Drone Launcher - Mechatronic Integration

Background
The Swedish Sea Rescue Society is aiming to set up a coastal network of small, remotely launched fixed wing drones for early situational awareness. One key element to relish this vision is to develop a remotely operated launcher. A principal design was developed in a previous thesis project, which has now been refined. A mechanical prototype is currently being built.

Problem description
In this proposal we are looking for help with the Mechatronics of the prototype system. The launcher has several moving parts: A lifting column, a horizontal rotation, a pitching rotation, an opening and a launching mechanism. The system needs to be able to communicate with the drone and a remote operator. It has to offer a protective environment as well as charging for the plane, and it will have to gather, transmit and operate based on various sensor data sources ranging from video to local weather. There is also an opportunity to integrate solar energy supply and motion to optimise solar input.

Objective
This proposal offers a practical project of mechatronic integration - including planning, sourcing, prototyping and testing. In the end we hope to have a working demonstrator that can remotely launch our prototype drones and thus kick of a small revolution in how we gather operational intelligent in maritime search and rescue.

Target group: Z, M, D, F
Number of students: 2
Prerequisites:
Links: surtsey.org/projects/automatic-uav-launching-box-2 (Related, not a project call description)
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