

# **Weekly Report N°17 for**

*School year 2023-2024*

**RubbleScout,**  
*"Navigating Chaos, Saving Lives"*

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## **Objectives:**

- Complete the design of new 3D parts in the CAD software for the updated RubbleScout robot assembly.

## **Activities Undertaken:**

### **1. Completion of CAD Design:**

- Finished designing all the new 3D parts in the CAD software, integrating the new functionalities and components:

- NVIDIA Jetson Nano mount
- multiple 40 mm fan housing for improved cooling
- PETG-based battery protection
- Reinforced wire connections for the ESP
- Mount for the Logitech C505e camera
- 12V lamp housing with relay control
- Aesthetic magnetic covers and other enhancements

### **2. Review and Refinement:**

- Conducted a thorough review of the CAD designs to ensure all components fit together seamlessly.
- Made adjustments to optimize the layout and functionality, ensuring ease of assembly and maintenance.

## **Results and Observations:**

- **Design Completion:** Successfully completed the CAD design phase, creating detailed models for all new parts.
- **Enhanced Integration:** The designs effectively incorporate the new components, promising improved performance, safety, and aesthetics for the RubbleScout robot.
- **Preparations for Prototyping:** The detailed CAD models are now ready for the next phase, which involves 3D printing and physical testing.

## **Next Steps:**

- **3D Printing:** Begin the process of 3D printing the newly designed parts.
- **Test Fit and Assembly:** Once printed, test fit all parts to ensure proper alignment and functionality.
- **Iterative Refinement:** Based on the test fitting results, make any necessary adjustments to the CAD models and reprint as needed.

**Reflections:**

This session marks a significant milestone in the redesign of RubbleScout, transitioning from conceptual planning to tangible design completion. The detailed CAD models set the stage for the next phase of development, where physical testing will validate the improvements and guide further refinements. The anticipation of seeing these new parts come to life and integrating them into the robot is high, as it promises to bring substantial advancements in RubbleScout's capabilities and usability.