

# GNG 1103 Project Deliverable C: Design Criteria and Target Specifications

Group 7

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## Introduction

Mines Action Canada wants us to create a virtual reality experience that shows the possible future impacts of militarized AI robots into our society. In this deliverable the user's needs from Deliverable B are converted into design criteria, as well as the technical benchmarking and target specifications will be covered. These will be performed based on similar existing works including: G6 - Rust In Peace, JERMs Stop Killer Robots (P8), and G7-Innovation Nation. These existing works are then ranked based on the target specifications for what Mines Action Canada wants. The target specifications have great importance as it benchmarks how future projects and prototypes meet the clients needs.

## Design Criteria

Need	Importance (1-5)	Functional / Non-Functional / Constraint	Related design specification
Working VR environment.	4	Functional	N/A
Video that conveys the ethical problems with autonomous weaponry.	5	Non-functional	N/A
Video can convince lawmakers.	4	Non-functional	N/A
Video is emotionally appealing	4	Non-functional	N/A

Video is informative	4	Non-functional	Accuracy of information
A visually appealing environment	4	Non-functional	N/A
Realistic portrayal of a potential future situation.	4	Non-functional	N/A
Video is short	3	Constraint	Duration of video
First person view	4	Functional	N/A
The VR environment is free of bugs or glitches.	3	Functional	N/A
Video is accessible for use.	3	Functional	File format / file size
Visuals that are mindful of people with medical conditions	3	Non-functional	N/A
No graphic elements	3	Non-functional	Content rating
Video abides by copyright law	5	Constraint	N/A

### Technical Benchmarking

The project we were given is focused on spreading awareness on the use of autonomous weapons and when considering past projects by other students we can establish benchmarks for various design aspects.

G6 - Rust In Peace - <https://makerepo.com/tharsh02/1847.g6-rust-in-peace>

JERMs Stop Killer Robots (P8) -

<https://makerepo.com/JadonXia/1838.jerms-stop-killer-robots-p8>

G7-Innovation Nation - <https://makerepo.com/caelenzackrias/1842.g7innovation-nation>

Design Aspects	Importance (1-5)	G6 - Rust In Peace	JERMs Stop Killer Robots (P8)	G7-Innovation Nation
Duration of video	3	1:30 minutes	~1 minute	~1 minute
Realism	4	Enhanced	Cartoonish	Graphics and

		graphics and effects and great models.	graphics and lack of effects, good models.	effects add to realism. Good models.
<b>Soundtrack</b>	2	Subtle music, intended to create suspense. Voiceover and NPCs voiceovers.	No music. Radio sound.	No music, but interactive backgrounds, sounds of robots, children and of radio.
<b>Storytelling</b>	3	Historical context given by a narrator/survivor. Story is layered.	Radio news outlines the brief reminders showcasing the difference in lifestyles. Final statement card.	Radio news highlights the downfall of a school and how things have changed and have gotten worse.
<b>Pg-13 / Stereotypes / Triggers</b>	5	Minor instances of blood, graffiti and propaganda. No stereotypes.	Radio outlines some crimes. No stereotypes.	The VR environment shows blocked windows and abandoned sites. Epilepsy warning.
<b>Hardware Requirements</b>	1	Computer to handle Unity Rendering.	Computer to handle Unity Rendering.	Computer to handle Unity Rendering.
<b>Cost</b>	4	\$50 - assuming it's the same as ours.	\$50 - assuming it's the same as ours.	\$50 - assuming it's the same as ours.
<b>Size Of File</b>	1	~68 MB	~9 MB	~74 MB
<b>Background/Environment</b>	3	Extensive background with multiple settings. Not situated in one place.	No background, as windows/doors are blocked. The room is a full VR environment.	The school classroom is the VR environment, and no background designs because of the barricaded windows.

## Target Specifications

### Functional Requirements

Design Specification	Relation (=, < or >)	Value	Units	Verification Method
Functioning VR Environment	=	Yes	N/A	Test, Feedback
User navigation	=	No	N/A	Test, Feedback
User ease	=	Yes	N/A	Test, Feedback
Highlight the robot's lack of decision-making prowess.	=	Yes	N/A	Test, Feedback
Simulate real-world scenarios by presenting a lifelike environment.	=	Yes	N/A	Feedback
Formats compatible with 360° and VR video.	=	Yes	N/A	Test, Feedback

### Constraints

Length	=	60	seconds	Test
Cost	≥	50	\$	Test
Time	=	3	months	Test

## Non-Functional Requirements

<b>Music</b>	<b>=</b>	<b>Yes</b>	<b>N/A</b>	<b>Test</b>
<b>Dimensions of the VR environment</b>				<b>Test/Remodeling</b>
<b>Camera Orientation</b>	<b>=</b>	<b>360°</b>	<b>Degrees</b>	<b>Test/Remodeling</b>

### Reflection

The client meeting helped us identify what design aspects were to take priority, in essence we “cleaned up” our previous needs into more focused and applicable criteria. We took out repetitive problems and instead put them together into one problem. We added safety as a criteria for epilepsy, triggers and other possible dangers in our videos.

The client meeting really helped us determine the most important emotional and physical aspects that we needed to have in our project. The most important thing we took from the meeting was how our project should strive towards simplicity. When showing our video to politicians we want them to clearly understand the meaning of our video as well as take something away from it without leaving confused and asking questions. By keeping it simple, we are able to convey our main objective the best way possible.

### Conclusion

This project has a large focus on storytelling and atmosphere, with a large focus on the video produced rather than the usability of the VR environment. It requires a functioning VR environment, but does not need complex user interactions, and should be more focused and small scaled to ensure quality work and meeting time limitations. The video should highlight the dangers of killer robots, showing their lack of decision making and identification of targets in order to convince lawmakers to heavily regulate their use. This can be done using music, images, sound and narration. This project must follow all time and cost restraints, as well as abiding by all copyright laws.