AOIs), and maintenance programs see reference 3.2.g for more details. Rather, the ISS SOW should include all continuing airworthiness requirements to maintain/update and manage these same items, once acquired, delivered and approved, throughout the in-service phase.
- 4.5 **Select an Airworthiness Support Structure**. The TA should answer the following questions to shape an airworthiness support structure that achieves the Sustainment Requirements:
 - a. Should I define the airworthiness support structure or be flexible and let the contractor develop their optimal solution?
 - b. What types of TAA organizational approvals are required to perform the Service List? See paragraph 3.1.c for a list of TAA-Acceptable Organizations.
 - c. What is the anticipated scope and depth of airworthiness authority to be assigned to each TAA-Acceptable Organization required to perform the Service List, and under what decisions of significance limitations? See Annex B to this advisory for decisions of significance and airworthiness authority assignment examples.
 - d. Which services could be performed by an organization with a civilian regulatory approval?
 - e. If applicable, which types of civilian regulatory approvals are required or acceptable to perform the Service List? See paragraph 3.1.f for a list of Transport Canada Civil Aviation Technical Airworthiness Organizational Approvals.
 - f. Which services need to be performed by the OEM or an equivalent organization that has access to sufficient design data?
 - g. Does the contract account for the coordination with other external organizations? For example, which organization is or will be responsible for the integration of design changes?
- 4.6 **Develop/Select Airworthiness Contract Clauses**. During SBCA Phase 2B, the TA will be required to develop/select the proper airworthiness contract clauses to be included in the sustainment contract (through the conduct of SBCA Option Analysis on Terms & Conditions). The following are examples of airworthiness contract clauses:

4.6.1 <u>Universal Airworthiness Requirement</u>. Since the DND/CF Airworthiness Program is enabled through contractual requirements, a statement such as the following should be added to all contracts:

Example of Universal Airworthiness Requirement

"All work performed in support of this contract, which involves airworthiness-related activities, is performed under the authority of the Minister of National Defence and the DND/CF Airworthiness Program, A-GA-005-000/AG-001, and is subject to the provisions of the Technical Airworthiness Manual (TAM), CFTO C-05-005-001/AG-001. Therefore, all contracted airworthiness-related activities shall be performed in accordance with the TAM. Non-Compliance to the TAM or the airworthiness program will result in non-Compliance to this contract."

NOTE

Since the above clause provides a general requirement to perform technical airworthiness activities in accordance with the TAM, there is no requirement to link to specific TAM paragraphs for each service element.

4.6.2 <u>TAA Organizational Acceptance</u>. There are two strategies for establishing the requirements for Organizational Acceptance within the SOW: setting the requirements strictly, or leaving them flexible/open-ended. Flexible organizational requirements should be used if the contract is set up to allow several different types of contractor organizational solutions. If flexible requirements are used, it is suggested that bidders be engaged through a bidder's conference to educate them on the TAA Organizational Acceptance requirements, according to their tailored solutions. See the types of TAA-Acceptable Organizations at paragraph 3.1.c.

Example of Strict Organization Acceptance Requirements

"[…]

- The contractor shall obtain provisional TAA Acceptance as an <u><Insert as applicable ADO, ATO, AMO, etc.></u> prior to commencing any airworthiness activities and full TAA Acceptance within <u><Insert # of months or weeks, recommend 24 months></u> after start of operations. The contractor shall provide the resources necessary to develop and enable the required policy and processes to achieve the airworthiness authority for the scope and depth of activities required to perform the work defined within this SOW. Failure to develop and enable the required enabling policy and processes to achieve full TAA Acceptance will result in non-compliance to this contract.
- 2. As part of the organizational acceptance process, the contractor shall provide the TAA with suitable access to:
 - a. policy and process manuals, lower-tier procedural documents, and work instructions used to perform the contracted In-Service Support services, as well as staff assistance necessary to demonstrate compliance to the requirements of the TAM for the scope of work sought;
 - b. enabling organizational records associated with the conduct of the contracted airworthiness-related activities and those that demonstrate compliance to the TAM including, but not limited to: internal and independent third party quality audits records, records that capture skill, knowledge and experience of authorized personnel, and data generated to support the demonstration of compliance to an airworthiness standard.
- 3. Should the contractor elect to use subcontractors to deliver any part of the work sought under this contract, the contractor will be responsible to ensure that their subcontractors meet the requirements of the TAM as an organization acceptable to the TAA, with a scope of airworthiness authorization sufficient to perform all sub-contracted work. Furthermore, the contractor will be responsible to perform all the necessary oversight activities on the selected subcontractors.[...]"

Example of Open Organization Acceptance Requirements

- "[…]
- 1. As directed by TAA staff, the contractor shall obtain all required provisional TAA Organizational Acceptances prior to commencing any airworthiness activities, and full TAA acceptances within after start of operations. The contractor shall provide the resources necessary to develop and enable the required policy and processes to achieve the airworthiness authority for the scope and depth of activities required to perform the work defined within this SOW. Failure to develop and enable the required policy and processes to achieve full TAA Acceptance will result in non-compliance to this contract.
- 2. As part of the organizational acceptance process, the contractor shall provide the TAA with suitable access to:
 - a. policy and process manuals, lower-tier procedural documents, and work instructions used to perform the contracted In-Service Support services, as well as staff assistance necessary to demonstrate compliance to the requirements of the TAM for the scope of work sought;
 - b. enabling organizational records associated with the conduct of the contracted airworthinessrelated activities and those that demonstrate compliance to the TAM, including, but not limited to: internal and independent third party quality audits records, records that capture skill, knowledge and experience of authorized personnel, and data generated to support the demonstration of compliance to an airworthiness standard.
- 3. Should the contractor elect to use subcontractors to deliver any part of the work sought under this contract, the contractor will be responsible to ensure that their subcontractors meet the requirements of the TAM as an organization acceptable to the TAA with a scope of airworthiness authorization sufficient to perform all sub-contracted work. Furthermore, the contractor will be responsible to perform all the necessary oversight activities on the selected subcontractors.[...]"

- 1. Since the above clauses use the term "TAA Organizational Acceptance", which includes both TAA Accreditation and TAA Recognition, it is not necessary to tailor these clauses in the case where civilian organizational approvals are being leveraged.
- 2. Where an Organizational Acceptance will include TAA Recognition, the TAA will require the organization to complete a Recognition Survey to assist the TAA in assessing the acceptability of the organization based on their other regulatory approvals and existing processes. A survey for a large organization completing a complex scope of work should take 30-40 hours to complete, whereas a survey for an organization completing a limited scope of work should only take 7-8 hours. The SOW should indicate a timeline for the completion of this survey, typically within 30 days of contract award.
- 3. Organizations may seek credit for existing policies, procedures and regulatory approvals as part of their transition plan for the period prior to full TAA acceptance within the Implementation Plan (IP). Credit for existing policies, procedures and regulatory approvals may also be sought as part of the organization's plan for achieving full TAA acceptance. In this case, the IP should identify the gap between the existing policies, procedures and regulatory approvals and the end state for achieving full TAA acceptance, and then provide a plan for completing the activities to close this gap, including milestones.
- 4.6.3 <u>Implementation Plan (IP)</u>. An Implementation Plan (IP) is normally produced to describe the organization's plan for achieving full TAA Acceptance, including milestones, as seen in Data Item (DI) WSE-001 under section A.1 of Annex A to this Advisory. It also describes the organization's transition plan for assuring compliance of products and services to technical airworthiness requirements for the period prior to full TAA Acceptance. Provisional TAA Acceptance may be granted based on an IP acceptable to the TAA. In some contracting schemes, the intent of the IP may be met by an In-service Support System Management Plan or equivalent document. Further details on the acceptance process

and timelines can be found in TAA Advisory 2013-01 – *TAA Accreditation Process* (reference 3.2.h), as well as by contacting DTAES 4-5.

4.6.4 <u>Civil Organizational Requirements</u>. Organizational approvals from Civil Aviation Authorities may be leveraged to achieve a TAA Organizational Acceptance. In these cases, TAA Organizational Acceptance clauses in 4.6.2 and the Universal Airworthiness Requirement Clause in 4.6.1 are still required. Depending on the airworthiness outsourcing strategy, the TA must determine whether to mandate civil Regulatory Approvals within the SOW, incentivize them through the bid evaluation, or make the decision that civil approved organizations are not required.

Example of a Mandatory TCCA AMO Clause

"[…]

- 1. The Contractor shall hold a TCCA-Approved Maintenance Organization (AMO) with the following ratings:
 - a. Aircraft (Non-specialized) rating for <a> <a></
 - b. Structural (Specialized) rating for <<u>Insert Aircraft Type></u> Sheet Metal and Composite Structure;
 - c. NDT (Specialized) rating that includes all NDT techniques consistent with the for <<u>Insert</u> <u>Aircraft Type></u>Non-destructive Testing Manual; and
 - d. <u><Insert Engine Type></u> type rating.
 - e. etc.
- 2. The above may be subcontracted to a TCCA AMO holding an equivalent TCCA rating. The Contractor shall submit all Subcontractor AMO certificates to verify compliance to the above. Subcontractors performing airworthiness-related activities are required to be deemed Acceptable by the TAA. In cases where the TAA has elected not to directly issue an Acceptance to a subcontractor, the Prime Contractor is required to provide oversight on those subcontractors who conduct airworthiness activities in order to ensure compliance to the airworthiness requirements within this SOW, in accordance with their quality system requirements.
- 3. While conducting maintenance in support of this contract, the contractor shall follow their TCCA-approved Maintenance Process Manual (MPM) and any supplemental TAA-approved policy.
- 4. At the request of the contract TA or TAA staff, the contractor shall provide to DND copies of civil regulatory documents, certificates, regulator audit reports, or letters.[...]"

- 1. For more information on the types of TCCA ratings and when they should be applied, please contact DTAES 4-5.
- 2. Defining Scope and Depth of Authority for DAOs and AEOs is generally more complicated than TCCA AMOs, since they are not tied to an aircraft type. Therefore, it is suggested to contact DTAES 4-5 to develop specific clauses for TCCA Design Organizations.
- 3. The Technical Airworthiness benefits for leveraging a TCCA AOC can include the existence of a maintenance control system enabled through a Maintenance Control Manual (MCM), the ability to manage a TCCA-approved maintenance schedule, and the possibility of the existence of a Paper-Based or Electronic Record Keeping System (ERKS) to manage the technical record of the aircraft during operations.
- 4. There are several types of TCCA operating certificates. It is suggested to contact DTAES 4-5 to determine which type of air operator certificate is right for a given application.

- 5. In addition to TCCA-approved organizations, organizations accredited by other competent airworthiness authorities such as the FAA, EASA and foreign Military Airworthiness Authorities may also be leveraged to achieve a TAA Organizational Acceptance. TAA Advisory 2016-04 Recognition of Airworthiness Authorities (reference 3.2.i) provides more details. However, it is suggested to contact DTAES 4-5 for guidance on these types of organizations.
- 4.6.5 <u>Airworthiness Policy and Processes</u>. In order to support TAA Organizational Acceptability, contractors must develop and implement the appropriate policy and processes. The following clauses cover the strategies for organizational acceptance from 4.6.2. and 4.6.3.

Example of an Airworthiness Process Manual Clause

- "[…]
- 1. The Contractor shall develop and implement a <u><Insert appropriate Airworthiness Process</u> <u>Manual Requirement: i.e., MPM, EPM></u> in accordance with DI AW-001 (see section A.2 of Annex A to this Advisory) and the requirements of the TAM.
- 2. The Contractor shall amend the <u><Insert appropriate Airworthiness Process Manual</u> <u>Requirement: i.e., MPM, EPM></u> when directed by the contract TA or TAA staff.[...]"

Example of a Civil Airworthiness Process Manual Clause

"[…]

- 1. The Contractor shall submit all Contractor TCCA-approved Policy Manuals (MPM, MCM, etc.) and TCCA approval certificate(s) to support the Contractor's TAA Organizational Acceptance.
- The Contractor shall inform the contract TA whenever a contractor's TCCA-approved Policy Manual or TCCA approval certificate has been changed or updated. At the request of the TA, the Contractor shall submit the updated TCCA-approved Policy Manual and/or TCCA approval certificates to the TA.
- 3. The Contractor shall create a DND Airworthiness Supplement (DAS) in accordance with DI AW-001 (see section A.2 of Annex A to this Advisory) to address specific DND requirements that are not addressed within the contractor's civilian policy.
- 4. The Contractor shall amend the DAS when directed by the contract TA or TAA staff.[...]"

- 1. A DID is typically included for the requested Airworthiness Process Manuals (APM) (see DI AW-001 under section A.2 of Annex A to this Advisory). However, organizations seeking credit for existing policies, procedures and regulatory approvals as part of their plan for achieving full TAA acceptance may not be required to develop a complete APM as specified in the TAM, instead, a DND Airworthiness Supplement (DAS) covering any unaddressed TAM requirements may be sufficient. This case typically applies to organizations accredited by competent airworthiness authorities such as TCCA, FAA, EASA and foreign Military Airworthiness Authorities for a similar or identical scope of work, or to an OEM accepted throughout the worldwide aviation community as capable and competent for the scope of work.
- 2. The DAS is created to bridge the gap between an organization's leveraged or recognized Civil Regulator's approval and any specific additional requirements stipulated in the contract, and/or to cover the unique DND TAM requirements that may be applicable to the organization. It may include new policies on: (1) accepting parts form the RCAF Supply System; (2) authorizing ex-military member to certify on-aircraft work; (3) updating DND's Electronic Record Keeping System (ERKS) for work conducted by the organization; (4) risk management to meet mandated DND policies, etc. Please contact DTAES 4-5 staff to help determine the requirements for the DAS data item as this will depend heavily on the level of existing regulatory approval and rating specified in the clauses in 4.6.3.

- 3. The timeline for the development of the APM(s) should be between six and 12 months, depending on the complexity of the contracted services. This requirement should be included in the SOW or as part of the Contract Data Requirements List (CDRL) item.
- 4.6.5.1 Contracted services for DND Type Certificate Holder (TCH) activities are generally complicated by the fact that they must be closely integrated with the existing policies and procedures of the DND TCH organization. In these cases, the contract may specify a list of contractual and airworthiness decisions that are retained by the TCH or the TAA. An example of such a list is provided at Annex B to this Advisory.
- 4.6.6 <u>Electronic Record Keeping Systems</u>. Electronic Record Keeping Systems (ERKS) must be accepted by the TAA in accordance with TAA advisory 2007-01.

Example of an ERKS Clause

- "[...]
 If the contractor elects to support the fleet using an electronic record keeping system (ERKS), the contractor shall obtain TAA ERKS acceptance in accordance with TAA advisory 2007-01. In order to support TAA acceptance, the contactor shall produce all ERKS supplementary documentation in accordance with DID MNT-XXX.
- 2. All data generated within the Contractor's ERKS is owned by the crown and shall be transferred to DND at the request of the DND TA, or upon termination of the contract. Data shall be transferred in an electronic format that can be batch-loaded into another ERKS, as directed by the DND TA.

- 1. The TA needs to develop the correct performance and functionality clauses for the ERKS system and define a Data Item (i.e., DI MNT-XXX) to enable the development of the appropriate plans and deliverables in accordance with TAA Advisory 2007-01 reference 3.2.j).
- 2. Using DRMIS as the fleet ERKS is not a TAA-issued mandate, and remains a business decision.
- 3. Although TCCA AMOs may have an electronic record keeping system or maintenance planning system to manage third line work orders, they generally do not have an ERKS designed for managing a preventive maintenance program and technical record for an aircraft fleet, since maintenance control is usually performed by a Transport Canada Air Operator.
- 4.6.7 Contracted Maintenance Control. The control of maintenance involves the scheduling of maintenance, servicing and elementary work tasks within the time constraints specified in the approved maintenance program and other maintenance support activities that have an impact on airworthiness, such as defect deferral, empty weight and balance control, Technical Record maintenance, and issuance of special inspections, modifications, deviations/Special Purpose Flight Permit. Within the RCAF, this is accomplished and managed with a DND accredited AMO (operational squadron with integral maintenance support, or Air Maintenance Squadron) and an accredited Fleet ATO (Weapon System Manager (WSM) organization) with assigned Type Certificate Holder responsibilities. Transport Canada Civil Aviation (TCCA) AMOs do not perform, nor do they have the authority to perform, maintenance control. Under Canadian Aviation Regulations, Maintenance Control is performed by TCCA-approved Air Operators, who have a Maintenance Control Manual (MCM). Therefore, when contracting out maintenance control services to a civilian organization, the TA should not expect the contractor to have an existing maintenance control system if they do not hold an Air Operating Certificate (AOC). Furthermore, there are some additional in-service support activities that might not be covered under an AOC, such as management of maintenance schedule and flight manuals/AOI that need to be appropriately contracted, as required.

Example of a Maintenance Control Clause

- "[…]
- The Contractor shall create a maintenance control system that meets the requirements of CAR Standard 726.08. This requirement may be satisfied through an existing Transport Canada Civil Aviation (TCCA)-approved Maintenance Control Manual (MCM); however, the Contractor shall create supplemental policy in accordance with DI AW-001 to address specific DND maintenance control requirements that are not addressed within the contractor's civilian policy.
- The Contractor shall develop and maintain a <u><Insert aircraft type, maintenance schedule series,</u> <u>etc.></u> maintenance schedule based on the OEM maintenance requirements, installed STC supplemental maintenance requirements, and any additional maintenance requirements as a result of installed DND equipment. This maintenance schedule must be approved by the TAA for DND-registered aircraft.
- 3. The Contractor must maintain the aircraft in accordance with the approved maintenance schedule and the approved Maintenance Control Policy.
- 4. If the Contractor uses a Minimum Equipment List (MEL) to support deferrals, it must be approved by the TAA for DND-registered aircraft.[...]"
- 4.6.8 <u>Risk Management</u>. For all organizations conducting airworthiness-related activities, regardless of whether or not the contractor is contracted to perform fleet risk management activities, the TA must include the following contract clause:

Example of a Risk Management Clause

"[…]

The Contractor shall follow the requirements and support the DND technical airworthiness risk management Procedure (EMT01.003). This includes notifying the WSM in accordance with EMT01.003 in the case where a risk or potential risk has been identified by the contractor.[...]"

NOTE

If the TA requires the contractor to perform risk management support activities on behalf of the WSM, these additional activities need to be described in the contract.

4.6.9 <u>TAA Airworthiness Audits</u>. All contractors may be subjected to onsite audits, as part of the organizational acceptance process as well as periodically, to ensure compliance with the applicable rules and standards in the TAM or other civil/military approval, during the conduct of airworthiness-related activities by the organization. Therefore, the following clauses are required:

Example of TAA Airworthiness Audit Clauses

- "[…]
- 1. The Contractor shall support TAA airworthiness audits at the Contractor's and DND's facilities, as required. This includes, but is not limited to, providing:
 - a. access to all contractor documentation developed in support of this contract (including manuals, technical data, technical records and access to ERKS, as applicable);
 - b. access to Contractor staff for interviews;
 - c. access to Contractor staff authorization records;
 - d. access to Quality Management System internal and external reports and findings;
 - e. access to Contractor policy, procedures, work instructions and other tools/forms/documents followed by contractor staff to perform the work under contract;
 - f. access to Contractor inventory, tooling and facilities used directly in support of the contract;
 - g. on-site support to TAA staff, including office space to conduct meetings and interviews; and
 - h. remote auditing support to access and conduct any of the above, as applicable, at the discretion of the TAA.

2. The Contractor is required to submit to the TA, and implement, a corrective action plan (CAP) with appropriate follow-up and closure activities to address all observations found during airworthiness audits, as directed by TAA staff.[...]"

NOTE

TAA staff generally schedule airworthiness audits every 30 months once full accreditation or recognition is achieved; however, the frequency may increase or decrease depending on other factors, such as the amount of civilian regulatory oversight, flight safety incidents related to activities conducted at the Contractor's facilities, or number of non-compliances raised during on-site audit. Typically, audits alternate between periodic Comprehensive Audits and Surveillance Audits. Surveillance audits are typically scheduled for three days with three auditors. Comprehensive audits are typically scheduled over five days with five auditors.

4.6.10 <u>Flight Safety</u>. The PSPC Standard Acquisition Clauses & Conditions (SACC) Manual standard clause for Flight Safety (FS) (B4064C) shall be used in DND contracts related to aviation and aircraft support services, including in-service support, as well as maintenance, repair and overhaul (MR&O) of DNDowned or -operated aircraft, major components and propulsion systems.

NOTES

- 1. The FS Program must be made available to the Directorate of Flight Safety (DFS), for review, prior to the contractor being allowed to work on DND-registered aircraft. (This is a contract deliverable).
- 2. The PMO/WSM shall accommodate/support DFS surveys, which should start within the first six months of operation.
- 4.6.11 <u>Integrated Logistics Support (ILS) Requirements for Design Changes</u>. Before Technical Airworthiness Clearance (TAC) can be granted to a design change, which means that it is ready to enter service, all Integrated Logistics Support (ILS) elements affected by the design change must be suitably addressed. The correct approach is to explicitly drive ILS work through ILS work statements in the SOW, since the TAC process is only a verification that sufficient logistic support exists to sustain the embodiment of the design change. Therefore, TAC should appear in the contract similar to the following statement:

Example of a Design Change TAC Clause

"[...] For each design change, the contractor is responsible for verifying that all necessary ILS elements are complete prior to its release for embodiment. This includes verifying the implementation of ILS elements under the responsibility of DND, which may require coordination through the DND WSM and/or Units. Once the Contractor has verified that the design change is logistically supported and the configuration change has been authorized, the Contractor shall issue TAC or recommend TAC to be granted by DND, in accordance with policies that are contained within the organization's APM.

NOTE

The TA needs to ensure the In-Service Support SOW covers all ILS requirements associated with the implementation of design changes. If the ILS requirements are defined correctly, the contractor portion of the overall TAC requirements will be met. In the case of type certified products OEMs, the TAA would not expect a separate "TAC process" within the contractor organization. Contact DTAES 4-5 for further guidance on the requirements of TAC within OEM organizations.

4.6.12 <u>Technical Airworthiness Clearance (TAC) Requirements for New Fleets or Major Design Changes.</u> Contracted in-service support services are typically engaged to support the Technical Airworthiness Clearance (TAC) requirements for new DND-registered fleets, or major design changes. Within the Technical Airworthiness Manual (TAM) (reference 3.2.d) the requirements to obtain Technical Airworthiness Clearance (TAC) include:

- a. Type Design granting of a Type Certificate for the approved type design;
- b. Aeronautical Product issuance of Certificates of Airworthiness, Certificate of Conformance; registration and markings; and records and documentation for each Aeronautical Product; and
- c. In-Service Support (ISS) Program including the areas of engineering / technical support, maintenance support and logistic support.
- 4.6.12.1 Guidance on the Type Design certification and Aeronautical Product conformance requirements for Technical Airworthiness Clearance for which contractor support is normally required are addressed in TAA Advisory 2017-01 (reference 3.2.g). This includes the requirements for the TAC Plan, which defines the overall plan to meet the type design, aeronautical product and ISS Program requirements. TAA Advisory 2017-01 also includes the requirements for the ISS Plan (TAM 2.1.2.S6), which addresses the airworthiness framework essential to assure the continuing airworthiness of the aircraft type during inservice usage. This plan maybe identified as the Continuing Airworthiness Support Plan (CASP) in contract documentation. While this plan is an acquisition requirement for issuance of initial Technical Airworthiness Clearance, it must be implemented and maintained during the in-service usage phase. Therefore, the ISS contract SOW must include provisions to address all items contained within the TAA-approved ISS Plan not already covered in other clauses.
- 4.6.12.2 The ISS Program developed to support the continuing airworthiness of the new fleet or major design change must address Type Certificate Holder responsibilities, engineering/technical support, maintenance support and logistic support. To address these areas, the PMO or WSM staff will define requirements for a contractor to develop and implement an Engineering Support program, a Maintenance Support program and a Logistics Support program. Depending on the contracting philosophy in use, the requirement for creating these programs may be combined into a single contract for acquisition and in-service support services or a stand-alone contract for in-service support services. Suggested contract clauses for ISS programs are presented below:

Example of Engineering Support Program Clauses

"[…]

- 1. The Contractor must conduct engineering support, throughout the Life Cycle of the Weapon System (WS) to maintain safety, airworthiness, and operational capability.
- Engineering support functions encompass the in-service engineering work required to operate, maintain, modify, monitor and sustain the WS throughout its life cycle. The engineering support effort must be applied by the Contractor including the Weapon System Support Network (WSSN), Suppliers, Original Equipment Manufacturers (OEMs) and Subcontractors in support of the ISS activities.
- 3. The Contractor must coordinate engineering, certification and airworthiness activities even if the Contractor does not have all the authority to approve such work, as per the Canada-approved Airworthiness Process Manual (APM). All work where the Contractor does not have the approval authority must be transmitted to Canada for review and any necessary approval.
- 4. The Contractor must prepare and submit an Engineering Support System Plan as per DI ENG-001 (see section A.3 of Annex A to this Advisory). The Contractor must complete the activities associated with the Engineering Support System, IAW the approved Engineering Support System Plan (ESSP) DI ENG-001. The Engineering Support System Plan must be kept up to date to reflect support updates.[...]"

Example of Maintenance Support Program Clauses

"[…]

 Maintenance support for the WS will consist of contractor-provided maintenance at the Main Operating Base (MOB) for <u><Insert maintenance to be carried at MOB></u>, and contractor-provided maintenance at a contractor facility for all other maintenance identified in the maintenance program. Maintenance support will include all support activities necessary to successfully perform all maintenance activities, as identified in the maintenance program.

2. The Contractor must prepare and deliver a Maintenance Support System Plan IAW DI MNT-001 (see section A.4 of Annex A to this Advisory). The Contractor must consider Maintenance Support while developing all other Support Systems. The Contractor must design, develop, validate and implement the Maintenance Support System, IAW DI MNT-001. The Contractor must ensure maintenance support is considered in all design changes and Configuration Management.[...]"

Example of Logistic Support Program Clauses

"[…]

- 1. The in-service Materiel Support System must be capable of providing the WS with materiel and Supply Chain Management (SCM) services support requirements to achieve the required WS operational capability. The Materiel Support System must be responsive and available to ensure a continuous support to operations.
- 2. The Materiel Support will address the life cycle processes required to conduct SCM and the coordination and integration of these activities into a seamless process for the WS spares and consumables, to include, but not limited to, the following key activities: Procurement, Inventory control, Transportation, Warehousing, Repair and Overhaul; and Customer services.
- 3. The Contractor must prepare and submit a Materiel Support System Plan (MSSP) in accordance with DI MTL-001 (see section A.5 of Annex A to this Advisory). The Contractor must perform the Work in accordance with the approved DI MTL-001.[...]"
- 4.6.12.3 In-Service Airworthiness Documentation. The airworthiness documentation produced as part of the acquisition phase to support initial airworthiness must be updated and maintained throughout the inservice usage phase. TAA Advisory 2017-01 (reference 3.2.g) expands on the initial airworthiness requirements and provides guidance on how to develop compliant airworthiness documentation, including, as applicable, the following:
 - a. Data Access;
 - b. Compliance Record;
 - c. Instruction for Continued Airworthiness and Maintenance Program;
 - d. Flight Manual;
 - e. Master Minimum Equipment List; and
 - f. In-Service Support Plan (covered under paragraph 4.6.12.1 above).
- 4.6.12.4 The In-Service Support contract Statement of Work must include provisions to address each of the above item during the in-service usage phase. Suggested contract clauses for each item (excepted for the In-Service Support Plan) are presented below:

Example of Data Access Clause

"The Contractor must obtain and provide Canada full access to the engineering and technical data necessary for the performance of the Work required by this contract, either by providing the data to Canada or providing Canada on-site access, for the duration of this contract. Any such data to which Canada owns rights in accordance with the contract must be transferred to Canada in a mutually agreed format upon termination of the contract. This includes the engineering and technical data prepared by the Contractor, suppliers and subcontractors, as well as referenced data and nested references."

NOTE

Data and Intellectual Property (IP) access will impact DND's ability to change or modify the support construct for future contracts with initial contractor, or if a change in contractor is

desired or necessary. The provided example of data access provides the minimum access required to satisfy airworthiness, but is likely insufficient to provide DND with the flexibility to change how or where engineering work can be executed. The TA needs to ensure the data/IP access requirements are fully covered within the contract to the level that minimizes future business risk.

Example of Compliance Record Clause

"The Contractor must retain and maintain the complete Compliance Record, which forms part of the Type Record for the <u><insert aircraft type></u> approved type design, and provide Canada full access to same for the duration of the contract. Upon termination of the contract, this same Compliance Record must be transferred back to Canada in a format acceptable to Canada."

Example of Instructions for Continued Airworthiness (ICA) and Maintenance Program Clauses

"[…]

- 1. The Contractor must obtain and, upon request, provide Canada access to the primary source documentation used to support the development of the approved maintenance program and Instructions for Continued Airworthiness (for example: Maintenance Review Board, Fault Tree Analysis, Failure Mode, Effects and Criticality Analysis (FMECA), etc.).
- 2. The Contractor must maintain and update the approved maintenance program and Instructions for Continued Airworthiness produced during the acquisition phase, as necessary, to assure the continuing airworthiness of the <u><insert aircraft type></u> for the duration of this contract, and transfer same back to Canada in a format acceptable to Canada upon termination of the contract."

Example of Flight Manual Clauses (if applicable)

- "[…]
- The Contractor must obtain and, upon request, provide Canada access to the primary source documentation used to support the development of the <u><insert aircraft type></u> Flight Manual Technical Airworthiness Data (TAWD).
- The Contractor must maintain and update the <u><insert aircraft type></u> approved Flight Manual TAWD, produced during the acquisition phase, for the duration of this contract, and transfer same back to Canada in a format acceptable to Canada upon termination of the contract."

Example of MMEL Clauses (if applicable)

"[…]

- 1. The Contractor must obtain and, upon request, provide Canada access to the primary source documentation used to support the development of the <insert aircraft type> Master Minimum Equipment List (MMEL).
- 2. The Contractor must maintain and update the <u><insert aircraft type></u> approved MMEL, produced during the acquisition phase, for the duration of this contract, and transfer same back to Canada in a format acceptable to Canada upon termination of the contract.
- 4.6.13 <u>DND/CF Airworthiness Program Continuous Improvement</u>. The DND/CF Airworthiness Program is subject to continuous improvement that involves updates and changes to accommodate technology evolution, enhanced safety and best practices. Under a controlled process of consultation and regulatory review, the TAM (reference 3.2.d) is subject to amendment every two years. Therefore, contracted in-service support services must include provisions to review TAM amendments and incorporate any change that impacts the delivery of a support service.

EXAMPLES OF DATA ITEM DESCRIPTIONS

This Annex provides examples of DIDs for inclusion in contract documentation. These examples include only the applicable airworthiness requirements. PMO and WSM staff must add any additional requirements, as necessary.

NOTE

In the suggested contractual statements contained here, the expressions XX, XXX, YY, etc., are sometimes used. These expressions designate a number that would have to be determined during the drafting of contractual documentation.

A.1 <u>WSE-001 Airworthiness Implementation Plan</u>

DATA ITEI	DATA ITEM DESCRIPTION DND Form 1409			
1. TITLE		2. IDENTIFICATI	ON NUMBER	
IMPLEMENTATION PLAN (IP)		WSE-XXX		
3. DESCRIPTION/PURPOSE				
To describe the contractor's plan for	compliance with T	-	and Requirements. The ID shall function	
as the overall plan for:	compliance with i		ness Requirements. The IP shall function	
	nd products and se	ervices delivered in	the period between contract award and	
the achievement of full Technic				
			n of a proposed Airworthiness Process	
Manual; and	0	0		
c) Measuring progress toward act		creditation/recognit		
4. APPROVAL DATE	5. OPI		6. GIDEP APPLICABLE	
7. APPLICATION/INTERRELATION	ISHIP			
8. ORIGINATOR		9. APPLICABLE	FORMS	
0. ORIGINATOR		J. AFFLICADLL	I ORMS	
10. PREPARATION INSTRUCTION	IS			
10.1 Format				
Must be prepared in Contractor's for	mat.			
10.2 Reference				
C-05-005-001/AG-001 – Technical /	Airworthiness Manu	ual (TAM)		
10.3 Content				
10.5 Content				
10.3.1 Introduction				
The IP shall describe the contractor	's processes and c	ontrol systems for	ensuring the airworthiness of all	
aeronautical products and services i				
	·			
	10.3.2 Maintenance Support (as applicable)			
			proposes to exercise as related to the	
			aintenance, including a list of activities that	
the bidder agrees must have				
2. Responsibilities for personn				
3. Authorization system for per				
			ons, including Aircraft Release Authority	
(ARA), Aircraft Certification Authority (ACA), Maintenance Release Authority (MRA) and Shop Certification Authority (SCA), as applicable;				
5. Eligibility criteria for personnel granting authorizations to personnel conducting maintenance certifications,				
including ARA and MRA, as applicable;				
6. Eligibility criteria for personnel to perform maintenance;				
 A description of the approved maintenance program and schedule to be followed; 				
8. A description of the technical records proposed for use, including traceability of component histories;				
	9. A description of the process for the completion, correction and retention of technical records;			
	10. A description of the process that ensures that only approved aviation replacement parts are used, including			
procurement, materiel control and disposal;				
	11. A description of the process to be used to enter into and sustain any maintenance support arrangements with other companies: and			
with other companies, and	with other companies; and			

12. A description of the Quality Management System of the organization.

10.3.3 Engineering Support (as applicable)

- A description of the scope and depth of technical airworthiness authority that the bidder proposes to exercise as related to the conduct of <u><Insert Aeronautical Product Name or Designator></u> design change development, engineering support and technical management, including a list of the activities that require approval by the DND TA or TAA;
- 2. Responsibilities for personnel conducting airworthiness-related activities;
- 3. Personnel authorization system for authorizing personnel involved in the development and approval of design changes, including:
 - a. Eligibility criteria for personnel to perform and approve design changes; and
 - b. Eligibility criteria for personnel granting authorizations and personnel being granted authorizations;
- A description of the engineering process to be followed for managing the <u><Insert Aeronautical Product</u> <u>Name or Designator></u> design, including assigned design change and configuration management responsibilities;
- 5. A description of the design data management system;
- 6. A description of the process to be used to enter into, and sustain, any engineering support arrangements with other companies; and
- 7. A description of the Quality Management System of the organization.

10.3.4 Schedule

Describe the contractor's concept and schedule for achieving full Technical Airworthiness Manual (TAM) compliance and full TAA Acceptance within <u><Insert # of months (12 months recommended)></u> of contract award. The IP shall include the contractor's plan for submitting to the TAA an Airworthiness Process Manual (APM) or DND Airworthiness Supplement (DAS), in accordance with the requirements of the TAM (CFTO C-05-005-001/AG-001) within <u><Insert # of months (6 months recommended)></u> of contract award.

Note

DTAES requires the APM six months in advance of accreditation date.

2. Progress Reports on Technical Airworthiness Compliance shall be submitted every two months until receipt of full TAA accreditation/recognition. The reports shall track progress against the schedule provided in the Implementation Plan (IP), identify problem areas and proposed solutions.

Note

Organizations seeking credit for existing policies, procedures and regulatory approvals as part of their plan for achieving full TAA Acceptance may not be required to develop a complete Airworthiness Process Manual (APM,) as specified in the TAM. Instead, a DND Airworthiness Supplement (DAS) covering any unaddressed TAM requirements may be sufficient. This typically applies to organizations accredited by competent airworthiness authorities – such as TCCA, FAA, EASA and foreign Military Airworthiness Authorities – for a similar or identical scope of work or to an OEM accepted throughout the worldwide aviation community as capable and competent for the scope of work. This will be discussed with the contract TA and the successful bidder at the initial Technical Airworthiness Management meeting, as per Para <<u>Insert paragraph number></u> of the <<u>RFP/SOW Name></u>.

10.4 Additional Data

Any other data or information including policies, processes and procedures necessary to describe how the Contractor will transition from contract award to full TAA accreditation or recognition, as applicable.

A.2 AW-001 Airworthiness Process Manual

DAT	DATA ITEM DESCRIPTION DND Form 1409				
1. TITLE		2. IDENTIFICATION NUMBER			
AIRWORTHINESS PROCES	S MANITAL (APM)	AW-XXX			
3. DESCRIPTION/PURPOSE		/W-7000			
To describe the contractor's airworthiness processes (i.e., Maintenance, Engineering and Materiel Support) and demonstrate compliance with the DND Technical Airworthiness Manual (TAM). The Draft APM or DND Airworthiness Supplement (DAS) is required as part of the contractor's undertaking to achieve TAA accreditation/recognition as an acceptable organization. Once approved by the TAA, it becomes the governing document for all airworthiness functions and airworthiness-related activities to be carried out by the organization in support of the applicable Weapon System.					
4. APPROVAL DATE	5. OPI	6. GIDEP APPLICABLE			
7. APPLICATION/INTERREL	ATIONSHIP				
8. ORIGINATOR		9. APPLICABLE FORMS			
10. PREPARATION INSTRU	CTIONS				
10.1 Format Must be prepared in Contracte	or's format.				
10.2 Reference C-05-005-001/AG-001 – <i>Tech</i> TAA Advisory 2013-02 – <i>Airw</i>					
10.3 Content					
 10.3 Content The Contractor's APM shall be developed to meet the requirements of TAM standards 1.4.2.S1.6 to 1.4.2.S1.9. For organizations seeking credit for existing policies, procedures and regulatory approvals as part of their plan for achieving full TAA acceptance, a DND Airworthiness Supplement (DAS) shall be developed that meets the requirements of TAM 1.4.2.S1.6 to 1.4.2.S1.9. The DAS shall provide amplification to the organization's existing airworthiness policy in complying with the requirements of the DND/CF Technical Airworthiness Program. While every organization is unique, all APMs share the requirement to cover general topics, as applicable, based upon the airworthiness functions and the scope and depth of authority assigned: a. TAM Part 1, Chapter 4, Section 2, Annex A – Acceptable Technical Organization b. TAM Part 1, Chapter 4, Section 2, Annex B – Acceptable Manufacturing Organization d. TAM Part 1, Chapter 4, Section 2, Annex D – Acceptable Maintenance Organization d. TAM Part 1, Chapter 4, Section 2, Annex D – Acceptable Materiel Support Organization e. TAM Part 1, Chapter 4, Section 2, Annex E – Acceptable Design Organization s. TAM Part 1, Chapter 4, Section 2, Annex E – Acceptable Design Organization					
4. The draft version shall, at a minimum, describe a "steady state" authorization control system. This is a description of how the organization will authorize its personnel to exercise airworthiness functions and perform airworthiness-related activities commensurate with the scope and depth of authority assigned to the acceptable organization. 5. The final version shall, describe the complete Airworthinese Control System of the acceptable organization.					
in compliance with the	5. The final version shall describe the complete Airworthiness Control System of the acceptable organization in compliance with the requirements of the DND/CF Technical Airworthiness Program and the TAM, and shall be complied with by the contractor in carrying out his responsibilities for Technical Airworthiness.				

10.4 Additional Data

A.3 ENG-001 Engineering Support Plan

	M DESCRIPTION		Form 1409	
1. TITLE		2. IDENTIFICATI		
ENGINEERING SUPPORT SYSTEM PLAN (ESSP)		ENG-XXX		
3. DESCRIPTION/PURPOSE				
The Engineering Support System Plan (ESSP) must outline the Engineering Support for the Weapon System (WS). The ESSP must encompass the Engineering Support System through concept development, design and implementation, deployment, operation, maintenance and support. The ESSP must identify and describe the engineering programs, organization(s), resources, processes, process tasks, process task outcomes, planning documents and technical reviews required to provide Engineering Support services.				
4. APPROVAL DATE	5. OPI		6. GIDEP APPLICABLE	
7. APPLICATION/INTERRELATION				
1. AFFLIGATION/INTERRELATION	NOTIF			
8. ORIGINATOR		9. APPLICABLE	FORMS	
10. PREPARATION INSTRUCTION	S	1		
10.1 Format Must be prepared in Contractor's for 10.2 Reference				
C-05-005-001/AG-001 – Technical A	Airworthiness Manu	iai (TAM)		
10.3 Content				
 10.3.1 Execution Process The ESSP must describe the execution process used in the analysis, design, test, validation and integration of the Engineering Support. The ESSP must describe how the execution process will integrate with other Support System Plans. The ESSP must describe the overall relationships between work activities and tasks reflected in the Integrated Master Schedule DI PM-XXX. The ESSP must also describe relationships and interfaces to other program efforts and support plans. The schedule must include the Engineering Support System deliverables, as specified in the applicable sections of the SOW. 				
 deliverables, as specified in the applicable sections of the SOW. 10.3.2 Development Process The ESSP must detail the analysis(ses), tasks and studies that the contractor will undertake, and the work products that will be generated to meet Canada's Requirements. The ESSP must describe how the Engineering Support Services will be developed, designed implemented, provided, supported, and managed in order to support the Maintenance Program Deliverables MNT-XXX for the life of the Contract. The ESSP must describe how applicable policies and technical orders associated with the Engineering Support will be considered in the development of the ESSP. Although not limited to these elements, the ESSP must cover the following: a. Air Vehicle Engineering; aerodynamic loads and performance analysis/improvement; flight dynamics and control system engineering; dynamic component engineering; avionics and mission systems engineering; software engineering; structural analysis and design/repair; 				

- i. composite structures engineering;
- j. corrosion control;
- k. Non-Destructive Testing technique;
- I. Structural Integrity Program (Fatigue Analysis);
- m. Engine Structural Integrity Program;
- n. Mechanical System Integrity Program;
- o. Electrical Wiring Interconnection System Program;
- p. Armament Systems, Stores carriage and separation engineering work;
- q. aero engine engineering;
- r. fuel system, auxiliary power, hydraulic, electrical and environmental control systems engineering;
- s. materials analysis;
- t. Simulation and Training Systems Engineering;
- u. Flight Test and Evaluation;
- v. Reliability and Maintainability Engineering; and
- w. human factors engineering.

10.3.3 Services

- 1. When developing the ESSP, the Contractor must list the services required for the Engineering Support System to provide life cycle engineering work in support of the WS. As a minimum, the ESSP must include the following services:
 - a. In-Service Engineering Support, as described by TAM 2.3.2.S1.4.d.(1)
 - b. Airworthiness Support;
 - c. ASIP/ESIP/HUMS/Mechanical System Integrity Program and EWIS Integrity program support;
 - d. Software Support;
 - e. In-Service Flight Test and Evaluation Support; and
 - f. Training Support System.
- 2. When developing the ESSP, the Contractor must include details for each of the services. As a minimum, the following topics must be addressed for each service outlined in the ESSP:
 - a. a list of the additional engineering standards that will be applied when providing services within the engineering disciplines;
 - a list of the engineering discipline specific technical reviews that will form part of the Engineering Support System (ESS) services, and any ESS engineering discipline specific deliverables that will be produced;
 - c. a description of the processes that will be used by the ESS to maintain a system engineering focus in the provision of ESS services; and
 - d. a description of the processes that will be used by the ESS to provide services to other Support Systems requiring engineering support services.

10.4 Additional Data

A.4 MNT-001 Maintenance Support Plan

	M DESCRIPTION	DND F	orm 1409
1. TITLE		2. IDENTIFICATIO	ON NUMBER
MAINTENANCE SUPPORT SYSTEM PLAN (Maint SSP)		MNT-XXX	
3. DESCRIPTION/PURPOSE			
The Maint SSP defines the maintenance support services will be with Canada's operations.			ne Contractor and how the
4. APPROVAL DATE	5. OPI		6. GIDEP APPLICABLE
7. APPLICATION/INTERRELATION	ISHIP		
8. ORIGINATOR		9. APPLICABLE F	FORMS
10. PREPARATION INSTRUCTION	S		
10.1 Format Must be prepared in Contractor's for	mat.		
10.2 Reference C-05-005-001/AG-001 – <i>Technical A</i>	Airworthiness Manu	ual (TAM)	
10.3 Content			
C-05-005-001/AG-001 – Technical Airworthiness Manual (TAM)			OW will be accomplished; In-Service Support (ISS) Support Intation of the Contractor's Intent of the maintenance concept (ICA) will be captured and managed e requirements listed in the , roles missions, environment of ng rate; eventive Maintenance and Corrective is scheduled maintenance components); and art 3, Chapter 1; able Usage and Condition r 4, and how these will be

10.3.2 Processes

- 1. The Maint SSP must describe the processes used in the systems engineering activities associated with Maintenance Support System development and on-going support, and the processes used in the integration with other SSs.
- 2. The Maint SSP must describe the processes used for Maintenance Program development, including all elements of the In-service Monitoring Program for the WS, and the Maint SSP must explain how the validation and any demonstration of the Maintenance SS or its components will be incorporated into the completion of the maintenance program.
- 3. The Maint SSP must identify the processes to be used in order to obtain Maintenance Program approval.
- 4. The Maint SSP must include the processes to be used for deviations, as they pertain to Contractor activities, to the Canada-approved Maintenance Program, in accordance with TAM 3.1.3.S1.2.
- 5. The Maint SSP must explain how the following will be addressed, including use of current processes or the need for development of new processes for:
 - a. Maintenance Support Program requirements, as described in TAM 2.3.2.S1.4.d.(2);
 - b. Support services for Contractor-provided Special Test Equipment (STE) at the MOBs, including Canada responsibilities, Contractor responsibilities and STE facilities;
 - c. Training for Contractor-provided STE;
 - d. Contractor use of any Canada-provided STE;
 - e. Contractor implementation and operation of the WS Tool Control System at the MOBs;
 - f. Describing how the contractor will manage STE calibration;
 - g. Aircraft induction for Contractor-provided maintenance, including:
 - i. aircraft arrival, post-maintenance test flights, acceptance by Canada and ferry flight departure;
 - ii. second and third line preventive maintenance, including aircraft painting, providing an overall summary of the paint schedule and how this relates to the other scheduled maintenance activities;
 - iii. second and third line unscheduled maintenance, including corrective maintenance for damage to aircraft beyond Canada's capabilities, requiring aircraft induction to the Contractor's maintenance facility and modification lines, including an explanation of how the Contractor will ensure that the Contractor maintenance facility is made available to support operations; and
 - iv. maintenance quality assurance and quality certification processes;

10.3.3 Contractor-Provided Maintenance

- 1. The Maint SSP must describe the overall concept and locations to be used for conducting first, second and third lines of maintenance, including all associated airworthiness accreditation and recognition plans and activities.
- 2. The Maint SSP must describe how all requirements for Contractor-provided maintenance of the SOW will be met.

10.4 Additional Data

A.5 MTL-001 Materiel Support Plan

	IDESCRIPTION	DND F	Form 1409	
		2. IDENTIFICATI		
MATERIEL SUPPORT SYSTEM PLAN (MSSP)		MTL-XXX		
3. DESCRIPTION/PURPOSE				
The Materiel Support System Plan (MSSP) must describe the contractor's management approach for meeting the Materiel Support requirements for the Weapon System (WS). It must provide visibility of key events, their relationship with other elements and actions of the In-Service Support (ISS) elements and the schedule for their accomplishments.				
4. APPROVAL DATE	5. OPI		6. GIDEP APPLICABLE	
7. APPLICATION/INTERRELATION	ISHIP			
8. ORIGINATOR		9. APPLICABLE	FORMS	
10. PREPARATION INSTRUCTION	S			
10.2 Reference	Must be prepared in Contractor's format. 10.2 Reference			
10.3 Content				
 C-05-005-001/AG-001 – Technical Airworthiness Manual (TAM) 10.3 Content 10.3.1 Execution The MSSP must describe the execution process used in the analysis, design, test, validation and integration of the Materiel Support. The MSSP must describe the Execution Process used in the integration with other SSPs. The MSSP must describe the overall relationships between work activities and tasks reflected in the Integrated Master Schedule DI PM-XXX. The MSSP must also describe relationships and interfaces with other program efforts and Support Plans. The schedule must include the life cycle data deliverables, as specified in the applicable sections of the SOW. The MSSP must detail the analysis(ses), tasks and studies that the contractor will undertake and the work products that will be generated to meet Canada's Requirements. The MSSP must describe how the following elements will be considered in the development of the MSSP. The MSSP must describe how the following elements will be considered in the analysis of Canada's requirements: MOB Warehouses; GSM/GFE; Operational Context; Materiel Support System Project Work Requirements: Spares and Consumables; Spares and Consumables; Supply Chain Management (SCM); and provision of SCM for Deployed Operations; and MSSP; MSSP Work; and 			Execution Process used in the activities and tasks reflected in the escribe relationships and interfaces include the life cycle data ne contractor will undertake and the ents. rders associated with the materiel will	

10.3.2 Services

- 1. The MSSP must explain how the requirements described in TAM 2.3.2.S1.4.d.(3) will be addressed, and must incorporate the following items:
 - a. the processes in accordance with the Logistics Support Program that will be used to develop/establish, support and/or execute the MSSP;
 - b. a detailed overview of the Materiel Support System ConOps;
 - c. a high level architecture of the Materiel Support services, and a description of the lines of service to the activity level;
 - d. a description of the interfaces and linkages to other Support Services and any other interfaces that are required, if applicable;
 - e. a description of the approaches that will be used to involve Canada in the MSSP;
 - f. a description of the MSSP management structure showing the authority and responsibility of each organizational unit, including organizations external to the SSP; and
 - g. a description of how the materiel lines of service will be integrated;
- 2. The MSSP must describe how the Contractor will meet the airworthiness controls in the management work for the WS spares and consumables in accordance with the TAM.

10.4 Additional Data

EXAMPLE OF APPENDIX TO SOW OR PWS RELATED TO DECISIONS OF SIGNIFICANCE

This Annex provides examples of a "Decisions of Significance/Airworthiness Scope and Depth of Authority" document, which is typically included as an appendix to the SOW or PWS. These examples include only the applicable airworthiness requirements. PMO and WSM staff must add any other requirements deemed necessary.

Decisions of Significance/Airworthiness Authorities

1. Introduction

- 1.1. The accomplishment of all decisions associated with work on the <a href="https://www.sector.com/insert/contract//www.sector.com/insert/contract//www.sector.com/insert/contract//www.sector.com/insert/contract//www.sector.com/insert/contract//www.sector.com/insert/contract//www.sector.com/insert/contract//www.sector.com/insert/contract//www.sector.com/insert/contract//www.sector.com/insert/contract//www.sector.com/insert/contract//www.sector.com/insert/contract//sector.com/insert/contract//www.sector.com/insert/com/insert/contract//www.sector.com/insert/com/insert/com/insert/com/insert/com/insert/com/insert/com/insert/com/insert/com/insert/com/insert/com/insert/com/insert/com/insert/com/insert/com/insert/com/insert/com/insert/com/insert/com/insert/com/i
 - a. Decisions impacting operations;
 - b. Decisions having a financial impact on Canada; and
 - c. Decisions affecting airworthiness.
- 1.2. The following sections are to be read in conjunction with Table 1 Airworthiness Authority.

2. **Decisions Impacting Operations**

- 2.1. Decisions that impact operations include:
 - a. Approval of changes to third line schedules (duration and induction dates);
 - b. Issue of Special Inspections;
 - c. Issue of Design Changes affecting the physical configuration of the aircraft;
 - d. Conduct of Mobile Repair Parties:
 - e. The grounding and operational restricting of aircraft;
 - f. Changes that:
 - i. significantly increase Canada's maintenance burden, whereby the level of effort involved is perceived as being beyond the maintenance unit's capability and will require augmentation to DND-provided resources;
 - ii. affect the aircraft operating procedures; or
 - iii. significantly impact the Training System, whereby the level of effort involved is perceived as being beyond the training unit's capability and will require augmentation to DND-provided resources.
- 2.2. For clarification, the Contractor may approve alternative parts that are identical, or nearly identical, replacements for the existing parts described in the Canada approved maintenance program, which conform to the following requirements that are excluded from item 2.1.c above:
 - a. The part does not introduce any new capabilities that would affect the way that the aircraft currently operates, which would result in a Major design change;
 - b. The aeronautical product on which the part will be installed does not require modification; and
 - c. There is no requirement to amend maintenance procedures, maintenance schedules, the flight manual or the aircraft operating instructions in order to accommodate the new part.

3. **Decisions Having a Financial Impact on Canada**

3.1. Canada will retain decisions for any changes to In-Service Support that have a financial impact upon Canada.

3.2. Canada will retain all decisions on the repair or replacement of components due to non-inherent failure damage.

4. Decisions Affecting Airworthiness

- 4.1. Canada will retain airworthiness decisions for which the Contractor has not been delegated the requisite authority from the Technical Airworthiness Authority (TAA).
- 4.2. The TAA, having satisfaction of the Contractor's conformance to the DND/CF Airworthiness Program, grants sufficient authority to the Contractor to permit completion of all assigned work in accordance with Table 1. Canada will retain airworthiness authority in accordance with the limitations identified in Table 1.

NOTE

The formal assignment of airworthiness authority to the applicable Contractor organization is effected through the approval by the TAA of the applicable Contractor's Airworthiness Process Manual or DND Airworthiness Supplement, in accordance with TAM Part 1, Chapter 4.

- 4.3. The DND Type Certificate Holder (TCH) or the TAA will retain fleet level airworthiness authorities within the construct of the Design Support Network (DSN) and any Airworthiness authority not assigned to the Contractor.
- 4.4. Although the Contractor will be permitted to make the airworthiness decision for which he possesses the requisite authority, if that decision results in an impact to operations, or has a financial impact on Canada, the resultant Business Decision will be made by Canada.

Airworthiness Activity	Scope	Limitations
Design Change	Approve design change categorization. Approve certification plans. Approve certification compliance matrix. Make findings of compliance. Grant Airworthiness Approval.	 Design changes deemed Major and Extensive, as per TAM Part 3, Chapter 2, must be referred to the TAA for determination of TAA Level of Involvement. Notes
		 Based on typical OEM/Design Authority capabilities. Limitations must be defined and expanded based on actual organizational experience and competency. The project team needs to work closely with the TAA Staff (DTAES 4) to establish the contractual targets for the applicable Contractor's scope and depth of airworthiness authority.
	Grant Technical Airworthiness Clearance (TAC).	1. Consultation with OAA and 1 Cdn Air Div A4 Maint staff is coordinated via the DND TCH.
		2. Unless specified otherwise, TAC associated to a Decision of Significance will be granted by the DND TCH.
		Note
		Applicable where contractor configuration management processes address all applicable TAC requirements.

Airworthiness Activity	Scope	Limitations
Repairs	Approve repair instructions.	1. TAA approval is required for repairs that do not provide full life, or require in-service inspections.
		2. All other repairs to be approved as per Design Change.
		Notes
		 Limitations must be defined and expanded based on actual organizational experience and competency. The project team needs to work closely with the TAA Staff (DTAES 4) to establish the contractual targets for the applicable Contractor's scope and depth of airworthiness authority.
	Grant TAC.	1. Unless specified otherwise, TAC associated to a Decision of Significance will be granted by the DND TCH.
		Note
		Applicable where contractor configuration management processes address all applicable TAC requirements.
Alternate Parts	Grant Airworthiness Approval.	1. Limited to form, fit and function replacements not requiring a configuration change to next higher assembly.
		2. All other Alternate Parts to be approved as per Design Change.
		Notes
		 Limitations must be defined and expanded based on actual organizational experience and competency. The project team needs to work closely with the TAA Staff (DTAES 4) to establish the contractual targets for the applicable Contractor's scope and depth of airworthiness authority.
	Grant TAC.	1. Unless specified otherwise, TAC associated to a Decision of Significance will be granted by the DND TCH.
		Note
		Applicable where contractor configuration management processes address all applicable TAC requirements.
Master Minimum Equipment List (MMEL)	Approve technical data to support the change.	1. Amendments to the RCAF MMEL require TAA/OAA Approval. OAA's involvement is coordinated by the TCH.

Airworthiness Activity	Scope	Limitations
Approved Flight Manual (AFM)	Approve technical data to support the change	 Amendments to the Flight Manual require TAA/OAA approval. OAA's involvement is coordinated by the TCH.
Preventative Maintenance Program	Approve technical data to support the change Grant Airworthiness Approval	 The following categories of changes require TAA approval: Airworthiness Limitations (AWLs) Extensive changes to maintenance schedule format or structure Changes resulting from changes to the aeronautical product role, mission or usage spectrum.
		2. All other Preventive Maintenance Program changes to be approved as per Design Change.
		Notes
		 Limitations must be defined and expanded based on actual organizational experience and competency. The project team needs to work closely with the TAA Staff (DTAES 4) to establish the contractual targets for the applicable Contractor's scope and depth of airworthiness authority.
	Grant TAC	1. Consultation with 1 Cdn Air Div A4 Maint is coordinated through the DND TCH.
		2. Unless specified otherwise, TAC associated to a Decision of Significance will be granted by the DND TCH.
		Note
Corrective	Approve technical data to support the	Applicable where contractor configuration management processes address all applicable TAC requirements. 1. Corrective Maintenance Program changes to
Maintenance Program	change Grant Airworthiness Approval	be approved as per Design Change.
riogram	Grant An Worthiness Approval	Notes
		 Limitations must be defined and expanded based on actual organizational experience and competency. The project team needs to work closely with the TAA Staff (DTAES 4) to establish the contractual targets for the applicable Contractor's scope and depth of airworthiness authority.
	Grant TAC.	1. Unless specified otherwise, TAC associated to a Decision of Significance will be granted by the DND TCH.

Airworthiness Activity	Scope	Limitations
		Note
		Applicable where contractor configuration management processes address all applicable TAC requirements.
Aeronautical Product Recertification	Approve inspection methods. Approve inspection instruction. Issue Certificate of Conformance.	No Limitations.
Approve Substitute Parts	Approve technical data to support the part use/installation.	 Part Substitutions are managed as deviations, since they are only authorized for temporary installation, until removal or approval as an alternate part. The DND TCH will approve deviation flight permit.
Local Manufacture of Parts by DND	Approve manufacturing instruction.	 Consultation with DND units is coordinated through the DND TCH or technical problem reporting process.
Deviations to the Approved Maintenance Program	Approve engineering data to support deviation. Approve ALOS Airworthiness Impact Assessments (AWIA) in support of deviations.	 The DND TCH will approve the deviation flight permit.
General Technical Queries	Approve technical data used to support the technical query.	 Consultation with DND units is coordinated through the DND TCH or technical problem reporting process.
Airworthiness Monitoring	Approve finding of applicability Approve follow-on action plan	 Consultation with DND units is coordinated through the DND TCH or other approved process.
		2. Follow-on action plans with financial impact limited as per financial decision of significance.
Special Inspections (SI)	Approve technical data used to support the SI.	 Consultation with 1 Cdn Air Div A4 Maint is coordinated through the DND TCH.
Risk Management	Approve technical data used to support AWIA. Prepare technical content of RARM. Provide recommendation for TAA Approval. Approve ALOS Airworthiness Impact Assessments (AWIA).	 Risk-acceptance and Airworthiness Risk Alert (ARA) / RARM release authority held by DND, as per TAM Part 5, Chapter 1.
Flight Permits	Approve technical data used to support the issue of a Flight Permit.	1. The DND TCH will approve Flight Permit.

 Table 1
 Airworthiness Authority