Appendix B

Flight Management System

Version 1.1

Revision History

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| --- | --- | --- | --- |
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# Introduction

## Purpose

The purpose of this document is to manage risks associated with the Flight Management System project. This includes identifying, describing and ranking risks as well as planning risk mitigation and contingency strategies.

## Scope

The scope of this document is limited to risks associated with the development process of the Flight Management System. The risks identified within pertain to areas of develop such as team member competency and absence, management practices, requirement elicitation and project delivery.

## Definitions, Acronyms and Abbreviations

There are no definitions, acronyms or abbreviations necessary to read and understand this document.

## References

There are no references to external documentation within this text.

## Overview

The remainder of this document contains all risks identified relating to the project. These risks encompass risk rank, risk description, impacts the risk may have on the project, indicators the risk is occurring or has occurred, mitigation strategy and contingency plan for the risk.

# Risks

## Lack of Experience in System Development

### Risk Ranking

All team members of this project are relatively inexperienced in software development. As such the ranking associated with this risk is –

* High

### Description

Lack of experience in system development is described as an individual’s absence or deficiency of familiarity in developing software in a team-oriented environment.

### Impacts

The impacts of this risk have been identified as follows –

* Duplicate work being completed as a result of poor communication between members
* Incomplete or incorrect deliverables

### Indicators

The following indicators have been associated with this risk –

* Poor decision making
* Meeting discussions out of scope
* Incorrect approach to the development process

### Mitigation Strategy

The current mitigation strategy involves sharing knowledge between team members through the versioning system and group meetings. Relevant documents including guidance and information pertaining to the development process will ensure all members of the team make up for lack of experience by using others experience and knowledge.

### Contingency Plan

The contingency plan for this is mainly to direct team members to relevant documentation to solidify understanding in different areas of the development process.

## Lack of Experience in Project Management

### Risk ranking

All team members of this project are relatively inexperienced in project management. As such the ranking associated with this risk is –

* High

### Description

Lack of experience in project management is described as an individual’s absence or deficiency in the practices and procedures relating to the management of software development and development in general.

### Impacts

The impacts of this risk have been identified as follows –

* Deliverables being handed in after due or not at all
* Project milestones non-existent or not met
* Poor allocation and time management of resources (team members)

### Indicators

The above impacts are all indicators of lacking experience in project management.

### Mitigation Strategy

The mitigation strategy for project management inexperience involves ensuring a project plan is in place as early on in the project as possible. This will ensure a timeline is established and provide the project manager with a visual representation of the project and it’s outcomes. The project manager can also review deliverables and milestones, which will aid in keeping the project on schedule for deadlines.

### Contingency Plan

The contingency plan for project management inexperience is to ensure project plans are in place and to review these plans when indicators present themselves.

## Team Member Absence

### Risk Ranking

All team members of this project could potentially become ill or withdraw from the subject at some point during the 12-week duration of the project. As such the ranking associated with this risk is –

* High (illness)
* Low (withdrawal)

### Description

Team member absence is described as a temporary or permanent absence from the project. Temporary meaning the team member could be affected by illness or other unforeseen circumstance. Permanent meaning the team member has withdrawn from the subject entirely.

### Impacts

The impacts of this risk have been identified as follows –

* Deadlines not met
* Increased work load for other team members

### Indicators

The indicators for team member absence are as follows –

* Missed group meetings
* Missed deadlines
* General absence from the project activities

### Mitigation Plan

The mitigation strategy for team member absence is team member awareness of the contingency plan for this particular risk. Refer to section 2.3.6.

### Contingency Plan

The contingency plan for team member absence is early intervention. Team members are required, as early as possible, to notify the manager of any illness or other circumstance that affects a team member’s ability to participate in the projects activities. The manager can then review the project plan and reallocate resources (team members) as necessary. This will ensure minimal disruptions to the schedule of the project.

## Poorly Defined Requirements

### Risk Ranking

All team members of the project are relatively inexperienced in requirement elicitation and as such this risk has been ranked as-

* High

### Description

The following paragraph describes what is meant by poorly defined requirements.

The requirements gathered from client meetings and interviews may be inaccurately or incorrectly represented within project documentation.

### Impacts

The impacts of this risk have been identified as follows –

* Final product does not meet client expectations or requirements

### Indicators

The indicators for poorly defined requirements are as follows –

* Requirements within project documentation do not match client expectations

### Mitigation Plan

The mitigation strategy for poorly defined requirements is ensuring requirements gathered are what the client wants from the system. Each time a client interview or meeting takes place the requirements gathered should be confirmed with the client before the end of the interview. Further, the client should be periodically met with to review current features and requirements elicited to date.

### Contingency Plan

The contingency plan for poorly defined requirements involves complete re-work of any and all requirements that are deemed incorrect or inaccurate by the client. This re-work should also include review of any other requirements that have dependencies on the requirement identified as incorrect or inaccurate.

## Implementation Language Proficiency

### Risk Ranking

All team members are familiar with both implementation language choices for development of the Flight Management System. One team member has been identified with a lower proficiency than what may be required for such a project. As a result the risk has been identified and given ranking of –

* Low

### Description

Implementation language proficiency describes an individual’s ability to write, and knowledge of, a particular programming language.

### Impacts

The impacts of this risk have been identified as follows –

* Less proficient team members may be restricted by what tasks they can perform and complete
* Increased work load of other members

### Indicators

The indicators for lack of implementation language proficiency are as follows –

* Inability to complete task given
* Lack of knowledge relating to code

### Mitigation Plan

The mitigation strategy for implementation language proficiency is to allocate resources (team members) to tasks that reflect their skill level. Also guiding team members to relevant information relating to the programming language of choice will help less proficient members become more skillful.

### Contingency Plan

The contingency plan for implementation language proficiency is to identify members having issues so other team members can aid them. Alternatively review and reallocation of resources (team members) may also be necessary in some circumstances. The manager will make this decision after discussion with other group members.

## Requirement Changes

### Risk Ranking

This is a common problem within the software development process that can be driven by changes in the external or internal business environment and has therefore been identified as a risk for this project. However, this project is an assignment therefore the chances of requirements changing are fairly low. As such this risk has been given a ranking of –

* Low

### Description

The risk Requirements Changing is described as, the client needing changes to be made to the requirements of the software due to scenarios such as, changing market for which the software is being developed or changing features to align with competing businesses. Requirements may also change as a result of key stakeholders being missed in early stages of project development that may mean their input is not captured early in the project.

### Impacts

The impacts of this risk have been identified as follows –

* Project schedule blowouts
* Increased time and cost to add or change software features

### Indicators

The main indicator for this type of risk is that the client will request changes to requirements due to unforeseen market or competitor changes.

### Mitigation Plan

The mitigation strategy for requirement changes is to have the client review requirements iteratively. To mitigate exclusion of key stakeholders, it is important to have client review stakeholder list in the early stages of the project.

### Contingency Plan

The contingency plan for requirement changes requires re-negotiation of time and cost constraints associated with the project. These negotiations will be largely dependent on the changes being made to the existing features agreed upon within the system.

## Lack of Familiarity with System Development Tools

### Risk Ranking

All team members of this project are relatively inexperienced in software development and it’s associated tool set. However, group members are all quick learners. As such this risk has been given a ranking of –

* Low

### Description

Lack of familiarity with system development tools is described as an individual’s absence or deficiency relating to the use of system development applications and tools.

### Impacts

The impacts of this risk have been identified as follows –

* Potential inability for team members using these tools to meet deadlines setout in project plan

### Indicators

The following indicators have been identified as follows –

* Deliverable deadlines being missed

### Mitigation Plan

The mitigation strategy for lack of familiarity with system development tools is to select tools that are intuitive, have a large user base, well documented and recommended by others. This will ensure that intuitive tools are selected and also that help can be found relating to the tools.

### Contingency Plan

The contingency plan for lack of familiarity with system development tools is to have team members use traditional means of producing diagrams and documents such as hand drawn diagrams or using Word, PowerPoint or Excel.