Air Force Life Cycle Management Center

Standard Process

to Execute

Risk and Issue Management

in Acquisition Programs

Process Owner: AFLCMC/AZA

Date: 21 Jan 2021

Version: 2.0

Record of Changes. Minor changes are annotated by changing the second digit, i.e., the first minor change after the basic document would be recorded as "1.1". Major changes are annotated by changing the first digit, i.e., the first major change after release of the basic document would be numbered as "2.0".

Record of Changes		
Version	Effective Date	Summary
1.0	21 Nov 13	Process Standard approved by Standards and Process (S&P) Board on 7 Nov 13.
1.1	28 May 2014	Added Qualitative metric (para 5.2.3 and subs). Reviewed and approved by S&P Board on 15 May 2014.
1.2	10 Jul 2015	Conducted annual review; no changes required.
1.3	29 Feb 2016	Replaced metric (para 5.2.3) with a summary of risk mgmt inspection findings as directed at 24 Feb 2016 S&P Board. Minor admin and references updates also made.
1.4	17 Nov 2016	Fact of life changes due to SAF/AQ implementation of government owned risk tracking tool in place of continued use of commercial software and minor revisions to align to revised Standard Process (SP) S01.
1.5	17 Nov 2017	Fact of life changes due to AFI 63-101/20-101 revision including changes to SharePoint URLs, linkage to new AFLCMC SPs, Guides, and sustainment information. Approved at Nov 2017 S&P Board.
1.6	15 Nov 2018	Fact of life changes to address National Defense Authorization Act FY16 Sec 804 emphasis and changes to SharePoint URLs, linkage to new AFLCMC SPs, Guides, and sustainment information. Approved at Nov 2018 S&P Board.
1.7	21 Nov 2019	Minor fact of life changes and a references middle tier acquisitions. Approved at Nov 2019 S&P Board.
2.0	21 Jan 2021	Updated due to multiple DoD and Air Force acquisition policy updates and terminations. OPR reassigned from AFLCMC/AZE to AFLCMC/AZA. Approved by 21 Jan 2021 S&P Group.

Risk and Issue Management Process

1.0 Description. This Risk and Issues Management standard process supplements the Air Force life cycle Risk Management direction for all Air Force Life Cycle Management Center (AFLCMC) organizations involved in system acquisition as directed by DoDI 5000.02, DoDI 5000.74, DoDI 5000.75, DoDI 5000.80, DoDI 5000.81 and AFI 63-101/20-101. Risk is a fundamental consideration from the first discussion of capability needs until final disposition of a materiel solution. The focus of this standard process is on risk management as a program management tool for acquisition programs acquiring weapon systems, information systems, system modifications, or services used by programs in the Program Executive Officer's (PEO) portfolio to sustain these systems. Because the Air Force has chosen not to implement opportunity management as part of risk and issue management processes for acquistion programs, this standard process aligns with AFI 63-101/20-101. Risk management is accomplished through active planning, risk identification, analysis, handling, and tracking of program or project risks. To ensure AFLCMC programs provide decision makers with the best available risk and issue information, and meet Air Force risk management expectations, program offices shall perform the following activities.

1.1 Execute rigorous, continuous risk management practices.

1.2 Manage risks and issues within defined cost, schedule, performance and technical contraints in accordance with this standard process.

1.3 Conduct Acquisition Center of Excellence (ACE) facilitated risk workshops as part of the initial acquisition strategy development to identify risks in executing the program.

1.4 Conduct Integrated Risk Assessments (IRA) to quantify and analyze cost and schedule impacts in support of the annual Program Office Estimate (POE).

1.5 If a program conducts a Program Sufficiency Review (PSR), ensure that the PSR assessment suite is completed prior to acquisition strategy risk workshops or WBS Activity 1.3.1.3 in Table 2.

1.6 Ensure execution and oversight of Risk Handling Plans (RHP) and Corrective Action Plans (CAP).

1.7 Document the program Risk and Issue Management (RIM) processes and strategies in a Risk Management Plan (RMP) developed by a multi-functional team at program initiation.

1.8 Track unclassified risks and issues for active Acquisition Master List (AML) programs in the Enterprise Risk Management Service (ERMS). ERMS is available online through the Program Management Resource Tools (PMRT) (Ref 10.20).

1.8.1 Track classified risks and issues in a risk management system with ERMS-comparable data. An Excel template is available on the AFLCMC Risk Management SharePoint site (Ref 10.18.1).

1.8.2 For AML programs initiated before Oct 2012, the PEO may approve continued use of a pre-existing tracking system on a subsequent sole source contract to track unclassified risks if the Program Manager (PM) certifies the system to be ERMS-equivalent (see Ref 10.18.1.1 for equivalency requirements). An approved Memorandum for Record, signed by the PEO, will be included in the RMP (see Ref 10.18.1.2 for memorandum template).

1.8.3 For AFLCMC programs in other Service's PEO portofolios, use that service's risk tracking system in lieu of ERMS and identify it in the AFLCMC program's RMP.

2.0 Purpose.

2.1 Consistent and organized risk and issue management is the purpose of the RIM process. The government performs risk management to identify risks and issues so it can mitigate negative events and improve the occurrence of positive events. Consistent and proper risk management provides program managers with confidence in achieving program objectives within planned cost, schedule, scope, quality and resources. It also gives program managers more control over their programs and puts them in a better position for responding to negative events.

2.2 This standard process supplements Air Force policy and guidance listed in Section 10. The intent of this process is to ensure understanding of how AFLCMC organizations will specifically execute that governance rather than repeat existing information. This process has three purposes for AFLCMC acquisition programs regardless of PEO portfolio.

2.2.1 Document this AFLCMC process and the employment of management tools.

2.2.2 Serve as the 'Just-In-Time' reference, and be the recommended 'Start Here' document.

2.2.3 Introduce employees to the unique aspects of applying RIM to acquisition programs managed in AFLCMC.

3.0 Potential Entry/Exit Criteria and Inputs/Outputs

3.1 Entry Criteria.

3.1.1 Acquisition strategy planning in support of a request for an Acquisition Decision Memorandum initiating program at Milestone A or later.

3.1.2 The modification is certified/approved by the lead command (i.e., Part V, AF Form 1067).

3.1.3 The receipt of a new sustainment support request or need to replace on-going support.

3.1.4 Acquisition strategy planning in support of an approval request for Middle Tier Acquisition activities.

3.2 Exit Criteria. Risk and issue management on a system or process ends with system disposal or discontinuation. At the end of the acquisition phase, residual risks and any MDA approved risk mitigation plans are passed to the PEO's sustaining program office for continued monitoring and action.

3.3 Inputs.

3.3.1 Program requirements

3.3.2 Outputs from tools and/or methodologies for revealing program risks. Paragraph 7.1 contains examples of such tools and methodologies.

3.3.3 Program and platform specific management plans (e.g., System Engineering Plan, Life Cycle Sustainment Plan)

3.3.4 Contractor Risk Management Plan

3.3.5 Contractor identified and managed risks and issues

3.3.6 Contract deliverables

3.3.7 DoD and Air Force governance regarding RIM

3.3.8 MIL-STD-882E hazard determination and legacy system safety identified risks

3.3.9 Risks identified during Analysis of Alternatives (AoA) applicable to the acquisition

3.4 Outputs.

3.4.1 Program Risk Management Plan (RMP)

3.4.2 Risks and issues identified, and applicable Risk Handling Plans (RHP) and issue Corrective Action Plans (CAP) developed

3.4.3 Risk handling waterfall charts showing projected and actual risk burndown associated with risk handling activities as represented over time

3.4.4 Quantified risk data in the schedule and cost analyses of an Integrated Risk Assessment that supports annual Program Office Estimates (POE) and other cost estimates

3.4.5 Standard risk matrix (5x5) using Air Force standard likelihood and consequence ratings

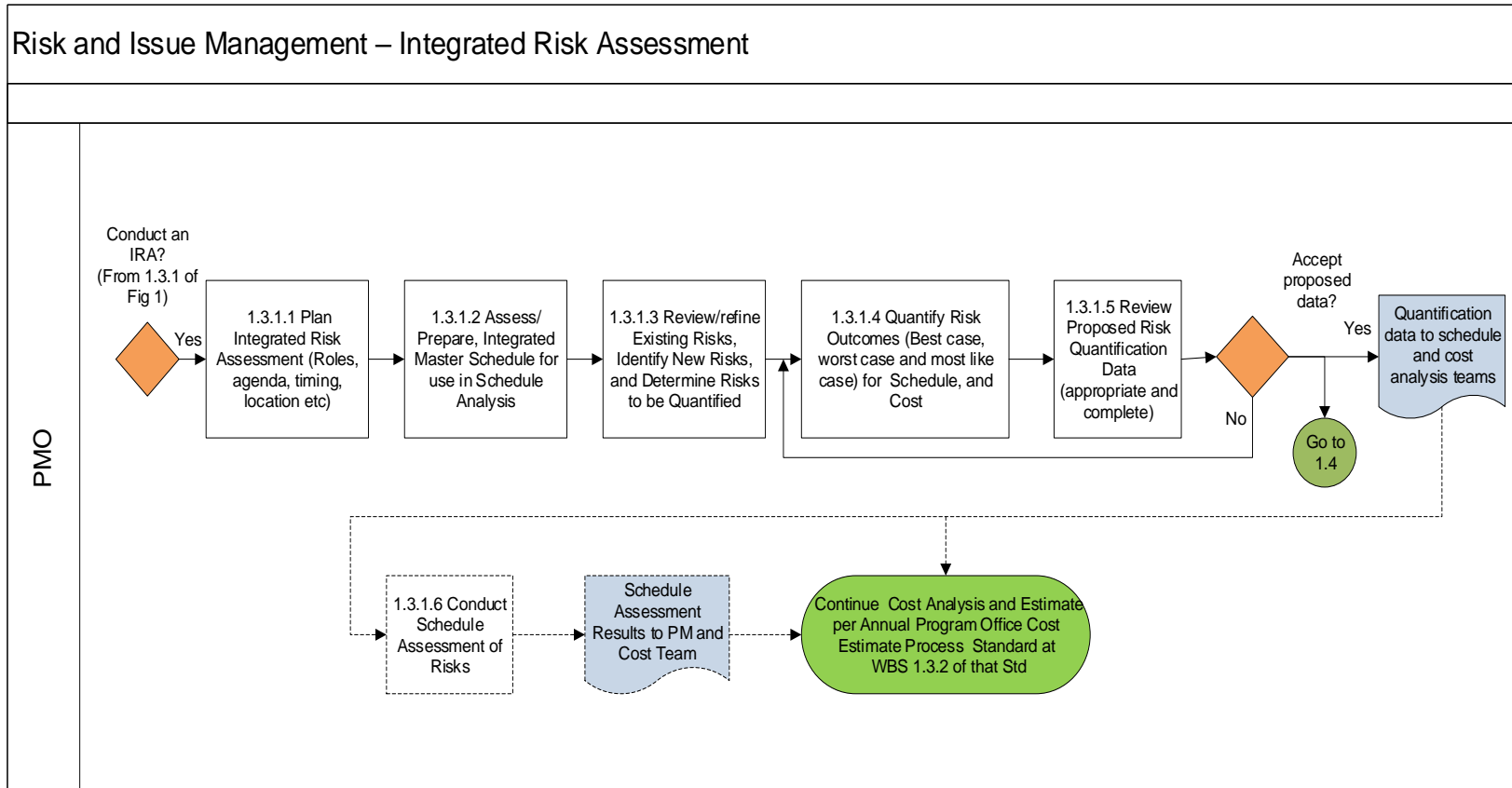3.4.6 Standard issue matrix (1x5) using Air Force standard consequence ratings

4.0 Process Workflow and Activities. This section details the workflow and activities of the RIM process to depict its cyclical nature.

4.1 Supplier, Inputs, Process, Outputs, Customer (SIPOC), **Table 1**. This table is a high-level macro representation of the Risk and Issue Management process.

4.2 Process Flowcharts. **Figure 1** is a high-level Risk and Issue Management process flowchart. **Figure 2** is an Integrated Risk Assessment for risk quantification.

4.3 Work Breakdown Structure (WBS). The WBS in **Table 2** provides additional details for the the activity boxes in Figure 1. Because Risk and Issue Management is continuous and cyclical, time is shown in non-cumulative typical intervals for a range of program complexity. References 10.17.1-2 contain information for accomplishing the activities. **Attachment A** is the detailed Microsoft Excel version of Table 2.

Table 1. SIPOC

Suppliers	Inputs		Process	Outputs		Customers
Providers of the required resources	*Resources Required to execute process*	*Requirements*	*Description of Activity*	*Deliverables From Process*	*Requirements*	*Anyone who receives output of the process*
- User/Lead Command - DoD/SAF Acquisition offices - Program Office - Prime Contractor	- Program Initiation Documents - Ref 10.1-10.8 - Cross-functional Risk working group/IPT - Contractor RMP and Standard Practices	- Overarching program requirements (e.g., CDD AF1067) and constraints - Analysis of Alternatives - Market Research	- Document program risks and issues - Execute Risk and Issue Management program	- Approved RIM Plan - Risk and issue database - RHPs with 5x5 matrix - Issue Corrective Action Plans (CAP) with 1x5 matrix	- Risk statements in IF-THEN format - Issue statements in SINCE-THEN format - Risk/Issue ratings use Air Force standard criteria - Sufficient data in RHPs/CAPs for generating planned and actual burn-down charts	- Decision Authority - PEO - DoD/SAF oversight IPTs - Program office personnel - Prime Contractor
- Users - Program Office personnel - Independent Subject Matter Experts - Prime Contractor - Organic repair and sustainment offices	- Program requirements - Assessment results (e.g., TRA, LHA) - Existing risk results - Linked and mechanically sound program schedule - Schedule risk analysis tool	- Well constructed risk statements - Sufficient data and information for conducting risk analysis - Sufficient detail in program schedule (WBS Level 4 or greater desired)	Conduct Integrated Risk Assessment for data analysis and quantification to support annual Program Office Estimates (POE) and other cost estimate reviews	- New/Updated risks and issues - Schedule risk analysis with specific identified risks - Cost analysis to support POE	- Risks/Issues in proper statement and matrix formats - Risk/Issues use Air Force standard criteria - Risk impacts to cost/schedule quantifications in worst/most likely/best case scenarios - Issues quantified by cost/schedule - Identify schedule tasks impacted by Risks/Issues	- Decision Authority - PEO - DoD/SAF oversight IPTs - Program Office personnel and cost staff

Figure 1. Risk and Issue Management Flowchart

Dashed lines indicate returning to an earlier procedure due to Risk Handling Plan or Corrective Action Plan rework.

Figure 2. Integrated Risk Assessment Flowchart

Risk and Issue Management – Integrated Risk Assessment

PMO

Conduct an IRA? (From 1.3.1 of Fig 1)

Yes

1.3.1.1 Plan Integrated Risk Assessment (Roles, agenda, timing, location etc)

1.3.1.2 Assess/ Prepare, Integrated Master Schedule for use in Schedule Analysis

1.3.1.3 Review/refine Existing Risks, Identify New Risks, and Determine Risks to be Quantified

1.3.1.4 Quantify Risk Outcomes (Best case, worst case and most like case) for Schedule, and Cost

1.3.1.5 Review Proposed Risk Quantification Data (appropriate and complete)

Accept proposed data?

Yes

No

Go to 1.4

Quantification data to schedule and cost analysis teams

1.3.1.6 Conduct Schedule Assessment of Risks

Schedule Assessment Results to PM and Cost Team

Continue Cost Analysis and Estimate per Annual Program Office Cost Estimate Process Standard at WBS 1.3.2 of that Std

Dashed lines indicate Integrated Risk Assessment procedures not covered in this standard process.

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Table 2. Excerpt of Risk and Issue Management Work Breakdown Structure in Attachment A

Lvl	WBS	Activity	Description	OPR	Time
1	1.0	Conduct Risk and Issue Management for Acquisition Programs	Risk and Issue Management as a management process for acquisition programs accomplished through active identification, assessment, analysis, handling, and tracking of program risks and issues.	Program Manager	N/A continuous process
2	1.1	Develop/Update Acquisition Program's Risk Management Plan (RMP)	The Program Manager, in coordination with the program office functional leads, develops a RMP consistent with Air Force policy and this standard process that articulates the program strategy for reducing risk and managing issues that threaten the ability to meet program objectives. Program personnel manage risks and issues according to the strategy and process documented in the RMP including roles and responsibilities, interaction with contractor(s), and plans to reduce programmatic risks. The RMP also documents the plan to maintain configuration management in the tracking of all risks, including tiered risks if used; frequency of risk review meetings and structures, such as Risk Review Boards, and the expected participants. RMPs are annually reviewed and if necessary, updated with current strategies and processes. RMPs will address the 15 emphasis areas in the second and third sentences of AFI 63-101/20-101, Paragraph 4.6.1.	Program Manager	Initial Plan 90 days, Updates 30 days,
2	1.2	Identify Specific Risks to meeting Acquisition Program Objectives	This activity identifies specific risks to meeting documented and derived requirements necessary to fulfill program objectives within the allotted cost/schedule and applies to any acquisition regardless of strategy. Pre-award risk workshops to identify risks to executing a program which need to be considered in the acquisition strategy and execution are facilitated by local Acquisition Center of Excellence offices. Risk workshops may occur at any time during program execution and are part of the technical evaluation phase of an Integrated Risk Assessment or risk integration in a Program Sufficiency Review. Risk statements are written in the IF (risk) THEN (outcome) format to facilitate risk rating and handling. Issues that are realized risks, known issues, or incidentally identified as part of risk assessment activities are analyzed in WBS Activity 1.6 below. During sustainment, risk identification continues with emphasis on maintaining readiness and availability. Integrated Product Support elements, Supply Chain Risk Management and Diminishing Manufacturing are on-going concerns. They can adversely impact parts/ services availability, reliability, performance, continuity of Air Force operations, economic efficiency and cybersecurity.	Program Manager, Program office Functional Leads	N/A continuous activity

Lvl	WBS	Activity	Description	OPR	Time
2	1.3	Analyze Risks	Analyzing Risk is the process of examining each identified risk, isolating the cause, and determining the impact. Part of this process is "rating" risks to determine their likelihood (IF) of occurrence and consequence of impact (THEN) on cost, schedule and/or performance. Use supporting rationale to quantifiy the most likely impact. Qualitative Likelihood and Consequence ratings must be in accordance with the criteria in AFI 63-101/20-101 Tables A3.1-A3.4, and presented on an Air Force 5x5 matrix (AFI 63-101/20-101, Figure A3.1). Risks identified using Mil-STD-882E (Ref 10.17.3) and Airworthiness Risk Bulletin 150A (Ref 10.9) use Figure A3.2 in AFI 63-101/20-101 for translating rating performance consequences. For System Security risks, use the System Security Engineering (SSE) process in the AFLCMC Systems Engineering Toolset (Ref 10.18.1.3). Unless indicated as a cost or schedule risk on the Standard 5x5 risk matrix, it is assumed that the risk is a performance risk. The PM for acquisition programs which are purely sustainment activities, such as contractor logistic support, knowledge support and IT sustainment should consider developing an alternative Consequence Rating Criteria and seek Milestone Decision Authority (MDA) approval for use. Sustainment risks not associated with an acquisition program should be rated against objective consequence criteria approved by the Program Manager and documented in the system's RMP. Consequence criteria examples are on the AFLCMC Risk Management SharePoint (Ref 10.18.1, Lessons Learned). Research and document additional risk information such as contributing causes that lead to the risk occurring. This information will influence handling plan strategies.	Program Manager	1-10 workdays

Lvl	WBS	Activity	Description	OPR	Time
3	1.3.1	Conduct Integrated Risk Assessment	Conduct Integrated Risk Assessment in support of annual Program Office Estimate or other directed cost estimate or milestone reviews. This activity is a structured effort designed to update risks, gather quantitative data on the range of impacts if the risks are realized, and analyze the potential risk effect on the program cost and schedule. The goal of this activity is to provide decision makers with better program insight. The quality of the gathered best case, worst case and most likely case cost and schedule data for each risk directly impacts the quality of the subsequent analysis. This activity is not applicable to acquisitions which primarily deliver "on demand", continuous or level of effort support. (i.e. Contract Logistic Support, helpdesk support, etc.)	Program Manager	60 work days
4	1.3.1.1	Plan Integrated Risk Assessment	Planning an Integrated Risk Assessment (IRA) includes determining the following: scope of the program to be analyzed; Ground Rules and Assumptions, including if a Program Sufficiency Review precedes the IRA; IRA event schedule; Integrated Master Schedule(s) versions to be used; personnel needed; training needed; and if an IRA charter is needed to ensure active participation.	Integrated Risk Assessment Core Team	20 work days
4	1.3.1.2	Assess/prepare Integrated Master Schedule for use in schedule analysis	The Integrated Master Schedule (IMS), provided in scheduling software such as Microsoft Project, is used to assess the impact of specific risks on the program schedule. The IMS must first be assessed to ensure mechanical integrity and if necessary prepared by correcting improper links and constraints. If multiple IMSs are used, a strategy must be developed to address linkages or touch points between schedules to ensure risk impacts are not artificially constrained by the lack of schedule interfaces.	Program Office Schedule POC and Prime contractor scheduler	Included in 1.3.1.1 planning
4	1.3.1.3	Review/refine existing risks, identify new risks and determine risks to be quantified	This is the first Integrated Risk Assessment (IRA) activity (Commonly called IRA part 1) of the technical evaluation phase. This meeting brings all the IRA teams together to review each of the existing risks and determine if the risk statement is still current and appropriate. New risks, including those from a preceding Program Sufficiency Review, are introduced, and risk statements created. Risks revealed by functional assessments are also considered if they have the potential to impact program cost, schedule or performance. The Core Team determines which risks (and issues if impacts are not in current program cost/schedule) are quantified.	Integrated Risk Assessment Core Team	25 work days (activities 1.3.1.3-5) 2-5 days

Lvl	WBS	Activity	Description	OPR	Time
4	1.3.1.4	Quantify Risk Outcomes (Best case, worst case and most likely case) for Schedule, and Cost	The execution team determines the range of the impacts of the outcome if the risk occurs without consideration to additional risk handling or mitigations that are not part of the current schedule baseline. Specific quantification data, as defined in the ground rules, is collected. This activity is performed by the risk owners during a "homework period" of usually no less than two weeks and no more than 4 weeks.	Integrated Risk Assessment Execution team, Schedule POCs	Included in 1.3.1.3 time span. (>10 workdays, <20 workdays
4	1.3.1.5	Review/Validate Proposed Risk Quantification Data	Risk Owners present the quantification data and supporting information to the Integrated Risk Assessment (IRA) Core Team, at a meeting commonly called IRA part 2. The Core Team accepts the data quantification assumptions and data, or directs rework. The technical evaluation phase of the IRA is not completed until all rework data is submitted and approved by the Core Team (Commonly called IRA part 2). Quantified data is passed to the cost and schedule analysis teams.	Integrated Risk Assessment Core Team	Included in 1.3.1.3 time span. 1- 5 workdays
4	1.3.1.6	Conduct Schedule Assessment	The Schedule Analysis team uses the risk schedule quantification data to run a Monte Carlo simulation on the schedule(s) to determine the range of impacts to the focus points. Results are briefed to the Core Team and given to Cost Analysis team for incorporation into the Program Office Estimate.	Lead, Schedule Analysis Team	15 workdays
2	1.4	Develop Risk Handling Plans (RHP)	Develop a Risk Handling Plan (RHP) for each high and medium rated risk. RHPs from low risks are at the Program manager's discretion or as directed in the RMP. RHPs consist of discrete actionable activities. Information for each activity includes: short activity description; estimated completion date; criteria to determine if activity was successfully completed and impacted risk as expected; rating of risk (likelihood and consequence by type) if activity is successful. RHPs strive to prevent the risk from occurring or changing the outcome so that the impact of the risk occurring is reduced. RHP activities must occur before a risk is realized. Contingency plans may be identified but no risk rating reduction is credited beyond what is acted on prior to the risk occurring. See AFLCMC Risk SharePoint site for minimum required tracking data.	Risk Owner(s)	10 workdays
2	1.5	Execute and Track RHP	This activity executes the RHP activities and monitors their execution. RHP activity data is updated as activities are completed. Risks should be reviewed and updated by the risk owner at least monthly. Dynamic programs may warrant more frequent review. Updates can be driven by the Program Executive Officer execution review schedule, or Defense Acquisition Board reviews where all medium and high risks are briefed.	Risk Owner(s)	1-5 days

Lvl	WBS	Activity	Description	OPR	Time
3	1.5.1	Evaluate Effectiveness of RHP Activity	When a RHP activity is complete, the actual completion date is entered into the risk tracking system and the activity is evaluated to see if it was successfully completed and if it had the intended effect on the risk (reducing likelihood or consequence rating). Determine if additional risk tracking activities will lower the risk. Consider any resource constraints when recommending further action.	Risk Owner(s)	1-5 days
3	1.5.2	Conduct quarterly Program Manager Risk Reviews and Bi-Annual Risk Deep Dives	At least quarterly, the Program Manager shall conduct a review of all high and medium active risks and issues to ensure RHP and Corrective Action Plan (CAP) actions are appropriate and on track. Bi-annually the Program Manager will conduct a risk deep dive to ensure risks from all functional areas are identified, analyzed, and tracked in addition to ensuring the RHP and CAP actions are appropriate and on track.	Program Manager	<1 day for quarterly review;1-2 for deep dive
2	1.6	Analyze Issues	Determine most likely impact to program using the Air Force Standard Consequence definitions for Cost, Schedule and/or Performance. Issues ratings are presented on a 1X5 matrix using the top row of the 5X5 risk matrix (since the probability of an issue is 100%). Analyze the root cause of an issue to help in determining the most feasible Corrective Action Plan.	Issue Owner	1-5 days
2	1.7	Develop Issue CAPs	Issue CAPs strive to contain the impact of realized risks or issues not previously identified as risk that the Program Manager determines warrant tracking and CAP development.	Issue Owner	10 workdays
2	1.8	Execute and Track CAPs	This activity monitors the execution of the CAPs and updates activity data as appropriate. Updates are often driven by the Program Executive Officer execution review schedule or the Program Manager's review schedule. Resolution urgency will also be a factor in the frequency of CAP monitoring and updates. See Reference 10.18.1 for the minimum tracking data required for the creation of burndown charts.	Issue Owner	1-5 days per update
3	1.8.1	Evaluate Effectiveness of CAP Activity	When a CAP activity is complete, the actual completion date is entered into the tracking system and the activity is evaluated to see if it was successfully completed and had the intended effect on the consequence (i.e., reduced consequence rating).	Issue Owner	1-5 days per update

5.0 Measurement.

5.1 Process Results. The ultimate measure of effective risk management for an acquisition program is the execution of all program objectives within cost and schedule constraints without deferring requirements to subsequent acquisitions. However, the long interval between program initiation and completion makes this an ineffective measure of an ongoing risk management process. Periodic Integrated Risk Assessments, which quantify and analyze the risk impacts to cost and schedule, provide the program manager a better understanding of program status and how realizing risks can affect the planned schedule and drive costs.

5.2 Process Evaluation.

5.2.1 Risk and Issue Management is a continuous, cyclical process with each risk and issue moving at its own pace. Therefore, this standard process lacks a time standard data collection requirement.

5.2.2 When briefing Risk Management findings that have been revealed since the last annual report, provide a summary of those findings instead of using previously established metrics or proposed revised metrics.

5.2.3 Risk Management self-inspection is one of the ten key areas in the Systems Engineering Assessment Model (SEAM) process. Annual assessment reporting requirements are in AFMCI 63-1201, paragraphs 1.1.3 through 1.1.3.5.1.2 (Ref 10.8).

6.0 Roles and Responsibilities. Risk management roles and responsibilities evolve throughout the system lifecycle with some stakeholders holding more responsibility at certain times during the acquisition process and less during others.

6.1 Program Manager (PM)

6.1.1 Own the program's Risk and Issue Management process and oversee its execution using rigorous, continuous risk management practices.

6.1.1.1 Conduct risk and issue reviews at least quarterly and bi-annual deep dives.

6.1.1.2 Determine if the Air Force Standard Rating Consequence Criteria are adequate for the type of acquisition program or lifecycle phase and if not, take these actions:

6.1.1.2.1. Develop alternative consequence rating criteria ensuring they are of similar scale to the Air Force Standard Consequence Criteria.

6.1.1.2.2. Include alternative consequence rating criteria in either the Acquisition Strategy document or an Acquisition Decision Memorandum for Milestone Decision Authority (MDA) approval per AFI 63-101/20-101 tailoring requirements.

6.1.2 Ensure program's risk management process is accurately documented in the program RMP.

6.1.2.1 Include contractor's risk management plan as attachment to program RMP.

6.1.2.2 Address in the program's RMP how joint risk management is accomplished.

6.1.2.3 Include any MDA approved alternative consequence rating criteria in RMP.

6.1.3   Initiate Integrated Risk Assessments (IRA) in conjunction with annual Program Office Estimates (POE) for programs which have scheduled activities.

    6.1.3.1   Arrange for Cost and Schedule Analysis Team support.

    6.1.3.2   Request independent Subject Matter Expert (SME) support, as needed.

6.1.4   Communicate risk and issues associated with the program to the PEO, MDA and senior leaders in accordance with AFI 63-101/20-101 Para 4.6.1.3.

6.1.5   Track unclassified risks and issues for programs with competitively awarded contracts.

    6.1.5.1   For such contracts awarded after Sep 2012, use the Enterprise Risk Management Service (ERMS).

    6.1.5.2   For contracts awarded before Oct 2012, a legacy system may be used if:

        6.1.5.2.1.   The PM certifies, in a memorandum for record (memo), that the system is equivalent to ERMS and its data is ERMS-comparable

        6.1.5.2.2.   The PEO approves and signs the memo.

        6.1.5.2.3.   The memo is part of the RMP.

6.2   Program Executive Officer (PEO)

6.2.1   Consider risks and issues relevant to portfolio level decisions.

6.2.2   Approve use of legacy risk tracking systems that the PM certifies as ERMS-equivalent.

6.2.3   When acting as the Milestone Decision Authority, accept high and medium residual risks to the program and document the decision in Acquisition Decision Memorandums in accordance with AFI 63-101/20-101.

6.2.4   Assign administrators to manage ERMS access and permissions via Program Management Resource Tools (PMRT) for directorate programs of record and to maintain platform level visibility of risks and issues. PEO may delegate ERMS access and permissions management to three-letter Division Chiefs.

6.2.5   Notify the ERMS office in AFLCMC/HIBX of administrator assignments and changes.

6.2.6   When acting as MDA, ensure adequacy of the Air Force Standard Consequence Rating Criteria before approving alternative rating criteria that are documented in the Acquisition Strategy or an Acquisition Decision Memorandum.

6.3   Three-letter Division Chiefs for PEO organizations managing acquisition programs

6.3.1   Maintain platform/division level visibility of risks and issues in ERMS.

6.4   Organization Functional Leads

6.4.1   Ensure personnel are trained in risk management and how to assess risk in their functional area; including unique functional-area tools and methodologies. Methodology and tool examples are in paragraph 7.1.

6.4.2 When appropriate, ensure personnel are trained how to use the risk tracking system.

6.5 Program Functional Leads

6.5.1 Ensure personnel are trained in risk management and how to assess risk in their functional area; including unique functional-area tools and methodologies.

6.5.2 When appropriate, ensure personnel are trained how to use the risk tracking system.

6.5.3 Participate in risk reviews, cross-functional risk assessments, workshops and IRAs.

6.5.4 Ensure functional area risks are incorporated in the program's overall risk management effort.   Per AFI 63-101/20-101 Paragraph 4.6.5, the Chief Engineer is responsible for technical risk management.

6.6 Program Office Personnel

6.6.1 Identify and elevate potential risks to functional or Integrated Product Team leads as they are revealed including those revealed in functional area assessments.

6.6.2 Complete Risk and Issue Management activities, including development of Risk Handling and issue Corrective Action Plans, when assigned as Risk Owner. If co-owner of a joint risk, assure that the risk statement and RHPs reflects a program perspective, and are appropriate and adequate.

6.6.3 Take risk management, assessment and applicable tool training as appropriate.

6.6.4 Participate in risk reviews, cross-functional assessments (e.g., IRAs) and workshops.

6.7 Center Cost Chief or Delegated Cost Chief at Operating Locations

6.7.1 Provide resources (e.g., manpower, software tools) to account for the quantification of acquisition program risks in Program Office Estimates as requested. Center staff manpower resources are requested by program office as needed.

6.7.2 Ensure Program Office Estimates incorporate all risks and that appropriate tools and methodologies are used to quantify risks provided by Subject Matter Experts or from the program office.

6.7.3 Approve the Program Office Estimate, with included risks, in accordance with the *AFLCMC Standard Process for Annual Program Office Cost Estimate* (Ref 10.12).

6.8 Acquisition Center of Excellence (ACE) Technical Expert (AFCLMC/AZE)

6.8.1 Designated as the AFLCMC Risk and Issue Management Standard Process owner.

6.8.1.1 Maintains and coordinates changes to this process.

6.8.1.2 Leads process improvement and change events related to this process.

6.8.2 Maintains the AFLCMC acquisition risk management SharePoint sites.

6.8.3 Provides risk management training during Focus Week and PM Journeyman course. Oversees content of acquisition risk training and workshops.

6.8.4 Trains Integrated Risk Assessement (IRA) teams and oversees/facilitate ACAT 1 IRAs, as available.

6.8.5 Advises programs on risk management processes, policies and tools.

7.0 Tools. During the RIM process various tools are used. Some tools are used to help reveal risk, others to analyze, track, or report. For example, an Integrated Baseline Review may be used to verify the technical content of the performance measurement baseline and the adequacy of the related resource (budgets) and schedules using risk revealing and risk analyzing tools. Tools listed here are Air Force or AFLCMC standard tools unless otherwise noted.

    7.1 Risk Revealing Tools and Methodologies. The following tools and methodologies are used to reveal risks in various aspects of an acquisition program. This list is not all inclusive. Other program areas, such as program protection planning, while not having 'tools', must still be assessed. None of these tools or processes alone, or in combination, will reveal all risks in a program. Program office knowledgeable personnel must be continually assessing program aspects and changes to identify risks as they present.

        7.1.1 Technology Readiness Assessment (TRA)

        7.1.2 Manufacturing Readiness Assessment (MRA)

        7.1.3 System Engineering Assessment Model (SEAM)

        7.1.4 Risk Identification: Integration and -Ilities (RI3)

        7.1.5 MIL-STD-882E, *System Safety*

        7.1.6 Logistics Health Assessment (LHA)

        7.1.7 Cybersecurity Assessment

        7.1.8 Intelligence Supportability Analysis and Intelligence Health Assessment

        7.1.9 Operational Test Readiness Assessment

        7.1.10 System Security Risk Management Process

        7.1.11 Supply Chain Risk Management (SCRM) Process

        7.1.12 Airworthiness Risk Assessment

        7.1.13 Independent Logistics Assessment (ILA)

    7.2 Risk Analysis Tools. These tools are used to statistically analyze the impact to the program cost or schedule if the risk is realized. Cost analytical tools are managed by the financial management community. Tools to analyze schedules are less readily available within the Air Force so the prime contractor or a third party contractor supporting the government may supply the software and perform the analysis with government oversight. There is no Air Force central manager for schedule risk analysis tools. The following are certified for use on Air Force systems/networks or are embedded in Open Plan Professional scheduling software.

        7.2.1 Crystal Ball (cost, AFMC/FM maintains certification, expires 6 Mar 2022)

        7.2.2 @ Risk (schedule)

        7.2.3 Pertmaster (schedule)

        7.2.4 Acumen (schedule)

        7.2.5 Full Monte v3.x (schedule, sponsored by AFLCMC/WIO, expires 29 Aug 2022)

    7.3 Risk and Issue Tracking Tools. Contractors use various systems to track their risk associated with acquisition programs. Some systems are proprietary (e.g., BORIS) and others are

Commercial Off-the-Shelf (COTS) tools such as Active Risk Manager. Not all contractor systems are configured to provide the Air Force standard risk matrix; use the Air Force standard ratings for likelihood/probability and consequence; or simultaneously track cost, schedule and/or performance impacts for a risk.

7.3.1 Probability/Consequence Screening tool (P/CS). P/CS is a Government Off-the Shelf (GOTS) tool that is managed by AFLCMC/AQ-AZ. It is used to facilitate initial program risk identification and rating, and is suitable in aiding the preparation of Acquisition Strategy Panel (ASP) briefings. P/CS lacks a robust Risk Handling Plan tracking capability, and is not intended for use beyond initial contract award except to facilitate risk workshops.

7.3.2 Enterprise Risk Management Service (ERMS). ERMS is part of the Air Force's Web Applications Software Products (WASP). This tool archives and tracks risk, issues and concerns; provides an Air Force standard risk matrix as an output; and creates various reports used to track risks and issues. ERMS is accessible through the Program Management Resource Tools (PMRT) website, and uses role-based permissions for access control. Training is available through the ERMS office in AFLCMC/HIBX.

7.4 Risk and Issue Reporting Tools. Current electronic upward reporting of risks and issues is initiated in the Monthly Acquisition Reports (MAR) tool. The MAR populates risk views in the Program Management Resource Tools Enterprise Analytics service. Upward reporting tools provide abbreviated risk information, and lack the robust risk handling information for tracking working-level progress. Digital Enterprise capabilities are being developed for pulling information from P/CS and ERMS into MAR for displaying risk views.

8.0 Training Delivery Approach.

8.1 Training Plan. Ongoing training is established and maintained to current Air Force, AFMC and AFLCMC policies, instructions, standards and guidance. Updates to this Standard Process are incorporated into AFLCMC training and SharePoint sites.

8.2 Available Training.

8.2.1 Risk and Issue Management Overview classes are regularly offered under the Program Management listings during AFLCMC Focus Week and in the AFLCMC Program Manager's "Bootcamp" program.

8.2.2 Risk training conducted by the AFLCMC Acquisition Center of Excellence (ACE), as part of facilitated pre-award risk workshops.

8.2.3 Self-help risk management information can be retrieved from the Acquisition Center of Excellence Community SharePoint site managed by the WP-OL.

8.2.4 The Air Force Institute of Technology (AFIT) School of Systems and Logistics has two risk management courses: Introduction to Life-Cycle Risk Management (SYS118) is offered online; and Applied Risk Management (SYS208) is taught in residence.

8.2.5 Other training opportunities can be found via the Defense Acquisition University training page or the Acquisition Center of Excellence (ACE) Training Catalog that is managed by AFLCMC/AZA.

9.0 Definitions, Guiding Principles and/or Ground Rules & Assumptions.

9.1   This standard process applies to acquisition and sustainment risk management. It is not applicable to risk management directed in AFI 90-802.

9.2   This process does not address risk processes that are part of Analyses of Alternatives and capabilitiy development. However, risk information revealed in those processes should influence the program RMP, and be part of the basis for initial risk management activities. Offices working efforts prior to program initiation should consult the *United States Air Force Early Systems Engineering Guidebook* (Ref 10.11).

9.3   Although Integrated Risk Assessments encompass analysis of cost risks, oversight for cost risk analysis is in the *AFLCMC Standard Process for Annual Program Office Cost Estimate*. This interface occurs in the Annual Program Office Cost Estimate Process during relevant data collection (Ref 10.12, Figure 1, Step 1.2.2).

9.4   Significant resources can be involved in risk handling. The Program Manager, functional leads, team leads, program office personnel, prime contractor, major suppliers and subcontractors must be actively involved in the risk management process for it to be effective.

9.5   Definitions

9.5.1 **Risk:** A potential future event that "*could or might*" occur which would result in the inability to achieve one or more program objectives within defined cost, schedule, and/or performance constraints.

9.5.2 **Issue:** An event that has occurred or will occur, and will impact the ability to achieve one or more program objectives within defined cost, schedule, and/or performance objectives. The probability of occurrence for an issue is 100%. A realized Risk (formerly called a Problem) is also covered under the term Issue.

9.5.3 **Concern**: Is a potential negative, future event for which there is insufficient information to characterize the likelihood and/or consequence.

9.5.4 **Risk Management Planning**: Risk Management planning consists of the up-front activities needed for a successful risk management program. Risk planning is the heart of the preparation for the next program phase. Risk management strategies are developed and documentation begins.

9.5.5 **Risk Management Plan (RMP)**: A formal document developed and maintained throughout the life of the program. The RMP provides detailed information and direction necessary to conduct effective risk management for this project. The RMP also provides effective risk management methods and processes, and assigns responsibility for the implementation of various aspects of risk management. Tailorable RMP template(s) are provided at the AFLCMC SharePoint site.

9.5.6 **Risk Handling Plan (RHP):** A formal action plan, complete with milestone schedule, closure criteria, and optional Technical Performance Measures (TPMs) to address a specific risk. A risk handling plan employs one or more individual risk management strategies such as: accepting, avoiding, mitigating, eliminating, transferring, or sharing.

9.5.7 **Corrective Action Plan (CAP):** A formal action plan, complete with schedule, closure criteria, and optional TPMs to address a specific issue.

9.5.8 **Contingency Plan:** A formal action plan made in advance of a risk being realized but not executed until the risk event has occurred. Often used when program cannot influence the likelihood of the risk occurring and cannot proactively reduce the impacts before the risk event.

9.5.9 **Risk Categories:** Risk categories are "*bins*" for collecting and organizing risks. For example, organize risks by Work Breakdown Structure (WBS), program phase, or risks types (e.g., technical risks, supportability risks, environmental risks). Risk categories provide ways to capture costs to handle risks and to conduct sensitivity analyses among risk categories. Risk categories provide ways of finding relevant risks for lessons learned and linkage to other activities.

9.5.10 **Tiered Risks:** Those risks located at different tiers of the enterprise (e.g., Government, Contractor, & suppliers). Each tier performs its own risk management functions and can link to the functions of the tier(s) above and below in terms of transferring and sharing risks. Program offices can also use a tiered approach to identify the required level of management responsibility/attention and help with risk reporting. For example a program can establish tiers according to work breakdown structure with the respective IPT Lead responsible for managing daily risks and reporting when a risk has become significant enough to require management attention. A notional risk tiering scheme for this example could be: Tier-1 – PEO/Program; Tier-2 – PM/Contract; Tier-3 – Major IPT; and Tier-4 – Team.

9.5.11 **Active Risk:** A risk tracked due to its assessed rating (usually Moderate or High)

9.5.12 **Risk Watch List:** Risks (usually Low) that are tracked but have no handling plan.

9.5.13 **Relevant Stakeholders:** Relevant stakeholders are those who are involved in the risk management process in terms of: Establishing a collaborative environment for free and open discussion of risk; Reviewing the risk management strategy and risk handling events; Participating in risk identification, analysis, and handling activities; and Communicating and reporting risk management output.

9.5.14 **Risk Review Board:** A board (sized to fit program) chaired by the PM, IPT leads or designee that meets frequently with the relevant stakeholders to foster a team approach to risk management. The board approves the introduction of new risks into the risk database and proactively manages, tracks, and communicates program risks. In addition the relevant stakeholders, board members include the functional leads, risk database administrator, and risk owners. If held quarterly and chaired by the PM, this meeting fulfills the PM quarterly review requirement.

9.5.15 **Risk and Issue Color Ratings:** Risks are classified based on the likelihood and consequence criteria and 5x5 risk matrix coordinates in Attachment 3 of AFI 63-101/20-101. For issues, use the 1x5 issue matrix in Attachment 3 of AFI 63-101/20-101. Issue classification is based on the same consequence criteria as risks.

9.5.15.1 **Low:** The risk/issue is depicted as green. Risks and issues at this level are regularly tracked. A RHP/CAP is optional.

9.5.15.2 **Moderate:** The risk/issue is depicted as yellow. RHPs/CAPs *are* required for all risks and issues at this level.

9.5.15.3 **High:** The risk/issue is depicted as red. RHPs/CAPs *are* required for all risks and issues at this level.

9.5.16 **Integrated Risk Assessment (IRA):** An IRA is a series of risk assessment and analysis events. The IRA integrates the identification of program risks and specific quantitative risk data with the analysis of risk impacts on program schedule and cost. This is a cross-functional assessment. However, the term "integrated" in this context signifies that integration of risk quantification data with the schedule analysis of the identified risks and the integration of both the risk quantitative data and schedule analysis outcomes into the cost analysis that supports the program office cost estimate. Additional information about IRAs is on the AFLCMC Integrated Risk Assessment SharePoint site (Ref 10.18.2).

9.5.17 **IRA Core Team:** The IRA Core team is the oversight team that reviews and concurs with the risks and associated data to be used in the data analysis. The team consists of the Program Manager, Program Chief Engineer, Program Chief Financial Manager, Functional Leads, Schedule and Cost Analysis Teams leads, other relevant stakeholders and independent subject matter experts as appropriate, program office POC for the IRA, the Contractor counterparts to the PMO team members, and the ACE facilitator (for ACAT 1 or ACAT 2 on oversight list).

9.5.18 **IRA Execution Team:** This team is comprised of the risk owners, and schedule owners who will be tasked to provide the risk quantification data. The prime contractor personnel are usually tasked with gathering the quantitative data on jointly owned risks and issues with oversight and concurrence by the government risk owners.

9.5.19 **IRA Schedule Analysis Team:** This team is composed of the contractor and government schedule POCs and any third party schedule analysis expertise brought in by the government. Team composition and duties will be determined by the IRA ground rules and assumptions.

9.5.20 **Enterprise Risk Management Service (ERMS):** The standard Air Force risk tracking tool using a SharePoint hosted database application created for use by Air Force acquisition programs to document, communicate and manage programmatic risks and issues for acquisition programs across all Air Force portfolios to meet AFI 63-101/20-101 risk management standards.

9.5.21 **Focal/Focus Points or Key Events:** Terms used to identify the tasks or events that are checked for impact during the schedule analysis activity of an IRA. Often it is a major event, like entry into a critical design review, or completion of Developmental Test and Evaluation

9.5.22 **Deep Dive:** A comprehensive review of a topic. In the standard a deep dive refers to a PM review of all risks and issues (active and emerging) including RHPs, CAPs, and progress made in executing the plans typically illustrated with a burn down or waterfall chart (ratings over time).

9.5.23 **System Security Risk:** A risk to Department of Defense (DoD) warfighting capability from foreign intelligence collection; from hardware, software, and cyber vulnerability or supply chain exploitation; and from battlefield loss throughout the system life cycle.

9.5.24 **Supply Chain Risk Management (SCRM):** "The systematic process for managing risk by identifying, assessing, and mitigating actual or potential threats,

vulnerabilities, and disruptions to the Air Force supply chain from beginning to end to ensure mission effectiveness." (AFI 63-101/20-101, Paragraph 6.18, dated 30 Jun 2020)

10.0   References to Law, Policy, Instructions or Guidance.

10.1   DoDI 5000.02, *Operation of the Defense Acquisition System,* 23 Jan 2020

10.2   DoDI 5000,74, *Defense Acquisition of Services*, 10 Jan 2020

10.3   DoDI 5000.75, *Business Systems Requirements and Acquisition,* 24 Jan 2020

10.4   DoDI 5000.80, *Operation of the Middle Tier of Acquisition (MTA),* 30 Dec 2019

10.5   DoDI 5000.81, *Urgent Capability Acquisition,* 31 Dec 2019

10.6   AFI 63-101/20-101, *Integrated Life Cycle Management,* 30 Jun 2020

10.7   AFPAM 63-128, *Integrated Life Cycle Management,* 10 Jul 2014

10.8   AFMCI 63-1201, *Implementing Operational Safety, Suitability and Effectiveness (OSS&E) and Life Cycle Systems Engineering (LCSE),* 12 Sep 2018

10.9   United States Air Force (USAF) Airworthiness Bulletin (AWB)-150A, *Airworthiness (AW) Risk Assessment and Acceptance,* 5 Dec 2017

10.10   *Department of Defense Risk, Issue, and Opportunity Management Guide for Defense Acquistion Programs* [DoD RIO Mgmt Guide], Jan 2017

10.11   *United States Air Force Early Systems Engineering Guidebook*, 31 Mar 2009.

10.12   *Air Force Life Cycle Management Center (AFLCMC) Standard Process for Annual Program Cost Estimate,* 21 Mar 2019

10.13   *Air Force Life Cycle Management Center (AFLCMC) Standard Process for Capability Development,* 16 Aug 2018

10.14   *Air Force Life Cycle Management Center (AFLCMC) Standard Process for Cybersecurity Assessment and Authorization,* 17 Oct 2019

10.15   *Air Force Life Cycle Management Center (AFLCMC) Internal Process Guide to Conduct Program Sufficiency Reviews (PSR),* 8 Mar 2016

10.16   *Weapon System Program Protection / Systems Security Engineering Guidebook* v2.0, 12 Mar 2020

10.17   ASSIST Website

    10.17.1   DI-MGMT-81808, *Contractor's Risk Management Plan*, 21 Apr 2010

    10.17.2   DI-MGMT-81809, *Risk Management Status Report*, 26 Apr 2010

    10.17.3   MIL-STD-882E, *System Safety*, 11 May 2012

10.18   AFLCMC Risk Management Websites

    10.18.1   Risk Mangement (ACE – WPAFB)

        10.18.1.1   ERMS Equivalency Requirements

        10.18.1.2   ERMS Equivalency Memorandum for Record Template

Attachment A

Risk and Issue Management (RIM) in Acquisition – Full Work Breakdown Structure (WBS)

WBS 2018.xlsx