SBR-Helpinio

Self-guiding unmanned rescue vehicle

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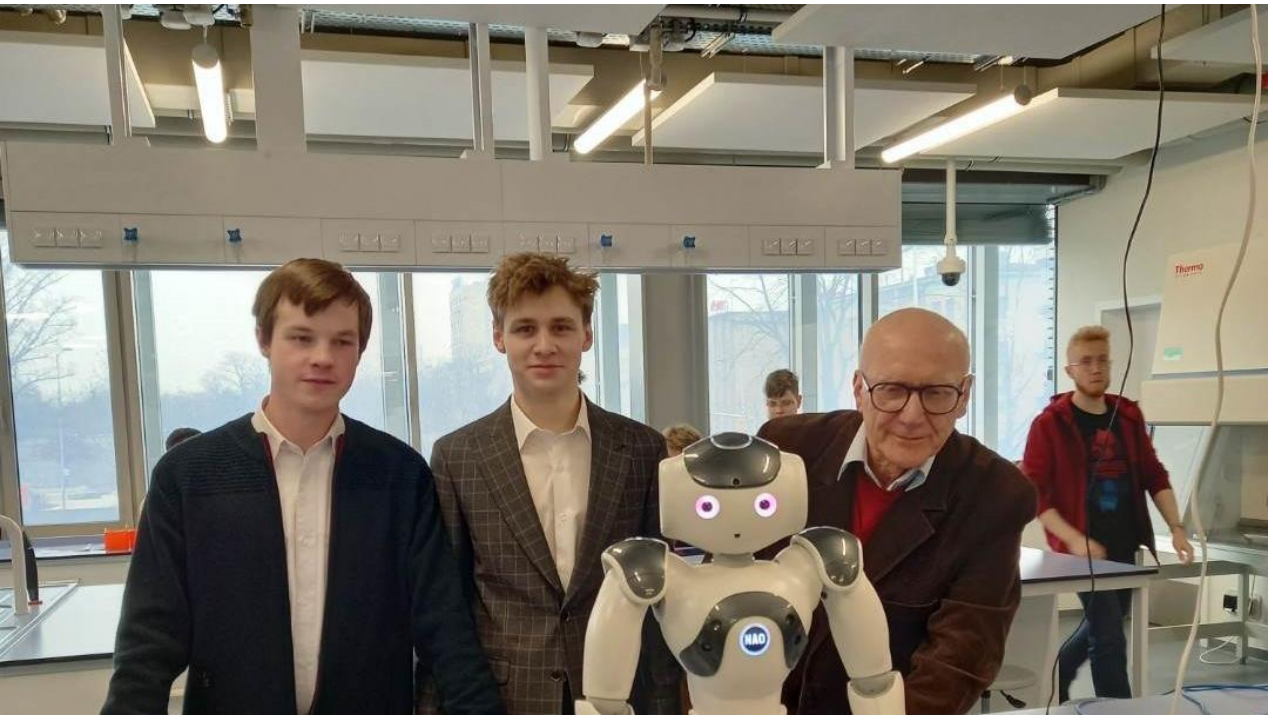

About us

We met at school and from the combination of our passions, we decided to create a team.


STARTUPY
W PAŁACU
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Kancelaria Prezydenta Rzeczypospolitej Polskiej
URZĄD PATENTOWY

Problem

- The motivation was the desire to help increase safety on the seas and oceans.
- The ship's crews are obliged to provide assistance, unfortunately there are no appropriate tools that will quickly help a drowning person.
- The WHO estimates that 236,000 people die each year as a result of drowning, which is 8% of the global death rate. More than half of all drownings occur in the Western Pacific and Southeast Asia.

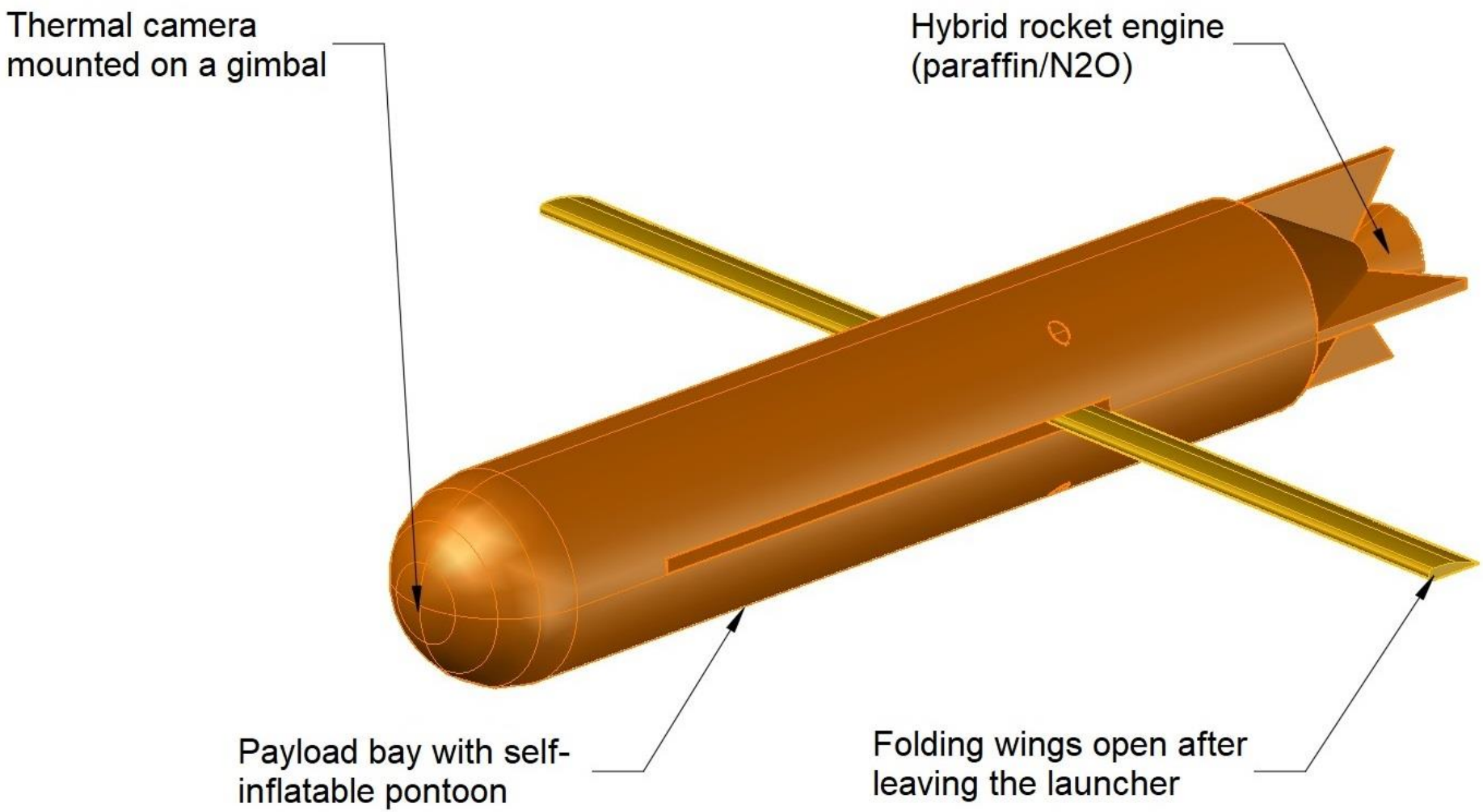
Solution

The project consists in developing a model of a flying unmanned aerial vehicle used to rescue drowning people, having the following characteristics:

- jet propulsion,
- self-guidance using a thermal imaging camera,
- the ability to deliver a self-inflating life raft,
- start from a portable shoulder launcher,
- easy and intuitive operation,

aimed at increasing security in the seas and oceans

Concept graphics



Demonstrator construction

Demonstrator construction process consisted of multiple stages:

-Planning and sourcing materials

-Creating 3D models of printed parts

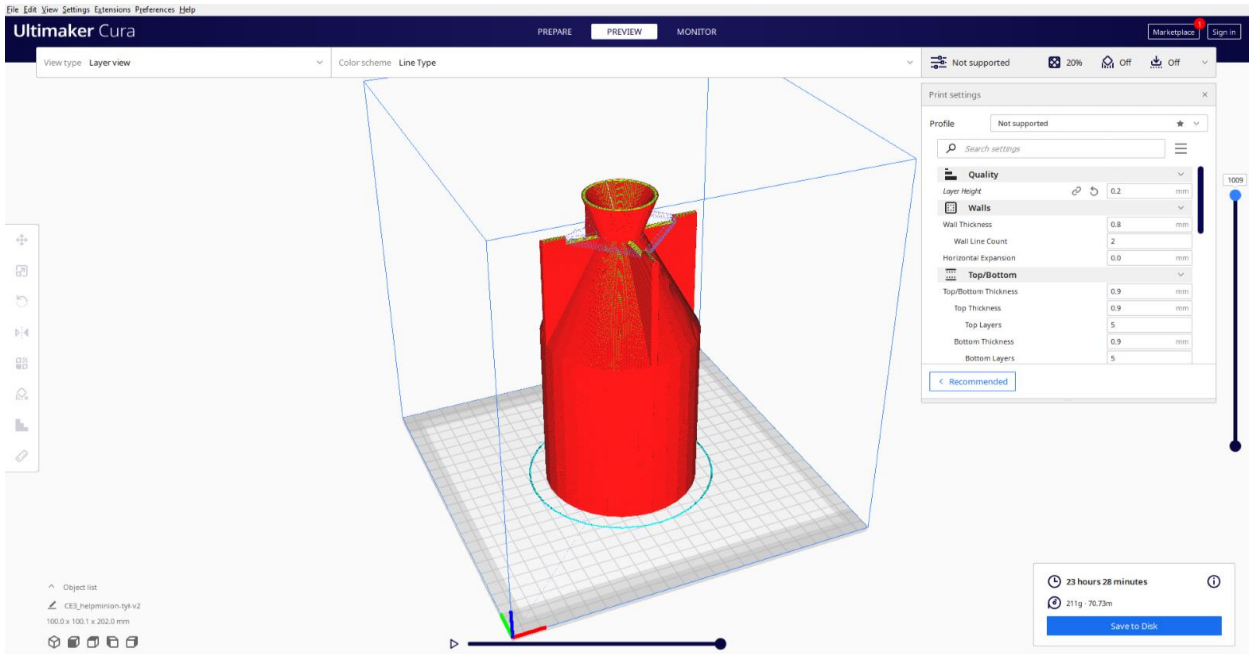
-Printing parts of wings and fuselage

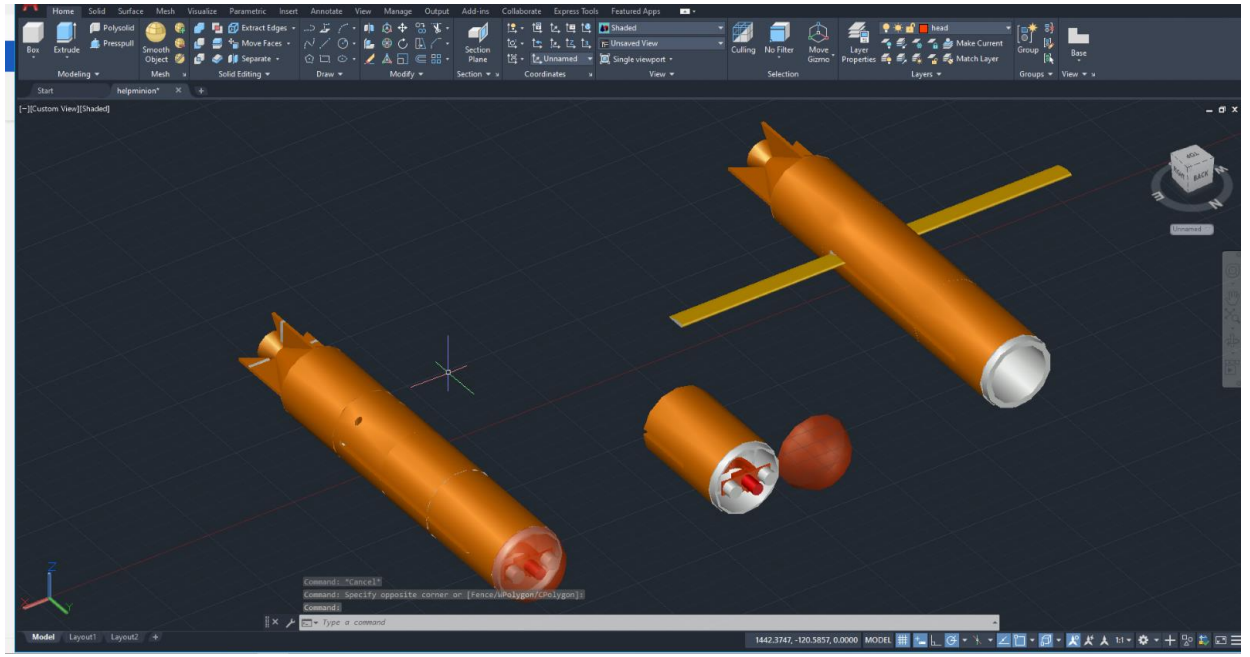
-Mounting and connecting electronic components

-Final mechanical assembly

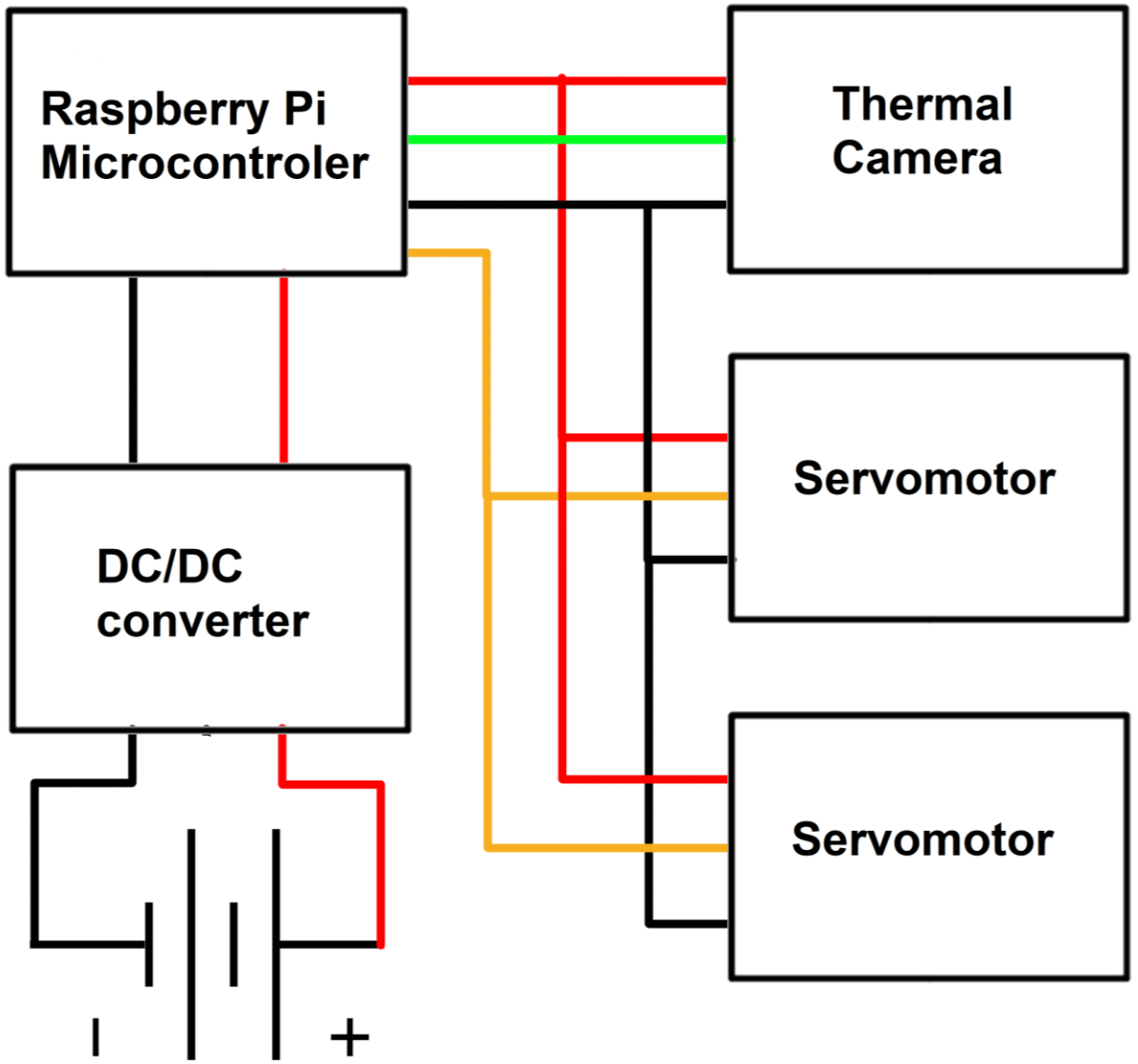
Planning – creating 3D models

- 3D models of printed parts were created in AutoCAD and then sliced into .gcode for 3D printer in CURA slicer.



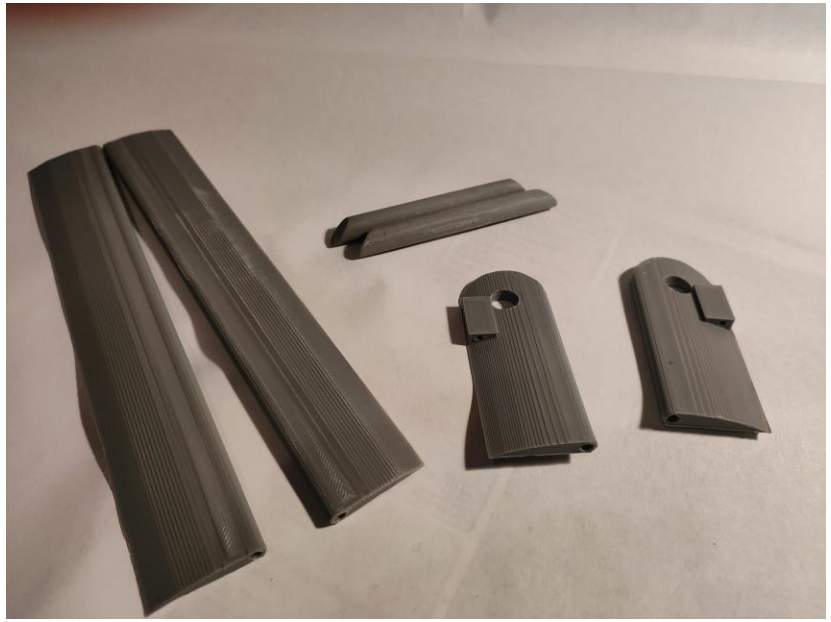


Schematics


Raspberry Pi
Microcontroler
Thermal
Camera
Servomotor
DC/DC
converter
Servomotor
-
+

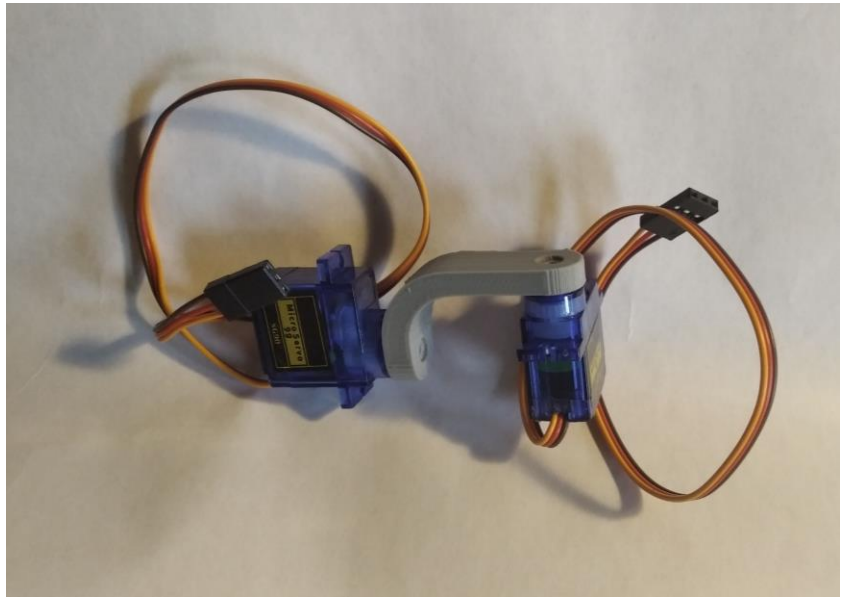
3D printing parts

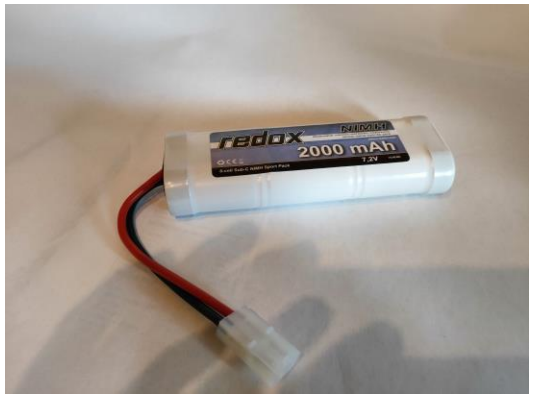
- Parts of wings and fuselage were printed on Ender 3 3D printer from PLA+ which provides both light weight and structural integrity and rigidity.

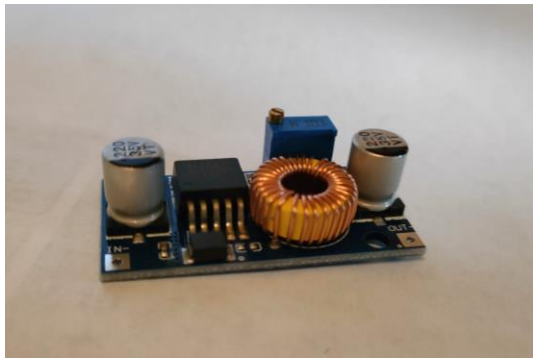


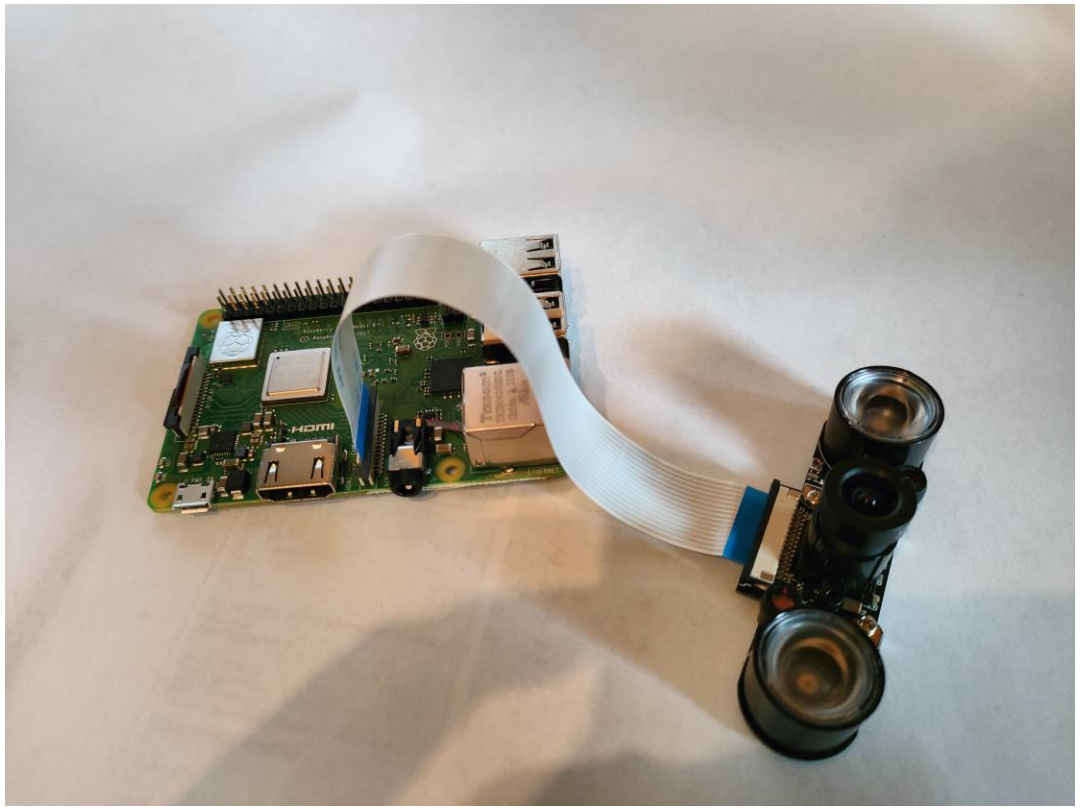
Mounting and connecting electrical components

All electronic components were connected according to the schematic with pin and socket connections which allows future upgrades and replacements.



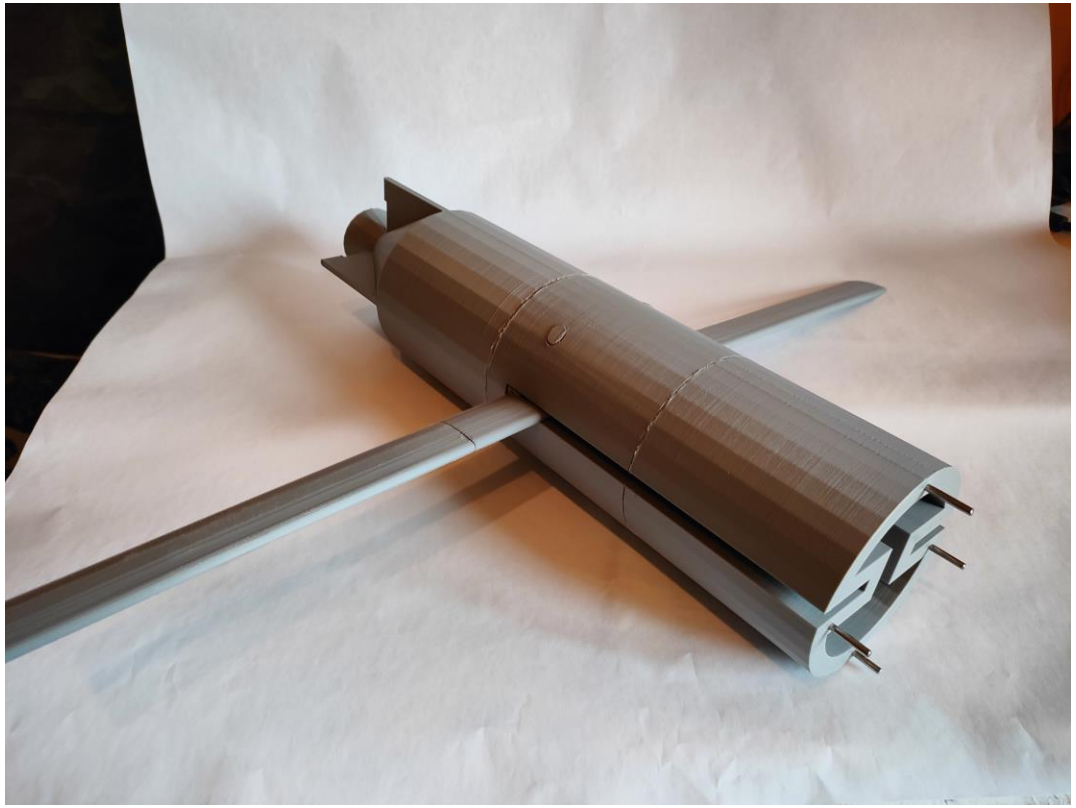


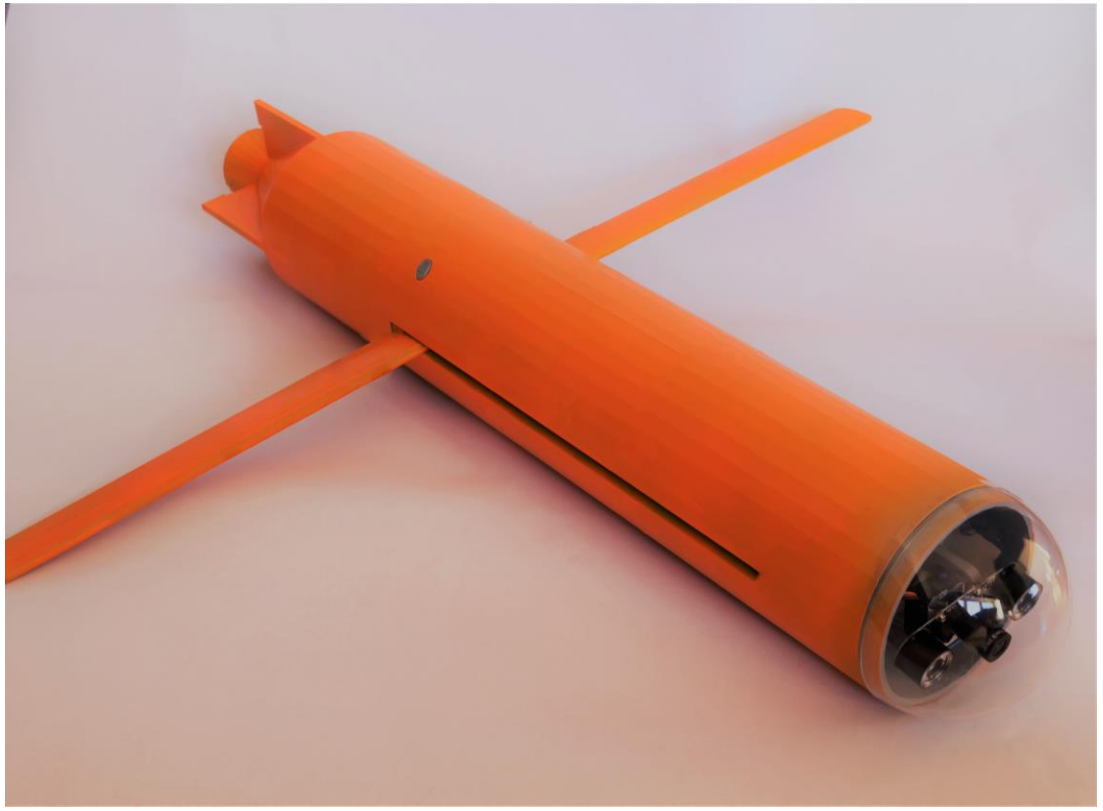




Final assembly

Final assembly consisted of mounting all electronics into the fuselage and securing all mechanical components together. Whole vehicle was then coated in high-vis reflective paint.





Future

- Securing funds and further development of the idea
- END GOAL: construction and implementation of functioning product

RKNT INVENIO

Thank You very much for watching

Q&A