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SKY SOCKET RISK MITIGATION, MONITORING, AND MANAGEMENT PLAN

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# 1.0 Introduction

## 1.1 Scope and intent of RMMM activities

We want our project to be free of any issues that would significantly delay the project, as well as any issues that would make our project unusable. We do not expect to stop all delays and imperfections and believe that the project can still be successful with some minor flaws. Therefore, our risk management plan focuses on only issues that are significant enough to cause the project to fail.

## 1.2 Risk management organizational role

Everyone working on the project is responsible for managing the project’s risks.

* Each project member should stay on task and ensure the group is on schedule.
* The client can manage risks by making his requirements clear early on and making sure the team is meeting his expectations throughout the project

# 2.0 Project risks

## 2.1 Risk table

## 2.1.1 Description of risk m

**Equipment Risk**

If some of the major equipment used to create the model fails/breaks during or shortly after development. The two main pieces of equipment necessary are the drone and the car. Either failing would cause a massive problem as there wouldn’t be the necessary tools required to build the model.

**Employee Risk**

If one or more of the team members doesn’t put in the required amount of effort to complete the project over the course of the year. The project relies on everyone doing their part and it is not easy for the team to pick up the slack of another team member.

There is also the risk of losing one of our team members due to unforeseen circumstances, making the project extremely difficult to complete.

**Quality Risk**

There is a chance that the model the team makes is not up to the client’s standards and is rejected at the end of the project. The quality of the model may be lacking in a few areas:

* Drone battery may not last long enough
* Too much latency in communicating between car and drone
* Lack of consistency in detecting objects

**Customer Risk**

There is a chance that the client loses interest in the project and/or the team.

**Policy Risk**

University policy is very strict when it comes to drones, and the drone can only be used in specific areas. If our use of the drone violates campus policy the project could be stopped.

## 2.1.2 Probability and impact for risk m

**Currently unordered**

| **Category** | **Risks** | **Probability** | **Impact** |
| --- | --- | --- | --- |
| Equipment Risk | Drone failing | 50% | 1 |
| Equipment Risk | Car failing | 30% | 2 |
| Policy Risk | Breaking campus policy | 15% | 1 |
| Employee Risk | Member(s) slacking | 20% | 3 |
| Customer Risk | Client loses interest | 5% | 1 |
| Employee Risk | Losing member | 5% | 2 |

Impact values:

1= catastrophic

2= critical

3= marginal

4= negligible

## 2.2 Risk refinement

**Drone Equipment Risk**

* Sub Condition 1. Damage to the drone can impair its ability to fly/hover
* Sub Condition 2. Damage to the drone camera can impair its ability to capture video imagery needed for video analysis
* Sub Condition 3. Damage to the Raspberry Pi can stop the drone from storing data, communicating with the car, and doing video analysis

**Car Equipment Risk**

* Sub Condition 1. Damage to the motor of the car may impair its ability to drive
* Sub Condition 2. Damage to the car camera may impair its ability to capture video imagery needed for video analysis
* Sub Condition 3. Damage to the Raspberry Pi can stop the car from storing data, communicating with the drone, driving along a specified path, and doing video analysis

# 3.0 Risk mitigation, monitoring, and management

## 3.1 Risk mitigation for risk m

**Equipment Risk**

To ensure that our equipment doesn’t get damaged we need to do all of our testing in controlled environments where there will not be unexpected obstacles/interruptions that can get in the way. We also do not want to allow for the drone or car to be used by anyone outside of the project.

**Employee Risk**

Each group member needs to focus on staying on track to complete each step of the project by its assigned deadline.

To try and ensure no one has to leave the group, each group member needs to plan to stay in state for most of the duration of the project and to allocate enough time in their schedule to give themselves proper time to complete their work each week.

**Customer Risk**

The team should consistently provide the client with all of the documentation and progress done on the project.

**Policy Risk**

Before using the drone in a new area the team needs to make sure they are permitted to use it. If they are unsure, they should speak with the client before proceeding and operating the drone.

## 3.2 Risk monitoring for risk m

**Equipment Risk**

Before using any of the equipment, it should be inspected for any damage and/or any unexpected modifications. Some basic tests should be carried out to ensure that the equipment functions properly before doing any actual work with it.

**Employee Risk**

To ensure everyone is putting in enough work we will check in on the team’s progress every one to two weeks.

It will be difficult to watch for suddenly losing a group member, however we can watch for sudden life events that occur in the team members lives.

**Client Risk**

During meetings and emails with the client we will ask for some feedback on how they currently feel about the project. We will try to determine their satisfaction with the work currently done and each team member’s contributions.

**Policy Risk**

The team needs to make note of which areas they conduct tests using the drone each time the drone is used on campus. The location should be cross-referenced with the locations that the drone is allowed.

## 3.3 Risk management for risk m

**Equipment Risk**

If the drone fails, we will need to get some sort of drone for the final product. We can still do development of the video analysis software without a drone until either the drone is fixed or a replacement is obtained.

If the car fails, we would like to fix it or replace it before the final product. However, it is still possible to make a working product without a functional car. It is feasible that the car could be manually moved using something such as a rope and the project could still retrieve some research results.

**Employee Risk**

If one of the group members is not putting in enough effort, there are a few steps to take. First off, a group member can be given a lower score on the team evaluations from the rest of the group. For serious cases, this behavior should be discussed with the client.

If a group member suddenly leaves the group, then the rest of the team will need to split that member’s responsibilities amongst themselves. This will likely result in more work for the remaining members.

**Client Risk**

If the client does decide to drop the project, it will be extremely difficult to complete the project. We will need to find support from someone else or the University to complete the project, or at least request to continue to use the drone and car until the project is finished.

**Policy Risk**

If we do break campus policy, we would try to hide it and hopefully get away with it. If not, we may still be able to do a small amount of work without using a drone. We could still work on video analysis of vehicles and send a signal to the car.

# 4.0 Special conditions

* **Drone Safety**

We need to make sure all of the team members take proper safety precautions when using the drone. Not following proper safety procedures could potentially lead to one of the team members to be seriously injured.

* **Demo Failure**

We want to ensure that the demonstrations for the project do not fail. To minimize the risk of them failing, the team needs to pre-record the demos approximately a week before the demo is due. If a live demonstration is required, the team should still prepare a video in case something goes wrong.