Project Deliverable C:

Functional Requirements:

Design Specifications	Relation (<,>,=)	Value	Units	Verification method
Using a virtual world to simulate real world events	=	Yes	N/A	Testing
Ensuring the video works on most systems	=	Yes	N/A	Testing
Soundsystem	<	10<	$	Estimate, Analysis

Our aim for designing this video is to be clear and concise, with as little issues as possible. Setup time may suffer from this decision, but we feel as though a quick project that doesn't effectively communicate our desired message is not worth putting out.

Non-functional Requirements:

Design Specifications	Relation (<,>,=)	Value	Units	Verification method	Associated Needs
Easy to understand	=	Yes	N/A	Testing, analysis	-Want simplicity to create ease while developing, but also so decision makers understand. -
Conveying Anti-Ai controlled weaponry	=	Yes	N/A	Testing, analysis	- Show the daily lives of "civilians" if robots are released. -Environmental Impact
Use of familiar locations	=	Yes	N/A	Analysis	-The experience should not be super futuristic but in a near future, recognizable environment. It should also appear destructive and war-like.

Provoking an idea of pro-activity	=	Yes	N/A	Testing, Estimation	-Shows that robots helping us is ok.
Video is suitable for public display	>	Yes	N/A	Testing, Analysis	-No blood or violence. Mainly focus on the aftermath of robots being deployed, showing the impact of these on the world.

The clients we're very particular about the video being simple and short, as to easily show many people this message in as short of amount of time as possible while maintaining effective communication. They were also very specific about as little blood, gore, or anything else not suitable for any audience should not be included in the video. While this criterion could have gone in restraints, we feel as though it is more of a creative decision than something actively impeding us.

Constraints:

Design Criteria	Relation (<,>,=)	Value	Units	Verification method
Length of the video	>	30 to 60	seconds	Analysis, Estimation
Cost	=	50 <	Dollars (cad)	Estimation, Analysis
Total Production Time	>	2	months	Estimate
Resolution	=	=>480	Pixels (p)	Testing, Analysis

The clients also repeated that the video should be a maximum of a minute numerous times, and we intend to keep the video as close to a minute as possible. The cost of the whole thing should not be a problem, and we will do our best to make it look as good as possible.

Technical Benchmarking:

Examples of simulations/scenarios	Robot Killers(lucas)	Mech robot simulation	Autonomous
Footage used	game	Game footage	Re-enactment
Easy to understand	medium	medium	very
Camera movement	One frame	One frame	360
Camera perspective	First person POV	First person POV	Wide view, closeups
interact ability	Gaming (controllable movement)	Uncontrollable movement	Uncontrollable movement

Green-good, yellow-medium, red-bad

From the little research into previous existing products that were available of VR simulations of autonomous robots, there was very little feedback on previous attempts. Often in existing products not all the realistic requirements are met. For example, very few of the Simulations emulate real-world events. For the design criterion to be fulfilled there must be realistic situations for the VR simulations. The software unity has issues with mobile work and the software often struggles to load on mobile devices making it more difficult to operate successfully. The coding used in Unity is C# which is foreign to most users so the shift from C++ to C# is difficult to understand. As well as this, unity is difficult to operate without its extended services to access those requires an unpayable amount.

Client Meeting Reflection:

After completing the first meeting with the client our group discovered that the client is looking for straightforward way to convey to UN representatives the dangers of autonomous robots in the use of war. We are to do this by means of virtual reality. During the meeting, the clients (Mines Action Canada) were very adamite that no killing should be conveyed and that there should still be a sense of hope while in the experience. We must be able to get our message across in 30 to 60 seconds, this means the scenery and chosen environment must be impactful to cause these emotions in representatives. It is also important to note that in the previous year there was difficulty with the VR setup, because of this we will need to take a video of the experience while we know it is working prior to design day. Since design day is fast approaching it is vital, we keep the design and production of the VR simple. Several times during the meeting the clients emphasized how last year there was groups who tried to add moving parts and make

the experience interactive. Our goal is to still make an impact on the representatives; however, it is important we do not strive to for something that is not attainable in the time constraints.

Since Deliverable B our group has realized the importance of ensuring the video is easy to understand, since a well put together video is useless if no one can comprehend anything that is said. In our design criteria we will verify this through testing and analysis. This means as a group we will analyze the video while considering our generated problem statement. We may also ask others, not in our group, to view our video. After doing so we will ask them questions such as:

What emotions did the video cause?

What is your general perception of the video? What is its goal?

After viewing the video what are your views on autonomous weapons in the use of war? Are these views different from prior to viewing the video?

Also, in Deliverable B we discussed how the video should not be futuristic but rather look like it could happen soon. To convey this our group has decided to use Ottawa as the environment for the video. However, the city will have tweaks due to the use of autonomous weapons, we have thought of but not decided on, using parliament in the video, giving buildings different purposes such as places for shelter, and using signs (specifically for warning).