# Project Deliverable E: **Project Schedule and Cost**

## GNG 1103 – Engineering Design

Faculty of Engineering – University of Ottawa

Diego Dallaire
Haden Hopkin
Harry Tran
Ika Nnamani
Noah Le

October 29, 2023

# Table of Contents

Table of Contents ..... 2
Introduction ..... 2
Clients Feedback ..... 3
Concept Sketch ..... 3
Project Schedule ..... 3
Bill of Materials ..... 4
List of Equipment ..... 5
Project Risks ..... 5
Verifying Feasibility ..... 6
Stopping Criteria ..... 6
Prototype Testing Plan ..... 6

## Introduction

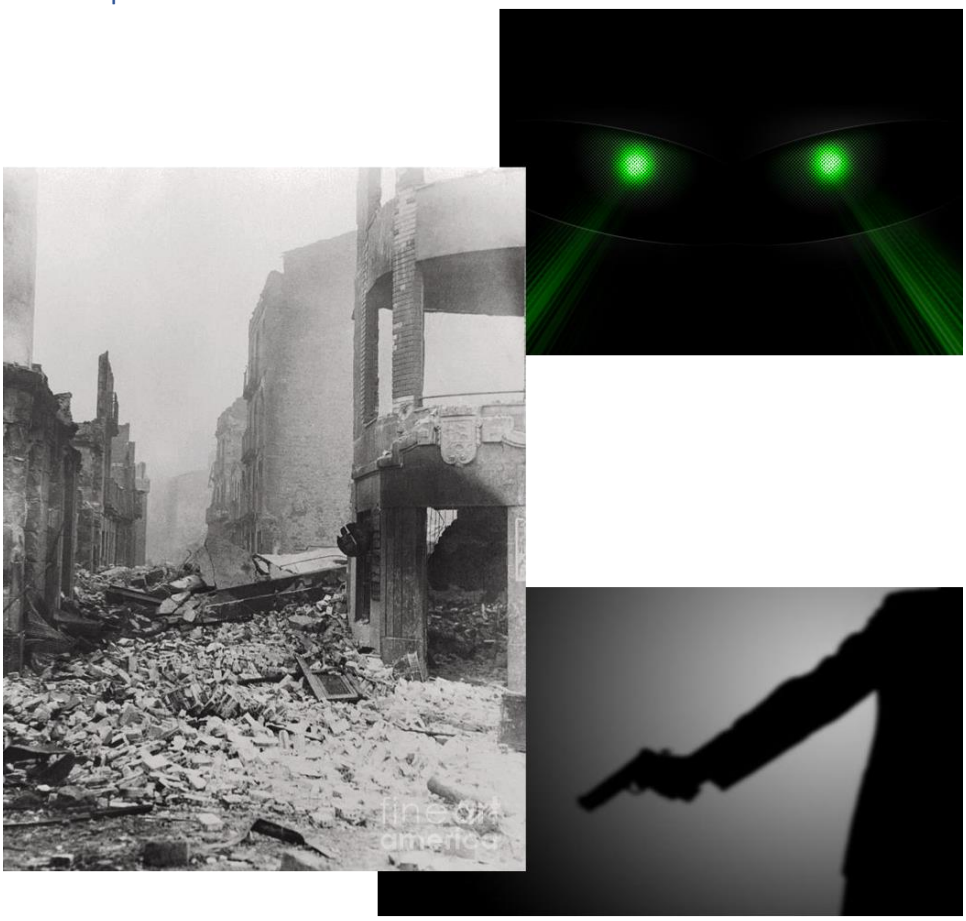
This document outlines the plans set in place to make sure all three of the projects prototype and testing for them by their respective due date. This document also goes over the different

components of this project, such as the materials, the cost and the risk to the completion of this project.

## Clients Feedback

During the client meeting we learned that many of our concepts were too complicated and helped us realize that the time we have to complete this project is too limited for our ambitions. They narrowed down our concepts into a final design concept, being a video that uses the camera movement programme to simulate movement based on Noah's concept, Terror by what you can't see.

## Concept Sketch



## Project Schedule

| Number | Task | Dependencies | Owner | Duration | Due Date |
|---|---|---|---|---|---|
| 1 | Deliverable E : Project Plan and Cost Estimate | Deliverable D | Everyone | 7 days | 10/29/2023 |

| | | | | | |
|---|---|---|---|---|---|
| 2 | Deliverable F : Porotype 1 and Customer Feedback | 1 | Everyone | 7 days | 11/5/2023 |
| 3 | Deliverable G : Prototype II and Customer Feedback | 2 | Everyone | 7 days | 11/12/2023 |
| 4 | Deliverable H : Prototype III and Customer Feedback | 3 | Everyone | 14 days | 11/26/2023 |
| 5 | Deliverable I :Design Day Presentation material | 4 | Everyone | 3 days | 11/29/2023 |
| 6 | Deliverable J : Project Presentation | 5 | Everyone | TBD | TBD |
| 7 | Deliverable K : User and Product Manual | 6 | Everyone | TBD | 12/10/2023 |

## Bill of Materials

| Part # | Part Name | Description | Quantity | Unit Cost | Extended Cost |
|---|---|---|---|---|---|
| 1 | Personal Computer | Computers of use for software; provided by university or members | 5 | NA | NA |
| 2 | Unity | 3D game engine to be used | 5 | NA | NA |

| | | | | | |
|---|---|---|---|---|---|
| 3 | HTC Vive | VR set, to be provided by university | 1 | NA | NA |
| 4 | VR headset | VR headset, in combination with Vive | 1 | NA | NA |
| 5 | Robot Pack(TBD) | Pack of 3D robots to be used for project | 1 | TBD | TBD |
| 6 | World-Building Pack(TBD) | World building for our simulation of torn down area | 1 | TBD | TBD |
| 7 | Sound Pack(TBD) | Sound pack to be able to add more authenticity to simulation | 1 | TBD | TBD |
| 8 | Gun Pack | Gun pack for user/robot | 1 | TBD | TBD |
| | | | | Total | TBD |

## List of Equipment

| Item Name | Description | Type | Prototype(?) | Source |
|---|---|---|---|---|
| Unity | Software needed for VR simulation creation | Equipment | 1(for now) | Internet, MakerLab |
| VR Headset | Headset to be able to access and play simulation | Equipment | 1 (for now) | MakerLab |
| Unity SteamVR Plugin | VR integration with Unity software | Library/Equipment | 1 (for now) | Valve |
| Test Computers | Test computers that we can use to explore full range of VR video | Equipment | 1 (for now) | Makerlab |
| Test Space | Space to be able to have functionality for the program | Space | 1 (for now) | Makerlab |
| HTC Vive | The VR set to test the program | Equipment | 1 (for now) | Makerlab |

## Project Risks

| Risks | Importance | Impact | Odds of Encountering | Solution |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Technology failure | 2 | Moderate | Moderate | During the working process make sure to test the systems and equipment repeatedly. Familiarising ourselves and perhaps finding problems early in the process that we can solve or figure out how to avoid it in the future. |
| Work being lost/not saved | 1 | High | Low | Regularly saving progress while we work on/develop the product. Can also backup the project onto a hard drive or cloud periodically |
| Project Complexity | 2 | Moderate | Moderate | Regularly check in with TA/PM to make sure our ideas and vision are achievable and realistic with the time frame we have. During client meetings check to see if the product is still headed in the right direction and has the shape of what they are asking for |
| Team Conflict | 3 | Low | Low | Being good communicators with everyone in the group voicing opinions and concerns when they come up. Solve disagreements maturely and calmly. If extra help is needed seek the TA or PM for help |
| Time management | 2 | Moderate | Moderate | Effectively use Wrike to plot out the tasks to be completed and use timelines and assign members sections of each deliverable to complete so work is evenly distributed |

## Verifying Feasibility

The project is mostly software and since this project is focused on simplicity, as emphasized during the client meetings, in terms of finishing the project this is very feasible. All the hardware needed is being supplied by the school. What is to be determined is the quality of it, since we are given limited time, it is up to us this time efficiently.

## Stopping Criteria

Our stopping criteria will be once we received strong feedback, whether positive or negative from our users during the testing of prototypes. The goal of this project is to move people and have an emotional impact, during these test we will determine wether our product is reachign this goal or not and the testing will stop once we've arrived at a definitive answer.

## Prototype Testing Plan

| Test number | What are we testing | Why | How are we testing it |
|---|---|---|---|

| | | | |
|---|---|---|---|
| 1 | The functionality and the reliability of the user's camera movement | To ensure the camera does not have any issue, and that it does what it's designed to do depending on what we decided (free user movement, scripted, etc) | Do several tries where the user will try different movement of the camera to see if it works properly |
| 2 | The atmosphere and emotions conveyed by the environment at its simplest no extra decorations, to see if it reflects the desired effect | To make sure that we agree on a terrain layout that strongly conveys the desired effect and emotions (claustrophobic, sketchy, terror, menacing, etc) | Each team member will explore the environment layout in the same way as the storyline will go. Then each member will give out a rating and note what was the atmosphere conveyed by the environment. |
| 3 | (IF WE INCLUDE IT IN THE DESIGN) The smooth running of anything or effects that's moving that isn't the user (ex; robots, explosion, civilian) or NPC. And its contribution to the storyline and the message being conveyed. | We need to figure out if those effects or NPC are keeping the user focused on the storyline and understand the message conveyed or if it distracts them from it. | Each team member and at least one person outside of the team (ideally the client if possible) will do at least 1 trial with the camera, environment and the effects/NPC. Then note down where was the attention of each team member drawn to, and how did they feel |
| | Testing the smooth running of the camera navigating the environment with the NPC and its effectiveness of | | |

| | | | |
|---|---|---|---|
| | creating the desired effect of living while hiding from a threat. | | |
| 4 | Simulate the storyline in the basic environment with the camera and the NPC/effects if there's any. Then see how long it takes to do the storyline, also could verify the smooth running of the video at this point. | To ensure that the virtual reality video stays within the time limit of 30sec to a minute. Also, to ensure that it works properly at this point in the testing phase. The goal is to give the user the sensation of living in constant fear hiding from a constant threat. | Do around 3 to 5 simulations with different people (client if possible) and count the time it takes as well as note any bug or issues that appears. |
| 5 | (IF IT IS INCLUDED IN THE DESIGN) The sound effect and its effect on the atmosphere and the user's experience | To make sure that the sound effects are relevant in our goal to convey a message and to see if the sounds make the video more immersive to the user. Furthermore, test to see if the sounds effect plays at the right moment in the storyline to enhance the general atmosphere. | Do 3 to 5 trial run with different individual, team members and people from outside of the team. They will do the simulation with all the established component tested and verified from all the previous testing as well as the sounds to find out if the sounds preserve and enhances the effect of being in constant fear while hiding from danger. Everyone will note down their experience of the trial as well as emotions |
| | The overall experience of the | To see if the prototype fulfills | Do trials with at least 5 different |

| | | | |
|---|---|---|---|
| | entire design with all the components together after necessary modifications is made. | all our needs and satisfies all criteria established | people, ideally the client as well, if that's not possible, do it with someone that is outside of our class. Then each user will write down their overall experience, emotions and thought on the video We will ask what the goal of the video is to the people who are outside of our team and has no knowledge on our team project. With the team doing trials runs, we will have a check list containing the needs and the fundamental criteria and verify that the prototype fulfils all of them. |