# **Risk and Issue Management**

Risks associated with hardware handling, software compatibility issues, and SDR integration will be identified and mitigated by the team, through proactive risk management strategies (in line with our secSDLC methodology) and general troubleshooting.

## Risk Register

|  |  |
| --- | --- |
| **Risk Name** | **Risk Management Plan** |
| Lack of Resources (Hardware) | All hardware required for the project will be provided by the client or mentor. If difficulty procuring hardware occurs, the team will collectively liaise with the client/mentor and set a meeting to obtain necessary hardware. |
| Incompatibility between hardware, software, or other components | The team will collaborate to troubleshoot and debug any incompatibility that should arise between hardware, software, and operating systems used. |
| Lack of software support | This issue can arise when using srsRAN software which may not have adequate support documentation for its use in our specific purposes. In these cases, the team will combine efforts to synthesize all online resources and leverage our own expertise and knowledge to attempt to troubleshoot the necessary configurations. |
| Inability to communicate regularly with mentor/client | The team will combine efforts to set up meetings and establish communication with the client/mentor, however, this may prove difficult due to busy schedules on both sides. The team will put forth their best effort to make the most of all mentor/client meetings, no matter how infrequent, preparing an agenda and adhering to it during meetings. |
| Lack of contact between group members | The team will schedule regular meetings between each other and keep in contact via Teams, ensuring that all members are present whenever possible. If a member is unable to make a meeting, another team member will take diligent meeting minutes which will be made available in the team documents. |

## 1. Monitor and Control Process

A proactive approach will be used to monitor and control risks and issues that present themselves throughout the development of this project. This process will include risk assessments, communication withing the team and appropriate mitigation actions.

2. Risk Management Plan

**2.1 Identification of Risks**

Risks will be identified through brainstorming, documentation review and continuous monitoring of the project. Any potential for risks or issues identified by a team member should bring it up with the rest of the team during our weekly meetings. An example of this would be software compatibility with the products we are using.

**2.2 Analysis of Risks**

Once a risk is identified, it will be analysed based on its potential impact and likelihood of occurrence. The risks will be categorised into low, medium and high severity based on their potential likelihood and consequences.

**2.3 Mitigation Strategies**

For each of the identified risks, mitigation strategies will be made to reduce the impact of the risk or reduce the likelihood of occurrence. These mitigation strategies will include preventative measures, contingency plans and risk transfer strategies.

**2.4 Risk Response Plan**

A risk response plan will be developed and will outline the specific actions to be taken in response to each identified risk. It will also include triggers for implementing the mitigation actions, escalation procedures and criteria for revaluation of risks over the course of the project.

## 3. Measure of Consequence

The consequences of the identified risks will be measured based on their impact on project objectives, schedule, budget and quality. These consequences will be assessed to prioritise the risk response efforts.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Level | Description |  |
| Catastrophe | 1 | Significant impact on the project. Loss of software functionality and irreparable damage to hardware. Will put the project to a halt. |  |
| Major | 2 | Major impact on the project. Loss of software/hardware functionality. Will delay the project while the response is undertaken. |  |
| Moderate | 3 | Will have an impact on the project and can be handled by mitigation processes already in place. |  |
| Minor | 4 | Minor impact on the project. Can cause loss of functionality but entirely manageable and preventable. |  |
| Insignificant | 5 | Insignificant impact on the project. Not worth worrying about |  |

## 4. Measure of Likelihood

The likelihood of risks occurring will be assessed based on current project conditions, historical data and overall judgement of the risk. Risks with higher likelihood will be given priority and greater attention in the risk management process.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Almost Certain | Likely | Possible | Unlikely | Rare |
| Description | Is expected to occur during the project. | Will probably occur during the project. | Might occur during the project. | Small chance of occurring during project. | Is not expected to occur during the project. |

## 5. Overall Risk Classification

The risks for this project will be classified based on their overall severity, which is based on their consequences and likelihood. This classification will ensure prioritisation of risk response efforts and resources directed towards these risk management activities.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Consequence | | | | |
| Likelihood | Catastrophe | Major | Moderate | Minor | Insignificant |
| Almost Certain | Extreme | Extreme | High | Medium | Low |
| Likely | Extreme | Extreme | High | Medium | Low |
| Possible | High | High | Medium | Low | Low |
| Unlikely | Medium | Medium | Low | Low | Low |
| Rare | Low | Low | Low | Low | Low |

6. Issue Management

**6.1 Issue Identification**

Issues will be identified through regular meetings, reports and communication within the team. Any deviation from the project plan, unforeseen challenges/roadblocks will be documented for further investigation and resolution.

**6.2 Issue Analysis**

Once issues are identified, they will be analysed to determine their cause, how they impact the project's objective and any potential solutions. Our team will collaborate and assess each issue and determine its severity and prioritise them based on urgency and impact.

**6.3 Issue Resolution Plan**

An issue resolution plan will be developed to address each identified issue. This plan will include specific actions to be taken, timelines for each resolution and the criteria for evaluating the effectiveness of the proposed solutions to each issue.

## 7. Constraints and Assumptions

Constraints and assumptions related to the risk and issue management will be documented to provide context for decision-making and risk response planning. Constraints will include things such as budget, resource limitations and requirements, whereas assumptions will include things such as the project timeline, stakeholder expectations and other dependencies.