

State of Florida Project Aspire

Risk Management Plan P013 *Updated April 2007*

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1.0 Risk Management

1.1 Definition

Project risk is an uncertain event or condition that may have a positive or negative impact on the project if it occurs, according to the Project Management Institute's Guide to Project Management Body of Knowledge (2000). There is a cause and effect to project risk; each risk has a cause and a consequence if the uncertain event occurs. Every project carries some element of risk and it is probable that progress will deviate from the plan at some point in the project life cycle.

Risk in a project environment cannot be totally eliminated. Project risks include threats to objectives and opportunities for improving those objectives. Risks originate from the uncertainty present in all projects. The objective of a risk management process is to maximize the impact of positive unplanned incidents and minimize the impact of negative unplanned incidents on the project.

1.2 Framework

This document is organized in the following manner:

- Purpose – Discusses why risk management is a necessary component of project management.
- Approach – Summarizes the approach to risk management for Project Aspire.
- Guidelines/Procedures – Outlines high-level risk management for Project Aspire.
 - Risk Identification
 - Risk Analysis
 - Risk Planning
 - Risk Tracking
 - Risk Controlling
 - Risk Escalation
- Risk Management Process
 - Purpose
 - Identify Risks
 - Assign Risks
 - Research Risks
 - Document Risks
 - Resolve Risks

- Track and Report Risks

1.3 Purpose

The purpose of risk management is to identify and address potential risks before significant consequences occur. This allows for risk-handling activities to be planned and invoked as needed across the project life cycle to moderate adverse impacts on achieving objectives. A successful risk management practice is one in which risks are regularly identified and analyzed for relative importance. Risk response planning, risk tracking and risk controlling help managers effectively use program resources. Potential threats are prevented before they occur and personnel consciously focus on what could affect product quality and schedules. Failing to manage risks reduces the overall probability of successfully completing the project.

1.4 Approach

Risk management incorporates the identification, analysis, and management of project risks. After risks are identified, risk analysis is used to determine the relative severity (impact) of the risk in terms of time and cost. Risk management is therefore concerned with not only identifying risks, but with reducing risk exposure through defined risk management strategies. To this end, identified risks are documented and tracked by the Project Management Office (PMO).

There are many sources of risk, both internal (e.g., the ability to produce a design, known weaknesses in a process application such as requirements allocation) and external (e.g., funding stability, natural environment) to the project. In general risks are categorized into two types:

- Inherent Risks – Inherent risks result from the nature of the project objectives, complexity, and scope. Inherent risks can often be predicted, and are regularly monitored throughout the lifecycle of the project by the PMO. There are two types of inherent risk:
 - Known risks – Known risks have been identified and analyzed. Generally, known risks are managed through preventive measures and likely never become issues.
 - Unknown risks – Unknown risks cannot be managed. Project managers may be able to address unknown risks by applying a general contingency based on past experience with similar projects.
- Project Risks – Project risks result from the selected approach, methodologies, tools, techniques, and the skills and experience of project personnel. In general, project risks cannot be predicted and are identified during the lifecycle of the project as they emerge. As project risks are identified, they are entered into the risk spreadsheet, where they are tracked and regularly monitored.

Once risks are identified, the potential severity (impact) is determined and measured, the probability of occurrence is estimated, and a risk priority is assigned. Risks are subsequently re-analyzed and re-prioritized on a monthly basis by the PMO so that project leadership can conduct risk response planning to reduce, contain, and otherwise control project risks.

Risk response planning techniques for Project Aspire are:

- Avoidance;
- Mitigation; and
- Contingency planning.

Monthly risk analysis allows project leadership to continually analyze and manage risks before they occur. If a risk does occur, it is escalated to a Project Level Issue and is tracked as such in the Issue Management application of the Project Control Database. Many of the risks that are identified are abated through risk response techniques (avoidance, mitigation or contingency planning) and never become Project Level Issues.

1.5 Guidelines/Procedures

The objective in risk management is to identify, assess and monitor risks, rather than react to them. Regular risk management consists of five key steps, which repeat throughout the project lifecycle to provide continuous risk identification, analysis, planning, tracking and controlling. Figure 1 illustrates the activity loop that helps the Project Aspire team manage risk:

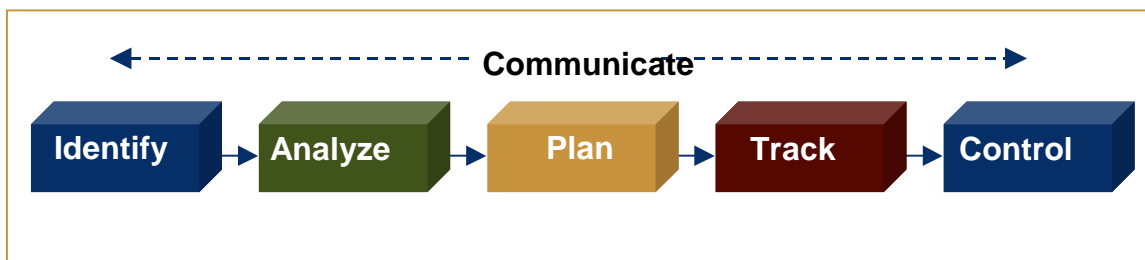


Figure 1 – Risk Management Process

1.5.1 Risk Identification

All risks identified during the project are documented, tracked and monitored by the PMO.

As the project moves forward, the project team identifies new risks and re-evaluates existing risks. The entire Project Aspire team is responsible for identifying and notifying project management of project risks throughout the lifecycle of the project.

The ongoing process of identifying risks throughout the project lifecycle is accomplished in several additional ways:

- Review of the existing risks in the risk spreadsheet;
- Review of the Project Schedule;
- Review of issues reported through the issue resolution process;
- Review of changes requested through the change control process;
- Discussions in the monthly risk analysis meetings; and
- Additional discussions with business, technical, and project team members.

1.5.2 Risk Analysis

The purpose of risk analysis is to determine relative project exposure. During the analysis step, the project team performs the following activities:

- Quantify the impact or severity of the risk should it occur.
- Estimate the probability that the risk will occur.
- Assign each risk an expected value based on the impact should the risk occur times the probability that the risk will occur.
- Determine the risk's priority based on the expected value.

1.5.2.1 Risk Impact Rating

For each risk factor identified, a risk impact or severity rating is defined. The purpose of the risk impact rating is to assign a relative value to the impact on project objectives if the risk in question occurs. Risks with high impact and high probability are likely to require further analysis and an aggressive risk response planning technique.

The risk impact rating is developed in the following manner:

- Quantify the impact should the risk occur in terms of severity. Impact relates to requirements, mission success criteria, resources, and cost and schedule constraints. A common measurement scale has been developed. The impact scale is 1 to 5, where 1 equals a minor severity and 5 equals a major severity, as detailed below:
 - Very High (impact score 5):
 - Deliverables and critical path schedule slip greater than one month as compared to the baseline schedule

- Cost overrun greater than \$ 4 million
- High (impact score 4):
 - Deliverables and critical path schedule slip between 15 days to one month as compared to baseline schedule
 - Cost overrun between \$ 2 million and \$ 4 million
- Medium (impact score 3):
 - Deliverables and critical path schedule slip between one week and 15 days as compared to baseline schedule
 - Cost overrun between \$ 1 million and \$ 2 million
- Low (impact score 2):
 - Deliverables and critical path schedule slip less than one week as compared to baseline schedule
 - Cost overrun between \$ 500,000 and \$1 million
- Very Low (impact score 1):
 - Deliverables and critical path schedule slip less than one week as compared to baseline schedule
 - Cost overrun less than \$ 500,000

1.5.2.2 Risk Probability of Occurring

- Estimate the probability of the risk occurring based on percentage as detailed below:
 - Urgent:
 - Greater than 90% probability of occurring
 - Occurrence is highly likely and possibly may not be controlled by following existing processes, procedures, and plans
 - High:
 - Between 70% and 90% probability of occurring
 - Occurrence is likely and may not be entirely controlled by following existing processes, procedures, and plans
 - Medium:
 - Between 40% and 70% probability of occurring
 - Occurrence is possible and emphasis should be on following existing processes, procedures, and plans

- Low:
 - Less than 40% probability of occurring
 - Occurrence is less likely or unlikely

1.5.2.3 Risk Expected Value

- Assign each risk an impact score and probability of occurrence. Calculate the expected value, which is the impact score times the probability. For example a risk that has an impact score of 4 and a probability of 50% would be assigned an expected value of 2.0.

1.5.2.4 Risk Priority

- The expected value is then translated into a priority using the table illustrated in Figure 3. This translation helps maintain consistency when risks are recorded and reported.

Expected Value (Impact Times Probability)	Priority Risk Priority
Greater than 4.5	Urgent
2.5 to 4.5	High
1.4 to 2.5	Medium
Less than 1.4	Low

Figure 3 - Translation of Expected Value to Risk Priority

- Prioritizing the identified risks also allows resources to focus on the top five (5) to ten (10) risks, and helps ensure that appropriate risk response planning techniques, shown in Figure 4, are developed.

Risk Priority	Risk Response Technique
Urgent	Develop formal contingency plans, to include funding
High	Identify contingency plan components and estimated funding models Incorporate avoidance and/or mitigation strategy into project
Medium	Incorporate avoidance and/or mitigation strategy into project
Low	Regularly monitor

Figure 4 - Mitigation Strategy Development

1.5.3 Risk Planning

As risks are identified, they are analyzed and the appropriate risk responses are developed using the applicable risk response planning technique. All risks are documented in a spreadsheet so that they can be actively monitored. Each time a risk assessment is performed (generally at least once per month), the spreadsheet is updated.

The objective of risk planning is to identify cost-effective risk management activities to reduce, contain, and otherwise control project risks. Risk management has both tangible and intangible costs. Tangible costs are generally dollars and time; intangible costs are generally perception and goodwill. The project management team must weigh the cost of the potential risk management actions against anticipated severity.

There are three types of risk response techniques for Project Aspire; avoidance, mitigation and contingency planning.

- Avoidance – This action involves modifying the project environment to minimize the likelihood of an identified risk. When potential risk situations are identified, alternative courses of action are evaluated to determine if the undesirable outcome can be avoided at a reasonable cost. Taking early action to avoid a risk is more effective than trying to repair its effects after the risk has occurred. Some risks that

arise early in the project are dealt with by clarifying requirements, improving communication, obtaining information or acquiring expertise. Once approved, risk avoidance activities are defined, assigned, and added to the Project Schedule.

- Mitigation – This action involves seeking to reduce the severity of a risk. Once approved, risk mitigation activities are defined, assigned, and added to the Project Schedule. Mitigation costs shall be appropriate, based on the likely probability of the risk and its consequences. Approved mitigation plans are incorporated into the risk information in the risk spreadsheet.
- Contingency Planning – This action provides a plan for addressing risk events that arise during the project. Developing a contingency plan in advance greatly reduces the cost of an action should the risk occur. A contingency plan is developed for actions that address significant areas where other risk response techniques are unavailable, or the cost of other risk response techniques is prohibitive.
 - Project management ensures that the contingency plan is realistic. For the plan to be viable, the following actions are necessary:
 - If additional resources are required to implement the contingency plan, then arrangements are made for them to be available at short notice;
 - Members of the project team must understand the contingency plan and their role in it;
 - Testing must be carried out if the feasibility of the contingency action is in doubt; and
 - The contingency must be funded.
 - Once approved, contingency plans are incorporated into the risk information in the risk spreadsheet and in the Project Schedule, with the necessary resources assigned. Contingency planning is costly and is only undertaken when the severity of the risk outweighs the cost of the contingency planning effort.

1.5.4 Risk Tracking

Risks change during the course of a project. New risks may be identified as more information becomes available and existing risks may be eliminated as a result of internal or external influences. Therefore, risk management is an ongoing project management function. Risks are actively tracked and reviewed using the PMO risk management process detailed in section 1.6.

1.5.5 Risk Controlling

Project Aspire project leadership performs ongoing risk analysis. Risk analysis may also be performed if the Project Schedule changes significantly. The risk information in the risk spreadsheet is updated after each Group Manager's meeting. Risk analysis may

result in a re-prioritization of risks, the addition or deletion of risks from the spreadsheet, or the identification of new avoidance, mitigation or contingency planning techniques. The PMO Manager is the designated the Risk Manager for Project Aspire.

1.5.6 Risk Escalation

Regular risk analysis allows project leadership to determine whether or not a risk trigger has occurred, signaling a risk event. Risk analysis activities may also reveal that an impact directly attributable to a defined risk is occurring. If negative consequences are happening, the risk is considered to have occurred and risk response techniques are implemented. If a risk occurs, it is then escalated to a Project Level Issue, and the new issue is tracked as such in the Issue Management application of the Project Control Database. After a risk occurs and is escalated to a Project Level Issue, it is actively managed in accordance with the PMO issue management procedures detailed in the Project Administration Procedures for Project Aspire.

1.6 Risk Management Process

The risk management process is documented below.

1.6.1 Purpose

The purpose of the PMO risk management process is to identify, document, track and report on known project risks. Documenting risks and tracking them using the risk spreadsheet ensures that a direct line of responsibility and authority is established for risk management. In addition, regular meetings and follow-up help ensure timely risk abatement actions.

1.6.2 Identify Risks

When a potential problem is identified during a project, the person identifying the problem discusses it with his/her Group Manager and/or project leadership to validate the risk. If it is determined that the risk is valid, the potential risk is presented to the PMO for consideration.

1.6.3 Assign Risks

Each risk is assigned to an individual, determined by the PMO, for evaluation and analysis.

1.6.4 Research Risks

The individual assigned to evaluate and analyze a risk determines risk severity, probability of occurrence, trigger events, and potential risk response techniques in

accordance with the Project Aspire Risk Management Plan. The research and analysis results are then added to the risk spreadsheet.

1.6.5 Document Risks

The PMO ensures that each risk is documented in the risk spreadsheet with the following data items, which are shown below:

ID	This represents the Risk identification number that is comprised of the abbreviation RSK followed by the risk number.
Name	The risk name should be short but descriptive of the nature of the risk.
Description	The risk description details the risk and indicates why the situation or problem is impacting work efforts. Be clear and include all relevant detail.
Impact	See Section 1.5.2.1.
Probability of Occurrence	See Section 1.5.2.2.
Expected Value	The expected value is the impact times the probability. See Section 1.5.2.3.
Priority	See Section 1.5.2.4.
Impact Description	Details the risk's impact on the project should it occur.
Trigger Events	Events that indicate a risk is occurring.
Avoidance Steps	See Section 1.5.3.
Mitigation Steps	See Section 1.5.3.
Contingency Planning	See Section 1.5.3.
Status Description	Details the description of the status of the risk.
Expected Resolution Date	The date the risk is expected to be resolved.

Status	Indicates whether a risk is in open or closed status.
Owner	The individual responsible for monitoring the risk.

One technique used by the PMO to identify and document risks is to periodically hold risk meetings with Group Managers and Team Leads using Group Systems collaboration software. In these meetings, new thoughts and ideas concerning existing or new risks are quickly captured and organized for selective inclusion into the risk spreadsheet.

1.6.6 Resolve Risks

Group Managers meet weekly, and an agenda item in this meeting is to review risks and make decisions based on trigger events, risk impacts, probabilities of occurrence, and priorities of the risks. Staff members with research assignments attend these meetings as appropriate to provide information on research and updates to open risks.

The PMO then completes any updates resulting from the Group Manager meeting to the risk information in the risk spreadsheet. If additional research or analysis is required, appropriate staff are assigned to provide this added information to the PMO for inclusion in the risk spreadsheet.

1.6.7 Track and Report Risks

The PMO tracks risks that are in an open status for trends. The PMO helps facilitate risk analysis in a timely manner based on the Project Schedule.

On a monthly basis, the PMO prepares a Risk Report for the Monthly Status Report.

Document Version Control

Version Number	Release Date	Version Number Description	Description of Changes
1	9/27/2003	Baseline	
2	9/27/2003	PMO Review	PMO Review and Updates
3	9/29/2003	Revisions	PMO Revisions
4	10/11/2003	Revised	PM Revisions
5	10/11/2003	PMO Review	PMO Review
6	10/15/2003	Revised	PM Revisions; new header
7	10/15/2003	PMO Review	Final PMO Updates
FINAL	10/28/2003	Cured	Incorporated State edits and cured deficiencies
FINAL Rev1	1/6/2003	Published revision	Updated the procedures to incorporate agency responses to the TRW Special Project Monitor Second Quarterly Assessment and to reflect changes to the PMOnline Risk Details screens. Details of revisions are in the document's change log.
FINAL Rev 2	04/23/07	Published revision	Updated to eliminate references to PMOnline, references to BearingPoint, and added triggers.