Project Deliverable C
Design Criteria and Target Specifications

This document outlines the functional, non-functional, and limitations of the project assigned by Mines Action Canada. These design criteria have been derived from the needs we received from Mines Action Canada and are quantified to their respective individual verification methods. Additionally, we have included a technical benchmark of similar products to gauge our client's interest in ideas of other existing products, in the hope to refine ours.

Design Criteria

Functional

Design Specification	**Relation (=, < or >)**	**Value**	**Units**	**Verification Method**
Appeal to empathy	=	Yes	N/A	Analysis Survey
Provoke feelings	= = = ≠	Fear Sadness Inspiration Rage	N/A	Analysis Survey
Inform user	=	Balanced with feelings	N/A	Analysis Survey
Showcase key elements	= = = ≠ ≠	How civilians adapt Downfalls and threats of AW Consequences of AW People Robots	N/A	During planning
Convey a message	= =	Simple and clear Ethical/moral concerns	N/A	Continuous
Convince politicians that the threat of AW is real	=	Yes	N/A	Analysis Survey

Non-functional

Design Specification	**Relation**	**Value**	**Units**	**Verification**
Environment, setup, solution, narrative	=	Simple	N/A	Continuous
Quality	=	High	N/A	Continuous

Limitations

Design Specification	**Relation**	**Value**	**Units**	**Verification**

Time duration	=	1	Minute	Editing
Copyright infringement	=	No	N/A	Continuous
Generic environment	=	Yes	N/A	Continuous
Weapons to consider	=	Legal	N/A	Continuous
Background knowledge level of the user	=	0	N/A	Continuous
Locations	<=	2	Sets	During planning
Trigger (trauma, epilepsy, graphic material)	=	None	N/A	Analysis Survey
Inclusivity (colours in video, age)	=	Everyone	N/A	Continuous

Technical Benchmarking

Type of VR Video: Cinematic VR Film or Interactive VR Experience

	Technical benchmarking	**Updated User benchmarking**
Resolution	For clarity at least at least a resolution of 1920x1080 (full HD) should be achieved for each eye.	Users may experience limitations in the level of detail, making it challenging to represent fine textures and intricate objects convincingly.
Frame rate	For a smooth and engaging experience, the frame rate should be at steady at least 60 frames per second (FPS). For smoother images, aim for 90 frames per second.	Battery Consumption: Running VR applications at higher frame rates can consume more power
Interaction	For interactive VR, a smooth response should be insured for user's experience. While for cinematic VR, scene captivation and visual storytelling should be the main priorities.	Cinematic VR is most preferred for this project. Yet, the Interactive one is advantageous to catch the user's attention.
Loading times	Minimize loading time.	Limited Content Quality: A focus on minimizing loading times may lead to compromises in the quality and complexity of VR content
Special audio integration	To improve the complete experience, use 3D spatial audio. the audio is to be	Copyrights issues

	positioned accurately in the virtual environment.	
Comfort and Control of Motion Sickness:	1. Reduction of discomfort and motion sickness in the VR video's design. 2. clear of quick movements and offer controls that are easy to use.	User Frustration for those who don't experience motion sickness.
Different platform compatibility	Compatible with major VR platforms, that include standalone VR and Pc based VR systems.	Cost, to get it in all major platforms, it will require a great budget.
Quality	Achieve high quality without compaction or blurry issues.	Cost, it isn't cost-friendly.

Existing Product	**Interpreted Need Satisfied**	**User's Perceptions**
1)Virtual Reality in Military Training	• Exposure to the field, soldiers are prepared to deal with scenarios that may arise. (Assuming zero background knowledge for users)	*-77% of respondents said the opportunity to practice in a simulated environment helps prepare them for dangerous real-world situations.* *https://lnkd.in/gBY5_KdV?trk=public_post-text* [1]
2)Unceded Territories-Virtual Reality depicting human's role in destroying the environment.	• Informative and provoking emotional reactions. • No profound knowledge is required, the simple storyline is easy to understand by people of different ages**.** • Video for a cause demonstrating the repercussions of human actions on the environment.	*-I absolutely love this video, should be shown all other the world and in schools* *-Great cause. Great Video!* *-High-quality, thought-provoking video.* *https://youtu.be/Cyl7IdwQJV4?si=JZHpPCfWK3KR5TI4* *-Surrey Art Gallery curator Jordan Strom. "It compels the viewer to recognize their role in one of the most urgent issues of our time: the global climate crisis."*

		https://www.ecuad.ca/news/2019/virtual-reality-artwork-immerses-participants-in-climate-crisis
3)Virtual Reality as a tool for Political-Decision Making	• Storytelling, creating a video that can trigger a reaction. • Presenting sequence of facts- outlining potential downfalls.	*-From my point of view, it was designed very neutrally. Of course, one could have depicted a huge crash in this experience and that everything explodes and bursts into flames to evoke fear.* *- Yes, I find it very attractively done and I like the futuristic setting. (…) VR influenced the whole process.* [2][2]https://www.frontiersin.org/articles/10.3389/fcomm.2022.842186/full#B38

References

[1] V. Business, Extended Reality(XR) in military training.

[2] L. P. Yuxweluptun and Paisley Smith, Unceded Territories(VR Innovation and Art activism).

[3] Frontiers, Virtual-Reality as a tool for Political Decision Making-Bullock et al., 2021.

Reflection:

The client's meeting had an immense impact on dividing the team's focus on the significance of storytelling and the technical attributes of the project instead of concentrating on the engineering aspect only. There is an evident message that should be passed on to educate, expose and trigger reactions about autonomous weapons.

Conclusion:

The detailed design criteria outlined in this document will serve as a guiding tool for our team as we approach to the execution of our project. We are emphasizing both the functional and non-functional aspects of the project while simultaneously considering our limitations on time, location, and available resources. With these criteria in mind, we are sure to optimize the project's outcome.