

Project Requirements

We have sketched out an Initial Immersive Experience Design (see below) in the form of a “game” in which participants find themselves subjected to the ethical risks and threats of LAWS in an entirely different way: by making them the targets of a LAWS.

Using the Initial Immersive Experience Design as a rough guide, design the experience by developing a clear set of rules and “game objectives” that highlight at least three of the nine ethical concerns of LAWS (above). Design a program within the DJI Education Hub, and then test out your program with the Robomaster S1. (You can reserve time in the lab for your team to test and refine your program in the two weeks before the final due date.) Enhance your experience design by creating additional elements with tools provided in the Makerspace.

Design Requirements:

1. The experience should last no more than 10 minutes.
2. The experience must accommodate a group of between 3-5 participants.
3. The “play area” must be smaller than 20' x 20'.
4. Player “character cards” must be uniquely identifiable to the Robomaster 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.
6. The experience must **not** glorify the horrors of autonomous warfare.
7. At the end of the experience, participants must not feel as if they have “won”, “defeated”, or “figured out” the system.
8. The experience must clearly illustrate no fewer than three of the nine “Ethical Concerns” listed above.
9. Character cards must NOT use physical, racial, or cultural stereotypes.
10. No element of the experience can suggest national, cultural, or racial identity (i.e. the experience must be “nationally”, “racially”, and “culturally” neutral). Biases designed into the game (e.g. the targeting system) must be based on traits other than national, racial, or cultural.

Some of the significant design questions you will confront during this project include:

1. How will the overall experience “flow” from beginning, through each of the elimination rounds?
2. How will each of the “elimination rounds” work?
3. What will define the “experience end” conditions?
4. What will the human-robot-interactions “feel” like to participants?
5. What Robomaster programming limitations will constrain the experience design?
6. What “targeting logic” will the LAWS use?
7. How difficult will it be for participants to “reverse engineer” the targeting logic? (Recall, the participants should not, ultimately, be able to “win” this experience)
8. What physical objects (e.g. character cards, play area markers) will be required?

9. What kinds of instructions/information will be given to participants, and when and how will it be given (e.g. from the robot, from a person, from objects used in the experience)?
10. What information will the character cards convey to the participants?

Prize

Winning teams will be considered for a one-semester internship at CRAiEDL, during which they will work with our team to refine the design of the interactive experience on the Robomaster S1.

Initial Immersive Experience Design

Quick Introduction: This immersive experience challenges participants to survive interactions with Lethal Autonomous Weapons Systems.

NOTE: You can think of the immersive experience as a “game”, but the goal here is to have participants (i.e. players) leave the experience feeling like they have lost, regardless of how successfully they participated.

This experience starts with a group of participants. At the beginning of the experience, each participant is given a “character card”, and instructed to stand within the “play area” (you must design the playing area based on the programming constraints of the Robomaster S1). This card must be legible to the targeting robot.

Participants are told they must figure out how to “survive” as long as possible (the *object* of the experience). The experience then unfolds in a series of successive “elimination” rounds during each of which one or more participants is eliminated. To “survive”, participants will have to determine why and how the robot is choosing its targets, and then figure out how to survive or disrupt the next attack.