Project Deliverable H: Prototype III and Customer Feedback
GNG 1103- Engineering Design
Faculty of Engineering- University

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Abstract

This deliverable consists of our final prototype. We updated our BOM, analysed our prototype test plan and added some new prototyping tests.

Introduction:

The third prototype that is analyzed in this report will be the last product of the project. It will be an improved version of the second prototype, which includes an enhancement of the lacking areas we discovered while testing it. The final touches we added will be discussed in this deliverable. These additions will complete our final product, which will be presented on design day.

Client/Users Feedback:

- The program has a premise and potentials to win the Design Day competition. It has an emerging and immersive experience.
- The script is a bit long, and we had to refine to fit in with the 5 minutes constraint upon the client's request.
- Some of the effects are nauseating and too sudden.

Prototype III EDS:

Design Specifications	Relation =, < or >	Value	Units	Verification Method
Functional Requirements				
Space required (Play area)	<	1	Meter squared (m^2)	Estimate, test, final check
Headset model	=	HTC Vive	N/A	Continuous testing during development
Ease of use	=	Yes	N/A	Beta testing prototype
Languages	=	English, French	N/A	Consult OLBI at uOttawa
Constraints				
Violence	=	No	N/A	Ensure/analysis
References to real world entities	=	No	N/A	Ensure/analysis
Consider health conditions	=	Yes	N/A	Ensure/analysis
Cost	<	400	Dollars ($)	Estimate, final check
Duration of experience	<=	5	Minutes (m)	Estimate
Delivery time	=	3	Months	Estimate

Feminist/anti-racists	=	Yes	N/A	Ensure/analysis
Operating conditions	=	Enclosed environment	N/A	Ensure/analysis
Non-functional Requirements				
Graphic Imagery	=	Yes	N/A	Test
Safety: (Low range of motion)	=	Yes	N/A	Test
Reliability	=	Yes	N/A	Test
Relatability	=	Yes	N/A	Test
Realistic	=	Yes	N/A	Test
Call to action at the end	=	Yes	N/A	Test
Aesthetic appeal	=	Yes	N/A	Test

Prototype Test Plan:

Test	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	Audio checking (voice overs)	Prototype 3	• Clear • Captivating • Bilingual	10 min
2	Movement checking	Prototype 3	• Smooth • No glitches • Effective	10 min
3	User Interactivity	Prototype 3	• Limited • Immersive	30 min
4	NPC motion	Prototype 3	• Realistic	10 min
5	Script/Dialogue	Prototype 3	• Accurate • Correct grammar	20 min
6	Transitions	Prototype 3	• Clear • Smooth	30 min
7	Play Testing	Prototype 3	• Works smoothly • Doesn't affect health (nausea, no flashing lights, etc.)	2 hours

			Total	3h 50min

Final Prototype additions:

I tried to warn them, about the errors in the system.

Utilisez le bouton circulaire afin de teleporter

Continue
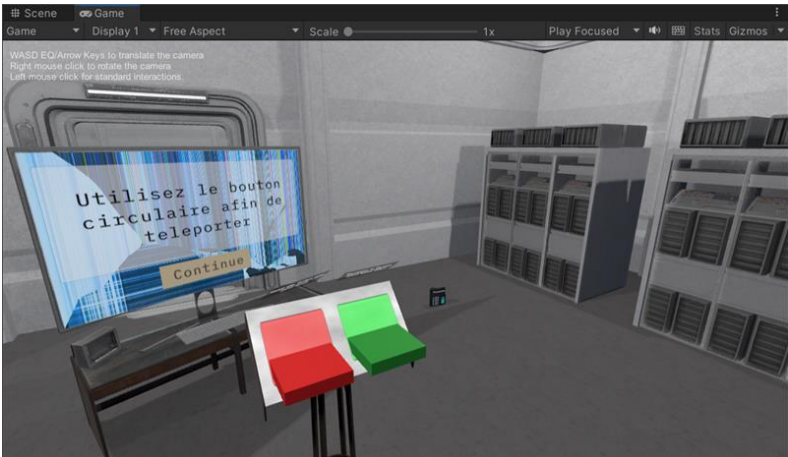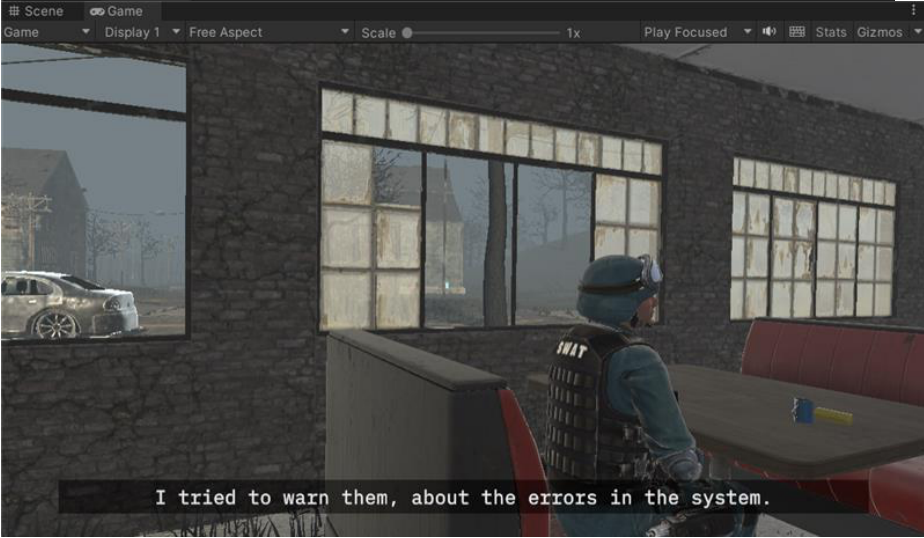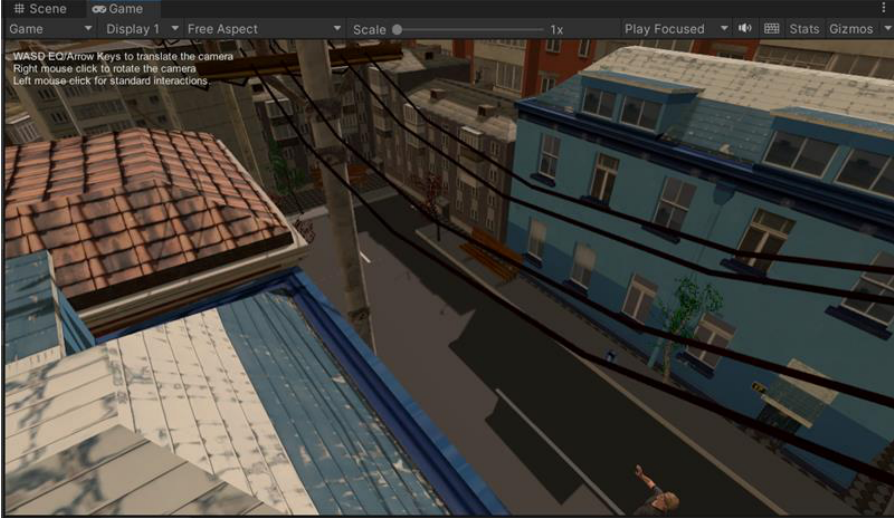
Analysis

Script:

The script was refined and finalized, so we were able to record the voice overs, which are to be integrated into the unity program. We cut the script into sections that fit with each corresponding scene. From there, the script was cut into dialogue boxes in both English and French, which will be included in the scene to help the user understand the context more. The script will give more depth to the story, which will help make an impact on the user and achieve our goal of influencing the decision makers to change their mind about autonomous weapons.

Voice over:

The script will be recorded as different recordings so it can be implemented in the program. We made the voice recordings ourselves using a commercial microphone. The purpose of the voice over is to make the user more aware of the environment and assist them to have a more immersive experience. At the same time, the voiceover will not be overly explanatory so we can leave more space for the user to have an impartial experience.

BOM Update
Below is a list of potential asset options -meaning not all of them will be used.

Part #	Part Name	Description	Quantity	Unit Cost	Extended Cost
1	Personal computers	Provided by team members and university	5	NA	NA
2	Unity	3D game engine. Student/Personal edition used	5	NA	NA
3	HTC Vive	VR set, provided by university	1	NA	NA
4	Control/Security Room Interior	Unity asset control/security room interior	1	9.99$	$9.99
5	Unity Asset: Sentinel Drone	Unity Asset sentinel drone	1	15$	$15
6	Unity Asset: Abandoned Area – Ruined Factory	Unity Asset abandoned area - ruined factory	1	35$	$35

7	Unity Asset: NPC populator	Unity Asset [NPC populator](#)	1	15$	$15
8	Unity Asset: Guns pack: low poly guns collection	Unity Asset [guns pack: low poly guns collection](#)	1	0$	$0
9	Unity Asset: Autonomous weapon	Unity Asset https://assetstore.unity.com/packages/3d/props/weapons/acs-114947	1	5.55$	5.55$
10	Unity Asset: War Effects	Unity Asset https://assetstore.unity.com/packages/vfx/particles/war-effects-67573	1	14.50$	14.50$
11	Unity Asset: War Debris Pack	Unity Asset https://assetstore.unity.com/packages/3d/props/industrial/war-debris-pack-145298	1	14.99$	14.99$
12	Unity Asset: Suburb neighbourhood house pack	Unity Asset https://assetstore.unity.com/packages/3d/environments/urban/suburb-neighborhood-house-pack-modular-72712	1	89$	89$
13	<mark>Unity Asset: Office pack</mark>	Unity Asset https://assetstore.unity.com/packages/3d/environments/sci-fi/free-sci-fi-office-pack-195067	1	0$	0$
14	Unity Asset: Post-apocalyptic destroyed buildings	Unity Package https://assetstore.unity.com/packages/3d/environments/urban/post-apocalyptic-destroyed-buildings-223947	1	42.99$	42.99$
15	Unity Asset: Abandoned Factory Buildings-Day/Night Scene	Unity Package https://assetstore.unity.com/packages/3d/environments/urban/hdrp-abandoned-factory-buildings-day-night-scene-164492	1	50$	50$
16	Unity Asset: Ruined City Update	Unity Asset https://assetstore.unity.com/packages/3d/environments/urban/ruined-city-update-18107	1	29.99$	29.99$
17	<mark>Unity Asset: Apocalyptic Wasteland</mark>	Unity Asset https://assetstore.unity.com/packages/3d/environments/urban/apocalyptic-wasteland-105051	1	$20	$20

Conclusion:

This final prototype will be developed and finalized for the final presentation on Design Day. We will present the pitch of the product for the users and judges before they try it so that they get an idea of our product and the purpose of it. The program will have an emerging experience that brings awareness to autonomous weapons. Ultimately, our goal is to change the perspective of the decision makers and make a positive impact.