

Multi-Purpose Aerial Drone

For Fire Extinguishing and Bridge Inspection

Problem Statement

- Update and perfect the current model of a quadcopter by a previous senior design team for presentation to the county for possible purchase.
- Design a new release mechanism that is more efficient for the chemical fire extinguisher.

Motivation

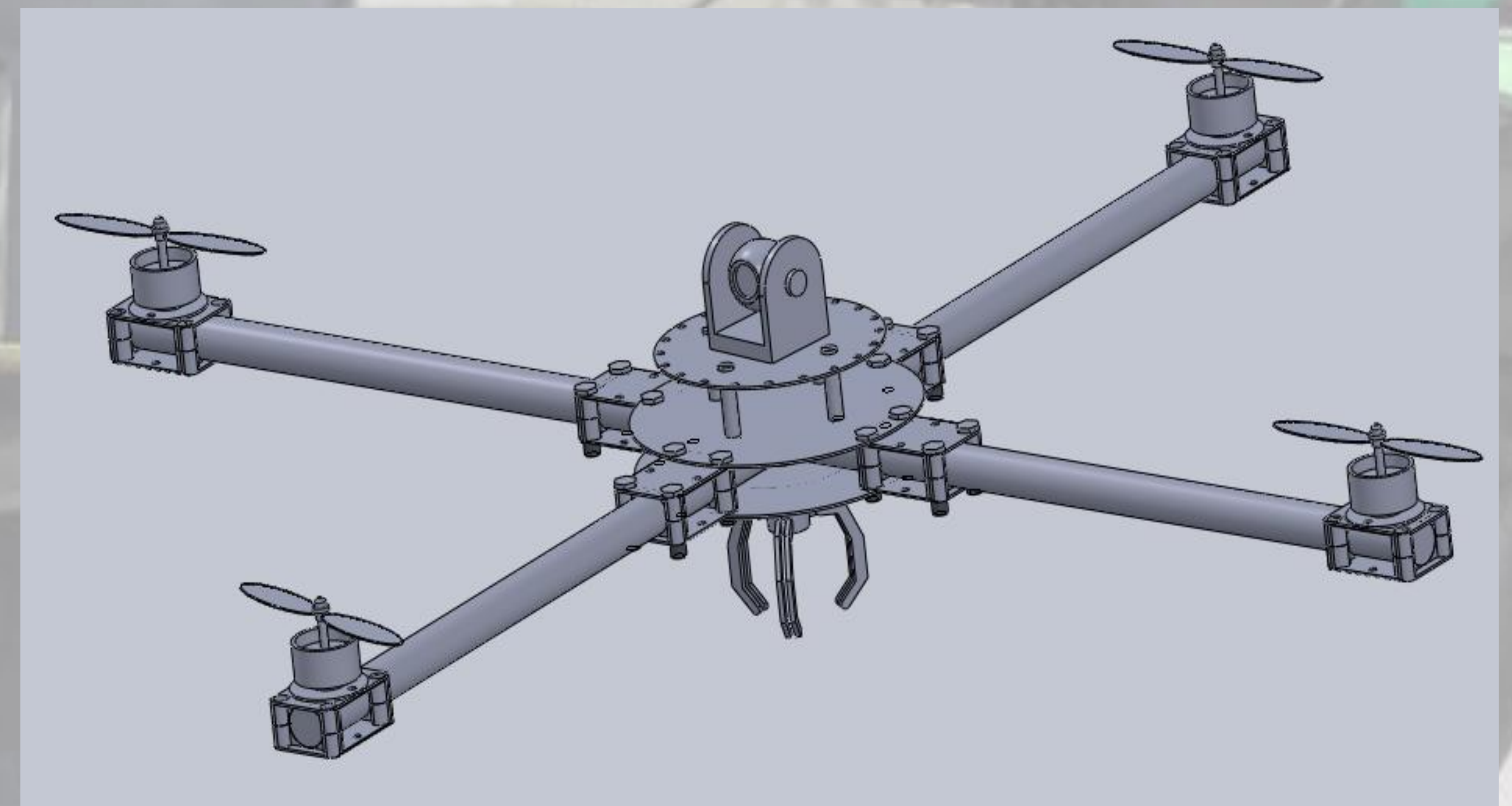
- To make the inspection of bridges safer for engineers.
- To prevent deaths and injuries from the extinguishing of small fires.
- To enhance the multi-purpose UAV.

Design objective

- Incorporate a camera for physical bridge inspection
- Incorporate release mechanism for firefighting agent bomb
- Utilize Carbon fiber for fabrication of release mechanism in order to reduce weight

Prototype and testing

- Prototyping of different models will be done using solid works
- Physical modifications and testing should be conducted on the quad copter
- Optimizations, repairs, and calibration conducted soon after



Timeline

Months	January	February	March	April	May	June	July	August	September	October	November	December
Weeks	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
Literature Survey												
Project Formulation												
SolidWorks Modeling												
Material Selection												
Design Optimization												
Build Prototype												
Testing/Analysis												
Final Optimization												
Final Report												

Team members



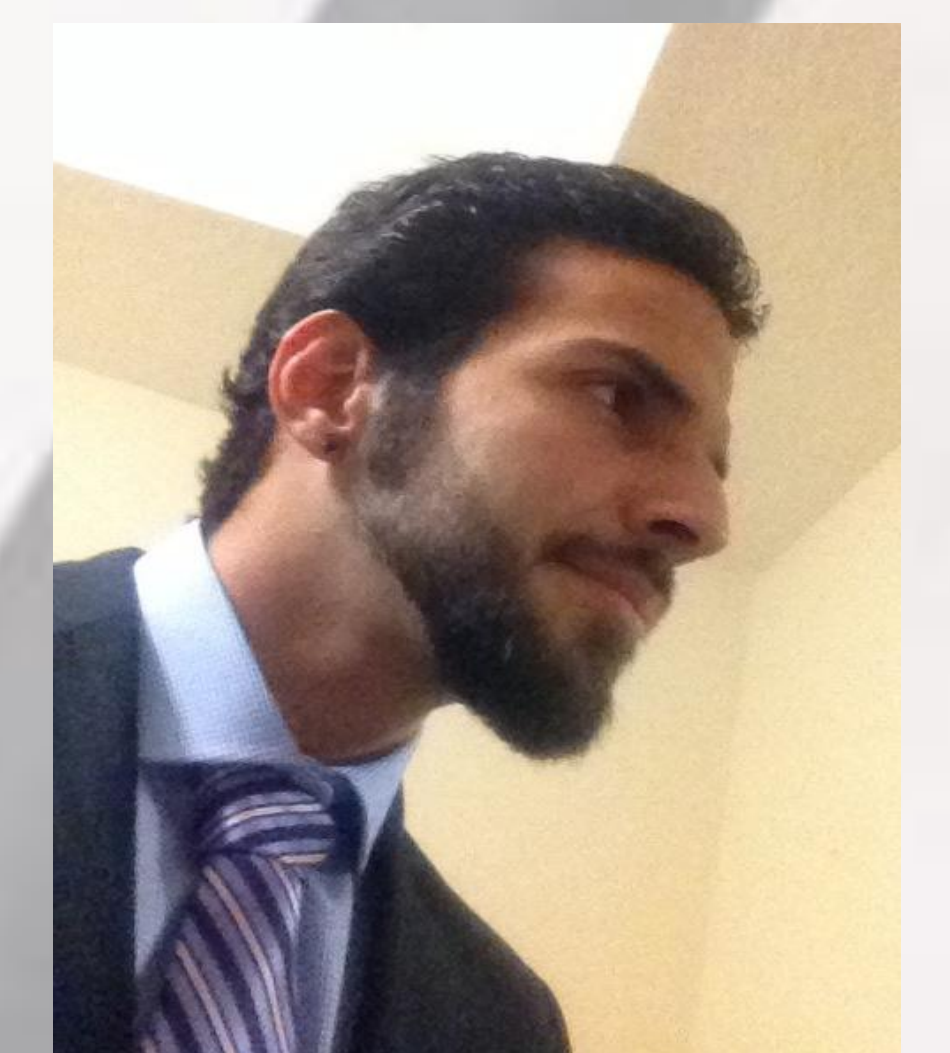
Raquel Remington



Ramon Cordero



Larry March



Daniel Villanueva

Advisor: Dr. Ibrahim Tansel