



## Motivation

Improve drone surveillance efficiency for the Farming and Agricultural Industry



## Background

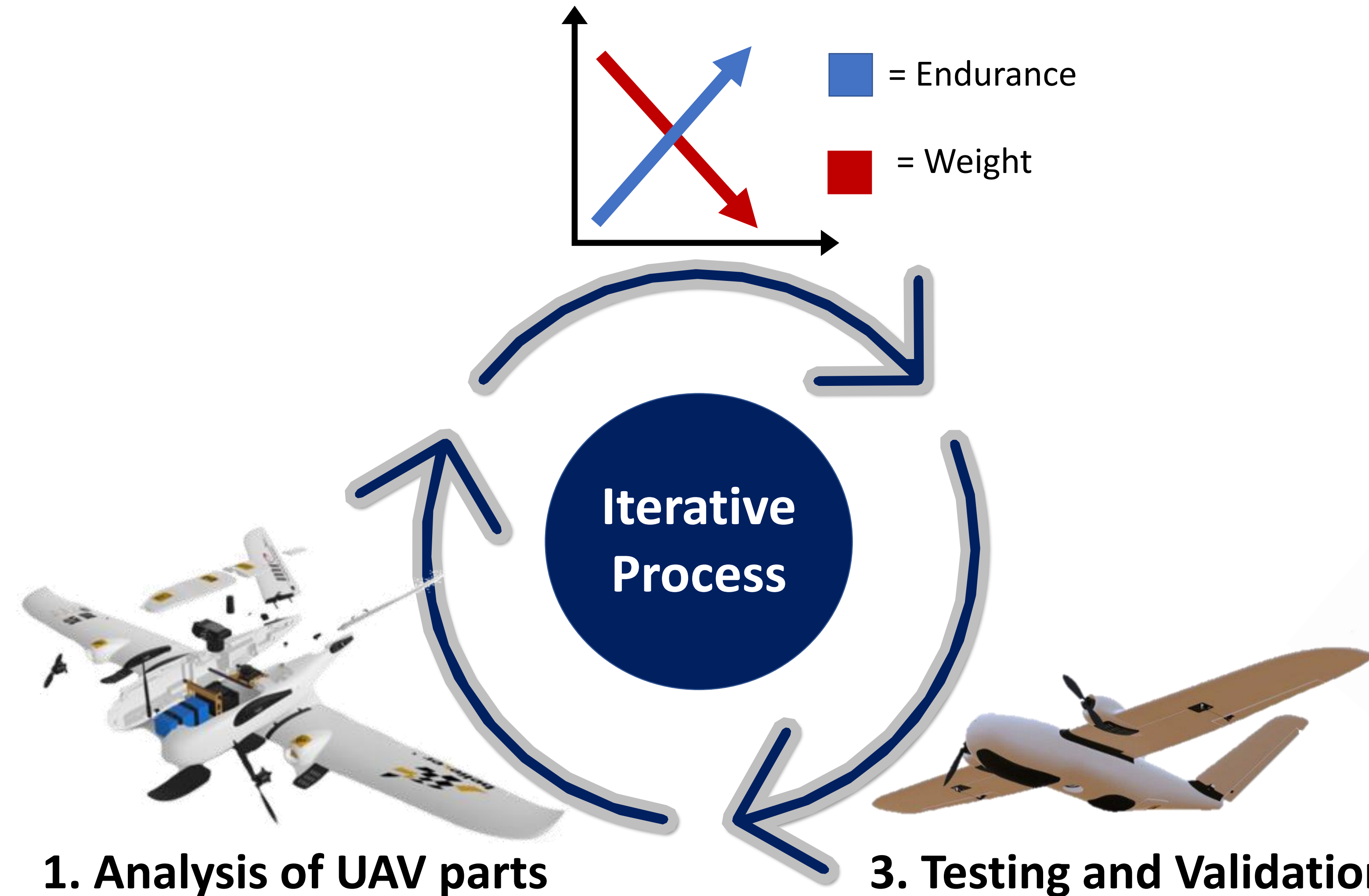
- UAV-Unmanned Aerial Vehicle
- Fixed Wing
- Believer 1960mm:
  - A fixed wing surveillance UAV
  - Wingspan: 1960mm
  - Endurance: 60 mins
  - Weight: 5.4 kg



## Objective

The objective of this project is to reduce the weight of a UAV and directly increase the flight time, while maintaining surveillance capabilities.

## 2. Light-Weighting Techniques Applied



## Targets

- Support mass of payload -> 600 g
- Produce greater lift than gross weight for overall flight time -> 54N
- Supports moments due to wings -> 1.128 Nm
- Overall flight time -> 60mins

## Light-Weighting Methods

- Lighter Electrical Components
- LW-PLA Constructed Parts
- Improve Propeller Design

Each iteration that reduces the weight of the UAV allows for the reduction of weight of other parts, since less thrust is needed. This cycle continues until the objective is met.



## Future Work

- Order Materials
- Build Prototype
- Testing and Analysis
- Continue Iterative Process
- Build Final UAV