

Aircraft Design Project

Urban Air Mobility (UAM)

Week 8

10/01 – 14/01



Instituto Superior Técnico
Universidade de Lisboa

Fuselage design

Objectives



Estimate length and diameter of fuselage

You can also build your own MTOW vs length plots based on your market study.



Passenger compartment dimensions and look up for safety requirements



Fuel/battery storage/avionics

Define where you will be allocating space in your configuration for these systems.



Make modifications to your initial design if needed!

Fuselage design

MATLAB implementation

```
{  
  "name": "Fuselage",  
  "type": "fuselage",  
  "interf_factor": 1.0,  
  "diameter": 1.0,  
  "length": 4.0,  
  "mass": 800  
},
```



Update the fuselage parameters on your JSON file (if needed)

Re-run the `aero_analysis` function, and update MTOW and design points
Any modification on the geometry will change the base drag coefficient of your aircraft

For next week's meeting:



Prepare Powerpoint presentation

Max: 5-10 min