



Air Force Life Cycle Management Center (AFLCMC)

Standard Process

For

Reportable

Airworthiness Flight Authorization

(TAA-issued Airworthiness Approvals)

Process Owner: AFLCMC/EN-EZ

Date: 21 February 2019

Version: 1.5

Record of Changes.

Record of Changes		
Version	Effective Date	Summary
1.0	21 Feb 2013	Basic document (Approved by S&P Board)
1.1	26 Feb 2013	Admin/Format Changes
1.2	8 Aug 2014	Process Improvement updates
1.3	10 Jul 2015	Annual review; no changes
1.4	9 Sep 2016	Annual review; no changes
1.5	21 Feb 2019	Incorporated use of Airworthiness Certification Tool, reduced total cycle time to 65 workdays, updated figures, tables and Work Breakdown Structure. Approved by S&P Board on 21 Feb 2019.

Reportable Airworthiness Flight Authorization Process

1.0 Description.

- 1.1 In 2010, the USAF instituted 62-series AF Airworthiness (AW) policy requiring independent assessments of all air systems by the USAF Technical Airworthiness Authority (TAA). AW Approvals are required for all air systems owned, leased, contracted for, operated, used, designed, or modified by the Air Force (AF). This document describes the process to obtain a TAA-issued AW Approval (Military Flight Release (MFR) or Military Type Certificate (MTC)) for new air systems undergoing initial AW certification and for reportable modifications to existing air systems. Refer to TAA-issued USAF Airworthiness Bulletins as needed for additional information on MFRs, MTCs, and reportable modifications.
- 1.2 **Baseline/Current Process.** All air systems must undergo AW assessment against approved AW criteria and standards and obtain AW Approvals prior to conducting flight. Failure to comply with approved criteria and standards results in AW risk which must be documented and accepted at the appropriate level of Program Management before an AW Approval may be issued. Airworthiness assessment for air systems undergoing initial AW certification and reportable modifications is conducted first by the Program Office and then by the TAA's organization (AFLCMC/EN-EZ) in close coordination with other organizations (e.g. AF Safety Center). TAA independence from the program chain of execution and TAA review assures the technical adequacy of data products, consistency across AF fleets, and process standardization. Air system conformance to the assessed configuration referenced in the TAA-issued AW Approval is the Single Program Manager's responsibility.
- 1.3 AW assessment for existing air systems undergoing non-reportable modification is conducted within the Program Directorate under the oversight of Delegated Technical Authorities at the Director of Engineering and Chief Engineer levels; refer to 62-series AF policy and TAA-issued AW Bulletins for more information.
- 1.4 Prior to execution of this standard process, the Program Office and AW Office engage in the submittal of input AW documents (Section 3.1.1). 62-series AW policy and TAA-issued AW Bulletins address these products and are available from the AW Office.
- 1.5 **Future Process State.** The AW Certification Tool (ACT) is now used by the TAA's organization as a workflow tool to conduct independent AW assessment and associated process metrics. This tool enhances communication between the Program Office and the TAA's organization enabling more efficient and timely process execution.

2.0 Purpose. All air systems must undergo AW assessment against approved AW criteria and standards and obtain AW Approvals (MTC or MFR) prior to conducting flight.

3.0 Entry/Exit Criteria and Inputs/Outputs.

3.1 Entry Criteria.

- 3.1.1 TAA-approved AW Plan and Certification Basis (CB), Project Tracker, Draft Compliance Report (CR) utilizing ACT, all compliance artifacts (unless previously agreed to by the AW Office), and CR Kickoff briefing, or,
- 3.1.2 Joint Urgent Operational Need (JUON) received for an aircraft design that has not previously been issued an MTC or MFR. As this is atypical, it requires direction from the TAA regarding how to conduct an AW assessment, or,
- 3.1.3 Direction from the TAA.

3.2 Exit Criteria.

- 3.2.1 Final AW Board approving compliance findings and risk assessment.
- 3.2.2 Completed risk acceptance by the appropriate authorities.

3.3 Inputs: AW Plan, CB, Project Tracker, draft CR in ACT, compliance artifacts, CR Kickoff briefing.

3.4 Outputs: TAA-approved CR, TAA-issued MTC or MFR (upon issuance, the Single Program Manager may issue Military Certificates of AW attesting to operational aircraft conformance to the approved design).

4.0 Process Workflow and Activities.

4.1 Suppliers, Inputs, Process, Outputs, Customer (SIPOC), **Table 1.**

	Suppliers	Inputs	Process	Outputs	Customers
Core Flight Release Process	PO Contractors	TAA-Approved AW Plan TAA-Approved CB Compliance Artifacts	Compliance Report Development	PO Compliance Assessment PO Draft AW Hazards & Risks Draft CR CR Kickoff Briefing Project Tracker	AW Office EN-EZ SMEs EN-EZ TAs EN-EZ TDs
	AW Office PO	PO Compliance Assessment Draft CR CR Kickoff Briefing	Compliance Assessment	Compliance Findings TAA-Approved CR TAA-Approved AW Hazards & Risks Draft Aircraft Restrictions Mitigation Options Draft AW Approval (MTC/MFR)	PO Test Orgs MAJCOMs
	AW Office PO	TAA-Approved AW Hazards & Risks Draft Aircraft Restrictions Mitigation Options	Risk Decisions	Aircraft Restrictions Mitigation Strategy TAA-Approved AW Risks in System Safety Risk Assessment Format Risk Acceptances Updated AW Approval (MTC/MFR)	AW Office Test Orgs PO MAJCOMs
	PO	Aircraft Restrictions TAA-Approved CR Risk Acceptances Updated AW Approval	AW Approval	TAA-Issued AW Approval (MTC/MFR)	PO Test Orgs MAJCOMs

Table 1. SIPOC

4.2 Process Flowcharts.

4.2.1 **Figure 1** shows the AW assessment process for a new developmental aircraft or a modification to an existing aircraft. It highlights the critical work (AW Plan, CB) which occurs prior to entrance into this standard process. Note that ACT is an automated MIL-HDBK-516 tool which retains the decisions and approvals of compliance to criteria. Usage of ACT begins with the development of the CB. Upon CB approval, ACT is used to build the CR and reference the associated artifacts until ready for submission to the AW Office. All artifacts need to be linked in the CR before submission, unless approved by the AW Office.

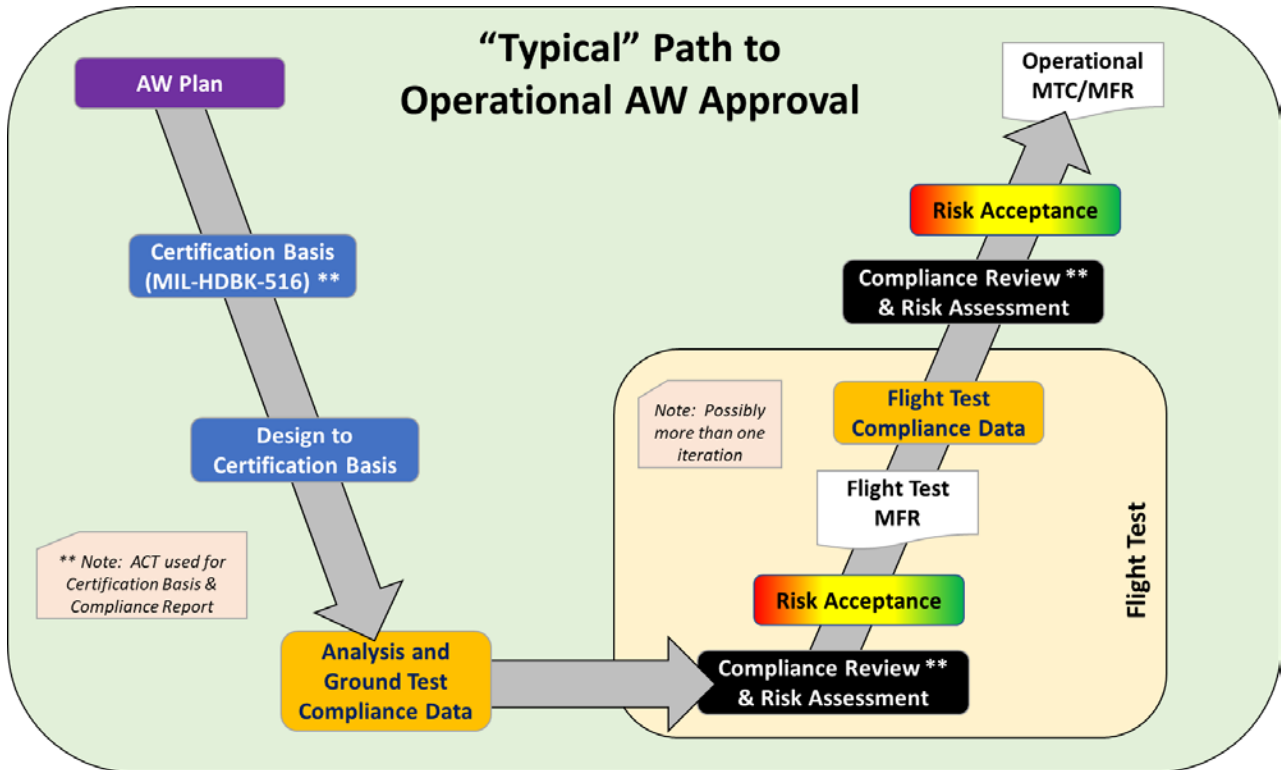


Figure 1. USAF AW Process

4.2.2 **Figure 2** highlights the AW Approval standard process exchanges between the program office and the TAA's organization, AFLCMC EN-EZ, in two parts. The upper half highlights the timeframe for EN-EZ to make a finding of compliance based upon the artifacts provided by the Program Office. This determination is critical to the AW Approval because it identifies the level of compliance to standards, and thus the level of safety of the design. Non-compliances typically result in risk identification. The lower half shows the timeframe to document risks and obtain risk acceptance prior to AW Approval. The tasking highlights that with Low and Medium residual risks the process moves from Step 1.11 to 1.16 which shortens the timeline for an AW Approval.

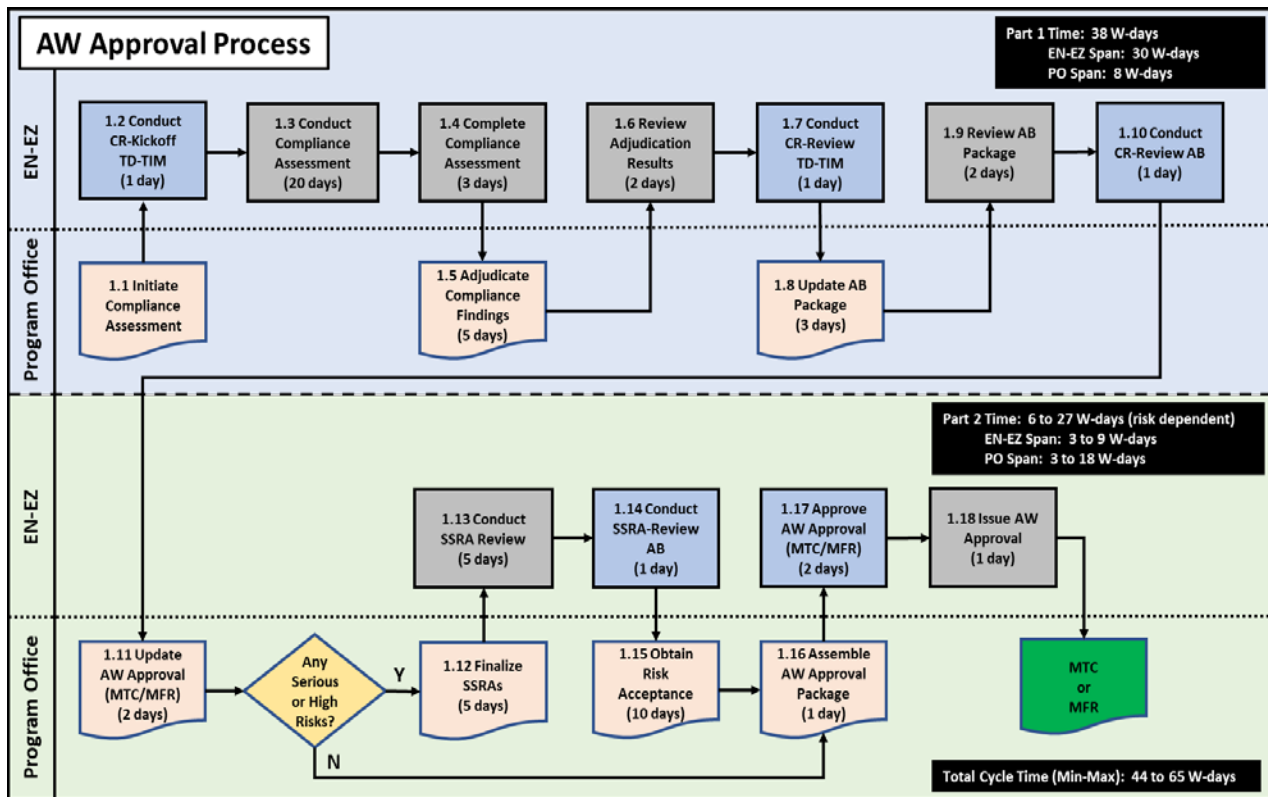


Figure 2. AW Approval Process

4.3 Work Breakdown Structure (WBS). The WBS, Attachment A, provides additional detail for the activity boxes in Figure 2.

4.4 Additional work tables, figures, or checklists. N/A.

5.0 Measurement. Process metrics are developed and maintained by the AW Office. They are reviewed at AW Management Steering Group meetings on a quarterly basis. Metrics to be tracked by this standard process guide are housed on the AFLCMC Dashboard and include:

- 5.1 Compliance to Project Tracker – This metric is time based and compares actual vs. planned worked days for the WBS tasks to AW Approval completion.
- 5.2 Rework/Delay Artifacts – This metric is a subjective assessment that records the causes of any delays or rework.

6.0 Roles and Responsibilities. The pertinent roles and responsibilities for the AW process are:

6.1 The TAA:

- 6.1.1 Implements, manages and controls the design activity of AW.
- 6.1.2 Organizes, trains and equips engineering workforce to provide expertise and direction to design and independently assess air systems.
- 6.1.3 Determines whether air system modifications impact AW, conducts independent AW assessments, and, when appropriate, issues AW Approvals.
- 6.1.4 Maintains and utilizes the AF AW Office. This office serves as the primary interface to the TAA.

6.2 Program Managers (PMs):

- 6.2.1 Ensure AW and substantiating data requirements are incorporated into program contractual documents.
- 6.2.2 Ensure air systems are designed and/or modified in compliance with AW criteria appropriate for the air system type and intended use.
- 6.2.3 Obtain TAA approval on Serious and High System Safety Risk Assessments (SSRAs), and AF AW Authority coordination on High SSRAs, prior to seeking risk acceptance. Obtain acceptance of all risks by the appropriate authority, prior to exposing people, equipment, or the environment to known hazards. Provide proof of risk acceptance to the TAA.
- 6.2.4 Obtain TAA-issued AW Approvals prior to flight for managed air systems.

6.3 Directors of Engineering (DOEs): Conduct AW activities as delegated by the TAA.

6.4 Chief Engineers (CEs): Develop and obtain TAA approval of AW plans, CB documents, and CRs.

7.0 Tools. AW SharePoint site for templates, AWBs, references, policy and ACT requests:

<https://cs2.eis.af.mil/sites/23230/Airworthiness/SitePages/Home.aspx>

8.0 Training. AW process training is available for AF personnel and contractors.

- 8.1 **AFIT SYS 116: Introduction to AW Certification.** Presents AF policy overview and provides introductory knowledge on importance of applying AW principles and practices, a basic understanding of that process during the acquisition and sustainment lifecycle, nomenclature, and an overview of the responsibilities each functional area has in implementing AW.
- 8.2 **EZZ-161: AW Policy and Implementation.** Covers details of the AF Directives, Instructions and AW Bulletins and teaches students how the AW process is executed to assess AW for AF platforms and platform modifications to issue AW Approvals.
- 8.3 **AFIT SYS 316: Advanced AW Certification.** Teaches how to assess AW for new and modified weapon systems, determine modification impact to AW and reportability, and technically assess MIL-HDBK-516 to develop the CB and CR. This course uses examples, case studies, and exercises based on actual experiences with AF weapon systems to allow development of skills required to support the AW process.

9.0 Definitions.

- 9.1 **Airworthiness (AW)** – The property of an air system configuration to safely attain, sustain, and complete flight in accordance with approved usage limits.
- 9.2 **Airworthiness Approval** – Documents issued by an empowered AW authority and may take a number of different forms (e.g., AW release, military type certificate, flight clearance) depending on specific AW authority policy. An AW Approval affirms that the appropriate tenets of the AW process are met and that the aircraft or air system was assessed against the required AW standards and any risk to aircrew, ground crew, passengers, or to third parties has been accepted by the appropriate authority. Examples of AF AW Approvals are Military Type Certificates, Military Flight Releases, and Civil Aircraft Operations Verification Letters.
- 9.3 **Certification Basis (CB)** – A document comprised of the set of AW certification criteria, standards, and methods of compliance that apply to a specific air design. It is typically derived from MIL-HDBK-516, *Airworthiness Certification Criteria*.
- 9.4 **Compliance Report (CR)** – A document comprised of the Certification Basis, references to compliance data, identified non-compliances, hazards associated with non-compliance, and risk level for those hazards.
- 9.5 **Military Type Certificate (MTC)** – An AW Approval based on evidence that the air system design is substantially in compliance with its approved Certification Basis (typically only LOW/MEDIUM risks remain due to non-compliance).
- 9.6 **Military Flight Release (MFR)** – An AW Approval for an air system design that does not meet full standards and/or intent of a Military Type Certificate.
- 9.7 **Technical Airworthiness Authority (TAA)** – The AF official who has the mandate to develop and enforce pertinent rules, regulations, and policy governing technical AW.

10.0 References to Law, Policy, Instructions or Guidance.

- 10.1 AF Policy Directive 62-6, USAF Airworthiness, 16 Jan 2019.
- 10.2 AF Instruction 62-601, USAF Airworthiness, 11 June 2010.
- 10.3 Airworthiness Certification Criteria, MIL-HDBK-516C, 12 Dec 2014.

ATTACHMENT A, Work Breakdown Structure for Flight Authorization

WBS Level	WBS	Activity	Description	OPR	Time (Days)	Input	Supplier	Output	Customer	Tools
1	1	Obtain TAA-Issued AW Approval				TAA-approved AW Plan and Certification Basis (CB) Compliance Report (CR) Kickoff briefing Draft Project Tracker Draft CR (in ACT) documenting PO compliance review including compliance findings, initial risk assessments, operational envelope, limitations & restrictions All compliance artifacts (unless previously agreed to by AW Office)	Program Office (PO)	TAA-approved CR TAA-issued AW Approval	PO	Project Tracker Template Airworthiness Certification Tool (ACT) ACT Data Import Templates AW Briefing Templates SharePoint
2	1.1	Initiate Compliance Assessment	PO submits the input items in order to commence the formal AFLCMC/EN-EZ compliance review PO requests project created in ACT AW Office performs initial review of completeness prior to scheduling the CR-Kickoff Technical Director (TD)-TIM CR-Kickoff briefing due 2 days before TD-TIM. Tracking of the standard process schedule starts with WBS 1.2	PO	0	TAA-approved CB CR-Kickoff briefing Draft Project Tracker Draft CR (in ACT) documenting PO compliance review including compliance findings, initial risk assessments, operational envelope, limitations & restrictions All compliance artifacts (unless previously approved by AW Office)	PO		EN-EZ	ACT ACT Data Import Templates AW Briefing Templates AW Office SharePoint
2	1.2	Conduct CR-Review Kickoff TD-TIM	CR-Review Kickoff TD-TIM conducted (AW Office, PO, TDs, TAs, and SMEs) to provide background program information	AW Office	1	CR-Kickoff briefing Draft Project Tracker	PO	Approved Project Tracker TD approval to commence review	PO	
2	1.3	Conduct Compliance Assessment	AW Office tasks EN-EZ SMEs to conduct compliance review (Technical Advisors (TAs) & TDs notified) SMEs work issues & questions with PO SMEs evaluate evidence against proposed envelope, limitations, restrictions & confirm and/or identify non-compliances and associated hazards, as required SMEs document their findings in ACT and in draft CR-Review AW Board (AB) briefing	AW Office	20	Draft CR (in ACT) documenting PO compliance review including compliance findings, initial risk assessments, operational envelope, limitations & restrictions All compliance artifacts (unless previously agreed to by AW Office)	PO	Updates to CR (in ACT) Draft CR-Review AB briefing	EN-EZ TAs, TDs	ACT AW Briefing Templates

3	1.3.1	Conduct Quick-look Review	<p>AW Office tasks EN-EZ SMEs (cc TDs & TAs) to conduct Quick-look within the first 5 days of the compliance assessment</p> <p>SMEs document findings in ACT and/or report to their TAs and TDs</p> <p>Quick-look is to identify deficiencies in CR and artifact quality or completeness. Enables PO to correct issues prior to a full SME assessment.</p>	AW Office	5	<p>Draft CR (in ACT) documenting PO compliance review including compliance findings, initial risk assessments, operational envelope, limitations & restrictions</p> <p>All compliance artifacts (unless previously agreed to by AW Office)</p>	PO	Identification of deficiencies in the draft CR and/or artifact quality or completeness	EN-EZ TAs, TDs	ACT SharePoint
3	1.3.2	Review SME Quick-look Findings	<p>TAs and TDs review SME Quick-look findings</p> <p>TDs notify AW Office of completion and provide details</p>	AW Office	1	Identification of deficiencies in the Draft CR and/or artifact quality or completeness	EN-EZ SMEs	Quick-look findings (in ACT) and/or in reports	AW Office	ACT
3	1.3.3	Adjudicate Quick-look Findings	<p>If any issues exist:</p> <p>AW Office notifies PO that Quick-look review complete and ACT available for review.</p> <p>PO updates CR (in ACT) and artifacts and notifies AW Office of updates</p> <p>AW Office notifies TDs, TAs, SMEs of updates</p>	PO	2	Quick-look findings (in ACT) and/or in reports	AW Office	<p>Updates to CR (in ACT) and/or artifacts, as necessary</p> <p>Unresolved issues</p>	AW Office	ACT
3	1.3.4	Conduct Quick-look TD-TIM	<p>If any issues still exist:</p> <p>AW Office, PO, TDs, TAs, and SMEs review Quick-look deficiencies and viable options to proceed with compliance assessment</p> <p>Note: Option may be to pause compliance assessment until PO can resolve deficiencies</p>	AW Office	1	<p>Updates to CR (in ACT) and/or artifacts, as necessary</p> <p>Unresolved issues</p>	AW Office	<p>Updates to draft CR (in ACT) as necessary</p> <p>Updated Project Tracker as necessary</p>	PO	ACT
2	1.4	Complete Compliance Assessment	<p>TAs, then TDs, review SME assessments in ACT & in draft CR-Review AB briefing</p> <p>TDs notify AW Office of completion</p> <p>AW Office notifies PO that compliance assessment complete and ACT and CR-Review AB Briefing are available for review</p>	AW Office	3	<p>CR (in ACT)</p> <p>Draft CR Review AB briefing</p>	EN-EZ SMEs	TA and TD coordination on CR and CR-Review AB briefing	PO	ACT
2	1.5	Adjudicate Compliance Findings	<p>PO works with SMEs to resolve issues, develop or refine restrictions, limitations & mitigations.</p> <p>PO determines if proposed limitations and restrictions are viable</p> <p>PO updates CR (in ACT) and CR-Review AB briefing as required and sends to AW Office</p> <p>Disagreements, if any, documented in CR-Review AB briefing</p>	PO	5	<p>CR (in ACT)</p> <p>Draft CR-Review AB briefing</p>	AW Office	<p>Updates to CR and CR-Review AB briefing as necessary</p> <p>Both are due 2 days before CR Review TD-TIM</p>	AW Office	ACT

2	1.6	Review Adjudication Results	AW Office provides updated CR and CR-Review AB briefing to SMEs, TAs, and TDs for coordination	AW Office	2	CR (in ACT) Draft CR-Review AB briefing	AW Office	TD approval to proceed with CR-Review TD-TIM	PO	
2	1.7	Conduct CR-Review TD-TIM	AW Office, PO, TDs, TAs, and SMEs review compliance assessment findings, non-compliances, resulting hazards and risks Resolve issues and disagreements if any Review mitigating actions including operational envelope, limitations and restrictions Unresolved disagreements, if any, are documented in CR-Review AB briefing	AW Office	1	Draft CR-Review AB briefing	AW Office	Action items TD approval to proceed with CR-Review AB Updates to CR and CR-Review AB briefing as necessary Unresolved issues	PO	
2	1.8	Update AB Package	PO and SMEs complete action items, update CR (in ACT) if necessary and submit updated CR-Review AB briefing if necessary PO submits a Draft MTC/MFR Output due 2 days before CR-Review AB	PO	3	Action items	PO	Updates to CR (in ACT) and CR-Review AB briefing as necessary Draft MTC/MFR	AW Office	MFR/MTC Templates
2	1.9	Review AB Package	AW Office provides updated CR, CR-Review AB briefing and draft MTC/MFR to SMEs, TAs, TDs and Safety Center for coordination	AW Office	2	Updates to CR (in ACT) and CR-Review AB briefing as necessary Draft MTC/MFR	AW Office	Approval to proceed to AB	EN-EZ	
2	1.10	Conduct CR-Review AB	AB and PO review compliance assessment findings, non-compliances, resulting hazards and risks, mitigation options AB approves CR and finalizes technical aspects of risk assessment	AW Office	1	CR Review AB briefing Draft MTC/MFR	AW Office	Minutes and Action Items TAA-Approved CR Risk mitigation actions if necessary	PO	
2	1.11	Update AW Approval (MTC/MFR)	PO updates MTC/MFR PO ensures mitigation actions (restrictions and limitations) acceptable and provides final MTC/MFR	PO	2	Results from CR-Review AB	PO	Updated MTC/MFR as necessary	AW Office	
2	1.12	Finalize SSRAs	For Serious and High risks resulting from non-compliances, PO finalizes System Safety Risk Assessments (SSRAs) IAW appropriate System Safety policy Note: the PO should have indications well before this activity that Serious or High risks exist and have already commenced SSRA development	PO	5	Results from CR-Review AB	AW Office	SSRAs	AW Office	System Safety SSRA format

2	1.13	Conduct SSRA Review	For Serious and High risks resulting from non-compliances, AW Office coordinates SSRAs with SMEs, TAs, TDs, and appropriate Senior Leaders (SL)	AW Office	5	SSRAs	PO	SME, TA, TD and SL coordination on SSRAs	EN-EZ	
2	1.14	Conduct SSRA-Review AB	For Serious and High risks resulting from non-compliances, AB and PO review, adjudicate issues, and approve technical details of SSRAs	AW Office	1	SME, TA, TD and SL coordination on SSRAs	AW Office	TAA approval of SSRAs	PO	
2	1.15	Obtain Risk Acceptance	For Serious and High risks resulting from non-compliances, PO coordinates SSRAs with the appropriate Risk Acceptance Authority IAW appropriate System Safety policy	PO	10	SSRAs	PO	Appropriate Acquisition and Operational Authority Risk Acceptance	PO EN-EZ	
2	1.16	Assemble AW Approval Package	PO provides PM risk acceptance of Low and Medium risks If any Serious or High risks exist, PO provides risk acceptance (from appropriate Risk Acceptance Authority) PO ensures mitigation actions (restrictions and limitations) acceptable and provides final MTC/MFR	PO	1	Appropriate Acquisition and Operational Authority Risk Acceptances	PO	Risk acceptances Final MTC/MFR	AW Office	
2	1.17	Approve AW Approval (MTC/MFR)	AW Office coordinates with AB and obtains TAA approval of the AW Approval package Note: This may entail conducting a formal AB or completed virtually, dependent upon resolution of issues	AW Office	2	Risk acceptances Final MTC/MFR	AW Office	AB coordination TAA-issued MTC/MFR	AW Office	
2	1.18	Issue Flight Authorization	AW Office provides the TAA-issued AW Approval (Flight Authorization)	AW Office	1	TAA-issued MTC/MFR	AW Office	TAA-issued MTC/MFR	PO	
				Planned Cycle Time	65					