***Algorithmic Trading***

***System***

***Risk Management***

***Plan***

Okanagan College

Algorithmic Trading System

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Version 1.3

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**Revision Sheet**

| Revision | Date | Brief Summary of Changes |
| --- | --- | --- |
| Version 0.1(draft) | Date | Baseline draft of document |
| Version 0.2 | October 26th 2023 | Started work on sections 5 & 6 |
| Version 0.3 | October 27th 2023 | Section 5 Finished. |
| Version 0.4 | October 28th 2023 | Section 6 Finished, Section 8. |
| Version 0.5 | October 31st 2023 | Section 8 Finished. |
| Version 0.6 | November 1st 2023 | Orientation and training section removed. |
| Version 0.7 | November 3rd 2023 | Section 13 Completed. |
| Version 0.8 | November 3rd 2023 | Various refinements to presentation of document. |
| Version 0.9 | November 4th 2023 | Section 1 & 2 completed. |
| Version 1.0 | November 5th 2023 | Multiple sections revised or removed. Various fixes and tweaks. Document is ready for release. |
| Version 1.1 | December 7th 2023 | Document given final review before release. |
| Version 1.2 | February 29th 2024 | Updated some roles and dates to match the projects current structure. |
| Version 1.3 | April 15th 2024 | Finalized formatting |

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# **I**ntroduction

The Risk Management Plan outlines the policies, procedures, and strategies for effective risk management in all activities related to the Algorithmic Trading System (ATS) project. Risk Management includes identification, assessment, mitigation, and monitoring of risks. Risk Management is an ever-evolving process that requires consistent monitoring and revision to ensure it remains relevant to the system as it evolves. Effective risk management aids in ensuring consistent system quality and adherence to project deadlines.

# **Purpose and Scope**

## **Purpose**

Risk Management necessitates a systematic and proactive approach to potential risks. Potential risks may be classified into known or unknown categories. The purpose of this plan is to establish necessary processes for mitigating known risks, and instill the culture required to address unknown risks as they make themselves known.

## Scope

The scope of the Risk Management Plan includes:

* Continuous risk identification, assessment, monitoring, and mitigation strategies
* Organization and responsibilities of the involved parties
* Communication strategies surrounding risk identification and mitigation to the involved parties
* Revision and change management of the Risk Management Plan as a result of monitoring and reflection activities

# **Definitions and Acronyms**

## Key Acronyms

| ATS | Algorithmic Trading System |
| --- | --- |
| PO | Product Owner |
| SM | Scrum Master |
| CM | Configuration Management |

## Key Terms

| mitigation | Actions or strategies taken to control or reduce the impact of risks |
| --- | --- |
| risk | Potential for an undesirable or unexpected outcome that may impact the project or system objectives |
| system | Refers to the components and elements of the Algorithmic Trading software |

# **References**

* ATS Risk Register [1]

# **Risk Management Overview**

## Organization Structure

* **Product Owners (PO):** Jacob Rawlings, Ben Carrier
* **Scrum Masters (SM):** Jake Fischer, Dominic Presch
* **Stakeholders/Clients**: Gaétan Hains, Albert Wong, Youry Khmelevsky

## Risk Management Tasks

* **Risk Identification:** The process of evaluating the project, detecting potential risks that might negatively impact its development, and cataloging those risks for assessment.
* **Risk Assessment:** The process of evaluating risks based on their likelihood to occur, impact on the project, and their severity.
* **Risk Mitigation:** The process of creating strategies that help eliminate or limit project setbacks when risks occur.
* **Risk Monitoring:** The process of re-evaluating risks and looking for new potential risks as the project progresses.

## Roles and Responsibilities

* **Product Owners:** Overall responsibility for risk management, including final decision-making on risk response strategies

* **Scrum Masters:** Responsible for coordinating risk assessments, maintaining the risk register, and facilitating risk response planning.

* **Development Team:** Responsible for identifying risks and bringing risks to the attention of the product owners and scrum masters.

* **Stakeholders:** Responsible for participating in risk reviews and providing input on risk strategies. They are informed about significant project risks and their potential impact on project outcomes.

# **Risk Management Policies**

## Risk Identification

### Responsibilities

Risk identification is the responsibility of the entire project team. This includes Product Owners, Scrum Masters, and developers. For further definition of roles and responsibilities, please refer to Section 7 in this document.

### Risk Identification Process

Risk identification is a process that occurs at all phases in the software life cycle. Risks can be categorized into technical, schedule-based, and organizational risks. These will be identified during regular stand-ups, brainstorming sessions, and project documentation reviews. Risks will be documented in the ATS Risk Register [1].

## Risk Assessment

### Responsibilities

Risk assessment is the responsibility of product owners and other relevant team members/developers. For further definition of roles and responsibilities, please refer to Section 7 in this document.

### Risk Analysis

Risk impact, likelihood, and severity will be assessed using the judgment of those responsible.

### Risk Prioritization

Risks will be prioritized and rated based on their potential impact on the project and their probability level (1-5).

## Risk Mitigation

### Responsibilities

The product owners along with the scrum masters will coordinate strategies for risk mitigation, risk acceptance, risk transfer, and risk avoidance.

### Risk Mitigation Strategies

Strategies such as contingency planning and process improvement will be used for risk mitigation.

### Risk Monitoring

Risks will be continuously monitored throughout the project to ensure mitigation strategies remain effective. The risk register will be updated regularly, and the status of each risk will be tracked.

## Risk Documentation

The ATS Risk Register [1] will be maintained to track identified risks, their assessments, and their mitigation plans.

## Risk Review and Approval

Risk management policies are reviewed and approved by Product Owners and Stakeholders. The team is to document any lessons learned from risk management efforts during project development and use these lessons to enhance the risk management process.

# Organization and **Responsibilities**

**Product Owners:**

Responsible for:

* Identifying and assessing risks related to changing requirements and shifting backlog priorities
* Communicating stakeholders expectations and priorities to the Development Team
* Monitoring the progress of the risk mitigation to guarantee they align with stakeholder expectations and needs
* Collaborating with the Development Team and Scrum Master to define, prioritize, and execute risk strategies
* Communicating with the clients and stakeholders, and reporting timely updates on development progress and obstacles

**Scrum Masters:**

Responsible for:

* Identifying impediments that could potentially become risks to the project’s success
* Encouraging the team members to communicate regarding risks and issues
* Facilitating risk mitigation activities and ensuring that risk strategies are executed effectively
* Communicating with the Product Owners and reporting timely updates on the Development Team’s progress and obstacles

**Development Team:**

Responsible for:

* Actively identifying technical risks related to the project
* Collaborating with the Product Owner and Scrum Master to assess the impact of identified risks
* Updating the progress of risk response efforts during daily stand-up meetings and sprint reviews

**Stakeholders:**

Responsible for:

* Participating in meetings and providing feedback on the project’s progress and quality
* Communicating expectations, concerns, and feedback to the Product Owner regarding project’s risks and performance
* Communicating changes in stakeholders expectations and needs related to risk management

# **Costs and Schedules**

Risks related to costs are not relevant as this is a student led project. The software is to be developed and required to have a viable product ready for presentation by April. To mitigate any potential risks associated with meeting the delivery date, strict adherence to the class deliverable schedule is imperative.

# **Communication**

Risk information will be communicated through:

* regular meetings (standups, retrospectives, reviews)
* risk status reports,
* ad–hoc communication when significant risks arise

Stakeholders and clients will participate in risk reviews and provide input on risk mitigation strategies. They are informed about significant project risks and their potential impact on project outcomes. If risks are to occur, stakeholders and clients will be updated regularly on the progress of risk mitigation and their results.

Risks will be assessed throughout mitigation procedures to determine if elevation of the risk is required for resolution. Risk elevation will be communicated by the Product Owners to all parties involved.

# **Plan Management**

The management of the ATS Risk Management Plan is crucial to ensure that risks are properly identified, assessed, and mitigated throughout the development of the project. This section outlines procedures to be used for plan revisions, approval, and configuration management to help maintain the plan’s effectiveness.

## Revisions

Revisions to the ATS Risk Management Plan may be needed as a result of new risk identification and assessment or changes in project conditions. Revision will be handled as follows:

1. Revisions will generally be initiated by a Product Owner. However, other team members may also identify the need for an update.
2. Product Owners and Scrum Masters are responsible for the coordination of plan revision. POs will keep stakeholders up to date and gather any input they may have. SMs will work with the project team to ensure revisions are done correctly.
3. Plan revisions may be triggered by major changes to the scope or schedule of the project. The plan will be reviewed at project milestones to ensure no revisions are needed.

## Approval Process

The revised ATS Risk Management Plan needs to be approved in order to validate that the changes made are accurate. Approvals will be handled as follows:

1. Product Owners will evaluate the plan based on its conformance with the project’s goals. All changes must be relevant to the scope of the project.
2. Revisions will be documented, including the date of approval, the name(s) of the approver(s), and the reason(s) for the revisions being made

## Configuration Management

Configuration management (CM) is necessary to keep track of changes to the ATS Risk Management Plan. CM will be handled as follows:

1. Google Drive is used for collaboration on project documentation. Revision history will be archived there. Final project documentation will be uploaded to Github.
2. All changes to the plan must go through the formal revision process. This includes revision, documentation, review, and approval.
3. Scrum Masters are responsible for ensuring that all changes are properly documented and archived.

## Communication

* Plan revisions will be communicated through Discord, email, or during daily team meetings.
* Stakeholders will be notified of any revisions that are made.