SCIF SiFi Salem (SSS)
Risk Management Policy

Document history

Version	Update	By	Comment
1.0	21 February 2022	KC	
2.0	20 February 2023	KC	

Contents

1. Introduction

This document defines the SSS Risk Management Policy. It establishes the organization's Risk Management Framework that includes the Risk Architecture (roles and responsibilities), Risk Strategy (appetite, attitude, and philosophy) and the Risk Management Process and Protocols that the company will follow to ensure the identification, analysis, evaluation, mitigation, and monitoring of risk.

SSS Risk Management Framework

2. Risk Architecture

2.1 Board

The Board's role focuses on risk oversight of management and corporate issues that affect risk at SSS. The Board will focus on the following:

1. Ensure that policies and procedures are developed consistent with SSS's strategy and risk appetite.

2. Consider Sustainability factors in evaluating risk and ensure decisions impacting Sustainability related risks, including but not limited to ESG factors (Environmental, Social, Governance)are in alignment with the risk appetite of SSS.

3. Review management's implementation of the risk management policies and procedures and making sure that they are resulting in the desired outcome. As part of a formal annual review, the Board will ensure risk policies and procedures remain appropriate and well implemented.

4. Encourage an organizational culture of risk mitigation that fosters appropriate risk awareness, behaviors and judgments about risk and that ensures that risk-taking beyond the company's determined risk appetite is recognized and appropriately escalated and addressed in a timely manner.

2.2 SCIF

The Chief Operating officer (COO) of SCIF US Holdco is ultimately responsible for the implementation and management of the Risk Management Policy and reports regularly to the Board on risk in the business. They are jointly responsible for the development of policies and procedures, as well as of the implementation, risk monitoring, and mitigation actions through the Risk Registry.

The SCIF team will:

1. be responsible for presenting to the Board the Risk Registry as part of the board meetings, including highlighting new risks, or changes in the severity of an existing risk;

2. ensure Sustainability factors are appropriately evaluated when identifying risks and developing mitigation plans;

3. assist the Board in implementing and maintaining the Risk Culture in all SSS employees and suppliers; and,

4. will share the main outcomes of the Risk Registry on an annual basis with the main external stakeholders, prior to 30 June of each year in a dedicated session.

2.3 Service partners

In the case where Service partners and strategic suppliers are responsible for the implementation and management of the Risk Management Policy, they will report regularly to the Board on risk in the business.

Where they are responsible for the development of policies and procedures, as well as of the implementation, risk monitoring, and mitigation actions through the Risk Registry, including Sustainability related risks, the company's Manager, SiFi Networks or its assigned delegate(s) will:

1. Support SCIF on reporting to the Board on the Risk Registry;
2. Build risk aware culture within the teams;
3. Agree upon risk management performance targets;
4. Confirm that Sustainability risks are included in the Risk Registry and risk monitoring processes of service partners;
5. Ensure implementation of risk improvement recommendations; and
6. Identify and report changed circumstances / risks.

Risk Management responsibilities for internal and outsourced employees:
1. Understand, accept and implement Risk Management processes;
2. Report inefficient, unnecessary, or unworkable controls;
3. Report loss events and near miss incidents; and
4. Co-operate with management on incident investigations.

3. Risk Strategy

SSS and its investors have a low appetite for risk and understand the importance of risk management for the performance of the company. The key objective of the risk strategy is to protect and build the performance of the business, following best market practices, environmental regulation and guaranteeing the health and safety of all its employees.

3.1 Types of Risks Faced by SSS

Risk is the effect of uncertainty on the achievement of SSS's objectives and is measured in terms of likelihood, and impacts. SSS understands risk as events that may have negative influence on the operation or on the company.

By establishing the Risk Management Policy, the company will be able to understand, monitor and mitigate risks to which it is exposed.

The main type of risks that SSS faces have been identified fall in the following categories:

- Operational Risks
- Technological Risks
- Cyber Risks
- Environmental Risks
- Health and Safety Risks
- Regulatory Risks
- Financial Risks
- Market Risks
- External Factors Risks (i.e., War, natural disasters, sabotage, personnel rotation
- Social / Community relations Risks (Public and EMP Opinion)
- Construction Risks
- Sustainability (incl ESG)
- Management
- Insurance
- Planning and Permitting
- Procurement
- Project Management

4. Risk Protocols

The Risk Protocols identify the risks SSS is exposed to and put in place actions to mitigate and monitor them. The risk protocols and process are one component of our wider ISO14001, ISO9001 and ISO18001/45001 aligned ESG management system, ensuring we identify, monitor and mitigate any risks.

The figure below shows the risk management process followed at SSS. The risk management process is a live process with constant input from the different stakeholders:
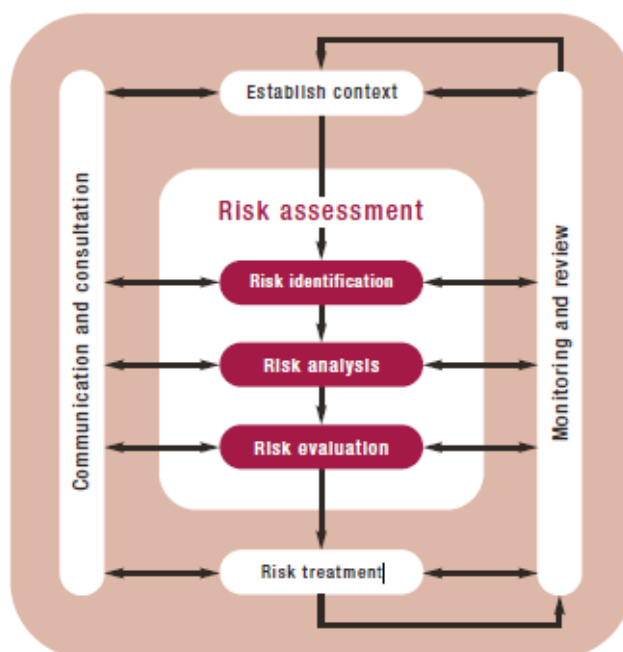
4.1 Risk Process

Risk Assessment:

The company and its service partners have in place procedures for the assessment of the different risks which include identification, analysis, and evaluation. Risks will be identified and scored based on qualitative analysis of unplanned events.

Risk identification and analysis establishes the exposure of SSS to risk and uncertainty. This requires an intimate knowledge of the SSS organization, the market in which it operates, the legal, social, political, and cultural environment in which it exists, as well as an understanding of its strategic and operational objectives.

Each risk is evaluated to understand the probability of occurrence and the impact in the business. The evaluation criteria will be explained in section 4.2 Risk Registry.

Communication and consultation

The SSS Risk Registry will be included in every board meeting pack. Updates on risks will behighlighted to the Board and/or stakeholders during the monitoring of the risk or the mitigation process.

Monitoring and Review

As part of the risk management process, all the risks identified will be monitored and reviewed as per the impact and likelihood of each of them. Monitoring and reviewing may result on a risk registry

update and immediate communication to the Board in those cases where the likelihood or impact is high.

4.2 Risk Registry

The Risk registry will include a list of all the risks identified by the project team. It will include the likelihood of each Risk arising as well as the potential impact. Each Risk will have corresponding mitigation actions and/or monitoring procedures. The Board may identify risks that will require additional reporting, depending on severity of impact. The Risk Registry will be updated and presented to the Board of Directors at every board meeting and any changes adopted and minuted by the Board.

Risk Template

An example format can be seen in the following Image:

The following defines the Risk Register columns:

Registry Item	Description
Ref. no	Risk number
Project Name	Name of the Project
Risk Status	Is the risk open or closed
Risk Category	Construction, Planning Permits, Health and Safety, Permits, Public Opinion, Procurement, Operation, Shelters, Natural Disaster, Schedule, Mobilization, Insurance, Finance
Risk Item	Description of the identified risk
Action Owner	Party responsible for managing the identified risk. Could be individual or organization

Action Due Date	The date mitigation actions must be taken according to mitigation plan. A due date is only required when the risk response is "Mitigate"
Likelihood	Frequency of the risk to occur
Cost Impact	Level of impact on cost to the Project
Performance / Quality Impact	Overall quality impact on the project
Time Impact	Risk to overall project schedule
Current Agg Risk Score	Overall score of the identified risk where in 1 is the lowest and 4 is the highest
Movement	Indicates whether risk score has increased, decreased, or remained the same over the last 8 weeks
Risk Response	Transfer, Mitigate, Accept, or Monitor
Risk Response Description	How the responsible party will take action or mitigate the identified risk
Secondary Effect	Indirect consequences of a risk or follow-on impacts to the risk identified

4.3 Risk Response

Risk handling involves developing specific, discrete responses to address each risk and reduce overall project uncertainty. If the identified risks are unacceptable, seek ways of preventing or reducing those risks and create fallback plans. In some cases, risks can be eliminated while other risks are completely external to the project, presenting little scope for reduction. See Risk Response Structure:

Risk Response	Description
Avoid	Remove the risk, usually by eliminating the cause
Transfer	Allocate the risk to others through contracts or insurance
Mitigate	Reduce the risk probability, risk impact, or both
Accept	Accept the possible consequences of the risk; absorb within project allowances, or fund specific risks separately.
Monitor	A monitored risk falls between the Accept and Mitigate response, it may not require a mitigation plan based on the risk rating but requires more frequent review.

Risk Evaluation

The Risk evaluation is a very important step in the process to understand how the different risks are affecting the organization. Each risk will have a probability and an impact score. The scoring criteria is detailed below.

	Consequences insignificant score 1	Consequences minor score 2	Consequences moderate score 3	Consequences major score 4	Consequences catastrophic score 5
Likelihood almost certain score 5	Medium Risk value 5	High Risk value 10	Very high Risk value 15	Very high Risk value 20	Very high Risk value 25
Likelihood likely score 4	Medium Risk value 4	Medium Risk value 8	High Risk value 12	Very high Risk value 16	Very high Risk value 20
Likelihood possible score 3	Low Risk value 3	Medium Risk value 6	Medium Risk value 9	High Risk value 12	Very high Risk value 15
Likelihood unlikely score 2	Low Risk value 2	*Medium/Low Risk value 4	Medium Risk value 6	Medium Risk value 8	High Risk value 10
Likelihood rare score 1	Low Risk value 1	Low Risk value 2	Low Risk value 3	Medium Risk value 4	Medium Risk value 5

The Probability / Impact Matrix (PIM) above is a useful tool for assessing risk. A risk's likelihood can be expressed as a qualitative score (e.g. 1 through 5, where 5 is highly likely) which equates to a percentage likelihood as shown below:

Likelihood	Rating	1	2	3	4	5
	Description	Rare	Unlikely	Possible	Likely	Almost Certain
	Bands	0 to 5%	5 to 25%	25 to 50%	50 to 90%	90 to 100%

A risk's impact is similarly expressed using as a 1-5 score as shown below. The principle impacts are for cost and time and the risk scores equate to bands of cost and time impact. Additional impact scores can be used as appropriate, for example quality, reputation, legal. Risks are scored according to their 'current' likelihood and impact, i.e. the team's opinion of the likelihood of occurrence and what the impact will be based on what is known now.

	Rating	1	2	3	4	5
Impact	Description	Negligible effect	Minor increase	Significant increase	Large increase	Major increase
	Cost (% Total)	0 to 5%	5 to 10%	10 to 15%	15 to 20%	>20%
	Time (% total)	0 to 5%	5 to 10%	10 to 15%	15 to 20%	>20%

Impact potential ranges

	Rating	1	2	3	4	5
Likelihood	Description	Insignificant	Minor	Moderate	Major	Extreme
	Cost	0 to 5%	5 to 10%	10 to 25%	25 to 50%	50 to 100%
	Time	Negligible Impact	Minor Impact	Delays Noted	Significant Delays	Severe Delays

Exhibit A
SiFi Network Risk Management Policy Document
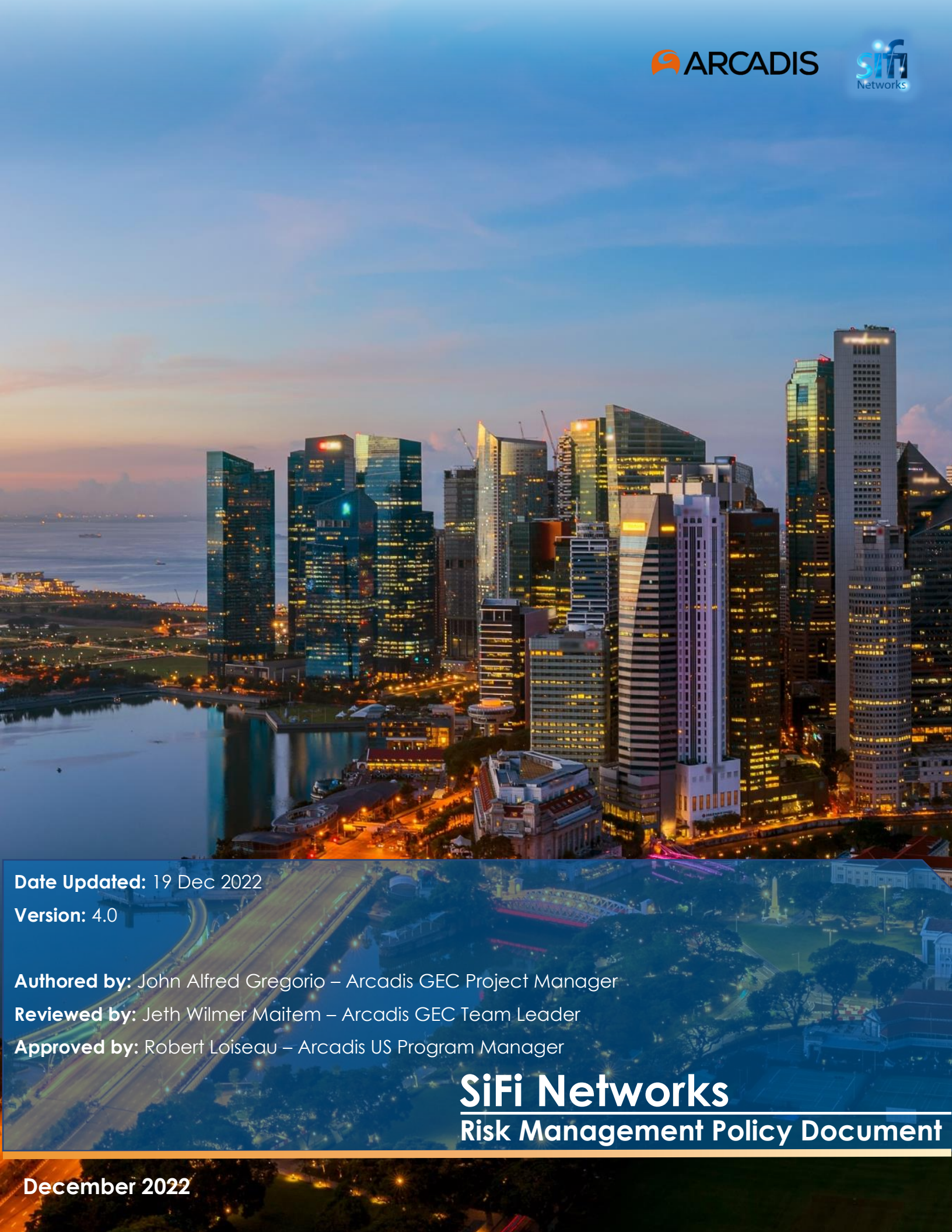
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SiFi Networks

Risk Management Policy Document

December 2022

1. INTRODUCTION

An effective risk management policy enables SiFi Networks to identify, assess, mitigate, avoid, and monitor risk to ensure its projects and team members remain healthy, safe, and confident about the future of the business. Arcadis has created an integrated approach to risk management that ensures proper risk identification, openness, and transparency.

All risks are logged in a risk register and evaluated on the likelihood of an event occurring against the cost, performance, and time. Arcadis Project Managers collaborate routinely with SiFi's Managers to understand current risks. When all factors are evaluated, an aggregate risk score is determined ("Current Agg Risk Score"), which is the weighted impact of the risk. The risk register communicates risk ownership, history, status, escalations, mitigation plans, and due dates.

The Risk Management Policy Document is created to ensure that processes are documented as part of our best practice culture. This will ensure a consistent approach to risk management and define requirements for effective Risk Management across all projects. This document is used to define the scope, roles, responsibilities, and process to be applied. Risk Management, Cost analysis - and Schedule are integral parts of the Project Controls suite of Best Practices.

VERSION

ISSUE	DATE	COMMENTS/REMARKS
1.0	29 Sept 22	First Draft for review
2.0	20 Oct 22	First Revision for Approval
3.0	02 Nov 22	Second Revision for Approval
4.0	19 Dec 2022	Third Revision for Final Approval

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KEY TERMINOLOGIES

TERM	DESCRIPTION
Risk	Is a source of uncertainty with the potential to impact the cost, schedule, or performance of a project.
Risk Management	Represents the systematic process to reduce exposure to risk by identifying, understanding, analyzing, and managing uncertainty.
Avoid	Remove the risk, usually by eliminating the cause.
Transfer	Allocate the risk to others through contracts or insurance.
Mitigate	Actively reducing the risk probability, risk impact, or both.
Accept	Accept the possible consequences of the risk; absorb within project allowances, or fund specific risks separately.
Action Owner	Person responsible for managing the entire risk.
Current Agg Risk Score	Overall score of the identified Risk wherein 1 is the lowest and 5 is the highest.
Critical Issue	An open/unresolved matter that will impact the project if not addressed in a timely manner.

2. RISK MANAGEMENT PRINCIPLE

A risk is a source of uncertainty with the potential to impact the cost, schedule, or performance of a project. A risk consists of the combination of the probability of a perceived threat or opportunity occurring and the magnitude of its impact on objectives. Within this definition 'threat' is used to describe an uncertain event that could have a negative impact on objectives. Conversely an 'opportunity' is used to describe an uncertain event that could have a favorable impact on objectives as benefits.

Risk Management represents the systematic process to reduce exposure to risk by identifying, understanding, analyzing, and managing uncertainty. This is a proactive process with an attitude to qualify and quantify open risks. By developing a plan mitigating actions and strategies, this prevents risks from occurring, or reduces their impact if they do occur. The Risk Escalation Strategy diagram Image 1 below illustrates the levels of risk management.
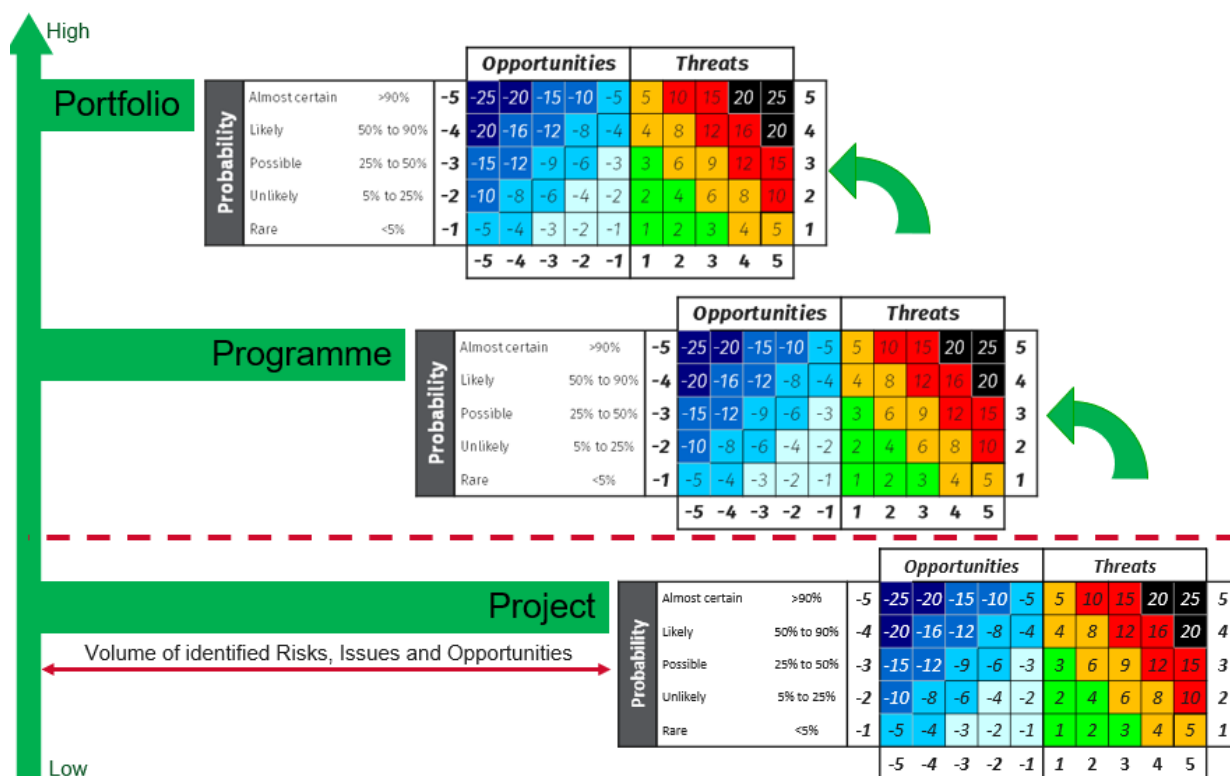
Image 1 – Risk Escalation Strategy

2.1 Likelihood Criteria

The SiFi Risk Likelihood Criteria in assessing each risk:

LIKELIHOOD	CRITERIA	RATING
Rare	Not expected to happen (less than 5%). The risk is conceivable but is only likely to occur in extreme circumstances.	1
Unlikely	Small likelihood but could happen (greater than 5% but less than 25%). The risk occurs infrequently and is unlikely to occur within the next six months.	2
Possible	Could occur often (greater than 25% but less than 50%). There is an above-average chance that the risk will occur at least once in the next six months.	3
Likely	More than a chance of occurring (greater than 50% but less than 90%). The risk could easily occur and is likely to occur at least once within the next six months.	4
Almost certain	The risk is almost certain to occur in the current circumstances (greater than 90%). The risk is likely to occur more than once within the next six months.	5

Table 1 – SiFi Risk Likelihood Criteria

2.2 Impact Criteria

The SiFi Risk Impact Criteria in assessing each risk:

IMPACT	COST	TIME	PERFORMANCE	RATING
Insignificant	Negligible impact on budgeted turnover – less than 5%	Negligible impact on project delivery	One-off and temporary to operational damage	1
Minor	Minor impact on budgeted turnover – greater than 5% but less than 10%	Minor impact on project delivery	Negative short-term damage to operations or reputation	2
Moderate	Moderate impact on budgeted turnover – greater than 10% but less than 25%	Delays to project delivery	Negative short-term to medium-term damage to operations or reputations	3
Major	Significant impact on budgeted turnover – greater than 25% but less than 50%	Significant delays to project delivery	Negative medium-term damage to operations or reputation	4
Extreme	Imminent cash flow problems; sustained, severe loss of turnover	Severe delays to project delivery	Extensive negative medium-term to long-term damage to operations or reputation	5

Table 2 – SiFi Risk Impact Criteria

3. KEY ROLES AND RESPONSIBILITIES

3.1 General Responsibilities

This section highlights key roles and responsibilities related to the implementation of this practice. The following notes are intended to provide a summary description:

ROLE	RESPONSIBILITY
SiFi Networks Board	Will hold the SiFi Project Board and project team accountable for the effective management of risk. The Board considers the risk involved when making any key decisions.
The Project Executive or Sponsor	A Senior level person (or group) within SiFi Networks who makes an initial assessment of overall project complexity and associated business. Obtains agreement from stakeholders regarding the handling of major project risks. They are also the first point of escalation for high risks. The Project Executive will appoint The Project Manager.
The Project Managers	They establish the risk management strategy to identify, manage, and monitor risk throughout the life of the project. They facilitates Risk Workshops, collect risks from project, and identifies Project Team Members.
A Customer Representative	Participates in the risk management workshop and takes ownership of risks that fall under the Customer's authority.
Project Team Members	Actively participate in the risk management workshop and take ownership of risks that fall within their responsibility. Project Team Members may change through the life cycle of the project and can be routinely adjusted to suit the project's Risk Profile.

Table 3 – SiFi Roles and Responsibilities

4. PRACTICE

4.1 Risk Management Principle

Risk management is a systematic process to reduce exposure to risk by identifying, understanding, analyzing, and managing the uncertainty in a project. Risk management helps ensure project objectives are aligned and that risks to ongoing activities are managed. Risk management includes the identification of key areas of risk, the likelihood of an event occurring, and estimates of the possible consequences. Risk management is applied throughout the life of a project as a method of preventing cost and time overruns, scope creep, and business risk.

A project risk is a potential problem that could impact the project in the future. However, a risk differs from a **critical issue**, which is an open/unresolved matter that will impact the project if not addressed in a timely manner. In other words, a critical issue is a risk occurrence of special importance or one that requires special attention.

The high-level process for Risk and Risk Management is presented below.
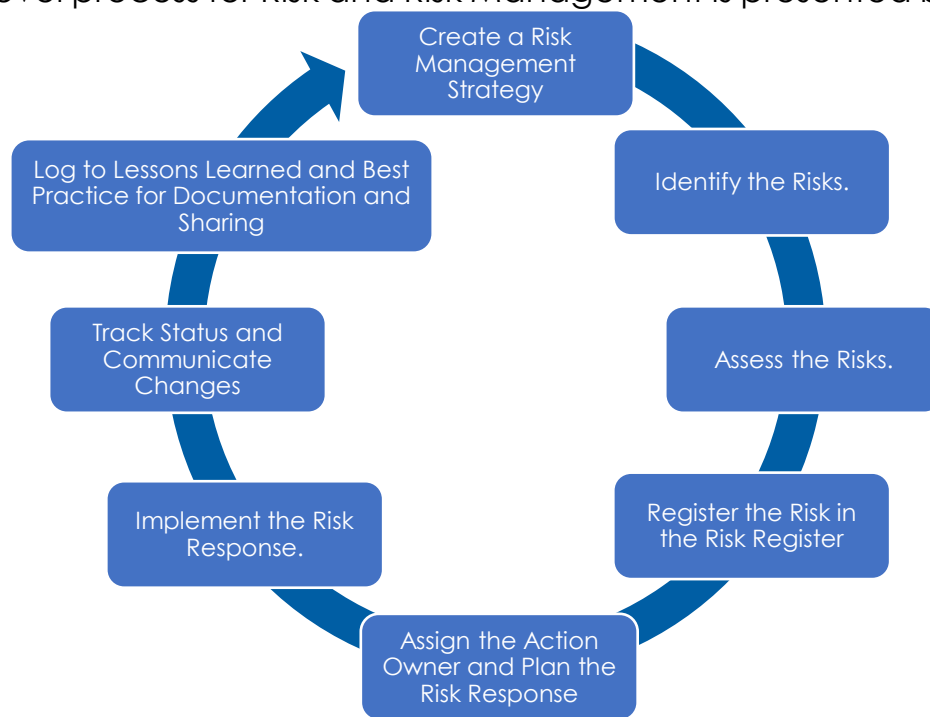
Image 2 – Risk and Risk Management

Image 3 shows the essential activities of Risk management, with the inputs and outputs for each activity. The diagram reflects that Risk management is an iterative process — as changes occur, the basic cycle (plan, analyze, and handle risks) repeats.

Initial Assessment and
Decision to Proceed

Risk Management Strategy

Formulate and implement an overall risk management strategy that is consistent with business objectives.

Risk Analysis

Identify and describe risks to gain awareness of the risk type, probability of occurrence, and potential impacts.

Quantified Risks

Risk Handling

Prepare a response to address each risk.

Risk Monitoring

Monitor the risk movement throughout the project lifecycle to update strategies and forecasts.

Changes and Additions

Image 3

4.2 Creating a Risk Management Strategy

Conducting an initial assessment and defining a strategy are steps required to create a risk management strategy.

4.2.1 Conduct an Initial Assessment

During the Business Analysis stage of the project, the Project Sponsor ensures an initial assessment of the overall project complexity and associated business risks. At this point, the primary concern is fundamental uncertainties — risks that could make the business case non-viable and need to be addressed at the department, site, or corporate levels. The results of this exercise are used to help determine whether to proceed with the project and if so, putting in place an appropriate project risk management strategy that minimizes SiFi's risk.

4.2.2 Define the Strategy

At the outset of the project, the Project Manager must establish an efficient risk management strategy to monitor and manage risks throughout the life of the project. This RISK MANAGEMENT POLICY DOCUMENT provides the risk management policy. The Project Manager documents the risk strategy as part of the Project Execution Plan.

The risk strategy establishes the risk management framework for the project. It explains how risk management will be tailored to the needs of the project, and addresses the following topics:

- o The scope of risk management for the project. Such impacts as:
    - o The Go Live or Customer Serviceable date.
    - o Focus only on risks that may impact project objectives.
    - o Assess potential impact/ risk with the introduction of the project on the rest of the organization.
- o Any aspects of risk management that will be addressed by others outside the project team.
- o How the risks will be analyzed, handled, and monitored across the life cycle of the project.
- o The frequency and level of detail at which risks are analyzed and reviewed. Determine when formal quantitative analysis will be applied.

- o Any major strategic decisions made to reduce the project risk. Such as the development of a prototype or the decision to appoint a contractor to deliver a turnkey solution.
- o Any major risks that are accepted into the project and their funding implications.
- o Any specialist resources, tools, or training needed to effectively implement risk management on the project.

4.3 Analyzing Risk

Risk analysis involves identifying all known risks at an early stage of the project and establishing a risk register describing the nature of the risk, probability of occurrence, possible impact, and mitigation plan.

4.3.1 Identify the Risks

This step consists of identifying all the possible risks that may adversely impact project success. Risk identification is not a one-time event; it should be performed on a regular basis throughout the project. The basic approach to risk identification is to:

- o Gather all the relevant data possible. This includes:
  - o Project description, Project Objectives, Cost Estimate, Schedule, and lessons learned from past
  - o Any understanding of business operations that may be impacted by the Project.
- o All Risks must be listed in the format below in **bold**. This will ensure that all risks are captured uniformly and clearly explain the contributing factors, risk, and resulting events:
  "As a result of…..There is a risk that…..Which will result in".
- o Schedule a facilitated risk management workshop with the core project team and any other key participants.
- o Use a creative approach to identify risks with the team and be thorough, continuing until no more risks can be identified.
- o Assign a risk owner.

4.3.2 Assess the Risks

After identifying the range of possible risks, the next step is to assess them. A risk assessment is performed whenever a new risk is identified or an existing risk changes or evolves.

A risk assessment —a structured process based on calculation to quantify the impact of risk. Risk assessments rank risks in terms of type, probability, and impact. Probability measures the likelihood of the risk occurring, and impact measures the severity to the project or facility when the risk occurs. Risk assessment consists of the following activities:

- Determine specific definitions of probability and impact appropriate to the project.
- Assign numeric values to the definitions for probability and impact.
- Analyze risks for both probability and impact.
- Calculate the risk index by multiplying the values for probability and impact (the higher the risk index, the more significant the risk).
- Use the Current Agg Risk Score shown in table 4 – SiFi Current Agg Risk Score to rank the risks for prioritized attention wherein
  - **(1) Very Low** – Not Expected to happen and negligible in impact on the Project.
  - **(2) Low** – Small likelihood but could happen with a minor impact on the Project.
  - **(3) Moderate** – This could occur quite often with a moderate impact on the Project.
  - **(4) High** – More than an even chance of occurring with a significant impact on the project.
  - **(5) Extreme** – Risk is almost certain with Severe impact on the project.

IMPACT	LIKELIHOOD				
		(1) **Rare**	**(2)** **Unlikely**	**(3)** **Possible**	**(4)** **Likely**	**(5)** **(Almost Certain)**
	(1) **Insignificant**	(1) Very Low	(1) Very Low	(2) Low	(2) Low	(2) Low
	(2) **Minor**	(1) Very Low	(1) Very Low	(2) Low	(3) Moderate	(3) Moderate
	(3) **Moderate**	(2) Low	(2) Low	(3) Moderate	(3) Moderate	(3) Moderate
	(4) **Major**	(2) Low	(3) Moderate	(3) Moderate	(4) High	(4) High
	(5) **Extreme**	(2) Low	(3) Moderate	(3) Moderate	(4) High	(5) Extreme

Table 4 – SiFi Current Agg Risk Score

4.3.3 Register the Risks

The results of the risk identification and risk assessment activities are captured in a risk register (see Image 4 – SiFi Risk Register). The collection of risks and their associated risk index values also provides insight into the overall project risk profile. If desired, this can be depicted graphically on a grid

Reference ID	Date Raised	Risk Sta...	Risk Category	Risk Item	Action Owner (Organiz...	Likeliho...	Ti...	P...	C...	Current Agg Risk Score	Movem...	Risk Response Description	Action Due Date
Salem - R:2	16-Oct-202	Open	Construction	As a result of the city's restrictions on working hours between the hours of 7am and 3pm, there is a risk that productivity could be reduced.	GC	(3) Possible				(3) Moderate	→	City Engineer can approve work outside standard hours. To be discussed between City and EPC, once EPC has completed first few workzones successfully. EPC will adjust their schedule to reflect the 7am-3pm (cutting) workday and clean up completed by 4:30pm.	NA
Salem - R:5	1-Oct-2020	Open	Planning Permits	As a result of NGRID's long review and installation timelines, there is a risk that power energization of the huts and cabinet locations could be longer than the project allows, which may result in delayed cabinet installations and go live dates.	GC	(3) Possible				(2) Low	→	Future GC will need to coordinate power design according to their schedule. Currently forecasting all power designs to be approved by March 2023.	NA
Salem - R:10	4-Nov-2020	Open	Permits	As a result of the city and former GC not forming a productive working relationship, there is a risk that the permit approval process may take longer. This may delay construction start.	GC	(3) Possible				(3) Moderate	→	SiFi and COS has met to discuss the path forward. COS to issue a contract to AECOM for project support, funded for by SiFi. This support to include permit reviews and issuance in a timely manner, forecasting April 2023 for construction start. Workshop with COS and AECOM to be scheduled to work through design and permitting details.	30-Nov-2
Salem - R:11	1-Oct-2020	Open	Public Opinion	As a result of working in the public domain there is a risk that some residents of Salem may be displeased with our work which may result in lower customer satisfaction, negative social media posts, and/or delayed permits.	SiFi	(3) Possible				(3) Moderate	→	SiFi has begun engagement with the City to put together a public relations and government relations campaign for councilmembers, commissioners, and neighborhood associations. SiFi has set up a 1-800 number for residents to reach out. Next meeting to share project updates in a council meeting TBD.	NA
Salem - R:12	1-Oct-2020	Open	Procurement	As a result of the procurement process and dynamic construction schedule, there is a risk that more/less material could be delivered than required which will result in material excess/shortage.	GC	(1) Rare				(1) Very Low	→	SiFi working to secure storage yard directly with the yard owner. SiFi/Arcadis has ordered material to start the project. New GC will place orders in a 3-month look ahead.	NA
Salem - R:19	1-Oct-2020	Open	Operation	As a result of the City's maintenance projects, there is a risk that the fiber network could be disturbed or in conflict with their work which will result in a disruption of service or relocation work.	GC	(3) Possible				(3) Moderate	→	SiFi Network will be registered with Dig Safe for markouts to minimize disruption due to other projects. SiFi also working on producing maintenance information to COS for awareness and communication with DPS on future projects.	31-Dec-2
				As a result of the City's review of the Pilot, there is a risk that		(5)						Pilot construction was not completed to the COS's satisfaction. COS has provided requirements for project to move forward. SiFi has submitted an	

Image 4 – SiFi Risk Register

4.3.4 Risk Register Columns

- o **Reference ID** – This is sequential with the Project Name and Row Number.
- o **Project Name** – Name of the Project.

- o **Risk Status** – this is Open/Close.
- o **Risk Category** – see 4.3.5 Risk Category.
- o **Risk Item** – this is the description of the identified risk.
- o **Action Owner(or Organization)** – Party responsible for managing the identified risk. This could be an individual or group.
- o **Action Due Date** – The date mitigation actions must be taken according to the mitigation plan. A due date is only required when the risk response is "Mitigate".
- o **Likelihood** – frequency of the risk to occur.
- o **Cost Impact** – Cost Impact of the risk to the Project
- o **Performance/Quality Impact** – Quality Impact of the risk to the Project.
- o **Time Impact** – Timeline Impact of the risk to the Project
- o **Current Agg Risk Score** – Overall score of the identified Risk wherein 1 is the lowest and 5 is the highest.
- o **Movement** – Indicates weather Risk Score has increased, decreased, or remained the same over the last Eight (8) weeks.
- o **Risk Response** – this is Transfer, Mitigate, Accept, or Monitor see section 4.4.1.
- o **Risk Response Description** – Risk Response Action to take or Mitigation Plan.
- o **Secondary Effect** – These are indirect consequences of a risk or follow-on impacts to the risk identified.

4.3.5 Risk Category

Establishing a Risk Category will enable the categorization of each Risk item. For SiFi's risk category, there are 13 Risk Categories in the Risk Register namely:

- o Construction
- o Planning Permits
- o Health and Safety
- o Permits
- o Public Opinion
- o Procurement
- o Operation
- o Shelters

o Natural disaster
o Schedule
o Mobilization
o Insurance
o Finance

4.4 Handling Risk

Risk handling involves developing specific, discrete responses to address each risk and reduce overall project uncertainty. If the identified risks are unacceptable, seek ways of preventing or reducing those risks and create fallback plans. In some cases, risks can be eliminated while other risks are completely external to the project, presenting little scope for reduction.

4.4.1 Risk Response

Develop suitable responses for each risk:

RISK RESPONSE	DESCRIPTION
Avoid	Remove the risk, usually by eliminating the cause
Transfer	Allocate the risk to others through contracts or insurance
Mitigate	Reduce the risk probability, risk impact, or both
Accept	Accept the possible consequences of the risk; absorb within project allowances, or fund specific risks separately.
Monitor	A monitored risk falls between the Accept and Mitigate response, it may not require a mitigation plan based on the risk rating but requires more frequent review.

4.4.2 Assign Responsibility

Where mitigation actions are feasible and justifiable, assign action owners and due dates to each

Table 5 – SiFi Risk Response

risk. Place the ownership of risks with those best placed to manage them, and who have the necessary expertise, resources, and authority to carry out any mitigating action.

4.4.3 Create a Risk Response Description/Mitigation Plan

A risk mitigation plan aims to eliminate, lessen, and manage the impact of the risk. For each risk, a risk response description/mitigation plan comprising one or more mitigation actions must be developed and recorded in the risk register. This section must include the impact of the action in accordance with the protocol and guidance of the project.

Where all other strategies and plans are not possible, the risk must be accepted. In this case, it is very important to continue to monitor and implement the mitigation plan. Risk acceptance requires a positive decision to accept a risk and may be appropriate where the level of risk is low, or it is not cost-effective to reduce the risk further.

4.4.4 Accumulate Results

Consolidate plans (e.g., contractual, insurance, and fallbacks) and incorporate them into the overall project plans.

Make adequate provision for risk management actions in project cost estimates. For Class 1 through Class 3 estimates, the risk results may be used to help determine the amount of contingency required within the range of typical contingency levels and should be highlighted in the Cost at Risk Log. For the Class 4 estimate, the results are used to determine the impact on project contingency and if a risk allowance is required and should be forecasted as spent in the financial model.

Then, document the recommendations, including those risks that the project team has consciously decided to accept or ignore. Next, communicate the risk strategies to the project team, senior management, and stakeholders. Obtain an agreement from stakeholders regarding the handling of major project risks. Also, ensure that decisions made regarding risk are agreed upon throughout all project stages.

The Risk Register and Reports are shown in Image 4 the Risk Page of the SiFi Networks Dashboard.

Risk Register (Open Items Only)
Project: Salem

Date: 29 Sep 22

Ref ID	Date Raised	Risk Item	Action Owner Organization	Likelihood	Time	Perf	Cost	Current Agg Risk Score	Movement	Risk Response Description	Action Due Date
Construction											
Salem - R:2	16-Oct-20	As a result of the city's restrictions on working hours between the hours of 7am and 3pm, there is a risk that productivity could be reduced.	GC	(3) Possible				(3) Moderate	→	City Engineer can approve work outside standard hours. To be discussed between City and EPC, once EPC has completed first few workzones successfully. EPC will adjust their schedule to reflect the 7am-3pm (cutting) workday and clean up completed by 4:30pm.	
Salem - R:25	02-Nov-20	As a result of unknown underground conditions and various pavement types such as cobblestone/brick pavers, there is a risk that production could be reduced.	GC	(4) Likely				(3) Moderate	→	Future GC has considered various underground conditions and pavement types in their production.	
Salem - R:26	02-Nov-20	As a result of fluctuation in the labor market, there is a risk for potential union grievances.		(1) Rare				(1) Very Low	→	No grievances to date	
Salem - R:27	02-Nov-20	As a result of limited parking in Salem, there is a risk that project could receive pushback from residents while trying to cordon off 700 LF minimum, per crew, per day.	GC	(2) Unlikely				(1) Very Low	→	No complaints to date. Future GC to identify which parts of downtown will be impacted during construction. Future GC to also post "No Parking" signage 24 hours before construction on each street.	
Salem - R:29	02-Nov-20	As a result of city's criteria for handhole and FABs, there is a risk that an increase in H20 lids and cast iron rims for FABs will be required, which will have a much greater cost than typicals suggested.	SiFi	(4) Likely				(3) Moderate	→	City has approved FABs and provided criteria for handholes. SiFi and Arcadis tracking cost impact for additional H20 lids.	

Image 4 – SiFi Risk Register Summary Report

4.5 Monitoring Risk

Establish risk controls to ensure the ongoing management of project risk. Continually review project risks and their significance, monitor the effectiveness of risk response strategies, and regularly update fallback plans. Ensure that the risk management process remains consistent with the main project objectives.

4.5.1 Identify Triggers & Red Flags

Identify the potential triggers & red flags that indicate the occurrence of a risk, and make sure these triggers are visible to the project team.

Monitor the triggers on a frequent basis and use the information to update forecasts.

Red flags: Information, situations, or sponsers that give rise to a concern that control has been lost or is being lost and/ or that the risk score has changed.

Triggers: changes or events that could impact the risk profile and indicate that the risk should be reviewed.

4.5.2 Document Risk Occurrences

Some of the identified risks will occur, and others will not. Risks that occur are actual risk occurrences, and the project team must recognize them to implement the fallbacks plan.

If a risk occurs, capture the facts as soon as possible. Prepare an analysis of the risk occurrence and create a lesson learned file. It may also be necessary to record the occurred risk as a schedule activity, budget line item, or change order. Communicate the results to the project team and the organization. Report major risks as a Project Alert topic. During the post-project review, record the descriptions of risks experienced and their consequences.

Review the risk management strategy after each unexpected risk occurrence to determine if revisions are needed.

Report all risks especially risks with a Current Aggregate score of (4) High or (5) Extreme to Project Executive Stakeholders during Monthly Board Report using the Risk Register Summary Report (see Image 4 - SiFi Risk Register Summary Report).

4.5.3 Track Status and Communicate Changes

Track the status of project risks by reviewing the risk register frequently but no less than monthly. As the project develops or as risks are further understood, reassess the probability and impact of identified risks.

Evaluate the project for new risks, especially when changes occur in the project (such as starting the next project stage). Repeat the cycle of identifying, assessing, and responding to any new risks.

Transfer the updated risk information into the forecast costs and schedule, then update any special risk allowances.

Incorporate changes and updates into the risk register on a regular basis. Reissue the risk register to the project team, highlighting changes since the last report. Include the status of any major risks in the monthly project report.

If a project risk introduces a business risk the project team must do everything possible to eliminate such risk by design. Occasionally, should the Business risk remain after the project closure, the risk must be endorsed by the Project Sponsor and transferred into a Business Unit's Risk Register.

4.6 Risk Escalation

Risk escalation is a formal method of raising awareness of specific risks with senior management and obtaining formal agreement for any ownership changes or additional activities that may be required. Agreement for risk escalation must be achieved by both parties before the escalation process can be completed.

Missed escalation should not, however, be confused with risk transfer, as this is a contractual arrangement that stipulates risk of ownership, exposure, and liability. Sometimes a new contract or change order would be needed as part of a risk response to lower the impact or likelihood of a risk.

4.6.1 What risks should be escalated and why?

Essentially, any risks which would potentially impact the program should be closely monitored and escalated where appropriate and reviewed at the Program Risk Review.

There are two main reasons why risks should be escalated:

- o For information
  - o The risk is currently under control at the project level but would have a significant effect on project or program milestones, activities, or deliverables if it were to occur.
- o For Action
  - o When mitigation cannot be done at the project level (actions would be above delegated authority, or outside of the remitted scope).

- o If the identified mitigation actions have not been effective at mitigating the risk, and additional support is required from senior management.
- o - When the risk requires direction or support from the program for resolution.

4.6.2 When should risk be escalated?

Escalated risks must be communicated up the risk management chain as soon as possible so that the relevant person is both aware of the problem and has sufficient time to take action. Escalation should not be delayed until the next monthly reporting cycle.

4.6.3 What information is needed to escalate a risk?

To submit a risk for escalation the following information is required:

- o The reasons for the escalation.
- o Suggested actions to be taken, along with required timescales and Risk owners.
- o Impacts on the project or program if action is not taken, along with any additional risk that may be introduced into the program.