System Overview

Target Acquired

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Aircraft Design Mission System Hierarchy

System: Aircraft Design Mission System

Subsystems:

1) **Unmanned Aircraft System (UAS)**

   Subsystems:

   1) Avionics

   2) Mission Systems

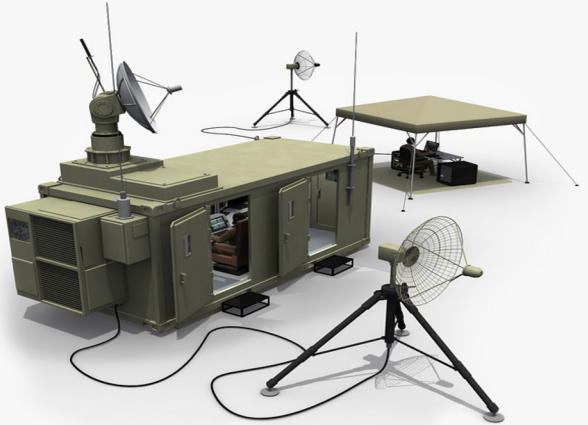
   3) Propulsion

1) **Ground Control System**

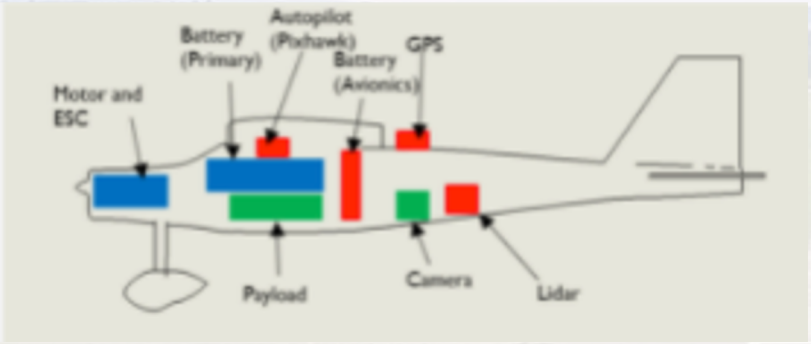
   Subsystems:

   1) Mission Systems

Sig Kadet Senior Sport



Overview of Unmanned Aircraft System (UAS)



Legend	
Avionics	
Mission Systems	
Propulsion	

UAS Subsystems

1) Avionics

- Pixhawk Autopilot
- GPS Receiver Module
- Lidar Sensor

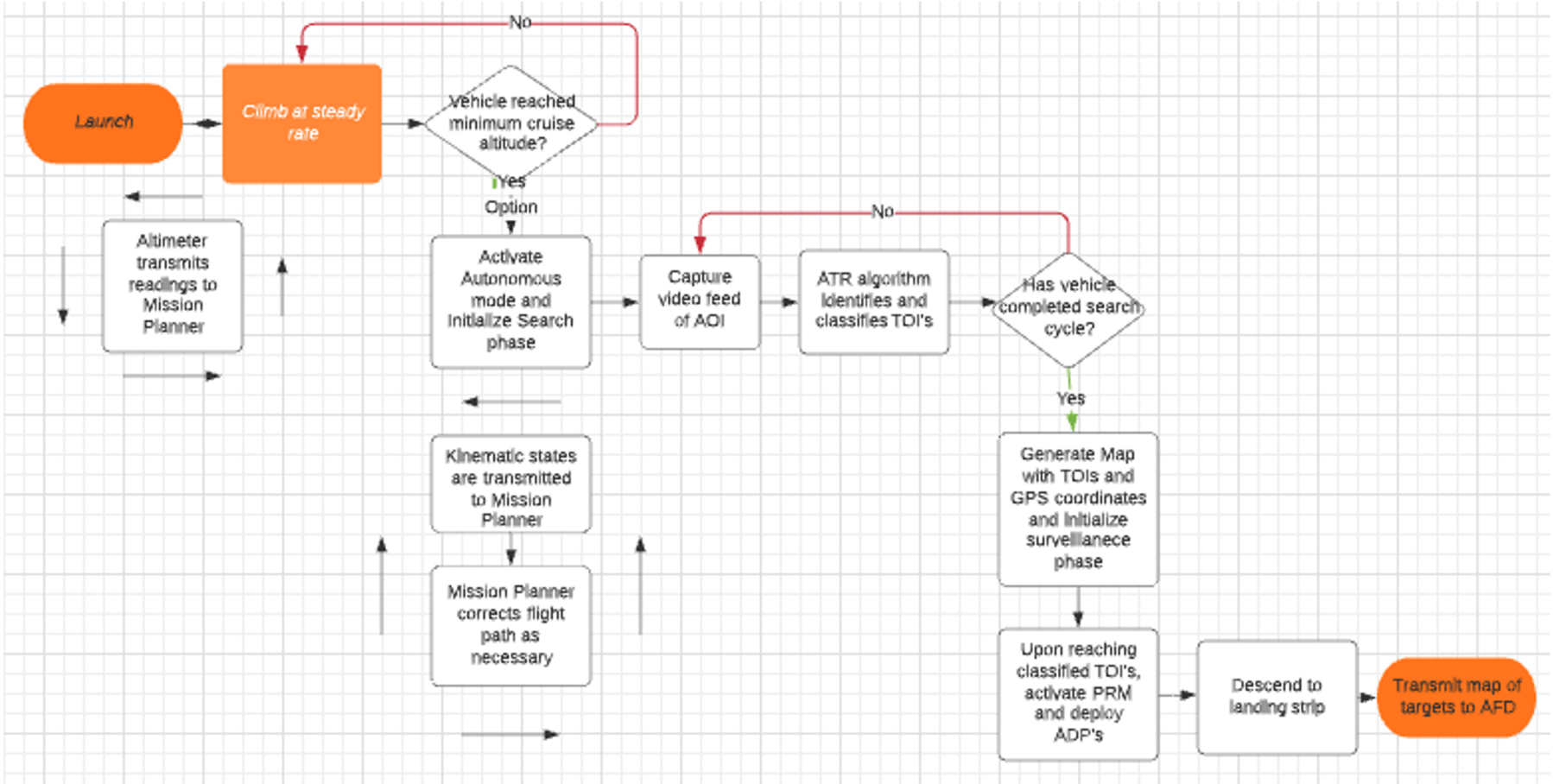
2) Mission Systems

- Payload
- Runcam Video Camera
- Herelink Video Transmission System
- Raspberry Pi Co-Processor

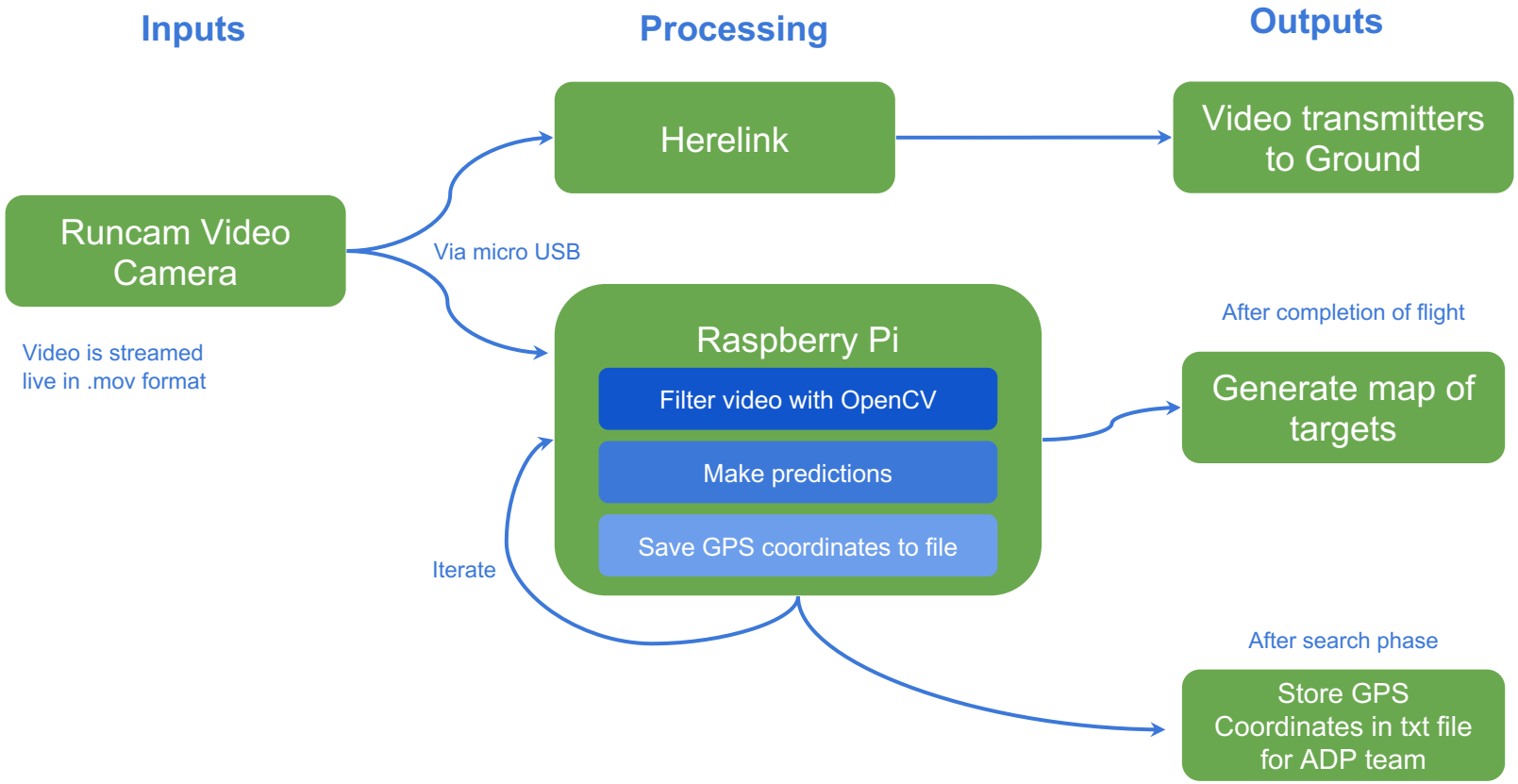
3) Propulsion

- Motor
- ESC

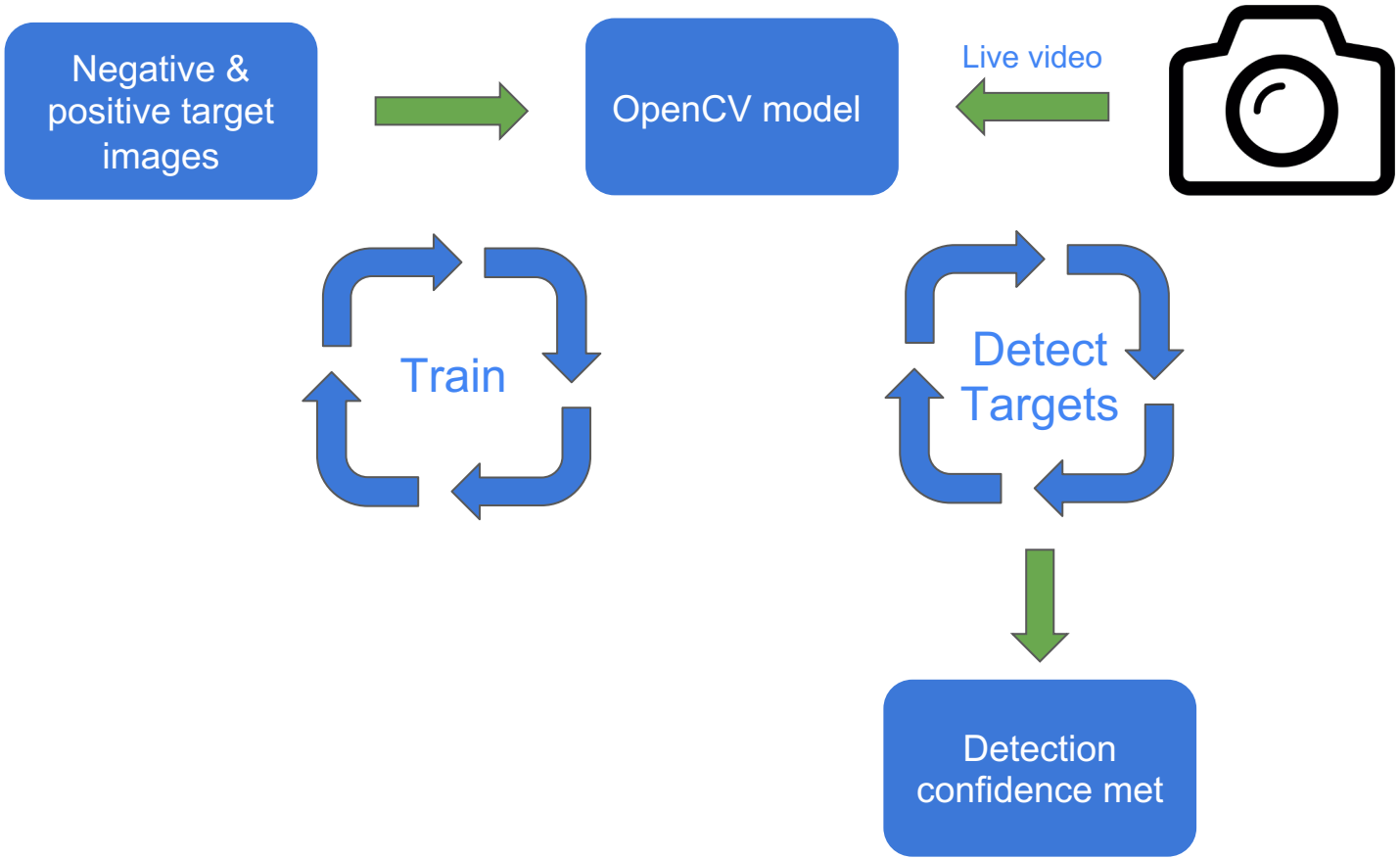
High-Level Flow Chart of Aircraft Design Mission System



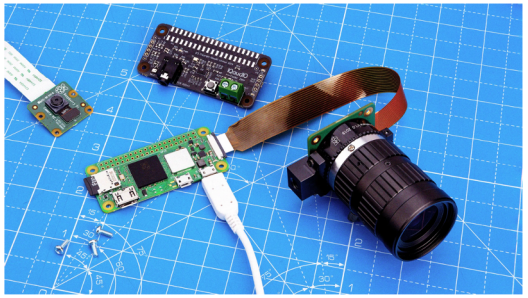
General Input/Output Structure and Processing Video Data



OpenCV Framework on Raspberry Pi

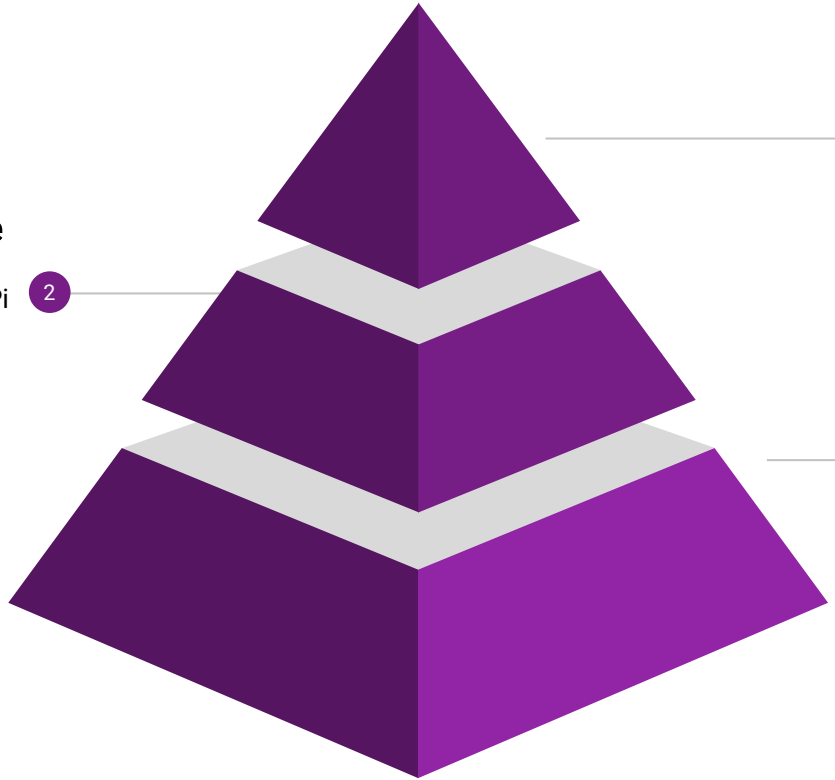


Top Down System Overview



Software
1
* C++ & Python
* OpenCV
* Raspberry Pi

Hardware
2
* Camera
* Raspberry Pi
* Pixhawk
* GPS



Aircraft
3
* Propulsion
* Avionics
* Mission (Payload)

All team members contributed equally to the work in this presentation