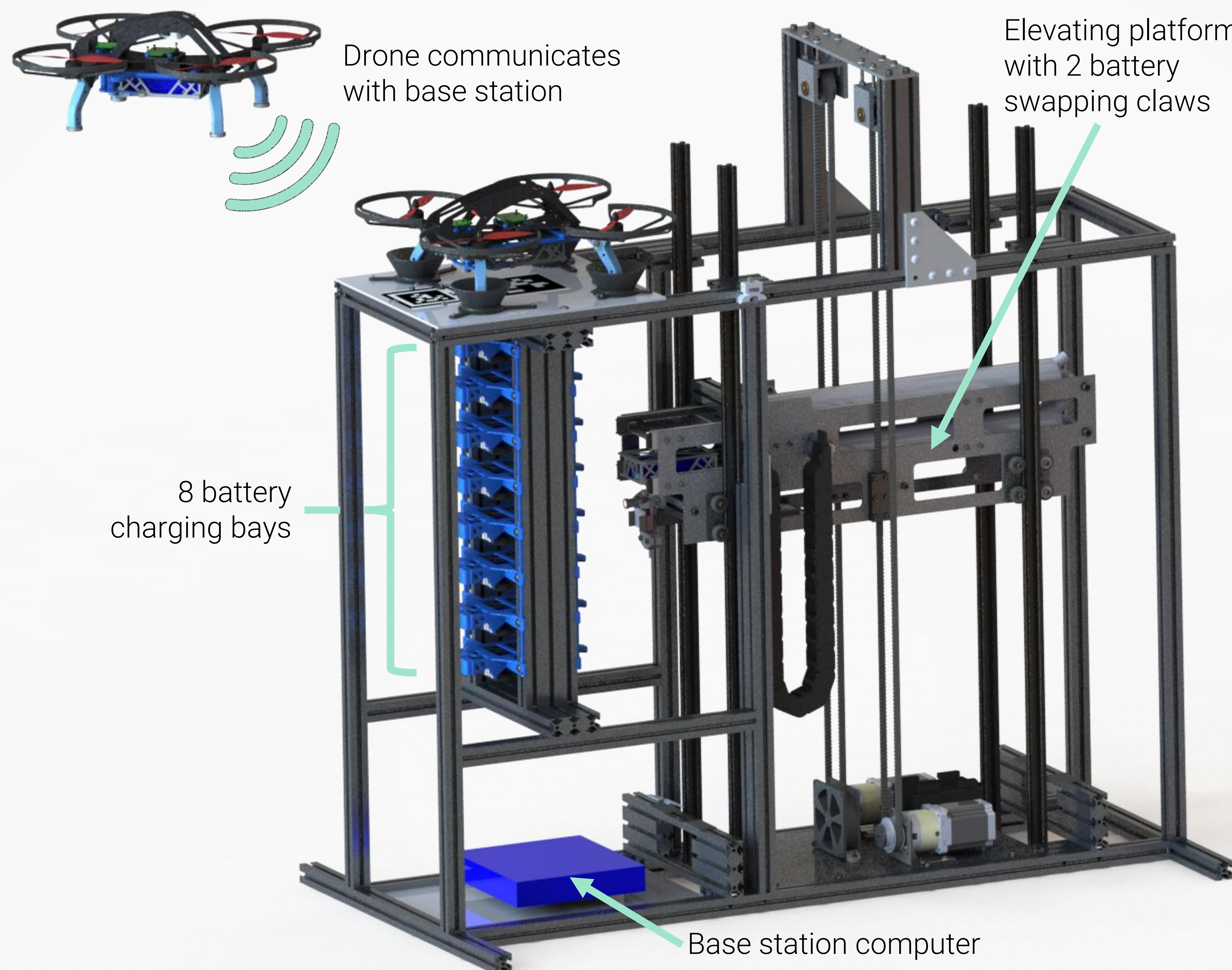


### MOTIVATION

- There is significant value in commercial and industrial automation of labor in outdoor and varied environments
- Drone swarms are an efficient and versatile solution, but logistically stunted by short flight times<sup>[1]</sup>
- **SWAPSTOP**'s goal is to enable drone swarm applications

### APPLICATIONS

- Inspection of electrical towers, power lines, and pipelines
- Mapping, surveyance, and geomatics
- Observation and surveillance of industrial sites, farms, livestock, and wildfires
- Search and rescue missions



### SPECIFICATIONS

- Fully autonomous
- Blazing 30s swap time
- 8 battery charging capacity
- 1.09m(L) x 0.32m(W) x 1.11m(H)

### ALTERNATE SOLUTIONS

Solution	Advantage	Disadvantages
Solar	50 min flight <sup>[2]</sup>	Requires sunlight
Gasoline	2 hour flight <sup>[3]</sup>	Loud & heavy
Fuel Cell	2 hour flight <sup>[4]</sup>	Expensive & heavy

### SPONSORS

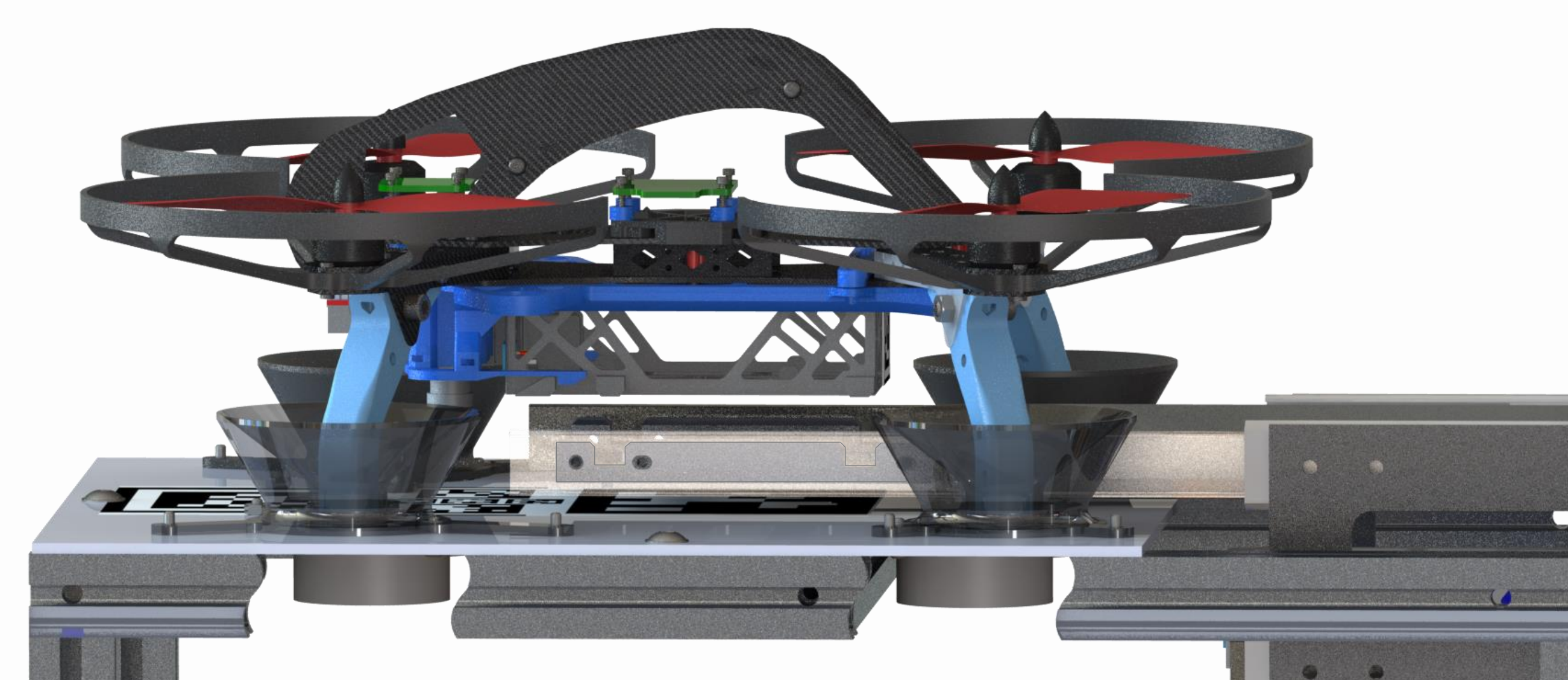


### DRONE LANDING



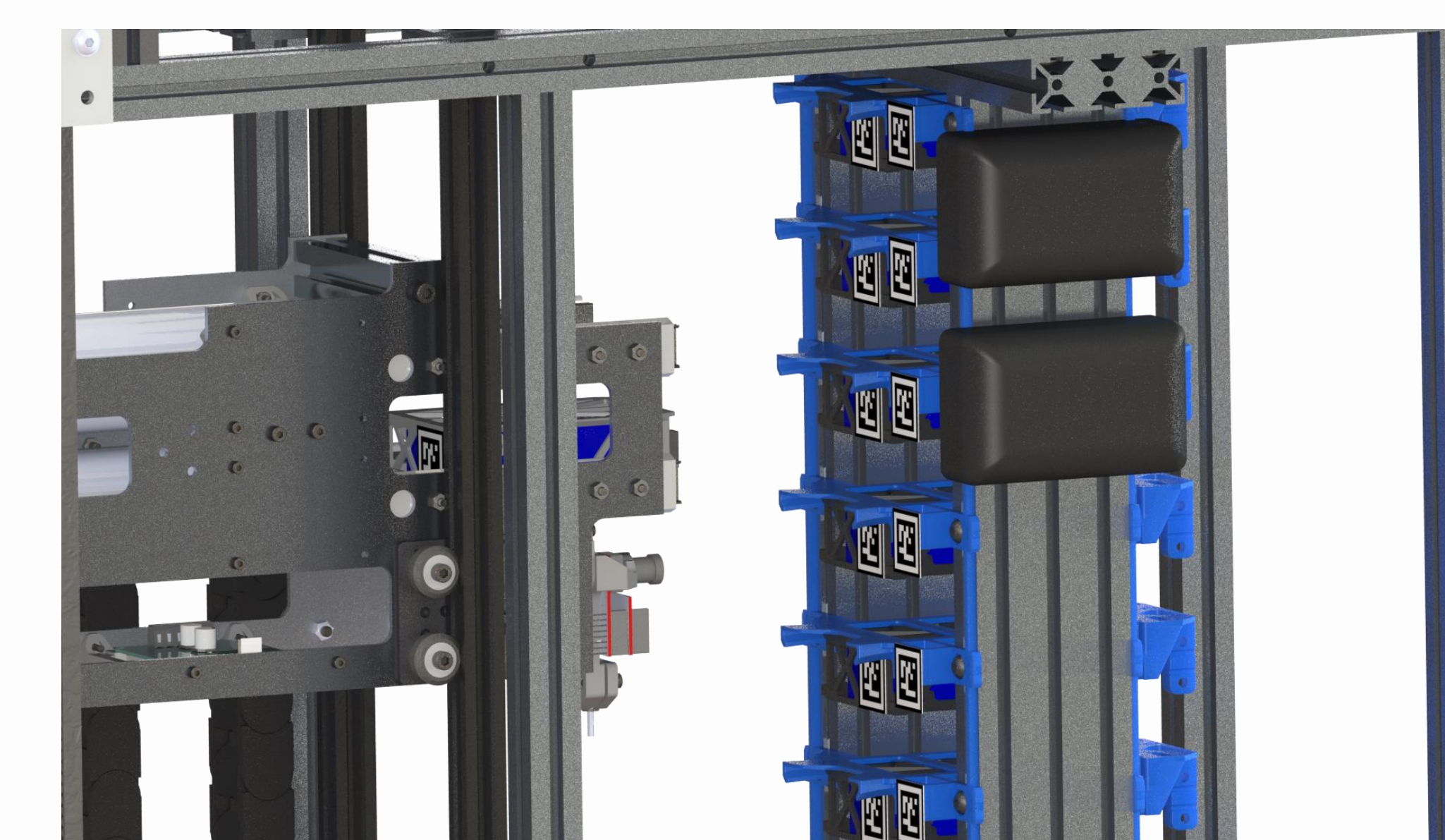
- Drone requests battery swap
- Base station coordinates landing
- Visual markers aid autonomous landing

### BATTERY SWAP



- Electromagnets hold drone
- First claw removes battery from drone
- Second claw inserts new battery
- 30s battery swap

### CHARGING & OPTIMIZATION



- April tags on battery bays and cartridges
- Colour sensors monitor charge status
- Intelligent battery management to optimize swap time and charge levels