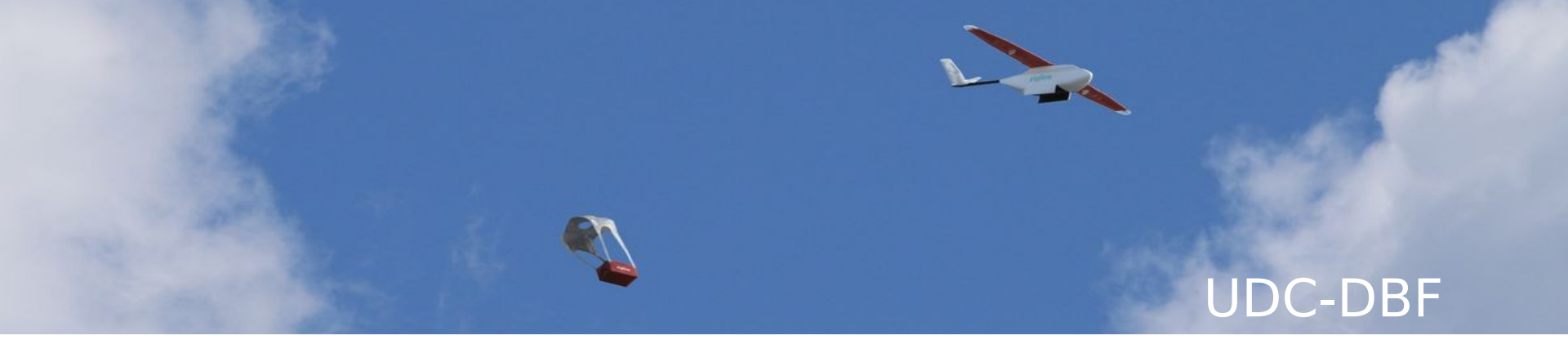

1st Design Iteration

Team Name: الثُّرَيّا

Wing Information	
Airfoil	NACA 4415
Span	1280
Root Chord	283
Tip Chord	170
Offset	113
AR	5.65
S_w	0.29e6 mm^2
Incidence Angle	0
Twist	-2
Dihedral	0

Vertical Tail Information	
Airfoil	NACA 0009
Semi Span (Total Length)	300
Root Chord	150
Tip Chord	150
Offset	0
S_v/S_w	0.07
AR_v	4
V_v	0.05
Incidence Angle	0
Tail Arm	550
Shifted Length in Z-Direction	50

Horizontal Tail Information	
Airfoil	NACA 0009
Span	450
Root Chord	150
Tip Chord	120
Offset	30
S_H/S_w	0.25
AR_H	3.33
V_H	0.5
Incidence Angle	-3.5
Tail Arm	550
Shifted Length in Z-Direction	50

Propulsion System Information					
Brushless Motor	Manufacturer	Model	Voltage Constant [KV]	No Load Current [A]	Resistance [ohm]
	Electrifly	Rimfire .15	1200	1.7	0.0415
Battery	Manufacturer	No. Of Cells	Voltage	Capacity [mAh]	C-Rating
	HRB	3	11.1	5200	50
Propeller Size (Diameter x Pitch)	10 x 4.7				
Speed Controller (Current Rating Value)	60A				

Flight Phases

Phase 1 (payload isn't deployed)	
MTOW	2 kg
X_{CG}	98
Static margin (%)	0.2
CL_{Cruise}	0.34
V_{Stall}	8,8 m/s
V_{Cruise}	18 m/s
α_{Trim}	1.95
Required Static Thrust	1.468 kg
Required Dynamic Thrust (at V_{Cruise})	0.746 kg

Phase 2 (payload is deployed)	
Mass	1.6 kg
X_{CG}	97.8
Static margin (%)	0.2
CL_{Cruise}	0.34
V_{Stall}	7.8 m/s
V_{Cruise}	16 m/s
α_{Trim}	1.95
Required Static Thrust	1.468 kg
Required Dynamic Thrust (at V_{Cruise})	0.846 kg

- Note: lengths should be in (mm), angles in (deg), weights and thrust in (Kg).