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### Objective

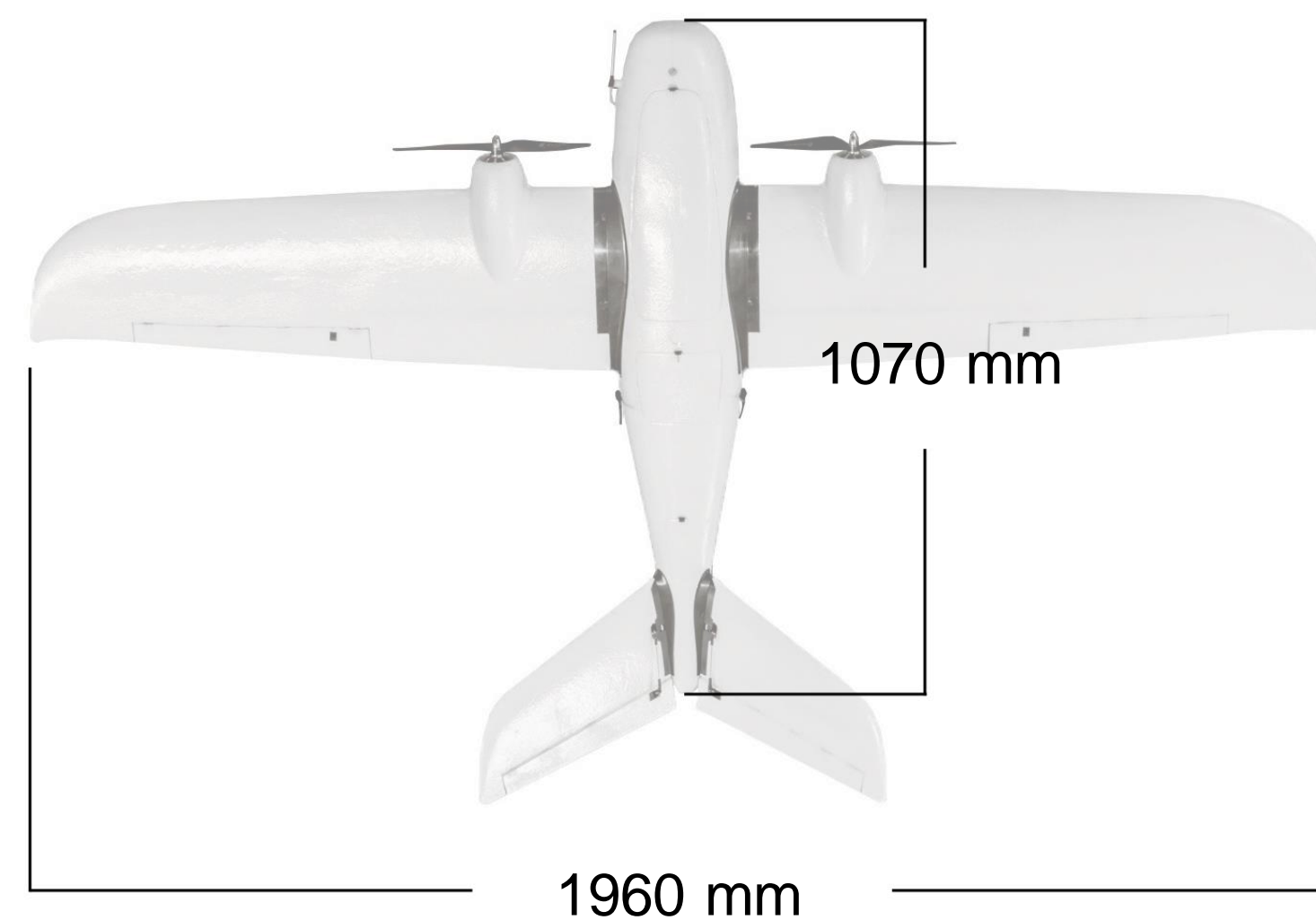
The objective of this project is to reduce the weight of a commercially available UAV through light weighting processes

### Background

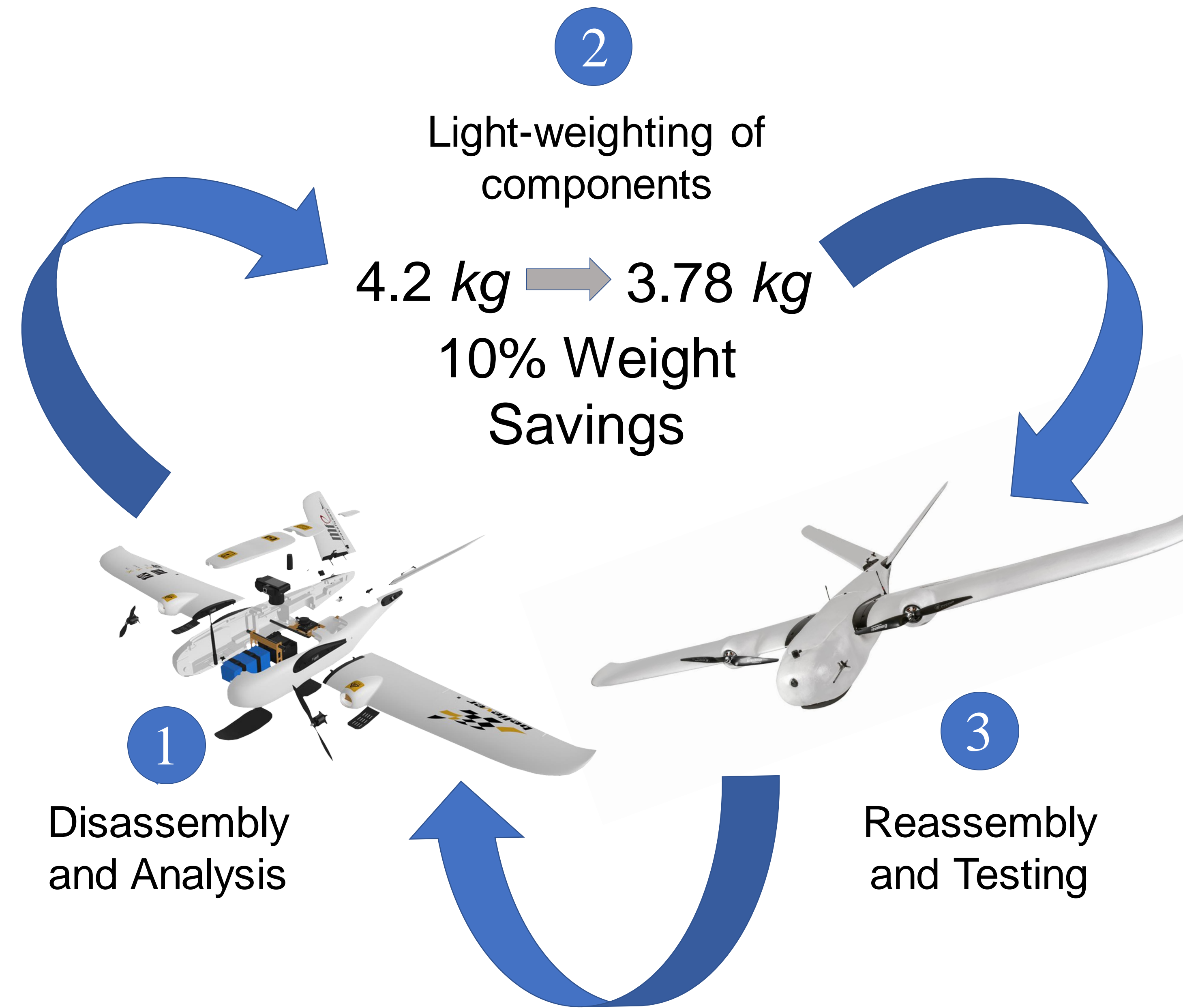
- Lighten and optimize components of a commercial fixed wing UAV
- Match or improve original UAV parameters with less energy used
- Lighter body/components allows for lower cost of UAVs

### Reference UAV

- Believer 1960 mm
- Commercially available
- Modular with spare parts
- Weight: 4.2kg
- Endurance: 80km



### Iterative Light-weighting

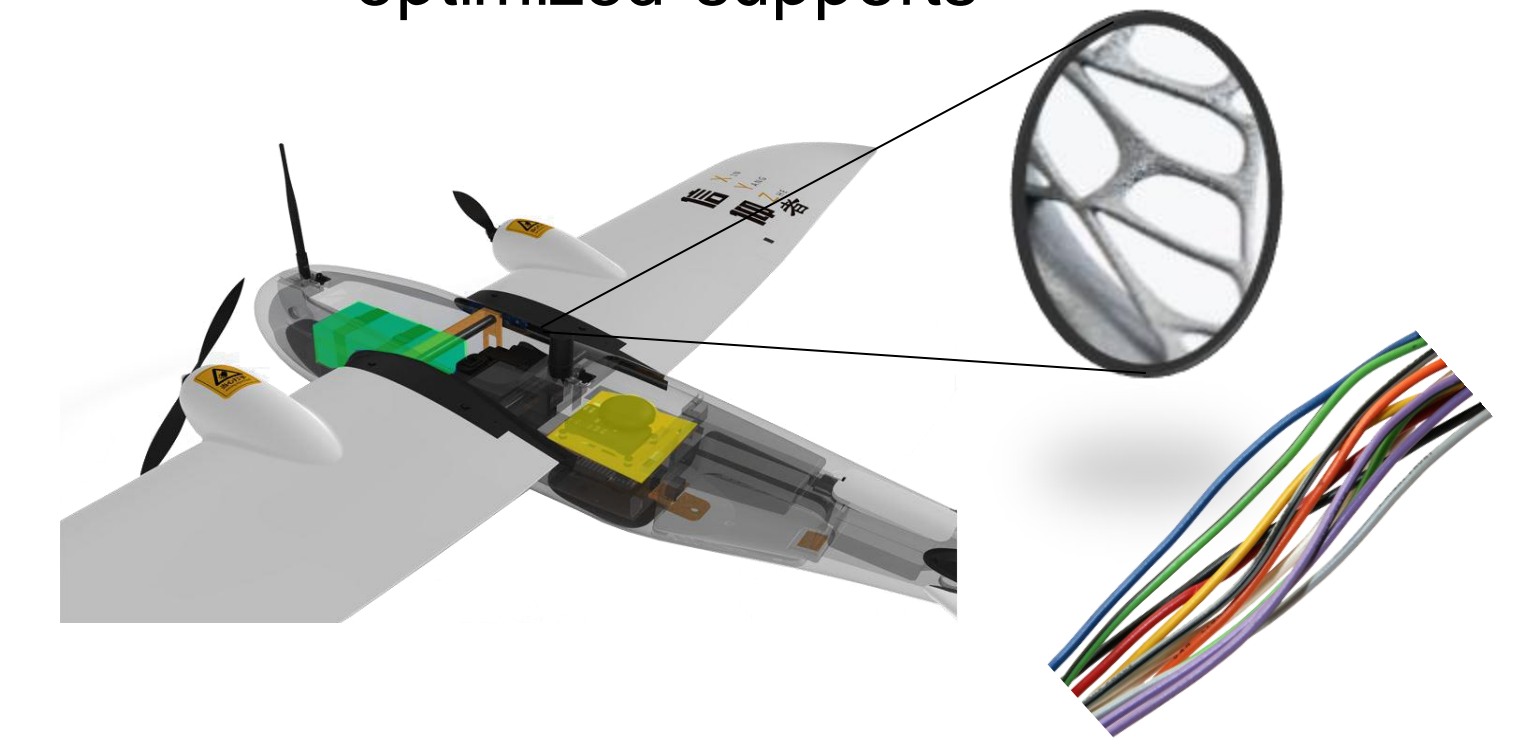


### Targets

- Keep original dimensions of reference UAV
- Reduce gross weight of UAV by 10%
- Keep all functions and maneuverability of the UAV

### Methods

- Optimization of Internal Structure
  - Replacement of solid internal structure with effectively optimized supports



- Fuselage structure supported with essential wiring used in normal operation
- Iterative Light-weighting Process
  - Each reduction in the weight of the body leads to smaller electrical components needed for the UAV to fly
  - The weight saved by these smaller components leads to a further reduction in weight of the body

### Future Work

- Program Software
- Order Parts
- Construct Prototypes
- Test and Analyze
- Repeat Light-weighting process
- Construct final build