

Project Deliverable B:
Needs Identification and Problem Statement
University of Ottawa
GNG1103: Intro to Engineering Design

Group 8 - BOOM

Isaac Chan (300403892)
Spencer Irwin (300415505)
Trevor Lo (300361762)
Adam Nasimi (300351123)

September 29, 2024

Contents

Problem Statement	3
Benchmarking	3
Functional Requirements	4
Non-Functional Requirements	4
Constraints	5

Introduction

The following includes all the needs collected during the client meeting, with additional benchmarking from existing products to further understand the required scope of the design.

Problem Statement

A need exists for an immersive experience that highlights at least 3 of the 9 ethical concerns of LAWS, is easy to pack, quick to set up and quick to play. The game avoids glorification of autonomous warfare and remains neutral to all identities. It includes instructions and trigger warnings and is designed for ages 10-23. The experience should leave participants with a sense of loss, regardless of their performance.

Benchmarking

1. The product should reflect the risk of igniting a global AI arms race in the use of Killer Robots. LAWS can malfunction or fall into the wrong hands creating big disasters.¹
2. The product should emphasize the physical and mental impacts caused using Killer Robots.²
3. The product should show the significance of human control in weapon systems.³
4. The product should allow players to feel the human cost of war, with them feeling they have lost, no matter how well they did.⁴
5. A similar product: This war of mine. A game where the player is set within a war setting, and tries to survive by making decisions. It provides many moral questions to the player, and creates a game with no winners.⁵

¹ Conn, Ariel. "The Risks Posed By Lethal Autonomous Weapons." *Future of Life Institute*, 4 September 2018, <https://futureoflife.org/ai/the-risks-posed-by-lethal-autonomous-weapons/>. Accessed 28 September 2024.

² Mines Action Canada, <http://minesactioncanada.org>. Accessed 28 September 2024.

³ "Immoral Code." Stop Killer Robots, 2021, stopkillerrobots.org/take-action/immoral-code. Accessed 28 September 2024.

⁴ Falck, Barnaby, et al. "10 Games That Are Anti-War." *Game Rant*, 3 July 2022, <https://gamerant.com/games-best-anti-war/>. Accessed 28 September 2024.

⁵ Zacny, Rob. "This War Of Mine Review." *IGN*, 24 November 2014, <https://www.ign.com/articles/2014/11/25/this-war-of-mine-review>. Accessed 28 September 2024.

Functional Requirements

User Statement	Interpretation (Needs)	Priority
Player “character cards” must be uniquely identifiable to the Robomaster S1.	Players can be identified by Robotmaster S1	5
The entire experience should be portable, i.e. easy to set-up and all physical parts/components (excluding the robot) should easily fit in a small carry-on suitcase.	Easy to set up (Portable)	3
Instructions must be required.	Instructions for set-up and necessary supplies included along the product.	3
Inclusion of epilepsy warnings and trigger warnings.	Before game starts add trigger warnings	2

Non-Functional Requirements

User Statement	Interpretation (Needs)	Priority
Include at least 3 of 9 ethical concerns shown above.	<i>Refer to project requirements</i>	5
Players should feel as if they were defeated or lost something leaving the simulation, no matter if they won or not.	Feel lost or in blue after a game session.	3
The experience must not glorify the horrors of autonomous warfare.	Avoid glorifying the horrors of autonomous warfare.	2

Constraints

User Statement	Interpretation (Needs)	Priority
The “play area” must be smaller than 20’ x 20’.	Max 20’ x 20’ size	5
The experience must accommodate a group of between 3-5 participants.	3-5 players	4
No element of the experience, including biases designed (e.g. the targeting system), can suggest national, cultural, or racial identity.	Gender, ethnic, religion neutral, generic background	4
The experience should last no more than 10 minutes.	Game time <10 min	3
Target audience should be the general public of around age 10-23.	Appeal to a younger demographic	2