

## Problem Statement and Client Needs

GNG 1103, Team 2

Ethan Harvey, Charles Tanagho, Linh Nguyen, Samuel Durocher, Timotej Mason

The client, Mines Action Canada is a humanitarian disarmament organization. One of their many campaigns for disarmament is “Stop Killer Robots”, aiming to preemptively ban autonomous weapons. In order to convince policy makers to ban autonomous weapons, they have recruited our team to create an immersive experience. During an interview with Mines Action Canada, their needs were thoroughly discussed and have been interpreted to accurately understand the problem at hand.

Category	Statement	Need	Rank
Gameplay	Experience should be interactive and engaging.	Experience should maintain users' attention. Users should interact with the robot in some way.	3
Gameplay	Experience should make users feel like they have lost.	Experience cannot be “won”. Experience should instill feelings of hopelessness, wrongdoing.	2
Gameplay	Product should challenge users to problem solve to “win”.	Challenging, create potential ideas to win (but not allow a win).	1
Gameplay	Product should challenge users to work together to survive.	Clear “gameplay” (straightforward instructions), Co-operative amongst users.	2
Gameplay	Product should have a run time of 5-10 minutes, used for 3-5 people.	Small scope (small group, brief).	2
Gameplay	Product should use the robomaster as a killer robot.	Program created for robomaster, targeting the users.	3
Accessibility	Any modifications to the robot must be done/unpacked in very quickly, and extra parts must fit in a carry-on bag.	Simple setup (no adhesives, etc.)	2
Accessibility	Product should engage the general public/no previous knowledge necessary.	Generic accessibility, no specialized knowledge required for users.	3
Accessibility	Product should have detailed instructions and a supply list.	Easy to follow setup instructions for Mines Action staff.	2
Accessibility	Product should be able to be used in a loud setting.	Clear communication by robot, through multiple methods.	1
Accessibility	Product should be able to be used indoors or outdoors.	Experience does not require constant surface conditions, and can handle varied lighting. Gameplay is readily transmissible.	3
Product Feel	Products must not glorify autonomous weapons.	Experience must be clear in its view on autonomous weapons. No upsides suggested to users.	1
Product Feel	Product should illustrate ethical concerns of autonomous weapons. Targeted towards policy makers and instilling fear.	Illustrate ethical concerns of autonomous weapons while convincing important figure heads of the dangers of LAWS.	3
Product Feel	Product should convince policy makers to ban autonomous weapons.	Convincing, clear and powerful message.	3
Program	Product should not use stereotypes of users.	Free of potentially triggering real world biases.	3
Program	Product should run seamlessly, be able to be maintained.	Clean code, no bugs. Well documented.	3

**Problem Statement:**

After identifying the needs from statements made by MAC, the needs were grouped and ranked by importance to clearly define the most important aspects of the problem. A problem was defined (a created experience is needed to illustrate the concerns of lethal autonomous weapons), the client (MAC) and the users (the general public) was defined, and finally the needs were defined. These can be condensed into a problem statement to focus the needs of the client and keep a clear guideline moving forward in the design process. The created problem statement is:

“Mines Action Canada requires an interactive and engaging experience for the general public that illustrates the ethical concerns of Lethal Autonomous Weapons Systems through a game scenario using a Robomaster S1 that is simple, neatly programmed, and portable.”

**User Perceptions:**

It is possible to assess user perceptions with a view to the few important resources, including MAC's website and their associates. The general opinion reveals people's opposition as to the deployment of LAWS for ethical concerns, for example, digital dehumanization and impunity. The same has been observed in other topics like protest against providing military assistance to Israel during the Gaza conflict. It was thought that supplying equipment only exacerbated the violence which was the major area of concern which these protests targeted. Through these actions such changes have been produced in the societies' perception and practice regarding war and violence. Therefore, our project should be set to share similar feelings, to raise concern that makes users feel what they should never feel in front of LAWS.

**Questions:**

There remain several unknowns relating to the project. A clarification on the budget is needed as it may determine the capabilities of the final product. The possibility and applicability of including a form of visual facial/object recognition software remains a question. The onboard processing power of the Robomaster S1 remains somewhat unknown, this may affect camera recognition capabilities.

**Conclusion:**

One can surmise the needs of the client and work from there but with the creation of the problem statement it allows us to properly follow the statement and maintain its importance. The project must encapsulate the importance and urgency that Lethal and Autonomous Weapons have on our future if permitted to pass. MAC has contracted the team in order to convey the worries that people have for the future, and demonstrate to users how the future could look.