

# Prototype III and Customer Feedback

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**Group 10**

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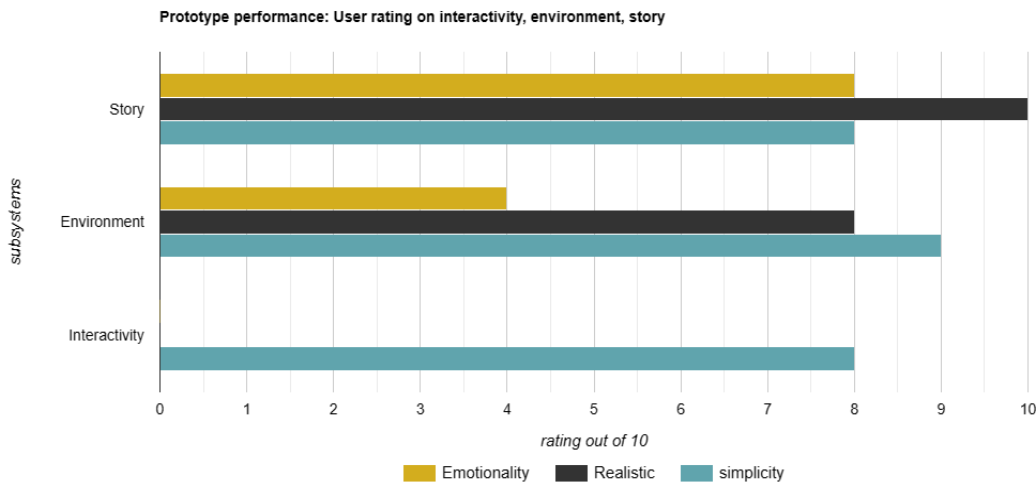
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# 1. Introduction

In this report, we'll be examining the third prototype, the concluding installment of our project. This version builds upon the second prototype, incorporating improvements to tackle the issues identified during testing. The final tweaks and adjustments made will be discussed here, adding the finishing touches to our end product, which will be showcased on design day

# 2. Users Feedback

Users who tested the simulation expressed their appreciation for its emotionality and realism, as indicated in the chart below where they received the highest ratings. However, they did highlight some areas that could be improved. Specifically, there were concerns about aligning the audio with the subtitles and ensuring it is distinguishable as a phone call. Additionally, users found it challenging to navigate through the simulation, despite our provided directions, making it difficult to connect the audio with the visual elements of the simulation. For example the audio would mention seeing the protest without the user reaching the point where they could see it.



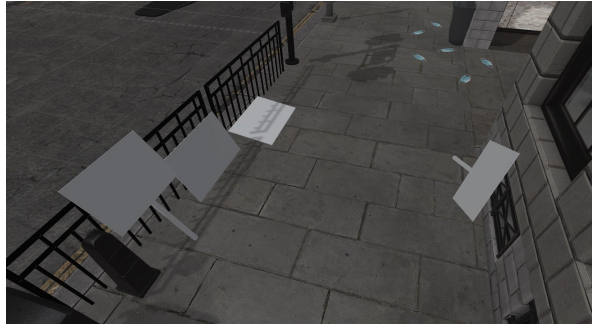
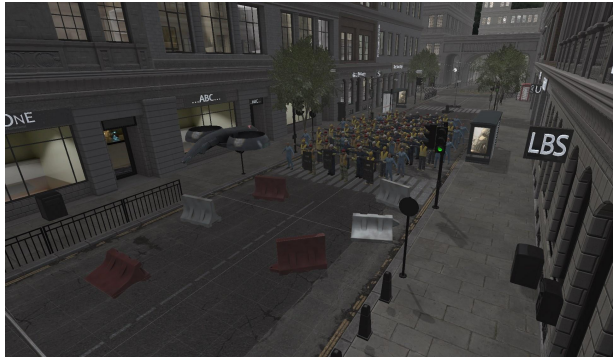
# 3. Prototype III

Design Specification	Measured Value	Target Value	Comments
Functional Requirements			
Synchronized VR with	Fail	Pass	P1: Want audio and text to follow

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text/audio			user camera during unity, work in progress with audio interface P2: Improved audio interface design, still need to record voice overs and subtitles.
Space for VR interaction	2.25m <sup>2</sup>	2.25m <sup>2</sup>	P1:Area needed for no collisions with outside debris P2:Limited hand movements needed to click interface so range of movement is less
VR Testing	1 per week	1-2 per/week	Make sure it runs smoothly and works with refinement
Non-Functional Requirements			
Language/ Comprehension	1	2	P1:Aiming to be a bilingual product, with French and English being the main languages P2:Still need to translate script and find a French voice actor to voice our lines
Constraints			
Concise plot	45 seconds	45 seconds to 1 minute	P1:Plot may need extra material to get fully maximize delivery of message P2:Script successfully revised and with cinematic pieces is now of sufficient length

## 4. Prototype Illustrations



## 5. Prototyping Test Plan III

Test ID	Test Objective (Why)	Description of Prototype used and of Basic Test Method (What)	Description of Results to be Recorded and how these results will be used (How)	Estimated Test duration and planned start date (When)
1	Determine user comprehension of scene	<ul style="list-style-type: none"> <li>- Comprehensive Prototype</li> <li>- Measure if the user can understand what is happening in the simulation</li> </ul>	<ul style="list-style-type: none"> <li>- Gather user feedback at the end with a survey</li> <li>- Ask users to identify any parts that confused them or that they didn't understand</li> </ul>	Continue test up until the end of the development of the final product
2	Determine if simulation is realistic	<ul style="list-style-type: none"> <li>- Comprehensive Prototype</li> <li>- Measure how realistic the simulation is to the user</li> </ul>	<ul style="list-style-type: none"> <li>- Gather user feedback at the end with a survey</li> <li>- Ask users to identify which parts were not realistic enough</li> </ul>	Continue test up until the end of the development of the final product

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3	Determine emotional impact	<ul style="list-style-type: none"> <li>- Focused Prototype</li> <li>- Measure the emotional impact of the simulation on the user</li> </ul>	<ul style="list-style-type: none"> <li>- Gather user feedback at the end with a survey</li> <li>- Ask user what emotions they felt and specifically what made them feel that way</li> </ul>	Continues up until the end of the development of the final product
4	Determine if problems with robots are easily identifiable	<ul style="list-style-type: none"> <li>- Focused Prototype</li> <li>- Measure if the core message of the simulation has gotten across to the user</li> </ul>	<ul style="list-style-type: none"> <li>- Gather user feedback at the end with a survey</li> <li>- Ask user how their opinions on killer robots changed from out simulation and what specifically made them come to that conclusion</li> </ul>	Continues up until the end of the development of the final product
6	Regulate synced audio	<ul style="list-style-type: none"> <li>- Focused prototype</li> <li>- Add audio throughout the simulation that is synced and corresponds with the environment, including ambience noise</li> </ul>	<ul style="list-style-type: none"> <li>- Gather users to test out prototype and see if audio feels immersive</li> <li>- Rate how well audio corresponds with environment and rate if it adds or takes away from storyline</li> </ul>	Continues until the completion of the final product
7	Test immersion with VR	<ul style="list-style-type: none"> <li>- Comprehensive prototype</li> <li>- Connect the unity simulation to the VR headset, Oculus Quest 2 in order to ensure that the realistic features translate well into the VR. It is also to ensure that the connection is smooth for the final presentation of our product</li> </ul>	<ul style="list-style-type: none"> <li>- Each team member will try on the VR headset and walk around the environment to see if it is immersive and realistic</li> </ul>	Continue testing up until the end of the final product

## 6. Analysis

### Results

With our third prototype, our focus was on adding and adjusting components within our environment to enhance the realism of the simulation. For instance, based on feedback

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received about the audio in the second prototype being challenging to distinguish as a phone call, we took measures to rectify this issue. We added a filter to the audio when the child is speaking, and we also changed the ringtone to a more common and recognizable tune. These adjustments were made to ensure that the dialogue is distinctly perceived as a phone call. Moreover, for this prototype, we incorporated more small details across the board for example we added ai proof clothing on the NPCs in the simulation. Through these efforts, we have successfully and seamlessly adapted our simulation to align with our initial vision when we started this project, aiming for it to be an emotionally impactful and educational experience.

### **Ease of Use**

From feedback received in our second prototype we added a few barriers so that the users would be able to go through the simulation how it was intended and thus makes it a lot easier for the users to understand the message and story we are trying to display.

### **Realistic and Recognizable Environment**

We took feedback from our second prototype and focused on refining everything, we made the texture more realistic by adding a few more props as well as fixing the protest we had going on in the simulation. We also included other aspect that were meant to be implemented into it such as making sure the subtitles work and match up with what was being said on the phone call as well as fine tuning and making the banners more emotionally impactful and similar to what we'd find in reality.

### **Script**

After receiving feedback on our edited script, we made more adjustments to achieve a better emotional response from our viewers and better fit our narrative. The updated script is as follows:

Act - Phone Call

Phone rings, user(parent) picks up

Kid: Hey Dad, are you free to pick me up from school right now? They want everyone out.

Parent: Sure. Are you okay, you're not in any danger are you? what's going on?

Kid: yeah i'm fine the new security drones are having issues again, i don't know they're identifying everyone as criminals, and there's a girl in my class being restrained by them. They can't turn them off like they usually can

P: I'm on my way right now. I want you to just follow your teachers instructions for now ok?

Kid: Yeah i am

P:

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I don't understand. The government was confident in those drones' advanced threat and facial recognition.

They shouldn't be allowed to taze and restrain people in the first place.  
I want you to find a mask to put on right now too.

Ill also have you always wear yours to school from now on

K: Okay, there are other students here already doing that. But I heard they might enforce a no mask policy so they can still scan you in the building though...

P: [sigh] We'll figure it out. I'm seeing people are starting to put reflective curtains on their windows. I'll do that when we get home. Where do you want me to pick you up?

K: There is a protest on the intersection when you turn in, come to the backfield.

P: K, I see it, gosh they are so many police officers.

(Officers are visibly wearing masks)

K: Wait, one of the drones is free- Oh my god, they're tazing the teachers! HEY, GET AWAY FROM ME! Dad, I have to go-

(Hangs up)

## 7. Final BOM

Part #	Part name	Description	Quantity	Cost	Extended cost
1	Computers	Provided by team members and the university	5	\$0	\$0
2	Unity software	3D game design engine. Personal license version	5	\$0	\$0



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		is used			
3	Oculus Quest VR set	VR set that is provided by the university in the makerLab	1	\$0	\$0
4	Unity Assets	Objects from the Unity Asset Store	10	\$30	\$0
Total					\$30

## 8. Conclusion

Approaching the Design Day presentation, our primary focus shifted to the completion of the final prototype. Ahead of user and judge interaction, we aim to deliver a concise pitch, offering a glimpse into both our product and its underlying goals. The program is strategically designed to provide an immersive experience, shedding light on the challenges surrounding autonomous weapons. In essence, our ultimate objective is to provoke a positive impact by influencing the perspectives of decision-makers.

## 9. Wrike Link

<https://www.wrike.com/workspace.htm?acc=6270829&wr=20#folder/1207807027/tableV2?spaceId=1207806872&viewId=200653858>