

ELECTRONIC RECORDS ARCHIVES

RISK MANAGEMENT PLAN (RKM v5.1)

for the

**NATIONAL ARCHIVES AND
RECORDS ADMINISTRATION**

**ELECTRONIC RECORDS ARCHIVES
PROGRAM MANAGEMENT OFFICE
(NARA ERA PMO)**

**Final
March 26, 2010**


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**Electronic Records Archives
Program Management Office
Risk Management Team**


Final

Signature Page

I recommend approval of the ERA Risk Management Plan (RKM).


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3/26/2010
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Document Change Control Sheet

Document Title: Risk Management Plan (RKM)

Date	Filename/version #	Author	Revision Description
04/12/02	ERA.DC.RKM.1.0.DOC	Frank Samuels	Baseline RKM
08/29/03	ERA.DC.RKM.2.0.DOC	R. Connell	Baseline with government comments
08/25/04	ERA.DC.RKM.3.0.DOC	Elizabeth Lazaro Larry Toth	Per IV&V responses on RKM 2.4 and 2.5 and ERA Documentation Review Comment Form for v2.5
06/16/06	ERA.DC.RKM.4.0.DOC	Elizabeth Lazaro Larry Toth	Change request # ERA 00000713; to reflect updates in risk processes and procedures.
07/28/06	ERA.DC.RKM.4.0.DOC	Elizabeth Lazaro Larry Toth	Per ERA PD Comments to make changes to add clarity to glossary, conformance to NARA standards, and provide steps in which a risk is identified, nominated, accepted and managed.
08/01/06	ERA.DC.RKM.4.0.DOC	Larry Toth	Corrected responses and made appropriate revisions based on initial response to PD's comments.
08/01/06	ERA.DC.RKM.4.0.Doc	Michelle Sonnier (Editor)	Made editing and formatting changes to ensure the document met ERA PMO standards
07/05/08	ERA.DC.RKM.5.0.DOC	Frank Samuels Farrokh Jahandari	Change request # ERA00001769; to reflect updates in risk processes and procedures.
11/13/08	ERA.DC.RKM.5.0.DOC	Farrokh Jahandari	Include and finalize with all QA Review Edits
03/26/10	ERA DC RKM 5.1 Doc	Frank Samuels Douglas Tidquist	Change request # ERA00003347 Updated to reflect changes in the Risk Management Process, ERA Risk Review Board Charter, and the dissolution of the ERA Risk Review Team.

TABLE OF CONTENTS

SIGNATURE PAGEERROR! BOOKMARK NOT DEFINED.

DOCUMENT CHANGE CONTROL SHEET.....**II**

1.0 OVERVIEW **1**

 1.1 DATE OF ISSUE AND STATUS 1

 1.2 ISSUING ORGANIZATION 1

 1.3 APPROVAL AUTHORITY 1

 1.4 UPDATES..... 2

 1.5 STRUCTURE AND CONTENT 2

2.0 SCOPE **2**

3.0 REFERENCE DOCUMENTS **3**

 3.1 STANDARDS AND GUIDELINES 3

 3.2 ERA PMO DOCUMENTATION 4

4.0 GLOSSARY AND ACRONYMS..... **4**

5.0 RISK MANAGEMENT OVERVIEW **11**

6.0 RISK MANAGEMENT POLICIES..... **13**

7.0 RISK MANAGEMENT PROCESS OVERVIEW **13**

 7.1 RISK MANAGEMENT PROCESS ELEMENTS 14

 7.2 RISK MANAGEMENT IN INTEGRATED PRODUCT TEAMS (IPTs)..... 15

8.0 RISK MANAGEMENT RESPONSIBILITIES **15**

9.0 RISK MANAGEMENT ORGANIZATION..... **19**

 9.1 ERA PROGRAM DIRECTOR (PD)..... 20

 9.2 ERA RISK OFFICER (RO)..... 20

 9.3 ERA RISK REVIEW BOARD (ERRB) 21

 9.4 INTEGRATED PRODUCT TEAMS (IPTs)..... 21

 9.5 NARA RISK REVIEW BOARD (NRRB) 22

10.0 RISK MANAGEMENT ORIENTATION AND TRAINING..... **22**

11.0 RISK MANAGEMENT COSTS AND SCHEDULES..... **22**

 11.1 RISK MANAGEMENT COSTS 23

 11.2 RISK MANAGEMENT SCHEDULE 23

12.0 RISK MANAGEMENT PROCESS DESCRIPTION **23**

 12.1 RISK MANAGEMENT CONTEXT 24

 12.2 RISK IDENTIFICATION 25

 12.2.1 *Submission*..... 25

 12.2.2 *Preliminary Assessment*..... 25

 12.2.3 *Formal Review and Recommendation* 26

 12.3 RISK ANALYSIS 26

 12.3.1 *Initial Analysis*..... 27

 12.3.2 *Detailed Analysis*..... 29

 12.4 RISK MONITORING AND CONTROL 34

 12.5 RISK TREATMENT 36

 12.5.1 *RISK PRIORITIZATION*..... 36

12.5.2 Plan and Respond.....37

12.5.3 Generating the Decision Analysis (DA).....38

12.5.4 Risk Thresholds38

13.0 RISK MANAGEMENT PROCESS EVALUATION39

13.1 CAPTURING RISK INFORMATION39

13.2 ASSESSING THE RISK MANAGEMENT PROCESS40

13.3 GENERATING LESSONS LEARNED40

14.0 RISK COMMUNICATION.....40

14.1 PROCESS DOCUMENTATION AND REPORTING43

14.2 COORDINATING RISK MANAGEMENT WITH STAKEHOLDERS43

14.3 COORDINATING RISK MANAGEMENT WITH INTERESTED PARTIES43

15.0 RISK MANAGEMENT PLAN CHANGE PROCEDURES AND HISTORY44

APPENDIX A: ERA RISK MANAGEMENT DATA A-1

APPENDIX B: ERA RISK IDENTIFICATION FORMB-1

APPENDIX C: DECISION ANALYSIS..... C-1

LIST OF FIGURES

Figure 5-1: ERA Continuous Risk Management Process.....12

Figure 9-1: ERA PMO Risk Management Organization19

Figure 9-2: ERA Risk Entity Relationships.....20

Figure 12-1: ERA Risk Management Process24

Figure 12-2: Risk Identification Process25

Figure 12-3: Risk Analysis Process27

Figure 12-4: Risk Exposure Process Guideline33

Figure 12-5: Inputs and Outputs to the Risk Monitoring and Control Process.....35

Figure 12-6: Inputs and Outputs to ERA Risk Management’s Plan and Respond Process38

Figure 14-1: Communication for ERA’s Risk Management42

Figure A-1: Risk Radar Database Management Input Fields A-1

Figure B-1: ERA Candidate Risk Identification FormB-1

LIST OF TABLES

Table 4-1: Glossary9

Table 4-2: Acronyms List.....10

Table 12-1: Risk Probability Levels31

Table 12-2: Risk Impact Levels.....31

Table 12-3: Risk Impact Timelines37

Table 14-1: ERA Risk Management Communication Types43

Final

ERA RISK MANAGEMENT PLAN (RKM)

1.0 Overview

The creation of the Electronic Records Archives (ERA) system is a strategic initiative for achieving the National Archives and Records Administration's (NARA's) mission to preserve valuable electronic records of the Federal Government and to make them available to future generations of Americans. This initiative will entail such far reaching and fundamental changes in the way NARA does business that it has been referred to as "building the archives of the future."

ERA will be a comprehensive, systematic, and dynamic means for preserving virtually any kind of electronic record, free from dependence on any specific hardware or software. ERA, when fully operational, will provide ready access for NARA users and customers to allow them to locate the records they seek, while also providing a dependable and responsive process for NARA to deliver those records in formats suited to customers' needs.

Acquisition programs are inherently risky because they occur in an environment of constant change. In order to be effective in a Program Management Office (PMO) environment, the risk management process must be recognized as an integral program management activity and not as a sub-function limited to the engineering activities. Risk management has been incorporated as a critical element of the ERA Program Management process. While the ERA Risk Management Program is responsible for managing all types of ERA threats and opportunities, it places a strong emphasis on the identification and control of specific threats and opportunities that may affect ERA cost, schedule, technical/quality, and performance goals, as well as the NARA strategic objectives.

The ERA Program is critical to the Agency's fundamental mission of preservation and accessibility of the authentic records of the U.S. Government. Thus ERA related threats to the NARA mission will have priority over other factors in estimating the impact of risks.

1.1 Date of Issue and Status

The date of issue is the date of ERA Program Director approval and is contained on the document Signature Page (i). The status is reflected on the Document Change Control Sheet (ii).

1.2 Issuing Organization

The issuing organization for this plan is the NARA's ERA Program Management Office.

1.3 Approval Authority

The individuals responsible for the organizational approval of this plan are listed on the Signature Page (i).

Final

1.4 Updates

This plan has been updated to align the structure and content to conform to the Institute of Electronic and Electrical Engineers (IEEE) STD 1540-2001. Plan updates are summarized on the Document Change Control Sheet and also described in **Section 15.0, Risk Management Plan Change Procedures and History**.

This plan will be carried out in compliance with the *ERA Program Management Plan (PMP)*. Any revisions to this plan will be made according to current Configuration Management (CM) processes as described in the *ERA Configuration Management Plan (CMP)*. See **Section 15.0, Risk Management Plan Change Procedures and History**, for further information.

1.5 Structure and Content

The following sections comprise the ERA Risk Management Plan (RKM).

- **Section 1.0** provides an overview of the ERA RKM, as well as the purpose and document-specific information
- **Section 2.0** defines the scope of this document and of ERA risk management
- **Section 3.0** provides a list of references that were used in the creation of this document
- **Section 4.0** provides a glossary of frequently used terms and an acronym list that can be used to enhance readability and understanding of the document
- **Section 5.0** provides a risk management overview
- **Section 6.0** addresses the risk management policies
- **Section 7.0** provides an overview of the risk management process
- **Section 8.0** identifies and describes risk management roles and responsibilities as they relate to program personnel
- **Section 9.0** describes the risk management organization
- **Section 10.0** describes risk management orientation and training for program personnel
- **Section 11.0** identifies and describes the relationship between risk management to cost and schedule
- **Section 12.0** provides a description of the risk management process
- **Section 13.0** describes the process for the evaluation of the risk management process
- **Section 14.0** describes the process to be used for risk communications
- **Section 15.0** describes how changes to this RKM will be handled

2.0 Scope

The ERA RKM presents the process for implementing the comprehensive and proactive management of risk as part of the overall management of the NARA ERA Program. This document serves as the capstone risk management plan for the ERA program. As such, the plan describes core processes that are supported or interfaced to/from lower level contractor or support organizations plans, processes, and organizational relationships relating to risk management. This ensures that the ERA risk management process is fully integrated into management of the ERA program and that information is shared between organizations in a

Final

timely manner. The conduct of risk management will be handled as a normal and integral aspect of the general technical and managerial processes employed.

This RKM describes a management approach that will:

- Serve as a basis for identifying alternatives to achieve cost, schedule, and performance goals;
- Assist in making decisions on budget and funding priorities;
- Provide risk information for milestone decisions; and
- Allow for monitoring the health of the program as it proceeds.

The described risk management process and activities for the ERA effort encompass the entire phased software development lifecycle. Risk management activities begin during the acquisition phase and proceed through development and implementation to operation and support. Risk management activities may change commensurate with the current lifecycle phase. Refer to the ERA Life Cycle (ELC) document for further descriptions of the particular lifecycle processes and activities. The risk management processes are limited to risk identification, analysis, planning and response, monitoring, and final resolution. Risk management is primarily concerned with quickly identifying any threat to the ERA program and facilitating the implementation of the most appropriate strategy to address each threat. While risk management will have input to many aspects of the ERA program management (as listed above), risk management activities themselves do not directly include issues management, setting of policy, budgeting, project control, risk mitigation assignments and like functions. Within the context of ERA, risk management facilitates all risk response activities but does not perform the response actions itself.

This RKM applies directly to all NARA ERA personnel and Integrated Product Teams (IPTs). The plan applies indirectly to all contractors and support personnel in that it establishes the required process, and information and reporting interfaces that are supported by the individual organizations supporting the process. All ERA personnel are required to be cognizant of this plan.

3.0 Reference Documents

The reference documents used to develop the ERA RKM are described in the sections that follow.

3.1 Standards and Guidelines

The standards and guidelines used in preparation of this document are listed below.

- Institute of Electronic and Electrical Engineers (IEEE) Std 1540-2001, *IEEE Standard for Software Life Cycle Processes-Risk Management*, March 17, 2001
- IEEE Std. 610.12-1990, *IEEE Standard Glossary of Software Engineering Terminology*
- Project Management Institute's *Project Management Body of Knowledge (PMBOK)*

Final

- Software Engineering Institute (SEI), *Continuous Risk Management (CRM) Guidebook and SEI CMMI technical reports*, Copyright 1996.
- Acquisition Review Quarterly, Bill Shepherd, *PMP Managing Risk in a Program Office Environment*, 2003.

3.2 ERA PMO Documentation

The following ERA PMO documentation was used to support the generation of this document. Please note that the documents referenced were current at the time of reference and publication, and remain so unless superseded by a subsequent version.

- Concept of Operations, Version 4.0
- Configuration Management Plan (CMP), Version 4.0
- Assessment Final Report, Year 3, Version 1.0
- Program Management Plan (PMP), Version 3.0
- ERA Risk Review Board (ERRB) Charter, 2010
- Requirements Document (RD), Version 3.1
- Quality Management Plan (QMP), Version 5.0

4.0 Glossary and Acronyms

Table 4-1, Glossary, provides a glossary of commonly used terms and their definitions in an Information Technology (IT) Risk Management context to aid in the understanding of this document. The technical terms used in this plan are defined in IEEE Std. 610.12-1990, *IEEE Standard Glossary of Software Engineering Terminology*.

TERMS	DEFINITIONS
Acceptability	Establishes the exposure to potential loss that ERA is willing to tolerate from a risk. See also Risk Acceptance.
Candidate Risk	An identified uncertain future event that has not been vetted. This is also the entry point into the formalized risk process for all potential risks.
Candidate Risk Identification Form	A form used by a Risk submitter to capture and present a Candidate Risk to the ERA Risk Officer (RO) for consideration.
Collaborative Risk	This is a strategy that seeks to identify individuals and/or groups who can work together with ERA in developing and implementing a risk response.
Decision Analysis (DA)	A report generated as a result of risk analysis that contains two (2) or more risk response options to be considered.

Final

TERMS	DEFINITIONS
ERA Risk Review Board (ERRB)	A team of ERA PMO Division Directors and Senior Managers, representing all PMO functional areas, who hold major responsibilities during an ERA increment or phase. The goal of the ERRB is to review all ERA related candidate risks. They are responsible for classifying risks, assigning risk parameters, and for continuously evaluating risks based on data concerning those parameters. They will meet as necessary to review new candidate risk items, as well as any change in status of existing risks concerning ERA. Members will be expected to take on the role of risk owner in support of approved risk response plans relative to their area of responsibility. The ERRB can recommend candidate risks for review, and, where appropriate, transfer risk ownership and management to another risk management organization. Members are assigned by the ERA Program Director (PD).
Escalation	The process in which ERA Risk Management will use timeline “triggers” to ensure that the appropriate management levels are alerted to potential impacts in a time frame that enables them to determine if special actions need to be taken.
Issue (Problem)	An issue, often confused with a risk, is a certainty characterized by a circumstance in the present that demands management attention and action for resolution.
NARA RRB (NRRB)	An Agency-level RRB tasked with handling risks at the level in which NARA senior managers can proactively determine and engage risk response plans.
Opportunity	An unplanned, uncertain event with the possibility of positive consequences (i.e., could have a beneficial effect on achieving objectives).
Project Data	Sometimes referred to as management indicators generated from budget, quality, performance, and schedule management disciplines. Project Data may include but is not limited to Earned Value, Critical Path Analysis, Schedule Management Tools, Defect Analysis, and Trend Analysis. Project Data is used to “trigger” evaluation of an item as a potential risk and precedes the identification process. Project Data is also employed in the Monitoring and Control portions of the risk process. This data helps to determine the success of the risk handling strategy.
Residual Risk	An uncertainty that remains after a risk response plan has been implemented.

Final

TERMS	DEFINITIONS
Responsible Person	An individual who may be designated by the Risk Owner to handle risk response activities; primarily risk mitigation and reporting to the appropriate risk review entity. This is the individual most associated with the day-to-day activities for a specific risk.
Risk	The possibility of suffering loss. Risks are future uncertain events that should they occur, may have adverse effects on the program. ERA’s risk management examines risks in terms of “what could go wrong” and its potential impact on the program’s objectives, i.e. cost, schedule, technical, etc.
Risk Acceptance	This is a strategy used in risk response planning. When risk acceptance is chosen, the team has decided not to change the project schedule to deal with a risk. In other words, it is an acknowledgement that a risk exists but due to various factors the organization has chosen not to provide resources or make an effort to control it. The organization is choosing to “accept” the consequences should the risk event occur.
Risk Classification	A.k.a. Risk Categorization. The grouping of risks based on shared characteristics. Risks can be grouped based on the same root cause, or they can be grouped by where or how the impact may be felt by the program. This activity will help show the major sources of risk and/or the major product areas that will be impacted by the risks. See Section 12.3.1.1, Risk Categorization.
Risk Context	The process of recording the additional information regarding the circumstances, events, and interrelationships within the project that may affect the risk. The risk context should capture more detail than can be captured in the basic statement of risk. The structure of the context is informal text, which may consist of from brief comments to one (1) or more sentences of explanation. The textual comments may include information on personnel, technical, or management issues, communications or other pertinent environmental aspects of the project.

Final

TERMS	DEFINITIONS
Risk Exposure	<p>Risk Exposure is the value that is given to a risk event, a product, or the overall program based on the analysis of the probability and consequences of the event. For the ERA program, Risk Exposures of Low, Medium, or High will be assigned based on the following criteria.</p> <p>High: Likely to have a significant impact, i.e., increase in cost, disruption of schedule, or degradation of performance. Significant additional action and high priority management attention will be required to handle this type of risk.</p> <p>Medium: Likely to have a moderate impact, i.e., increase in cost, disruption of schedule, or degradation of performance. Special action and management attention may be required to handle this type of risk.</p> <p>Low: Likely to have a minimum impact, i.e., increase in cost, disruption of schedule, or degradation of performance. Actions within the scope of the planned program and normal management attention should result in controlling acceptable risk.</p>
Risk Identifier	Any individual who submits a potential (candidate) risk.
Risk Identification	A risk process used to identify, nominate, assess, and accept a candidate risk. The process involves determining if a candidate risk might affect the program. The process is also used to document risk characteristics. Some of the evaluative tools typically employed in risk identification include brainstorming and checklists.
Risk Identification Form	A means that ERA RO uses to document information about a candidate risk. This information is used in the risk identification process. Information is added to the sheet as it is acquired or developed.
Risk Management	The process for systematically identifying, evaluating, mitigating, and controlling project risks.
Risk Mitigation	This is a strategy used in risk response planning. When risk mitigation is chosen, the team has decided to reduce the probability and/or impact of a risk to an acceptable level.
Risk Monitoring and Control	A risk process used for monitoring and tracking, identifying new and residual risks, executing risk response plans, and evaluating their effectiveness throughout the project lifecycle.

Final

TERMS	DEFINITIONS
Risk Officer (RO)	The ERA RO is ERA’s internal risk champion. The ERA RO ensures that the risk processes are carried out during the program. In this capacity the ERA RO facilitates the implementation of risk management on behalf of the ERA PD. The ERA RO is not solely responsible for risks or the success of risk response action plans. The RO is responsible for facilitating the identification and assessment of ERA risks, assisting risk owners in the development of risk response plans, monitoring, tracking, reporting, and compiling historical risk information throughout the program lifecycle. The ERA RO serves the PD and has primary responsibility for risk management.
Risk Owner	An individual who holds a stake or has an interest in reducing or eliminating a risk. The Risk Owner should hold some functional knowledge of the opportunity or threat posed by the risk and remains open to possible solutions. A Risk Owner is responsible for planning, implementing, and reporting on risk response plans and activities.
Risk Parameters	A.k.a. Risk Attributes. Qualitative and quantitative measures used to analyze, evaluate, and categorize risks in terms of likelihood (probability), consequence (impact), thresholds, and triggers (timeframes). The purpose of evaluating the parameters is to gain a better understanding of the risk.
Risk Process	The procedures and techniques employed to identify, analyze, plan, monitor, report, and ultimately control or reduce risk exposure within a program or project. The tools include risk, mitigation, risk transference, and risk acceptance.
Risk Register	A.k.a. Risk Profile, Risk Database. A repository that provides for collection, maintenance, and analysis of data gathered and used in the risk management processes. This is an output of the risk monitoring and control process. The ERA PMO risk register is the “Risk Radar Enterprise” (RRE) toolset.
Risk Response	A.k.a. Risk Treatment. This activity is intended to enhance opportunities and to reduce threats to the program’s objectives. A risk response activity includes the application of one (1) or more of the following strategies: risk acceptance, risk mitigation, and risk transference.
Risk State	The risk state refers to the type of response planning performed. For the purposes of ERA, a response plan can be in the following risk states: Accept, Mitigate, Escalate, or Transfer.

Final

TERMS	DEFINITIONS
Risk Statement	The process of considering and recording the conditions that are causing concern for a potential loss to the program, followed by a brief description of the potential consequences of these conditions. The objective is to arrive at a concise description of risk, which can then be understood and acted upon. The components and description of risk are: <ul style="list-style-type: none"> • Condition: a single phrase or sentence that briefly describes the key circumstances, situations, etc., causing concern, doubt, anxiety, or uncertainty. • Consequence: a single phrase or sentence that describes the key possible negative outcomes of the current conditions.
Risk Threshold	A point (usually in the form of a > or < metric) where more aggressive risk monitoring is employed. It involves a determination of the criteria by which acceptability of a risk is defined. It may also activate the implementation of risk response plans and risk assessments.
Risk Transference	A strategy used by the project team that seeks to shift the monitoring and control reporting together with ownership of the response, generally to another organizational unit. Risk transfers seek to ensure that the appropriate authority to assign resources is engaged to effectively respond to risk.
Risk Trigger	This term is sometimes used interchangeably with risk threshold. For purposes of IEEE conformance and consistency, ERA will implement risk threshold terminology in this plan.
Transition	This refers to a risk state in which there is change in a risk state either pending or in process. It reflects the period of time in which a risk awaits an approval/rejection decision.
Stakeholder	An individual or organization that is actively involved in the program, or whose interests may be positively or negatively affected as a result of project execution or project completion. They may also exert influence over the project and its results.
Subject Matter Expert (SME)	Any person(s) who possess expert knowledge in a specific area.

Table 4-1: Glossary

Table 4-2, Acronyms List, contains a list of acronyms and their respective definitions as used within this plan.

Final

ACRONYM	DEFINITION
CCB	Configuration Control Board
CM	Configuration Management
CMP	Configuration Management Plan
CRM	Continuous Risk Management
DA	Decision Analysis
DoD	Department of Defense
ELC	ERA Life Cycle document
EOG	ERA Oversight Group
ERA	Electronic Records Archives
ERRB	ERA Risk Review Board
GAO	Government Accountability Office
GUI	Graphical User Interface
IEEE	Institute of Electronic and Electrical Engineers
IPPD	Integrated Product and Process Development
IPT	Integrated Product Team
IT	Information Technology
IV&V	Independent Verification and Validation
LMC	Lockheed Martin Corporation
MP	Metrics Plan
NARA	National Archives and Records Administration
NH	NARA Office of Information Services
OMB	Office of Management and Budget
PD	Program Director
PM	Project Manager
PMBOK	Project Management Body of Knowledge
PMO	Program Management Office
PMP	Program Management Plan
POC	Point of Contact
POST	Program Office Support Team
QM	Quality Management
QMP	Quality Management Plan
RD	Requirements Document
RIF	Risk Identification Form
RKM	Risk Management Plan
RO	Risk Officer
RRE	Risk Radar Enterprise
SEI	Software Engineering Institute
SME	Subject Matter Expert
WBS	Work Breakdown Structure

Table 4-2: Acronyms List

Final

5.0 Risk Management Overview

Risk management is a key tool designed to enhance program management effectiveness by providing program managers with information they can use to reduce lifecycle costs and mitigate or avoid potential problems that may impede the success of the program/project.

Proactive risk management is critical to the management process to ensure that risks are handled at the appropriate management level.

The approach for implementation of the ERA risk management program was developed using the results of an initial program risk assessment. The results of this and subsequent assessments led to the acknowledgment and confirmation that while acquisition programs, in general, are inherently risky; the combination of the unique nature of the ERA acquisition and the culture of NARA as an agency creates an environment where overall risk exposure to the ERA program is high. This high risk exposure places an emphasis on risk management as a critical element of ERA program management.

Risk management is essential to the success of ERA, and as a critical element; implementation of ERA risk management is ultimately the responsibility of the ERA Program Director (PD). The PD has assigned a Risk Officer (RO) to develop and implement the ERA risk management plan. The RO, guided by the PD, has established risk management core activities consisting of:

- Planning and implementing risk management,
- Managing the risk profile,
- Identifying risks and opportunities,
- Applying qualitative and quantitative risk analysis,
- Developing and executing risk response plans and steps,
- Implementing risk monitoring and control processes,
- Communicating risk management results and activities, and
- Evaluating the overall risk management process.

In order to facilitate risk management core activities, the ERA program's approach adopts a Continuous Risk Management (CRM) methodology. CRM is a software engineering practice and project management best practice with processes, methods, and tools for managing risks in a project. It provides a disciplined environment for proactive decision making to assess continuously what could go wrong (risks), determine which risks are important to deal with, and implement strategies to deal with those risks. Similarly, opportunities (things that could go right) can also be advanced to the benefit of the project scope, budget, schedule, etc. **Figure 5-1, ERA Continuous Risk Management Process**, graphically illustrates this methodology.

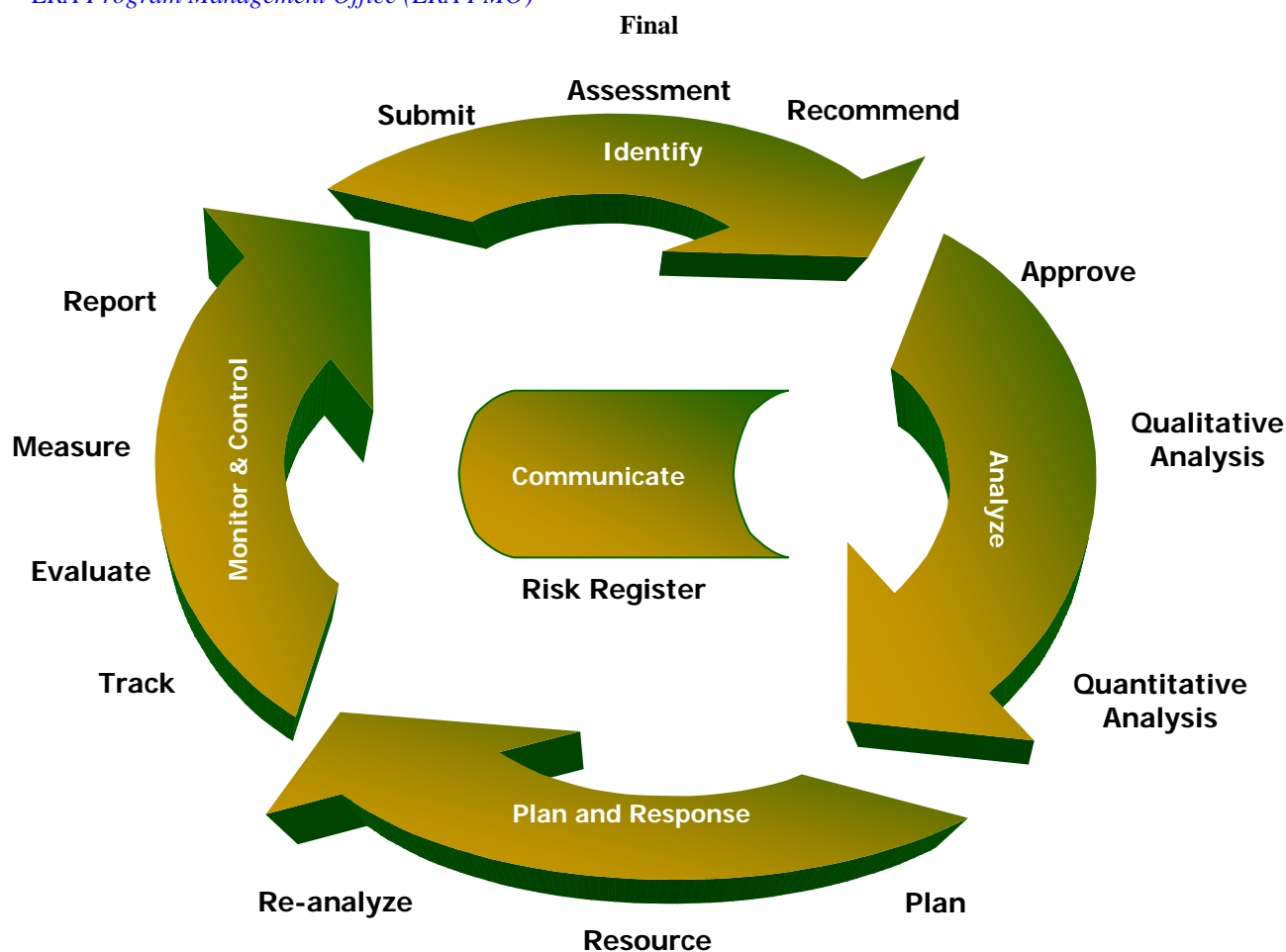


Figure 5-1: ERA Continuous Risk Management Process

Management indicators and supporting tools provide the information necessary to manage the program. Unfavorable trends and incidents must be analyzed and their impact on the program assessed. Appropriate program management actions must be taken for those areas determined to be significant to the program. Management corrective actions can either involve the reallocation of resources (funds, personnel, and schedule) or the activation of a planned mitigation strategy. Severe cases of unfavorable trends and leading indicators may require adjustment to the program requirements, milestones, and schedule.

It is important that the ERA PD emphasize the need to reassess the identified program risks continually. As the system progresses through the software development lifecycle, more information will become available to assess the degree of risk inherent in the effort. If the risk changes significantly, the risk handling approaches should be adjusted accordingly. For additional detail, refer to **Section 7.0, Risk Management Process Overview** and **Section 12.0, Risk Management Process Description**.

Overall, this proactive approach to risk management is critical to the comprehensive management process and ensures that risks are handled expediently and at the appropriate management level.

Final

6.0 Risk Management Policies

ERA Program Management is committed to effective and continuous risk management. Therefore, early, accurate, and continuous identification and assessment of risks is encouraged and effective risk reporting, mitigation planning, and mitigation actions will be viewed as positive influence on the program.

This ERA RKM will be carried out in compliance with the *ERA Program Management Plan (PMP)*. Any revisions to this plan will be made according to current Configuration Management (CM) processes as described in the *ERA Configuration Management Plan (CMP)*.

ERA PMO and support contractors are expected to perform risk identification, monitoring, and reporting in accordance with this ERA RKM and supplemented by any risk guidance documents developed for their specific areas.

The administration of the risk management program and the roles and responsibilities of ERA personnel are described in **Sections 8.0** and **9.0**. Orientation and training of personnel is described in **Section 10.0**. Cost and schedule information as it relates to risk management is provided in **Section 11.0**. Communication of risk information on the program is described in **Sections 12.0** and **14.0**.

This plan establishes the guidelines for the implementation of the CRM methodology as implemented for the ERA program. It does not establish policy for other risk activities throughout the Agency; but rather may provide guidance and leadership in risk management. Inclusion of references to other risk functions, external boards, and review bodies within this plan should not be construed as establishing policy, but rather is included for clarity regarding processes and interfaces necessary to the overall functioning of the ERA PMO's risk management activities.

7.0 Risk Management Process Overview

This portion of the RKM provides an overview of the processes involved in risk management and their relation to ERA. A viable risk management process should be flexible and should not stifle initiative, and should also work toward providing a disciplined environment for proactive decision making. Risk management will respond to risks by:

- Encouraging risk identification,
- Decriminalizing risk identification,
- Identifying risks proactively (continually assess what could go wrong),
- Identifying opportunities (continually assess favorable or well-timed occurrences)
- Assessing the probability of occurrence and severity of impact of each identified risk,
- Determining the appropriate course of action (i.e., mitigate, transfer, or accept) for likely risks with significant impact,
- Developing and following action plans or steps for any risk that requires mitigation,
- Maintaining a continuous watch on low probability, low impact risks whose status is subject to change,

Final

- Producing and distributing reliable and timely reports, and
- Fostering good communication between all ERA stakeholders.

The risk management process will be implemented in a flexible manner as appropriate to the circumstances surrounding each risk. The basic risk management strategy is intended to identify critical areas and risk events, both technical and non-technical, and proactively take the necessary action to handle them before they can become problems, causing serious cost, schedule, technical/quality, and/or performance impacts.

7.1 Risk Management Process Elements

The specific functional elements that comprise ERA's risk management process are Identify, Analyze, Plan and Respond, and Monitor and Control. Each functional element is outlined below.

Identify

- Review past program history and extract risks
- Review project data (i.e., Earned Value Management Indices, Critical Path Analysis, Integrated Schedule, Monte Carlo Analysis, Budget, Defect and Trend Analysis, etc.)
- Review submitted risk identification forms
- Conduct and evaluate brainstorming sessions utilizing individual or group expert judgment
- Conduct independent risk identification assessment
- Ensure that risks are distinguished from issues or problems and are identified appropriately
- Enter risk in risk register

Risk identification/analysis tools and techniques to be used include:

- Interview techniques to extract a draft risk statement and context
- Fault Tree Analysis
- Historical data
- Lessons Learned
- Risk Consideration Checklist
- Individual or group expert judgment
- Detailed analysis of the Work Breakdown Structure (WBS), resources, and schedule

Analyze

- Conduct probability assessment – each risk will be assigned a high, medium, or low probability of occurrence
- Establish risk categories – identified risks should be associated with one (1) or more of the following risk categories (e.g., cost, schedule, technical, program, process, product, functional, Mission Success, and Affect on other NARA organizations)

Final

- Assess risk impact – assess the impact of each risk according to the identified risk category
- Determine risk severity – assign a probability and impact rating in each of the risk categories
- Define the timeframe when the risk is likely to occur

Plan and Respond

- Prioritize risks
- Review risk profile with PD
- Assign a risk owner/responsible person
- Determine appropriate risk management strategy/resource
- Develop appropriate risk response plan
- Review priorities and segregate into reporting levels

Monitor and Control

- Define reporting formats
- Define review form and frequency for all classes of risks
- Report risk based on triggers and category
- Conduct risk review and support program reviews
- Meet with and provide reports to ERA PD on a monthly basis, at a minimum

7.2 Risk Management in Integrated Product Teams (IPTs)

The ERA PMO is responsible for acquiring an ERA system that meets the defined requirements and serves the business needs of NARA. The PMO has chosen the Integrated Product and Process Development methodology (IPPD) to accomplish this, with the utilization of Integrated Product Teams (IPTs). The IPTs are created, as necessary, throughout the lifecycle of the ERA system and may be comprised of PMO staff, development contractor staff, and stakeholders and users from all relevant components of NARA depending on the mission of the specific IPT.

It is the intention of the ERA Risk Management Program to include risks associated with IPT activities. As such the ERA PMO Risk Team (consisting of the ERA RO and the contractor risk management support staff) will attend IPT meetings, solely in a risk management capacity. However, it is possible that due to the potential number of IPTs and schedule conflicts, the ERA PMO Risk Team may not have the resources to enable full attendance. Under such circumstances the risk identification responsibility can be shared with an existing IPT member who will also serve as an IPT Risk Liaison.

8.0 Risk Management Responsibilities

Table 8-1, ERA Risk Management Roles and Responsibilities, lists the primary responsibilities of all ERA personnel and other users (including employees, consultants, and contractors) for successful implementation of the risk management strategies and processes that are described in this RKM.

Final

Roles	Required Responsibilities
Program Director (PD)	<ul style="list-style-type: none"> • Oversee ERA’s risk management activities. • Monitor risks and risk response plans. • Approve funding decisions for risk response plans. • Monitor control decisions. • Recommend and carry out control decisions.
Project Manager	<ul style="list-style-type: none"> • Assist the ERA PD in overseeing ERA’s risk management activities • Assist the ERA PD in establishing the organizational authority for all risk management activities. • Serve as member of the ERRB • Serve as official interface to all ERA Senior Managers and ERA on risk response funding, support, risk transfer, and risk escalation. • Serve as official reporting interface to the NARA ERA Oversight Group.
Risk Officer (RO)	<ul style="list-style-type: none"> • Facilitate the implementation of risk management. The ERA RO is not solely responsible for identifying risks, or the success of individual risk response plans. • Encourage proactive decision making in determining appropriate risk response actions to Risk Owners and managers across ERA Divisions and reporting authorities. • Administer, and maintain the commitment of the stakeholders to, the ERA risk process • Regularly coordinate and communicate risk information to and among stakeholders • Serve as member of the ERRB • Serve as Secretary of the ERRB • Facilitate the activities of the ERRB in reviewing risks. • Ensure that risks and risk status are continuously communicated to ERA PMO and ERA’s development contractors. • Manage risk prioritization and the Risk Register (database). • Recommend and plan risk management training. • Orient ERA PMO staff, development contractor, and IPT groups to ERA’s risk management activities. • Act as mentor to IPT Risk Liaison.

Final

Roles	Required Responsibilities
ERA Risk Review Board (ERRB) Secretary	The RRB Secretary functions are performed by the ERA Risk Officer or their designated alternate. Functions include: <ul style="list-style-type: none"> • Schedule and coordinate meetings; • Prepare meeting agendas, risk review packages, and minutes of the meetings. • Receive and track the status of proposed risk items. • Perform initial assessment of proposed risk items for submission to the RRB Chair. • Counsel the Risk Owner in reporting/publishing findings of the Subject Matter Expert (SME) analysis as requested by the RRB Chair. • Facilitate publishing of the analysis to Board members who will make a decision on whether risk mitigation is necessary. • Regularly coordinate and communicate risk information to and among stakeholders • Post minutes to the PMO Shared Directory and distribute to all members and alternates, etc.
Division Director	<ul style="list-style-type: none"> • Designate risk owners in their area of responsibility and/or competence. • Actively encourage staff to report risks. • Ensure that all assigned staff actively integrates risk management into their areas of responsibility. • Serve as member of the ERRB • Select and approve a risk response strategy. This also includes approval of resources (e.g., risk owner or available SME) for further risk analysis and/or the compilation of a more detailed risk response plan if necessary. Approves all tasks. • Assign resources for risk response activities contained in a detailed response plan. • Ensure that all reports and risk response plans generated by their staff go to the ERA RO for review before submittal to the ERA PD and ERRB.
Individual member of ERA's Program Management Office (PMO)	<ul style="list-style-type: none"> • Attend IPT meetings as assigned. • Identify candidate risks. • Access ERA risk management data on PMO Shared Drive. • Submit candidate risk data using Standard Identification Form when necessary • Compose and implement a risk response plan, when tasked • Report all costs and time associated with implementing a risk response plan

Final

Roles	Required Responsibilities
ERA Risk Owner/Responsible Person	<ul style="list-style-type: none"> • Attend ERRB Meetings as required or assigned. • Review and/or Submit to the ERA RO, for use by the ERRB or the NRRB, any relevant project data e.g., Critical Path Analysis, Project Management support tools/data, Defect Analysis, Audits, and/or other types of metrics, and unfavorable trends • Recommend risk response strategies • Contribute to the development of response plans (determine approach, and define scope, costs, schedule impact, and actions) • Report on status of assigned risks and effectiveness of risk response plans • Work with the ERRB to determine if the risk response has generated any additional or residual risks.
Integrated Product Team (IPT) Risk Liaison	<p>An IPT Risk Liaison is generally a permanent member of the IPT and preferably also a member of the ERA PMO.</p> <ul style="list-style-type: none"> • Identify and report candidate risks that may arise from IPT activities. • Participate in any risk planning in accordance with this ERA RKM. This planning requires coordination with the ERA RO who, acting as mentor, can facilitate the acquisition of resources for responding to and treating risks uncovered by IPTs. • Report on the progress and outcomes of risk response and treatment activities to the ERRB.
ERA Risk Review Board (ERRB)	<ul style="list-style-type: none"> • Review collaborative resource risks that threaten to terminate, weaken, or change the objectives, direction, or vision of the ERA Program and/or impact other NARA entities • Exchange risk information across NARA organizational boundaries. • Review all candidate risks for validity, including determining initial timeline triggers, impact, probability, etc. • Accept or reject candidate risks or return for additional information, refinement, etc. • Identify the appropriate responsible management level (i.e., Agency, Program, Project – Senior/Division, or Development Contractor, etc) in whose domain the risk falls. • Recommend transfer agency level items to the NRRB and Project–Level items Development Contractor • Review status of all categories of risk including program, technical, product, process, functional, cost, and schedule risks. • Prioritize ERA–owned risks. • Review and approve risk owner’s risk response plans as well as contingency plans. • Determine if the objectives of risk response plans were met. • Recommend control decisions to the ERA PD.

Final

Roles	Required Responsibilities
ERA Quality Management	<ul style="list-style-type: none"> • Provide oversight and review of RKM plan updates and revisions • Ensure risk management processes and documentation adhere to Quality practices • Interface with risk management as needed for risk reporting

9.0 Risk Management Organization

The ERA risk management organization functions within and interfaces with the existing ERA PMO organizational structure. IPTs are formed for the functional areas that are critical to the success of the ERA program. All functional areas not covered by an IPT are assessed and reviewed by the ERA PD, ERA PM, and RO to ensure adequate vigilance against the emergence of risk. **Figure 9-1, ERA Risk Management Organization**, depicts the ERA Risk Management Organization.

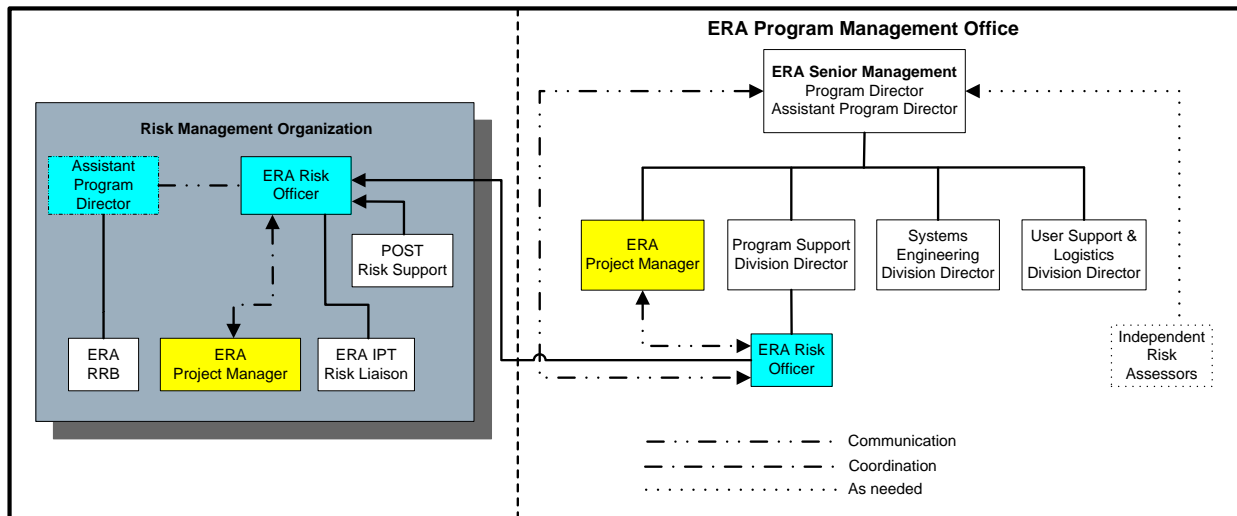


Figure 9-1: ERA PMO Risk Management Organization

Figure 9-2, ERA Risk Entity Relationships, further presents the ERA Risk Management Organization by showing the relationship between the various risk management boards. This figure depicts both the flow of information between the risk management boards as well as the escalation of risks determined to be better dispositioned at a higher level.

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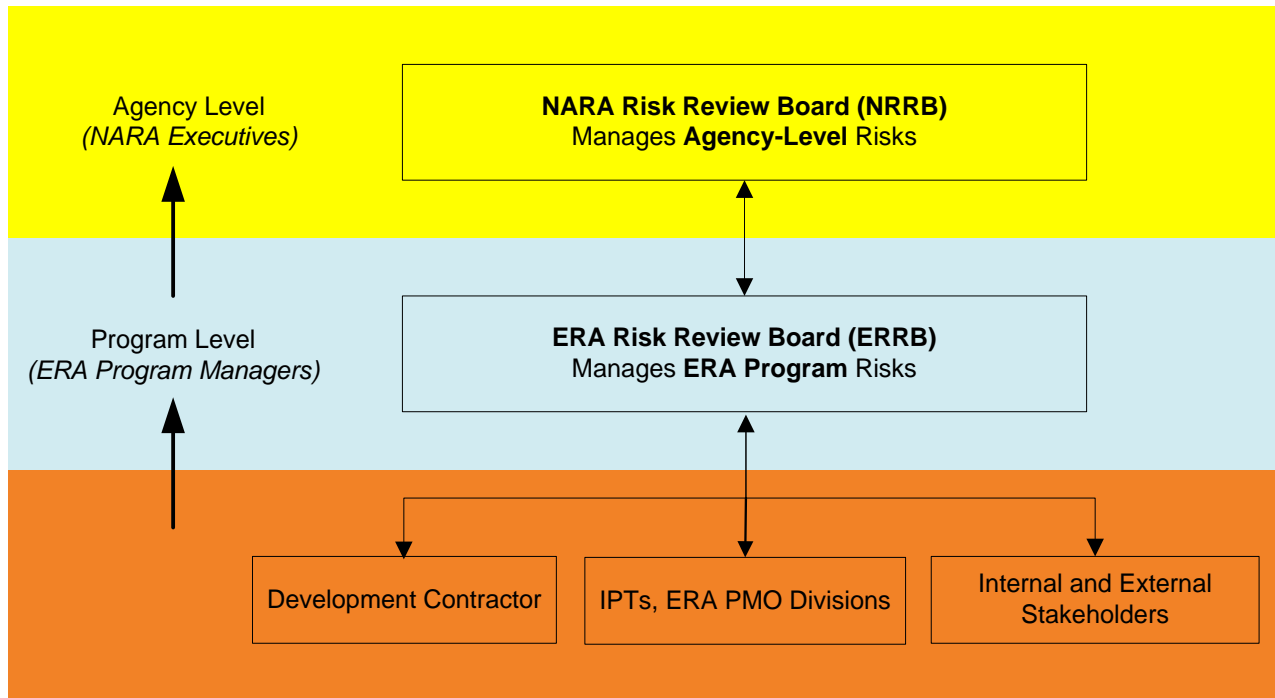


Figure 9-2: ERA Risk Entity Relationships

The following sections describe the primary functions and responsibilities of individual program personnel.

9.1 ERA Program Director (PD)

The ERA PD is responsible for the overall success of the NARA ERA Program. In this regard, the PD has accepted risk management as a critical element of the ERA Program Management process. The PD is therefore ultimately responsible for planning, allocating resources, and executing risk management. This requires the PD to oversee and participate in the risk management process. The ERA PD has designated an ERA Risk Officer to assist with this responsibility.

9.2 ERA Risk Officer (RO)

The ERA RO is responsible for facilitating the identification and assessment of ERA program risk areas; assisting with the development of risk response plans; and tracking/reporting risk information throughout the ERA lifecycle. This may be a full-time position or an additional duty, as the PD deems appropriate. The RO shall have specific training and experience in risk management to increase the chance of successful implementation and to avoid common problems. The ERA RO and the contractor risk management support staff constitute what this plan refers to as the ERA PMO Risk Team. The ERA Risk Team takes on the challenges involved with implementing this *ERA Risk Management Plan (RKM)*. The RO is also responsible for developing, assessing, and maintaining the RKM.

Final

9.3 ERA Risk Review Board (ERRB)

The ERRB is chaired by the ERA Assistant Program Director and its membership is comprised of a small group of ERA PMO Division Directors and senior managers. It is responsible for making decisions and recommendations directly affecting the management of program-level risks and opportunities. These are risks that threaten the successful achievement of the ERA program objectives and opportunities to enhance the possibility of achieving those objectives. These are risks that the ERA PMO has full ownership and the available resources to respond successfully.

The charter that establishes, defines, and authorizes the ERRB also provides its overriding policy. The ERRB administers and maintains the commitment of the stakeholders to the ERA PMO risk process and, as necessary, coordinates and communicates risk information to and among stakeholders. Forms and procedures are utilized for all transfers and the actions and decisions of the Board are documented in meeting minutes and results captured in the risk register.

The ERRB members are asked to strategize approaches to all risks involving ERA. This includes reviewing risks, creating and/or clarifying entry and exit criteria, and determining the benefit of proposed mitigation. The ERRB may also be request further information on context, consequences, and status from the risk owners, contractor(s) and ERA PMO. The risk owner and/or responsible person may be asked to present updates and relevant information to the Board for review. All active risks with any reported activity are revisited at each meeting to re-assess for any change in attributes. Multi-voting is used to arrive at consensus for risk probability and impact. The goal of the ERRB is to arrive at an initial consensus on whether the candidate risk presented is actually a risk and how it should be treated. The Board members will be provided methods and tools to identify, analyze, plan, respond, monitor, and communicate risks. The frequency at which the Board is scheduled to meet is established by the charter and is on a monthly basis. However, the Board can meet more or less frequently at the behest of the Board Chair and is dependent on circumstances such as the number and nature of active risks as well as the lifecycle phase of ERA. Members will be expected to come to a consensus for identifying the appropriate Division Director/senior ERA manager in whose domain the risk falls. That person will in turn designate an appropriate risk owner. Those risks that are beyond the purview of the Board are escalated (transferred) to the NRRB. The ERRB members may also evaluate a risk response plan, and whether or not a risk response has met its objective. The ERRB is expected to come to a consensus on all risk transfers and recommendations to the ERA PD. The ERRB refers Agency risks to the NRRB.

9.4 Integrated Product Teams (IPTs)

Each IPT should designate an individual to serve as the IPT's Risk Liaison in a situation where IPT attendance by a member of the ERA Risk Team is not possible (due to resource or schedule conflict). This individual will be responsible for the continuous and proactive assessment of critical IPT areas to identify, report, and potentially assist in the analysis of potential risks. They will aid in the development of options for reducing risks and monitoring the effectiveness of the

Final

selected handling options. The IPTs will also participate in identifying the resources required to implement the developed risk treatment options.

9.5 NARA Risk Review Board (NRRB)

Note: The inclusion of this reference should not be construed as the ERA PMO setting any policy for the NRRB. This paragraph is included here only as an informative reference for overall clarity.

The NRRB is NARA's Agency-level Risk Review Board, which is responsible for agency level, strategic risk management. Risks beyond the purview of the ERA PMO to effectively manage may be transferred to the NRRB.

10.0 Risk Management Orientation and Training

The degree to which the ERA PMO is properly oriented and trained in risk management will be one (1) factor in determining the overall success of the ERA Program. Orientation and training for the common risk management approach used will be coordinated with other emergent risk functions within NARA to ensure a common understanding, approach, and unified process. Risk training seeks to ensure commonality of process to ensure smooth communication between the various NARA risk management entities.

Currently, ERA's risk management takes advantage of the following opportunities to orient staff, stakeholders, and suppliers to the risk management process.

- **Employee Orientation.** This includes a "Risk Management Guide" Power Point presentation on risk management used to introduce new employees to the ERA PMO risk management process; and is also used to remind and reinforce the process with existing NARA staff involved with the ERA.
- **Kick-off Meetings for IPTs.** All ERA Program related IPTs will allow for a brief risk management orientation. The purpose will be to facilitate the selection and ongoing activities of the IPT's Risk Liaison.

The RO will continuously review the ERA program including, scope, increments, and other changes, with the intent to address risk training needs. When necessary, the RO will be responsible to provide appropriate risk training and/or refreshers to PMO and/or Program Office Support Team (POST) staff.

11.0 Risk Management Costs and Schedules

The implementation of this RKM incurs cost and must be part of the integrated program schedule. The sections below provide an overview of the required resources and schedule activities; however, refer to the current *ERA WBS and Schedule*, which is part of the *ERA PMP* for specific details.

Final

11.1 Risk Management Costs

An effective risk management program requires resources. The resources ERA will use in managing risks are broken into two (2) major categories; operations and response planning. ERA risk management will be funded by the PMO and the resources include personnel, time, tools, etc. At a minimum, the risk management program staff will include: one (1) full time ERA RO, one (1) risk management support contractor, and one (1) IPT risk liaison for each IPT.

Budget allocation for risk response plan development and execution is controlled by the ERA PD, who has delegated oversight to the ERA PM. Each Division Director is responsible for overseeing risk response activities of Risk Owners/Responsible People within their functional area. Any requirements for additional mitigation resources, to be drawn from the management reserve, must be requested from the PM for approval by ERA PD. In those cases where risk mitigation activities cross organizational bounds, the Risk Owner will ensure adequate resource allocation and coverage for achieving successful mitigation.

11.2 Risk Management Schedule

Continuous risk management activities and tasks are ongoing. Most are delineated in detail in the *ERA Program WBS and Schedule*, which is referenced within the *ERA PMP*. Listed below are some of the major activities currently performed along with some of the resulting products.

- Weekly program and functional area meetings will include status of risks
- Quarterly program reviews will include status of top risks
- Monthly summarization and reporting of critical risks to the PD
- Monthly meeting of the ERRB
- Re-establishment of the baseline set of risks on a program milestone basis
- Creation of Monthly Prioritized Risk List
- Administration and Maintenance of ERA PMO Risk Register
- Risk Analysis, Tracking, Monitoring and Control
- Attend IPT meetings as necessary

12.0 Risk Management Process Description

ERA's Risk Management Process reflects a continuous, systematic, and forward-looking approach to identifying, analyzing, and responding to risks. It is intended to minimize the probability and consequences of events adverse to the project and promote or advance those events with the potential for a positive impact. ERA's Risk Management should not be confused with Issues Management. Issues Management is the process of prioritizing and addressing immediate problems or crises (events with a certainty of occurrence) that can affect an organization's success. **Figure 12-1, ERA Risk Management Process**, depicts ERA's Continuous Risk Management approach. The essential risk process revolves around the ability to document and communicate results via the risk register. A risk tool containing this type of feature is employed to continuously list, track, monitor, and provide plan updates; report qualitative and quantitative analysis; and foster proactive decision making between NARA and

Final

the development contractor. Broadening awareness within the Agency to the value of implementing a risk management process has led to acquisition of Risk Radar Enterprise (RRE), an enterprise-capable risk tool to facilitate risk data communication.

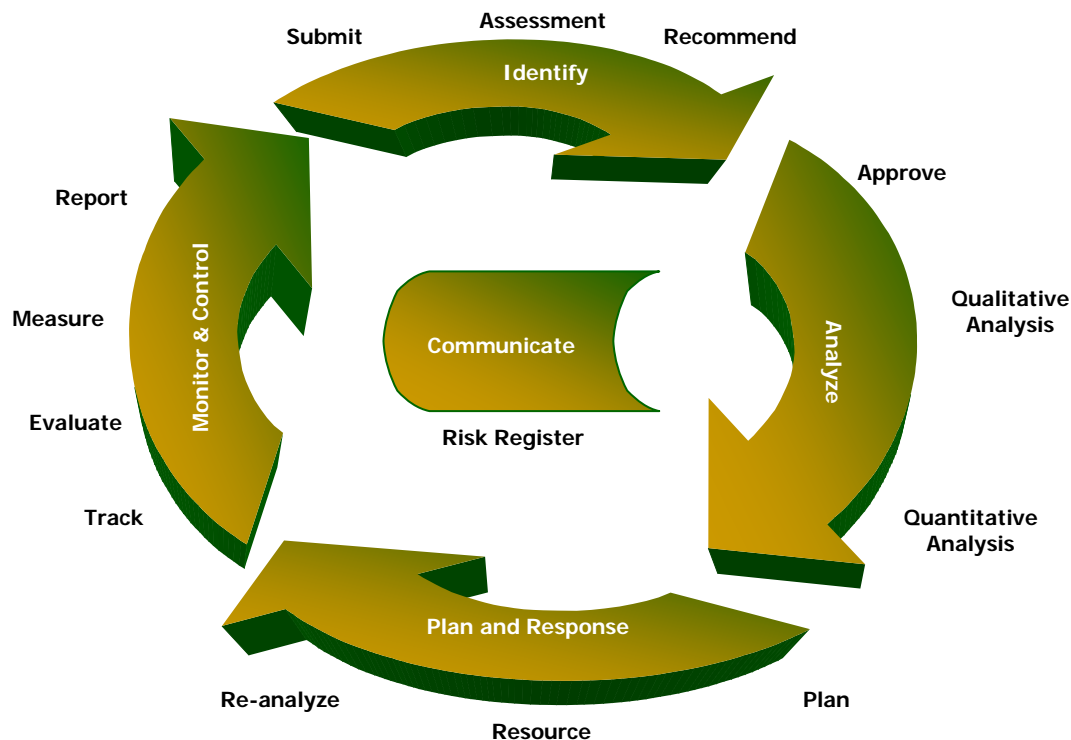


Figure 12-1: ERA Risk Management Process

12.1 Risk Management Context

ERA, as a system acquisition program, has significant inherent risks. It is essential to identify risks, implement qualitative and/or quantitative risk analysis, develop and follow risk response plans, and implement risk monitoring and control in an effort to prevent foreseeable risks from manifesting as significant problems. Annual risk assessments provide an independent view into not only the effectiveness of the risk management process, but also the overall functioning of a risk methodology within a larger Agency context. With the ERA Program taking the “lead” with an IT risk management process, other NARA units have now recognized the value of risk management, and have initiated plans to implement their own process. ERA risk management is working with NARA managers to foster a greater awareness and acceptance of risk management. ERA risk management seeks to establish commonalities in risk management language and processes to ensure a smooth and effective interface among existing and emergent risk functions.

Previous annual risk assessments have deemed the Risk Exposure of the ERA Program as high, and thus placed a strong emphasis on continuous risk management as a critical element for ERA Program Management.

Final

12.2 Risk Identification

Risk Identification is a process to determine which events might affect the project and documenting their characteristics. It is important to note that risk identification is an iterative process. The first iteration is a preliminary assessment and validation performed by the ERA PMO Risk Team with consultation, as needed, with the Identifier of the risk. The second iteration involves presentation, review, and discussion by the ERRB. The ERA Risk Management process utilizes three (3) distinct steps in characterizing risks: Submission, Assessment and Validation, and Approval. A graphical depiction of the identification process is provided in **Figure 12-2, Risk Identification Process**.

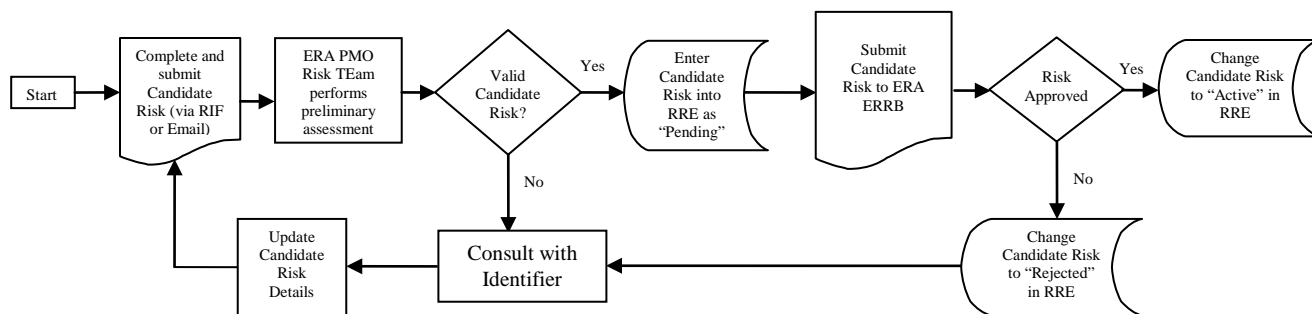


Figure 12-2: Risk Identification Process

12.2.1 Submission

Any individual may submit a candidate risk. In this context, submit means to present or propose a risk for review, consideration, or decision. The preferred method used to document the proposed risk is the ERA Risk Identification Form (RIF). **Figure B-1, ERA Candidate Risk Identification Form**, presents a sample of this form. ERA RIFs are available and can be obtained by contacting the ERA RO.

12.2.2 Preliminary Assessment

Once an ERA RIF is submitted, the ERA RO performs a preliminary assessment to determine whether the proposed risk is properly formulated, provides clear and sufficient information for the ERRB to determine if the risk is valid, and contains a condition or event that warrants further review. Based on that determination, the RO will then take appropriate action and notify the risk submitter of the action. Possible actions include preliminary approval or further investigation.

12.2.2.1 Preliminary Approval

If the ERA RO selects preliminary approval, the proposed risk is entered into the risk register and marked as “pending.” The preliminarily approved risk then becomes a candidate for formal review by the ERRB/PD.

Final

12.2.2.2 Further Investigation

If the ERA RO determines that insufficient or ambiguous information has been provided and that further investigation is required The ERA RIF is returned to the submitter and an opportunity to discuss the reasoning behind the action and gather additional information is provided.

Note: At any level of review, the risk event, including the title, may have to be revised to more accurately identify the risk, indicate its actual scope and potential impact, or distinguish it from previously identified risks.

12.2.3 Formal Review and Recommendation

After a risk action of preliminary approval is selected, the candidate risk is then presented at the next meeting of the ERRB. The ERRB will have the opportunity to review pertinent information and make a recommendation to validate and approve, reject, or request further review. If the risk is found acceptable and approved, it is then identified as a valid risk to be managed and its status is updated in the risk register from pending to active. The ERRB may, at times, require additional information for some risk items. Should this become necessary the potential risk items' status remains "pending" until such time as the additional information/analysis is provided and the ERRB can approve or reject.

12.3 Risk Analysis

This section satisfies the intent and content required from Section 12.2, Risk Analysis, of the IEEE Std. 1540 2001 - IEEE Standard for Software Life Cycle Processes-Risk Management.

Risk Analysis is the evaluation, classification, and prioritization of identified risks to determine possible outcomes, the probability of the events occurring, and their consequences. Steps in the Analysis Phase include:

- Perform initial analysis,
- Approve funding for further analysis,
- Perform detailed analysis (quantitative or qualitative), and
- Communicate results of the analysis.

Figure 12-3, Risk Analysis Process, provides a graphical depiction of the inputs and outputs of the risk analysis process.

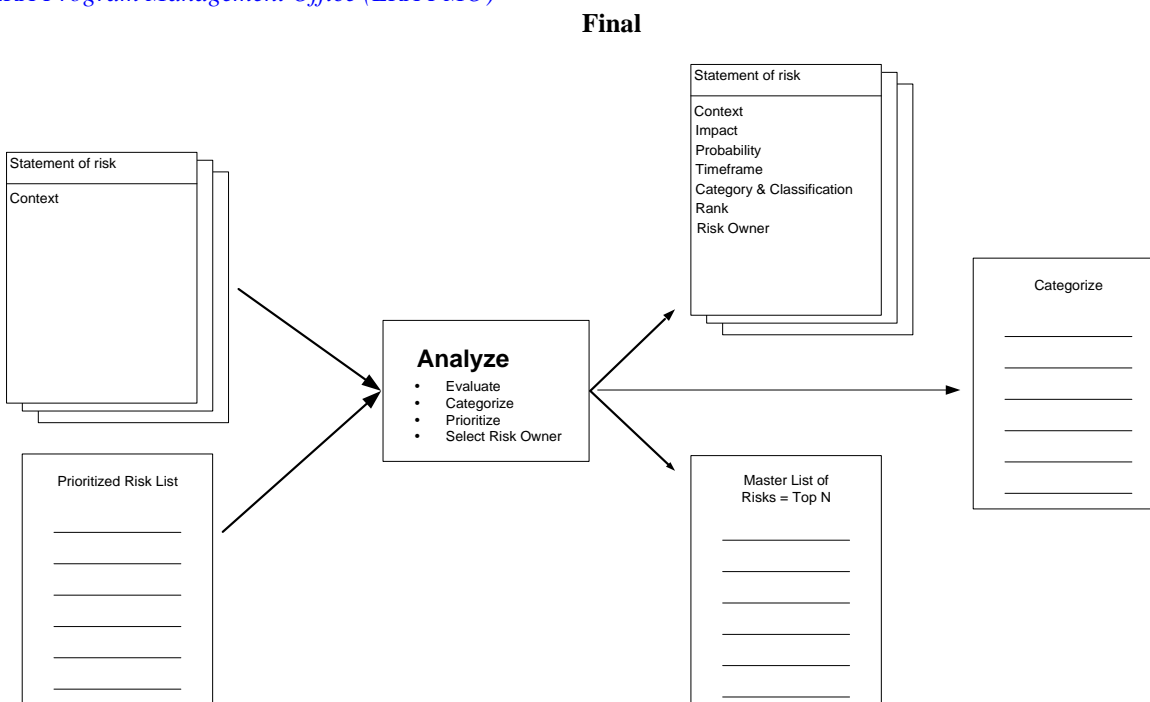


Figure 12-3: Risk Analysis Process

12.3.1 Initial Analysis

Once Candidate risks have been approved by the ERRB they become active risks and further evaluation can proceed, beginning with an initial analysis. At this time, the ERRB, led by the Chair, will identify a potential Risk Owner. The Risk Owner will work with the RO and any required SME on planning and responding to the risk. The ERRB attempts to categorize the risk and determine if resources exist within the project to perform further risk analysis or if there is need for an external SME. The ERRB may at this time also determine that the risk may affect other organizations within NARA and would best be handled at a higher level. If this should be determined, the ERRB will formally request the risk be transferred to the NRRB. The ERA RO, working with the ERA PM, also communicates with the ERA project control team to determine probable cost and schedule impact; negotiate short term funds to be used for further analysis; and create a draft milestone/cost schedule. When the initial analysis is complete, the ERA RO provides the information to the ERA PD in order to:

- Communicate the risk,
- Seek the PD concurrence on the risk, and
- Seek additional funding (if necessary) for detailed analysis including use of a SME as required.

12.3.1.1 Risk Categorization

The risk categorization section provides information regarding the various risk categories used by the ERA PMO to classify or group risks. By placing risks in categories, ERA is able to show the relationship among risks, help identify risks that could be mitigated as a set, as well as

Final

identify “issues” that should be escalated to the ERA PD and PM so that an appropriate strategy outside of risk management can be applied.

12.3.1.1.1 Cost Risk

Cost risk is associated with the ability of the program to achieve its lifecycle cost objectives. Cost risk builds on technical and schedule assessment results, translates technical and schedule risks into “dollars and cents,” and also provides cost estimates for risk handling options, while deriving the most probable cost impacts. It also integrates technical assessment and schedule risk impacts with the known available resources. Cost risk also establishes budgetary requirements consistent with fiscal year planning (which includes tracking planned and actual resource use and any slippage). Cost risk is a focus area required to maintain integration of the risk assessment process to ensure consistency of the final product.

12.3.1.1.2 Schedule Risk

Schedule risk is associated with the adequacy of the time estimated and allocated for the development, production, and fielding of the ERA system. Schedule risk reflects the technical foundation, activity definition, inputs from technical as well as cost areas, and provides the most probable schedule for cost analysis and fiscal year planning. Schedule risk evaluates baseline schedule inputs; an impact to program schedule based on technical team assessment, and quantifies the schedule excursions reflecting schedule impacts if risk mitigation fails. Schedule risk is needed to maintain integration of the risk assessment process to ensure consistency in the final product.

12.3.1.1.3 Technical Risk

Technical risks are those that threaten the evolution of the design, the production of ERA, and/or the level of performance necessary to meet the operational requirements. This type of categorization should be based on the source or root cause.

12.3.1.1.4 Program Risk

Program risk is any risk that threatens to terminate, weaken, or change the strategic objectives, direction, or vision of ERA. Driving factors of Program Risk are cost, schedule, and/or performance.

12.3.1.1.5 Strategic Risk

Strategic risks are generally used by the NRRB to identify risks that demand Agency level engagement by NARA senior managers to ensure adequate coverage for effective risk response planning and mitigation. Senior staff agreement is necessary for the determination of the appropriate risk owner. The NRRB monitors and controls the strategic level risks, but may delegate specific risk mitigation activities as part of an overall mitigation strategy to other boards. Risks identified at lower levels may also “bubble up” to the level of a strategic risk once the analysis has determined strategic implications in the risk.

Final

12.3.1.1.6 Process Risk

Process risk is a risk that threatens the proper execution of the business processes defined for the ERA system and its evolution that includes program office processes. Process risks are assessed in terms of variance from accepted best practices and potential consequences of the variance.

12.3.1.1.7 Product Risk

Product risks are those that threaten the production of any aspect of ERA, so that it may not be produced on time, within budget, and/or according to specifications. Product risks are assessed in terms of technical performance measures and observed variances from established profiles.

12.3.1.1.8 Functional Risk

Functional risks are those that affect the ERA's ability to support specific users or user functions. They adversely affect the basic requirements associated with the preservation of the records of the Federal Government. Typically, functional risks occur where specific requirements or business processes have been overlooked in the implementation.

12.3.1.2 Funding Approval

The ERA PD reviews the initial analysis data and determines if the risk is valid and the plan for addressing the risk is sufficient. Upon approval/concurrence from the ERA PD, a change request (if required) is submitted to add the activities to the schedule (including the use of a SME).

The ERA PD may reject the plan due to incomplete or ambiguous information, or may deem that the risk may affect other internal organizations within NARA, thus necessitating the need to elevate the risk to the ERRB.

12.3.2 Detailed Analysis

The detailed analysis concepts are presented using guidance from the Project Management Institute's Project Management Body of Knowledge (PMBOK). Qualitative and quantitative risk analysis processes can be used separately or together. Each process relies on a varied set of inputs and analysis techniques, and produces a different set of outputs. If used together, qualitative risk analysis precedes quantitative risk analysis. Lastly, both processes make the assumption that a risk management plan exists. The ERA Risk Management Program is focused on the use of qualitative risk analysis.

12.3.2.1 Qualitative Risk Analysis

Qualitative risk analysis is the process of assessing the probability of identified risks occurring, their potential impact to project objectives and prioritizing risks based on the resultant risk exposure. Inputs to the process include identified risks, project status as to where the project is in the System Development Life Cycle (SDLC), project type, precision of the risk, and the scales of probability and impact. Each input is further evaluated to provide better understanding. Using tools, during the analysis process, such as probability and impact tables, will produce

Final

output in the form of a list of prioritized risks (a list of high and medium risks that require additional analysis) and an overall risk ranking for the project.

12.3.2.1.1 Inputs to the Qualitative Risk Analysis Process

Risk process identification, as previously indicated, is the first element of the risk management process. Potential risks are identified and initial analysis is performed in an effort to determine the validity of the risk.

The type of project influences the uncertainty of risk. Projects that are similar to previous projects often have a better understanding of potential risks and the probability of their occurrence. For projects like ERA that are both very complex and lean toward state of the art technology, the degree of uncertainty surrounding the risk and the probability of occurrence is greater.

A project's status also plays an important part in the risk analysis process. As often occurs in the early stages of the SDLC, many risks have not surfaced. As the program matures, changes are inevitable making it more likely that risks will be discovered.

Precision of data may also be a factor. How well is the risk understood? Has it been seen before? How much data is available in order to accurately portray the risk? The answers to these questions will be a factor in determining what data is available and how reliable it is.

Major items from the Risk Management Plan for qualitative risk analysis include roles & responsibilities, budgets and schedule for risk management activities, risk categories, definitions of probability & impact, and the stakeholders' tolerance

The scales of probability and impact, i.e., likelihood of occurrence, help identify risks that require aggressive risk management. These scales are graphically depicted in **Table 12-1, Risk Probability Levels** and **Table 12-2, Risk Impact Levels**.

12.3.2.1.2 Evaluation Techniques

The Risk Owner/Responsible Person and/or SMEs will analyze identified risk events and recommend probability and impact values for each using the **Table 12-1, Risk Probability Levels** and **Table 12-2, Risk Impact Levels**. After being provided with this recommendation, as well as all pertinent risk event information, the ERRB members will individually provide input as to the probability and impact values. The resulting average values provide input to the determination of each event's risk exposure value.

12.3.2.1.3 Risk Probability

For each identified risk, the probability of the risk occurring will be determined. The five (5) levels of probability and corresponding likelihood of occurrence for the ERA program are depicted in **Table 12-1, Risk Probability Levels**. Based on the analysis that is performed, a probability value is assigned to the risk.

Final

Probability Level	Likelihood of Occurrence
1 (1% - 20%)	Remote
2 (21% – 40%)	Unlikely
3 (41% – 60%)	Likely
4 (61% – 80%)	Highly Likely
5 (81% – 99%)	Near Certainty

Table 12-1: Risk Probability Levels

12.3.2.1.4 Risk Impact

For each risk that is identified, the following question must be answered: Should the risk event occur, what is the magnitude of the impact? For the ERA program, impact will be determined in, at a minimum, each of six (6) areas: Cost, Schedule, Technical/Quality, Performance, Mission Success, and Affect on other NARA organizations. The five (5) levels of impact for the ERA program are depicted in **Table 12-2, Risk Impact Levels**. Based on the analysis that is performed, an impact value is assigned to the risk.

Level	Technical Performance	Schedule	Cost	Impact on Other Teams
1	Minimal or no impact	Minimal or no impact	Minimal or no impact	None
2	Acceptable with some reduction in margin	Additional resources required. Able to meet need dates	< 5%	Some impact
3	Acceptable with significant reduction in margin	Minor slip in key milestone. Not able to meet need dates	5 -7%	Moderate impact
4	Acceptable-no remaining margin	Major slip in key milestone or critical path impacted	>7<10%	Major impact
5	Unacceptable	Can't achieve key team or major program milestone	>10%	Unacceptable

Table 12-2: Risk Impact Levels

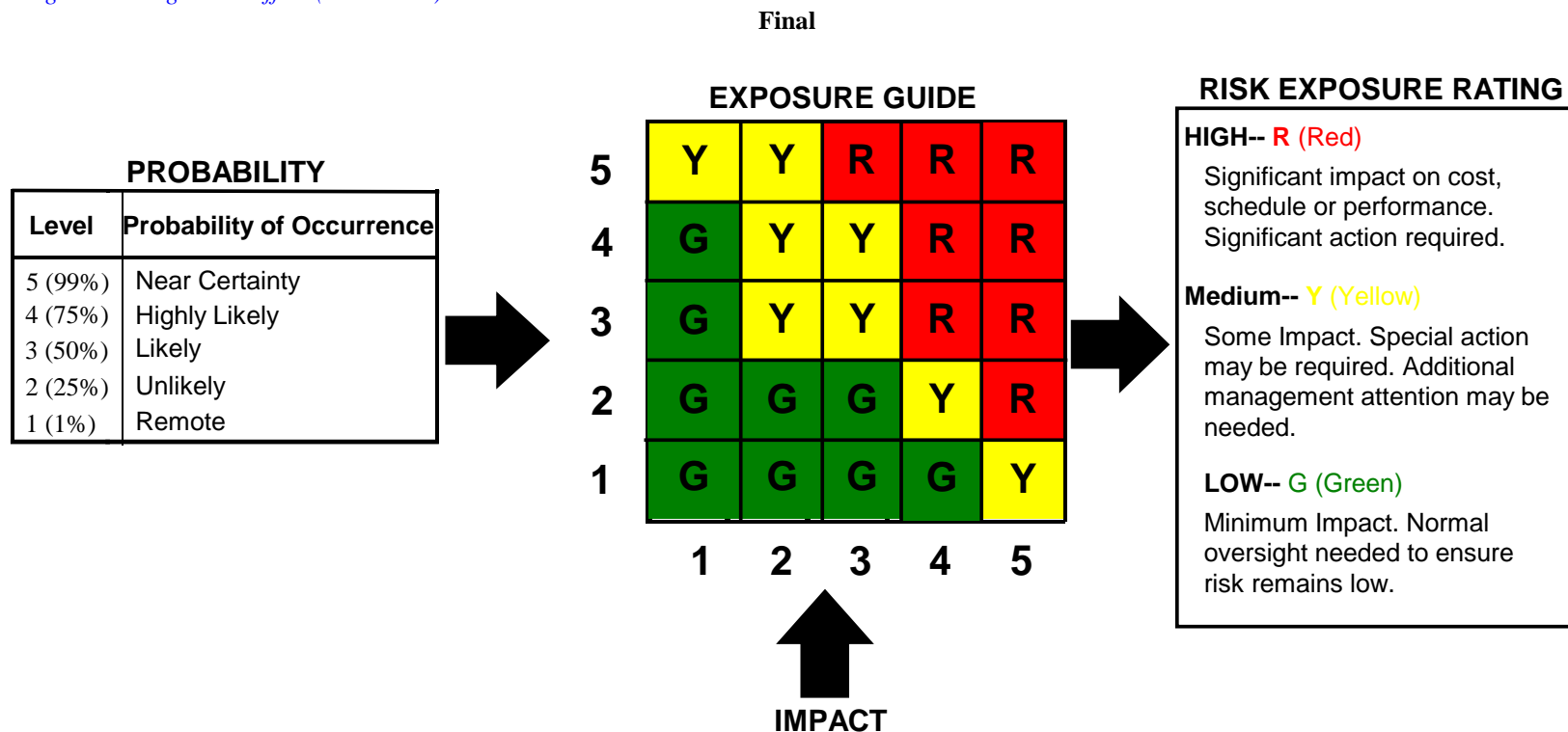
12.3.2.1.5 Risk Exposure

Each identified risk event will be assigned a risk exposure. This rating is a reflection of the severity of the risk and provides a starting point for the development of options to handle the

Final

risk. It is important to consider both the probability and impacts in establishing the rating, for there may be risk events that have a low probability, but whose impacts are so severe that the occurrence of the event would be disastrous to the program. Values assigned from **Table 12-1** and **Table 12-2** during the risk analysis will determine the Risk Exposure, using the process guideline depicted in **Figure 12-4, Risk Exposure Process Guideline**.

The rating section of **Figure 12-4** defines the risk exposure associated with each combination of probability and impact values, and will be used throughout the program. For example, (impact/probability x impact) 2x2 maps to a color code of G (Green) and will correspond to a risk exposure of LOW. Level 4x3 maps to a color code of Y (Yellow) and will correspond to a risk exposure of MEDIUM. Level 4x5 maps to a color code of R (Red) and will correspond to a risk exposure of HIGH.



Value	Technical Performance	Schedule	Cost	Impact on Other Teams
1	Minimal or No Impact	Minimal or No Impact	Minimal or No Impact	None
2	Acceptable with Some Reduction in Margin	Additional Resources Required; Able to Meet Need Dates	<5%	Some Impact
3	Acceptable with Significant Reduction in Margin	Minor Slip in Key Milestone; Not Able to Meet Need Dates	5-7%	Moderate Impact
4	Acceptable, No Remaining Margin	Major Slip in Key Milestone or Critical Path Impacted	7-10%	Major Impact
5	Unacceptable	Can't Achieve Key Team or Major Program Milestone	>10%	Unacceptable

Figure 12-4: Risk Exposure Process Guideline

12.3.2.1.6 Outputs from the Qualitative Risk Analysis Process

Having evaluated risk in terms of probability and impact, outputs from the analysis will include:

- Ranking the project in terms of overall risk and then comparing it to similar programs,
- Generating a list of risks by priority,
- Generating a list of high and/or medium risks that require additional analysis, and
- Determine if trends have evolved as a result of performing iterative qualitative risk analysis.

12.3.2.2 Quantitative Risk Analysis

Quantitative risk analysis is the process of analyzing numerically the probability of each risk and its consequence on project objectives, as well as the extent of the overall project risk. It is performed in order to determine the probability of achieving a specific project objective, quantify risk exposure for the project, identify risks requiring the most attention, and identify realistic cost, schedule, or scope targets. Inputs to the process include a risk management plan, outputs from the qualitative risk analysis process include a list of prioritized risks and a list of high and medium risks that require additional analysis (to be provided by performing quantitative risk analysis), historical information that may be available from similar past programs, and expert judgment.

12.4 Risk Monitoring and Control

This section satisfies the intent and content required from Section 12.3, Risk Monitoring, of the IEEE Std. 1540 2001 - IEEE Standard for Software Life Cycle Processes-Risk Management.

Risk monitoring is the process in which risk data is acquired, compiled, and reported on risk response plans and risks and/or on watch status. Control is the process of making decisions based on the risk data that has been acquired, compiled, and reported. Because these functions are closely linked, they have been combined as part of the same process. See **Figure 12-5, Inputs and Outputs to Risk Monitoring and Control Process**, for additional detail.

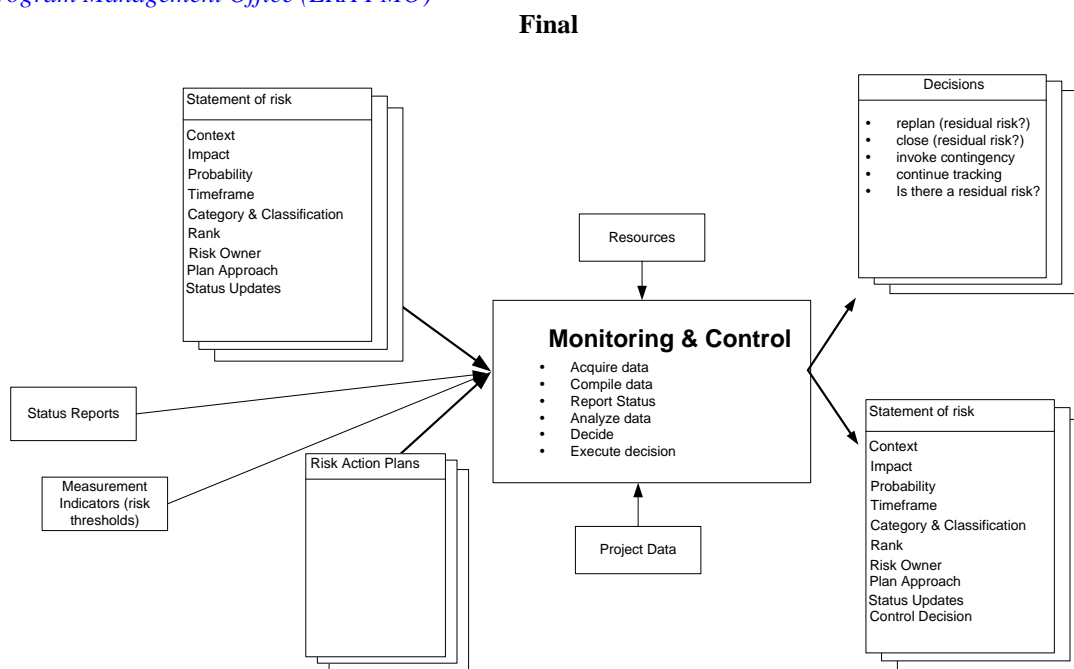


Figure 12-5: Inputs and Outputs to the Risk Monitoring and Control Process

Once the Risk Owner has begun implementing the Plan, he/she will report status as to the progress of this activity to the ERRB and the appropriate Manager (i.e., NARA Manager, ERA Senior Manager, and/or ERA Division Director). During these contacts, decisions may come forth altering the progress, outcome, success, and/or closure of the activity. These decisions will be captured in the Risk Register and the appropriate action will be taken.

The ERA RO will consult with the ERA PM and PD on the combination of risks that shall be communicated to stakeholders. The ERA POST Risk Manager, will be responsible to capture and document comments from stakeholders pertaining to ERA's monitoring and control of risks, produce a set of minutes from the comments to be distributed to ERRB members, post approved minutes to the PMO shared directory.

The ERA RO will also attend and represent ERA at the NRRB. The ERA RO will consult with the ERA PM on the combination of risks that shall be communicated to the NRRB. The ERA RO, with the assistance of the ERA POST Risk Manager, shall capture comments from stakeholders pertaining to ERA's monitoring and control of risks, along with any new candidate risks and share the information with ERRB members.

Currently, ERA Risk Management is using RRE as its risk register to capture pertinent details associated with the lifecycle of ERA Risks, including:

- Risk statement;
- Risk context;
- Risk impact, probability, timeframe, category, classification, risk owner, responsible person, appropriate external board and/or review body;
- Summary of updates; and

- Historical record of risk-related events.

The Risk Register tool is equipped with mechanisms to generate standard and customized/adhoc reports.

Oftentimes, new candidate or residual risks will be “discovered” in the monitoring process. Residual risks reflect items that pose uncertainties after a response has been implemented. An important part of Monitoring and Control is to capture data that confirms the existence of another or residual risk. If a residual risk is newly discovered or the response has not met its objective, then the process of analysis is repeated and re-planning starts. Uncovering a residual risk, and making a decision to respond to it, is a “key” event that characterizes this risk management process as continuous.

12.5 Risk Treatment

This section satisfies the intent and content required from Section 12.4, Risk Treatment, of the IEEE Std. 1540 2001 - IEEE Standard for Software Life Cycle Processes-Risk Management. Also reference the *ERA Metrics Plan (MP)* for further information on risk-oriented metrics.

12.5.1 Risk Prioritization

The ERA RO will initially prioritize (rank) all active risks contained within the risk register based solely upon the calculated Risk Exposure value.

Division Directors will be expected to prioritize High and Medium risks in their areas. Prioritization will provide the basis for the development of risk response plans and the allocation of risk management resources. Prioritization will be accomplished using expert opinion along with the following criteria to identify risks with the highest priority:

- Risk Exposure – HIGH and MEDIUM;
- Impact - Within each rating, the highest value of Impact, i.e., level 5;
- Urgency – The amount of time that is available before risk response actions must be initiated; and
- Probability - Within each rating, the highest value of Probability, i.e., level 5 (99%).

The anticipated timeline for risk impacts are also important factors in assigning priority to risk. All other factors being equal, those risks with a longer impact timeline should have a lower priority value. As such, the timeline is also a factor in assigning priorities to risks across the ERA Program. **Table 12-3, Risk Impact Timelines**, provides detail for each of the four (4) impact timelines.

Final

Impact Timeline Category	Days to Impact
Imminent	0 to 30 days
Short-Term	31 to 60
Mid-Term	61 to 120 days
Long Term	Over 121 days

Table 12-3: Risk Impact Timelines

The RO and ERA PM will receive and review the prioritized lists and communicate the results to the ERRB and the ERA PD, when applicable. In turn, ERRB and ERA PD will decide whether further action is warranted, and possibly recommend steps toward a solution.

Risk reporting is partitioned by Risk Priority in order to ensure that proper focus is applied to the most critical risks. Based on priority the Risk List is partitioned into two (2) levels; active and archive. The active level is made up of the top 10 risks on the risk list according to priority. These risks are reviewed directly between the RO and the PD. The scope of these informal reviews includes a brief review of the risk and potential impacts, the trends in probability and impact, actions that have been taken to reduce either probability or impact, why they have not been effective, and suggested changes to the Risk Control process to more effectively control the individual risk.

The archive level is all risks that are below the top 10. These risks are directly controlled by the RO. The RO will monitor each risk in this list, updating either impact or probability if appropriate. Risks will move in and out of the archive level based on changes in priority.

12.5.2 Plan and Respond

Planning is the function of deciding what, if anything should be done with a risk. Planning produces risk response plans for individual or sets of related risks. Risks are planned by those who have the knowledge, expertise, background, and resources to effectively deal with the risks. Within ERA this process remains the same but has been tailored in order to preserve an integrated and continuous approach. The Risk Owner and the appropriate manager, with the assistance of the ERA RO, will determine the approach, define the scope, and outline actions to be taken. This may entail obtaining cost estimates or proposing the procurement of hardware, software, or additional resources. Determining the approach, scope, and outline may also entail considering Project constraints in terms of cost and schedule. If the risk impacts a critical path item, the risk owner may need to request services from project control in order to run Monte Carlo simulations. Risks that have been identified as being on the critical path are marked as such in the risk database.

ERA Risk Management encourages the development of options and the use of a decision analysis report by the risk owner in obtaining the approval(s) necessary to launch a full response to a risk. The Decision Analysis (DA) provides documentation as to why a decision to proceed was reached. See **Appendix C, Decision Analysis**, for a sample of a DA. The ERA RO will draft a DA. It will be presented to the ERA PM who will finalize it for final approval and

funding by the ERA PD. Upon approval and funding, the risk owner shall manage the activities and report on the progress to the ERRB upon request. **Figure 12-6, Inputs and Outputs to ERA Risk Management's Plan and Respond Process**, describes the Plan and Respond process.

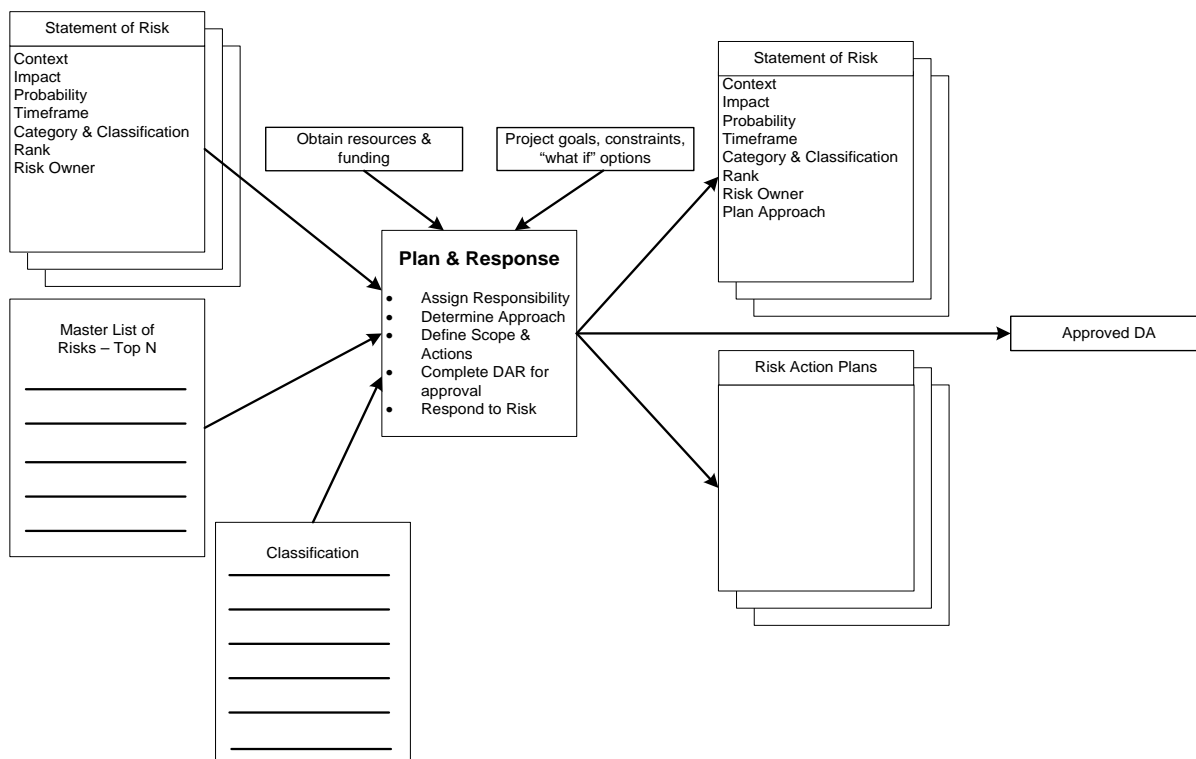


Figure 12-6: Inputs and Outputs to ERA Risk Management's Plan and Respond Process

12.5.3 Generating the Decision Analysis (DA)

The purpose of the DA is to:

- Determine with certainty that a particular approach is warranted,
- Determine with some degree of certainty the best option, and
- Act as the instrument/proposal for funding and formulation of a final risk response action plan.

All findings obtained will be communicated in a DA. This document should include no less than one (1) and no more than three (3) options with related cost impact and program constraints.

12.5.4 Risk Thresholds

The use of risk thresholds in ERA's risk management process involves a determination of the criteria by which acceptability of a risk is defined. For the purposes of this document,

Final

acceptability is meant as the level of exposure to a loss that NARA, or the ERA program specifically, is willing to tolerate based on examined considerations. Risk thresholds are discussed and determined, when appropriate, during risk analysis and are revisited during status meetings to determine if a threshold requires updating. In some cases, the threshold establishes the maximum level of a measured criterion that has been deemed as “acceptable” without requiring further review by designated stakeholders.

The application of metrics is also used for deriving risk thresholds and determining when the thresholds are approached or exceeded. A risk threshold can also represent the point (usually in the form of a > or < metric) whereupon more aggressive risk monitoring is employed. It may also activate the implementation of risk contingency plans and/or a more in-depth risk assessment. As an example, OMB has defined the 10% cost/schedule variance threshold and mandated its application as integral to cost and schedule control activities.

13.0 Risk Management Process Evaluation

This section provides a description of the process for evaluating and improving the risk management process. This process improvement includes capturing risk management related data to be used in reporting metrics; assessing the ERA program as a whole, and the effectiveness of risk management execution; and the generation of lessons learned.

13.1 Capturing Risk Information

Information regarding activities and decisions surrounding all identified risks is entered into the Risk Register tool beginning with information provided in the finalized RIF. Risk Radar Enterprise (RRE) is the application and database that serves as the ERA Risk Register. A screen shot of the RRE input fields is presented in **Figure A-1, Risk Radar Database Management Input Fields**. As described earlier in this document; the RIF gives members of the program team, both Government and contractor support, a standard format for reporting risk-related information. The RIF should be used when a potential risk event is identified. This initial data is entered into the Risk Register, in its entirety, and will be updated as the assessment, handling, and monitoring functions are executed and new information becomes available. The Risk Register becomes a single point for capturing and reporting on all activity results related to specific risk events.

The risk register is used to provide risk related metrics. e.g.:

- Number of risk in the register
- Number of risks in a state of “Pending” (awaiting validation and approval)
- Number of risks being “Actively” managed
- Number of risks being “Watched”
- Number of risks “Retired” (closed) in a reporting period
- Risks reported by category (classification)

Desired Risk Management metrics are to be gathered and included in an ERA PMO metrics report provided to the PMO senior management on a monthly basis. Project data as described

elsewhere in this plan, along with the metrics and information submitted by ERA staff (via email, interviews, brain storming sessions, etc.), is compiled to identify and assess risks.

13.2 Assessing the Risk Management Process

The ERA Program and the PMO are independently assessed, as a whole, using a risk based assessment approach. The risk management process will be assessed on a continuous basis by the ERA RO and on an annual basis by the ERA Quality Management (QM) team as defined in the *ERA Quality Management Plan (QMP)*. The QM team will provide its findings and recommendations to the RO.

The ERRB members, ERA senior managers, and the entire ERA PMO staff are encouraged by the RO to provide inputs regarding the risk process, with emphasis placed on seizing any opportunities for risk process improvement. In addition, stakeholders and other interested parties are encouraged by the official NRRB Representative and the ERRB Secretary to provide comments and recommendations regarding the risk process through the meetings of both the NARA and ERRB. Risk documentation will be updated as appropriate to reflect the implementation of risk process improvements. Also, ERA PMO Quarterly Program Reviews include risk management activities and processes as integral for review. Other periodic management reviews such as PMO meetings will address topics including risk management effectiveness, communications process effectiveness, and contractor risk interface effectiveness, as appropriate. Risk process effectiveness can also be gauged by review of the independent annual risk assessment summary reports.

13.3 Generating Lessons Learned

Lessons Learned is also a process that ERA Risk Management has adopted in order to help determine the context for future activities. Annually, key employees, stakeholders, and users are invited to offer “what went wrong” and “what went right” in the overall ERA risk management process. Prior year findings are generated and communicated to the entire ERA PMO staff and the process is adjusted appropriately. For example, inclusion of NARA Managers, ERA senior managers, ERA Division Directors and their staff in the process was a key improvement promulgated by ERA Risk Management’s Lessons Learned.

14.0 Risk Communication

Communication of risk information is often difficult because the concept of risk deals with two (2) subjects that staff does not normally communicate well: (1) probability, and (2) negative consequences. Communication is continuously applied throughout ERA’s risk process. For example, **Figure 14-1, Bottom-Up Approach to Risk Management**, encourages a bottom up approach while working to ensure that the product promised is delivered. Also, **Figure 14-1, Communication for ERA’s Risk Management**, shows the inputs and outputs for the communication process. The ERA RO and the entire ERA PMO staff agree that effective communication is essential for the overall success of the ERA program. Special consideration has been given to the fact that ERA has faced challenges in both fitting within the existing

Final

NARA culture as well as exposing risks that are present in current and planned NARA-wide projects. The objectives of risk communication are:

1. Understand the program's risks and risk response alternatives
 - **Encourage a Bottom Up Approach.** A bottom up approach ensures that the product promised is delivered to the stakeholders and that the central mission is not lost in the day-to-day administration involved in the development of ERA. Please refer to **Figure 9-2, ERA Risk Entity Relationships**, which in addition to depicting the flow of information between the risk management boards and the escalation of risks determined to be better dispositioned at a higher level; also demonstrates the bottom up approach ERA is currently implementing.
2. Understand the risk data and make informed choices within the constraints of the ERA Program
3. Establish enablers to communication:
 - **Define clear roles and responsibilities.** This helps to define sources of information and helps define the positions, roles, and responsibilities within the organization. ERA Risk Management uses the versions of its RKM to define roles and responsibilities.

Defining clear roles and responsibilities discourages common barriers to communication such as:

- a. *“Don't tell me your problems”*-requiring a solution before the risk is discussed
 - b. *Shoot the Messenger* – suffering negative consequences because the individual communicates “unpleasant” information.
 - c. *Mistrust*-Individuals do not trust each other (e.g., history, political factors, etc.)
 - d. *Hidden Agendas* – situations that create individual preferences for results
- **Make risk actions and decisions visible.** Risk information is made available to the entire PMO in an easily-understood format. ERA Risk Management information is provided to the PMO staff via posting to a common shared directory structure. The RIF, current prioritized risk list, an archive of meeting minutes, and a meeting schedule are included in the data. ERRB meeting minutes are also provided via email once they have been approved. The common shared directory structure allows ERA PMO team members to access the information from their desks. Making risk actions and decisions visible discourages barriers to communication like:
 - a. *Stick--at nothing--* this is about program personnel who identify risks but fail to communicate them to others
 - b. *Hidden agendas*– situations that create individual preferences for results
 - c. *Placing blame* –risk information is abused because it is used to place blame on personnel

- d. *Differential Knowledge* – each individual has a different understanding of the risk.
- **Establish an internal champion.** Identify an advocate for the risk management process. The ERA PD has appointed the RO as the internal champion of risk management. Having an internal champion on board discourages the communication barriers typically associated with risk management. During the fall of 2005, a NARA-wide champion was named as Chair of the newly-formed NRRB.
- **Reward positive behavior.** When behavior is rewarded, it tends to be reinforced and sustained in the future.

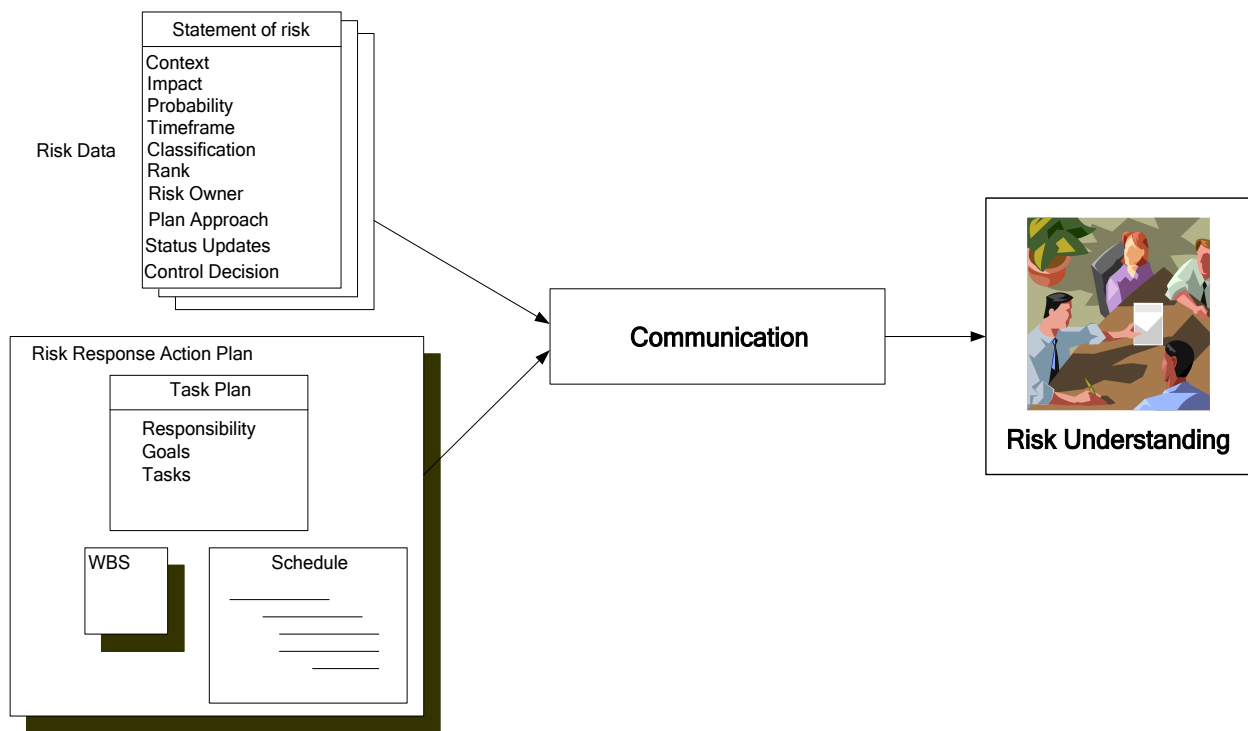


Figure 14-1: Communication for ERA’s Risk Management

Table 14-1, ERA Risk Management Communication Types, shows the types of communication ERA Risk Management employs.

Types of Communication	Description	Vehicle and Level of Management Reached
General	General communication applies to both internal and external risk communication. It includes peer-to-peer, intra-group, and internal organizational communication.	<ol style="list-style-type: none"> 1. RIFs with follow-up one-on-one interviews 2. Common ERA PMO shared directory structure including Risk Management Directory 3. Email
Management	Management communications is for internal project communication among all levels of the project staff.	<ol style="list-style-type: none"> 1. Risk Status Reports 2. Monthly Report to NH 3. Monthly PD RO meeting 4. Email
Team	Team communications covers communication within small teams.	<ol style="list-style-type: none"> 1. Update on status reports and control decisions 2. Email
External	External communication deals with the formal and informal communication between the project and its external customer(s), suppliers(s) and senior organization managers.	<ol style="list-style-type: none"> 1. NRRB 2. Quarterly Performance Review 3. Quarterly Congressional Report 4. Email

Table 14-1: ERA Risk Management Communication Types

14.1 Process Documentation and Reporting

The ERA PMO common shared directory structure provides a central point of reporting for potential risks, as well as further documentation and status on risks. The Risk Radar database provides a greater degree of detail on risks and contains the risk profile for each risk. Documentation for specific risk process procedures are being developed into a comprehensive ERA Risk Deskbook under separate cover. This guidebook will provide for a readily available reference into specific Risk processes.

14.2 Coordinating Risk Management with Stakeholders

The ERRB and the NRRB provide the primary vehicles for communicating risk information to stakeholders. See **Section 14.0, Risk Communication**, for further information regarding interface within and between ERA risk management and the stakeholders.

14.3 Coordinating Risk Management with Interested Parties

Other parties beyond the stakeholders interested in the ERA development can access the NARA Website for ERA-specific information. Risk reporting, analysis, mitigation, and overall risk status are not planned for coordination with other interested parties at present. Overall ERA status is communicated to the appropriate Congressional committees and oversight agencies as

necessary, and may take the form of written, electronic, or in-person communications. The discussion of relevant risk topics as they pertain to ERA are embedded in these interfaces. As other interested parties are identified, they will be included in future updates to this plan.

15.0 Risk Management Plan Change Procedures and History

The ERA RO is responsible for this plan. As a part of process improvement (e.g., independent assessments, lessons learned, QM assessments), the RKM and the overall risk management approach will continue to evolve. The plan will be updated as required by the ERA PMO and “as needed” to maintain current and sufficient risk management activities. The original and subsequent versions of this plan are under CM control. All updates to the RKM will be controlled by the Configuration Control Board (CCB).

Final

Appendix A: ERA Risk Management Data

The following fields are in the risk database: (Note this is not a complete listing of all fields)

Risk Data - Details [New] [Save] [Cancel] [Delete]

ID No: ERA_ * ID Date: 09/08/2008 Security Classification: ---

* Risk Originator: [] Risk Owner: []

* Risk Title: []

* Description: []

Analysis

5					
4					
3			X		
2					
1					
	1	2	3	4	5

Probability: [3] Cost: [3] Schedule: [3] Technical: [3] Other: [3] Impact: [3] Largest: [3]

Risk Exposure: 1.5 Risk Level: M Trend: ↓ Status: Mitigate

Early Impact: 09/08/2008 Late Impact: 09/08/2008 Days To Impact: 1 Impact Horizon: NEAR

Last Updated: [] Next Update: 09/09/2008

Triggers

Attributes

Type: Cost Phase: System Development Milestones

Source: Security Program Area: [] Primary: []

Control: Internal IPT/Focus Area: [] Secondary: []

Critical Path: [] WBS/Specification Reference: [] Tertiary: []

Cost

Occurrence Cost: 0.00 Mitigation Cost: 0.00 Opportunity Cost: 0.00

Factored Cost: 0 Factored Cost: 0 Factored Cost: 0

Figure A-1: Risk Radar Database Management Input Fields

Final

Appendix B: ERA Risk Identification Form

Note: <i>This document is a draft and intended to serve as a starting point to review and assess this area of risk. It is <u>not</u> intended to be complete or definitive. Please feel free to edit and comment as necessary:</i>
Submitter:
Risk Title:
Potential Risk Owner/s:
SME POCs:
<p>Risk Statement: Must:</p> <ul style="list-style-type: none"> i) Be in specific condition/consequence format (i.e., If X occurs then Y may result...); ii) Be as succinct as possible; iii) Define potential impact (i.e. so what?); <p>If statement is too complex, consider breaking down into separate, more definitive risks</p> <p><i>Example: If we do not have specific requirements for usage and process times by Business Teams, then we may build a system that does not meet the users' needs (i.e., process speed, availability, or uptime), thereby potentially creating poor user experience, inefficient business process and decreased support for ERA.</i></p>
Risk Description Context:
Timeframe:
Impact:
Probability:
Root Cause/s:
Mitigation Strategy:
<p>Mitigation Steps:</p> <ol style="list-style-type: none"> 1. 2. 3. 4.
Contingency:

Figure B-1: ERA Candidate Risk Identification Form

Final

Appendix C: Decision Analysis

Release of the XYZ system as an ERA funded product

This paper recommends that the criticality of Risk ID #154 Release of the XYZ system as an ERA funded product be eliminated or significantly reduced. ERA presumes that XYZ is an imminent risk if the product upon release is proven inadequate (the risk of XYZ not being able to meet higher than expected demand) or perceived by the public, GAO and OMB as being inadequate, and that this association with ERA may negatively affect ERA's ability to gain adequate funding in the future. Upon review, the Risk Officer has found that XYZ poses no imminent risk to costs or schedule. XYZ's funding has been transferred to ERA and all indications prove that ERA will receive funding for this project through 2004. No information proving that XYZ has a pattern of running deficit spending due to schedule delays has ever been offered. The ERA project schedule yields no predecessor or successor relationships that impact any ERA activity. XYZ is not part of ERA's critical path. Furthermore, XYZ poses no imminent threat to quality. It has complied, as much as feasibly possible due to its contract with the ABC Company, with quality measures requested by ERA. In fact, two government personnel and several contractors have been assigned to XYZ to assure compliance with best practices that mirror those held by ERA. Lastly, XYZ poses no perceptual threat. Initially, XYZ was supposed to carry the logo of ERA on its product. This agreement was re-negotiated and XYZ will launch as a product of NX not NY.

Analysis of Options

Option 1	Option 2	Option 3
Why Maintain Risk ID#154 as a critical ERA risk?	Why re-define Risk ID#154 as resolved and recommended for retirement?	Why re-define Risk ID#154 as reduced and recommended for monitoring?
Pros	Pros	Pros
1. It has not fully complied with Best Practices.	As a risk item, XYZ poses no imminent cost, quality or schedule threat to ERA?	As a risk item, XYZ poses no imminent cost, quality or schedule threat to ERA?
2. ERA funds the product and others will blame ERA if it fails.	ERA can transform NARA’s perception by discontinuing negative descriptions of the XYZ product entirely.	To facilitate a partnership to study the impact of the functionality introduced upon NARA’s existing and emerging business processes from a Lesson’s Learned perspective
Cons	Cons	Cons
1. Funding for XYZ was merged with ERA but NW claims ownership to intellectual property and its operation.	XYZ does pose a minimal threat to the perception of the public, GAO and OMB because ERA will maintain a relationship with XYZ even if it proves to be a failed product.	ERA will maintain a relationship with XYZ even if it proves to be a failed product.
2. XYZ may not be able to re-negotiate its contract to include all of the CM documentation necessary to be perceived by ERA, not NARA, as managing with Best Practices.		

Conclusions

The Risk Officer recommends Option 2 and Option 3 for its ongoing benefit to all parties for the following reasons:

- XYZ poses no risk requiring the development of a risk response plan.
- Both options provide the opportunity for ERA to build a partnership with XYZ to study the impact of the functionality introduced upon NARA’s existing and emerging business processes from a lesson’s learned perspective. The results of this relationship should be promoted as a change management study initiative NARA wide.

XYZ is important to ERA for its Lessons Learned in the area of software development, planning, testing, and change management activities relative to deployment and training.