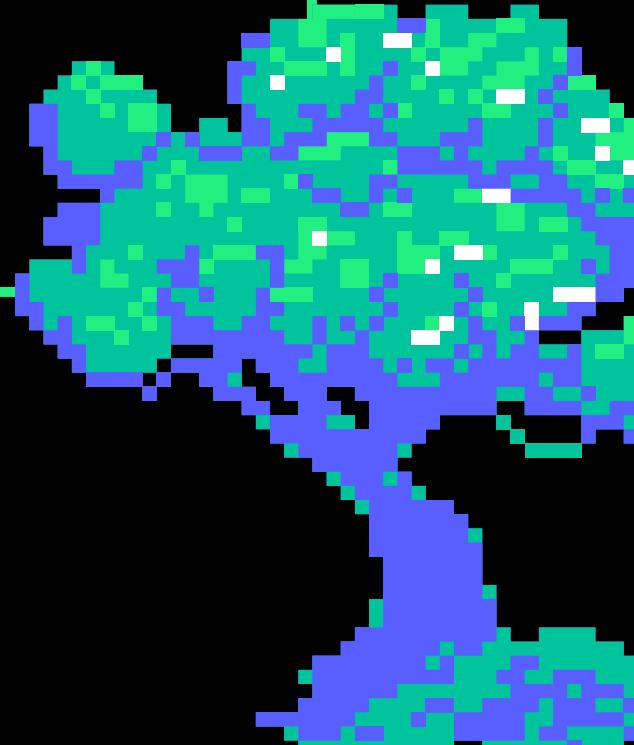
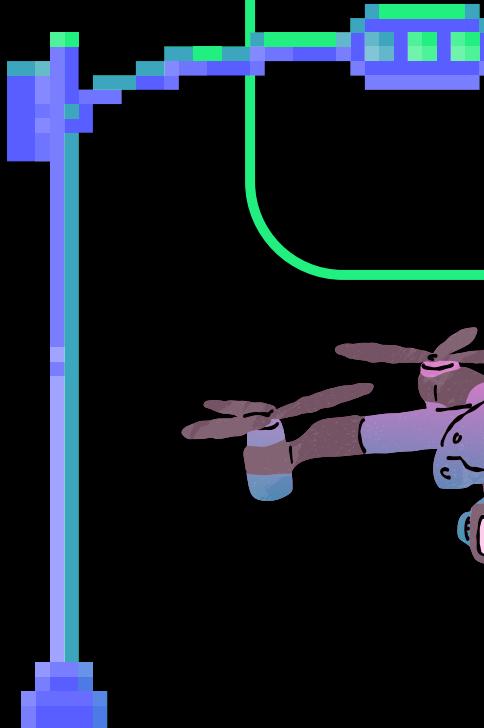


EXPLORE THE DEPTHS

ROVER MK_1

BY

BITSANE_100



NAVIGATING THE FUTURE



PROBLEM STATEMENT

- ◆ DEVELOPING A FULLY AUTONOMOUS DRONE FOR DRONE DELIVERY SYSTEMS ADDRESSES CRITICAL CHALLENGES IN MODERN LOGISTICS. BY AUTONOMOUSLY TRANSPORTING GOODS FROM DISTRIBUTION CENTERS TO CUSTOMERS' DOORSTEPS, THE SYSTEM STREAMLINES LAST-MILE DELIVERY
- ◆ THIS PROJECT AIMS TO ADDRESS THESE CHALLENGES BY DESIGNING AND IMPLEMENTING ROBUST ALGORITHMS AND SYSTEMS FOR AUTONOMOUS FLIGHT, OBSTACLE DETECTION AND AVOIDANCE, ROUTE PLANNING, AND REAL-TIME DECISION-MAKING.

⚡ PRODUCT IDEA

- ◆ THIS AUTONOMOUS DRONE, WITH ITS SEAMLESS TRANSITION BETWEEN AERIAL AND UNDERWATER ENVIRONMENTS, PROVIDES A SINGULAR SOLUTION FOR EXPLORATION IN DIVERSE TERRAINS.
- ◆ IT ENABLES EFFICIENT ENVIRONMENTAL MONITORING, AIDS IN SEARCH AND RESCUE OPERATIONS.
- ◆ EFFECTIVELY ADDRESSING CHALLENGES POSED BY INACCESSIBLE OR CHALLENGING CONDITIONS ACROSS LAND, AIR, AND WATER.

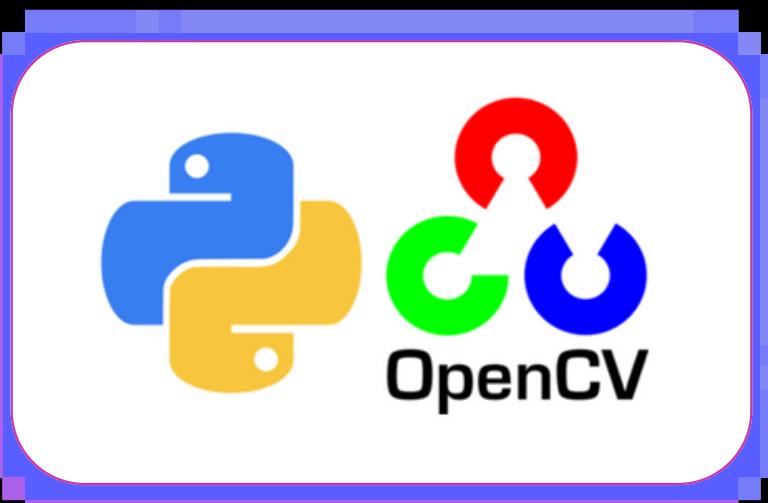


LAND

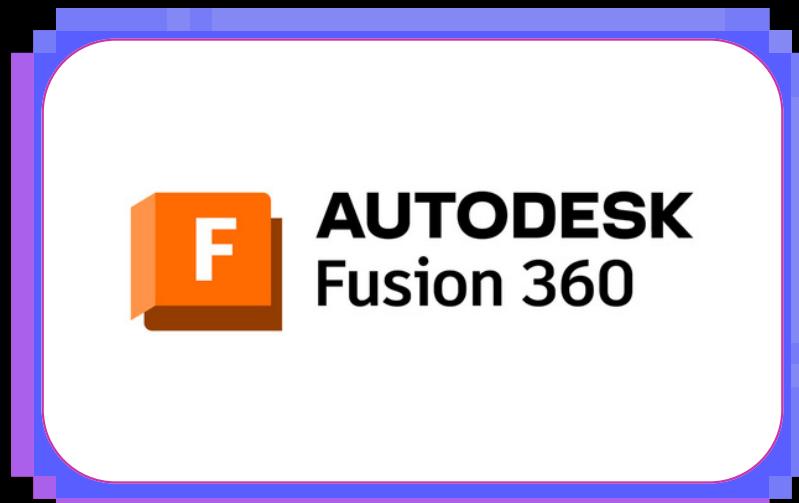
AIR

WATER

TECH-STACK



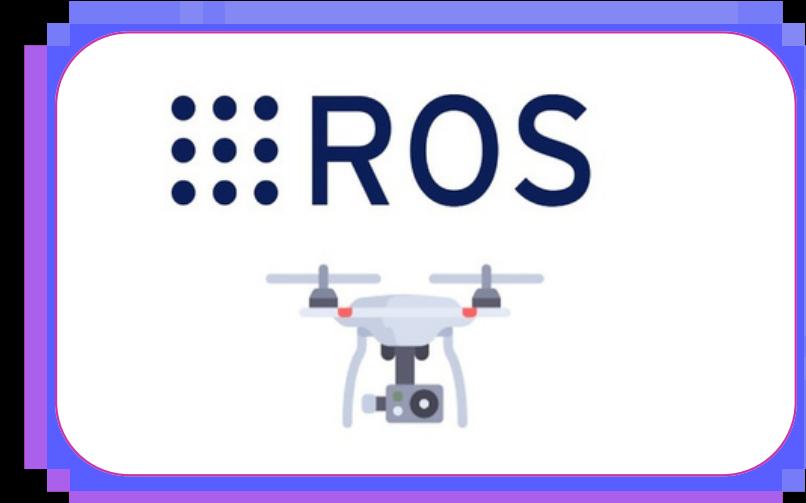
To develop computer vision algorithms for tasks such as object detection and enabling the drone to autonomously navigate



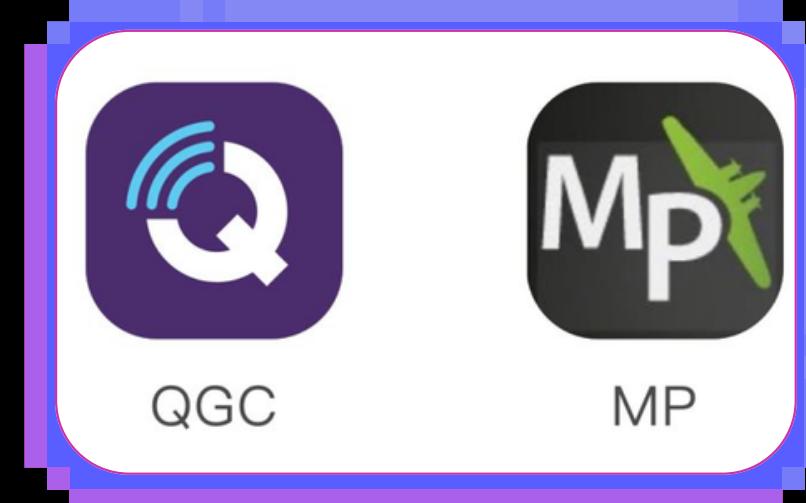
for designing the physical components of the drone, including its aerodynamic frame and waterproof enclosures



for connection between the controller and control station, enabling real-time monitoring and control of the drone's parameters



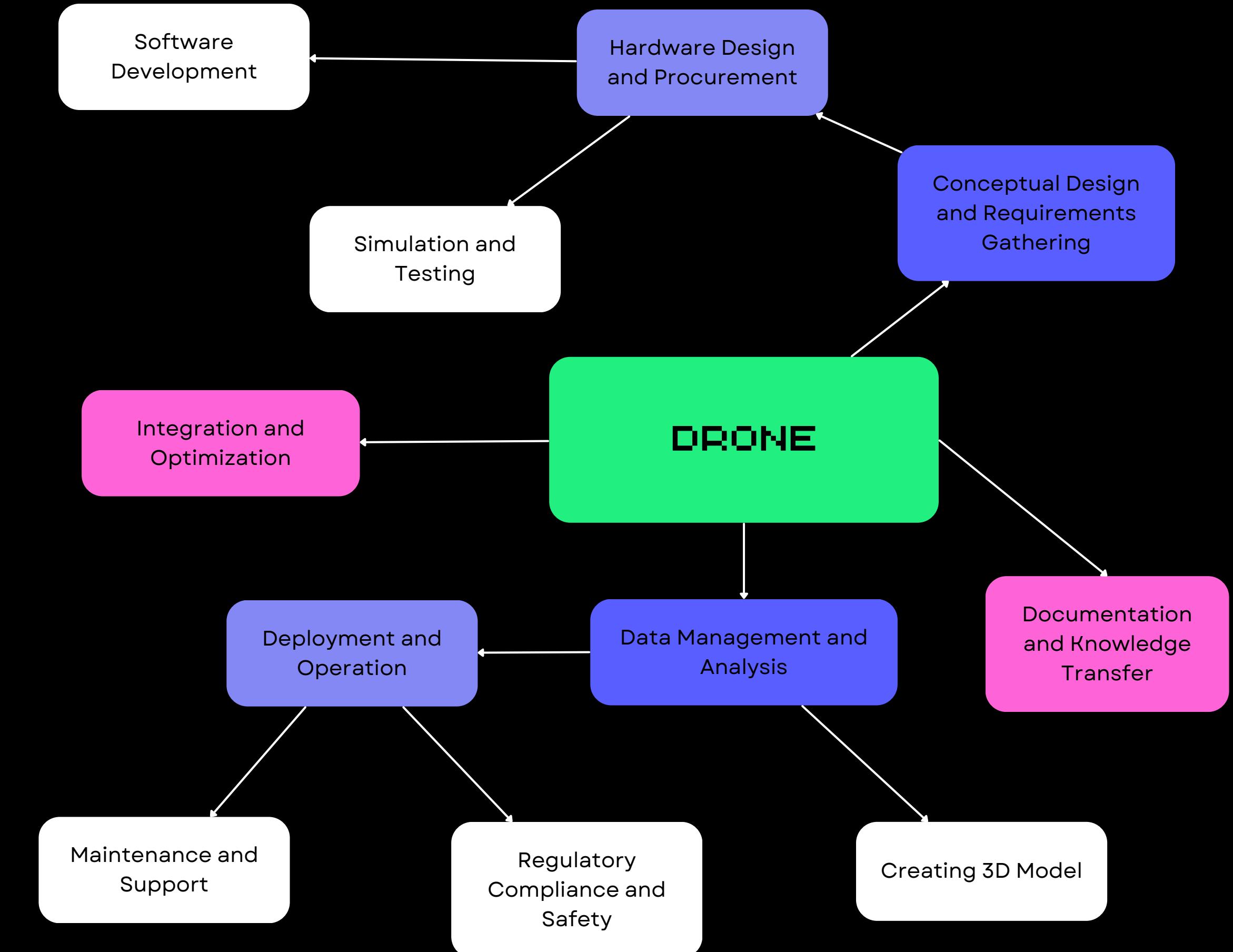
ROS empowers drones through modular software for tasks like navigation, perception, control, and communication, enabling versatile applications.



QGC is an essential tool for drone operators, providing intuitive interfaces and comprehensive functionalities.



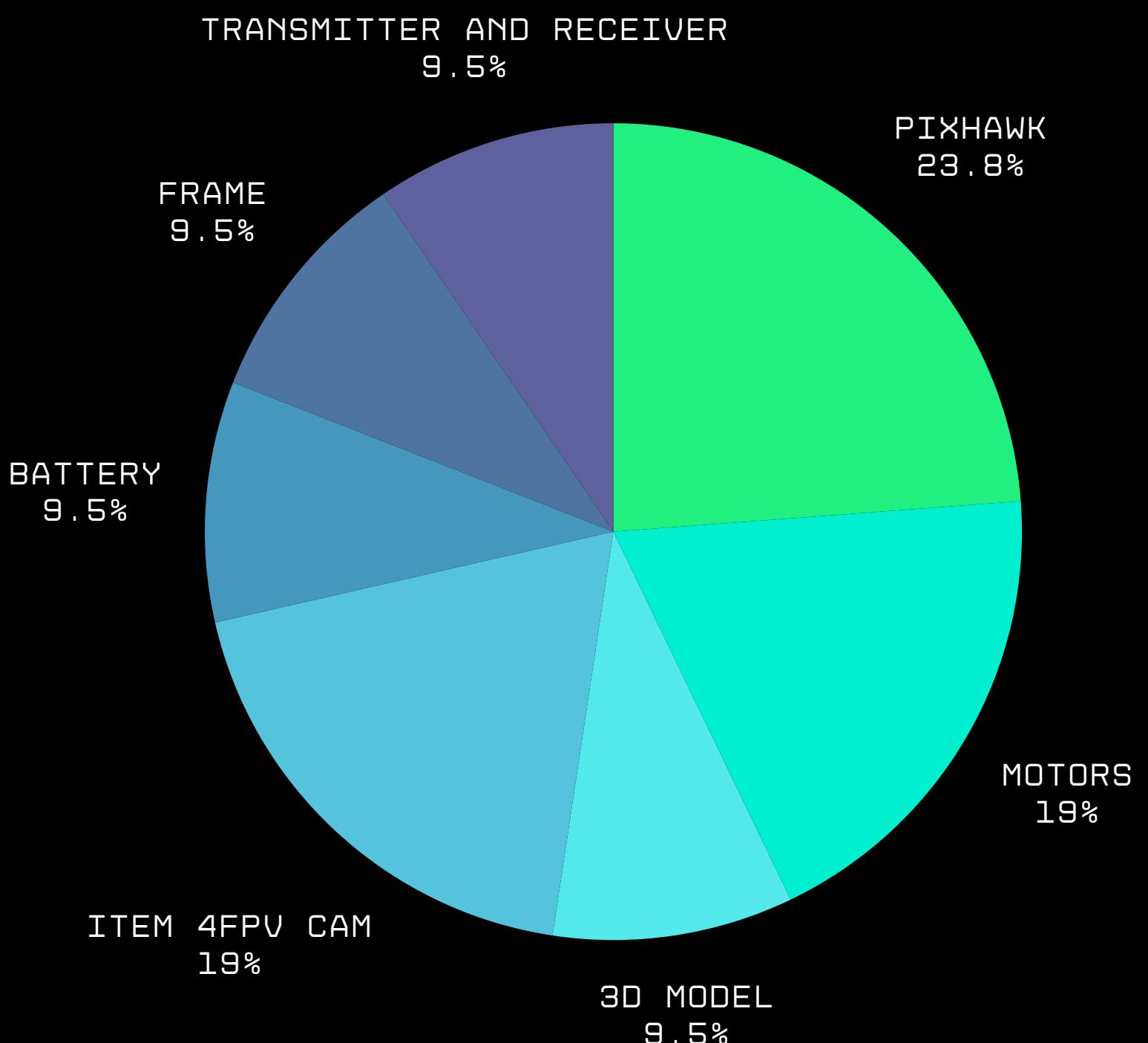
to simulate and validate the performance of the drone's navigation algorithms and control systems, allowing for comprehensive testing





BILL OF MATERIALS

WITHIN OUR 20K BUDGET, WE'RE INTEGRATING THE PIXHAWK FLIGHT CONTROLLER, MAXIMIZING EFFICIENCY AND PERFORMANCE. THIS ENSURES THAT WE DELIVER A COST-EFFECTIVE SOLUTION WITHOUT SACRIFICING QUALITY, SETTING THE STANDARD FOR INNOVATION IN AUTONOMOUS DRONE TECHNOLOGY.





OUR VISION

- WE ARE BUILDING A REVOLUTIONARY AUTONOMOUS DRONE DELIVERY SYSTEM THAT TRANSCENDS CONVENTIONAL BOUNDARIES. OUR PROJECT INTRODUCES A CUTTING-EDGE DRONE CAPABLE OF SEAMLESSLY TRANSITIONING BETWEEN UNDERWATER AND OPEN AIR ENVIRONMENTS, OFFERING UNPRECEDENTED VERSATILITY IN DELIVERY LOGISTICS.
- UTILIZING ADVANCED AUTONOMY AND OBSTACLE AVOIDANCE, OUR DRONES NAVIGATE COMPLEX TERRAINS WITH UNMATCHED PRECISION, GUARANTEEING SAFE AND PROMPT PRODUCT DELIVERY. OUR AIM IS TO PAVE THE WAY FOR A FUTURE WHERE LOGISTICAL CHALLENGES BECOME AVENUES FOR INNOVATION AND ADVANCEMENT, RATHER THAN OBSTACLES.



STREAMLINING DRONE OPERATIONS

- WE STREAMLINED OUR DRONE OPERATIONS BY EMPLOYING QGROUNDCONTROL (QGC) AND MISSION PLANNER FOR CALIBRATION AND VARIOUS ESSENTIAL TASKS. THESE USER-FRIENDLY SOFTWARE TOOLS PROVIDE INTUITIVE INTERFACES, ENABLING PRECISE SETUP AND EFFICIENT MANAGEMENT OF OUR DRONE FLEET, ENSURING SMOOTH AND RELIABLE PERFORMANCE.
- LEVERAGING QGC AND MISSION PLANNER, WE OPTIMIZED DRONE OPERATIONS. THESE TOOLS FACILITATED CALIBRATION AND VARIOUS TASKS, ENSURING PRECISE SETUP AND EFFICIENT MANAGEMENT.

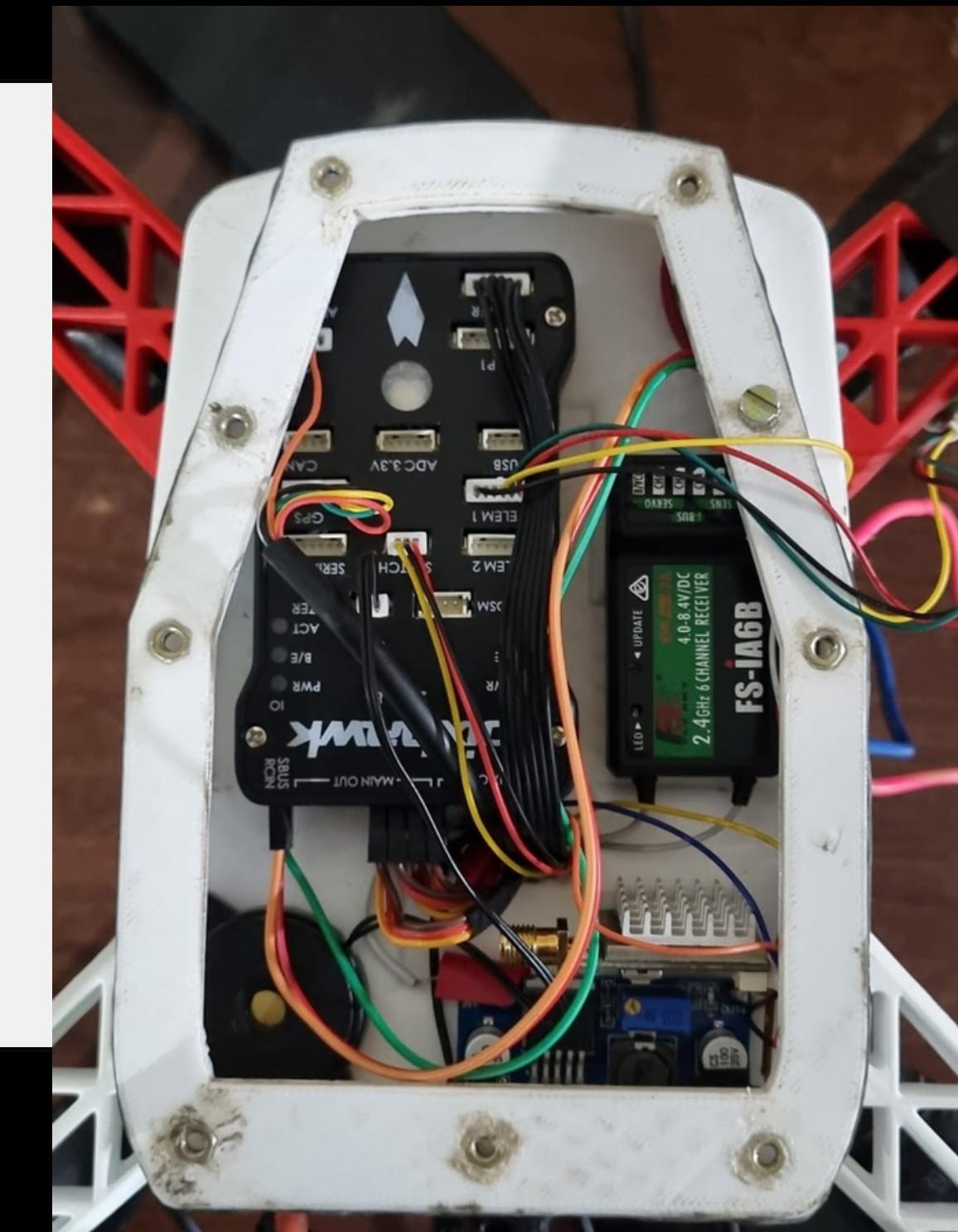
ROVER MK_1



FINAL PRODUCT

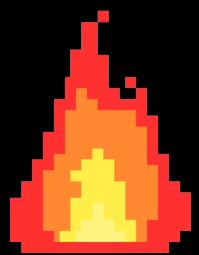


EXTERIOR



INTERIOR

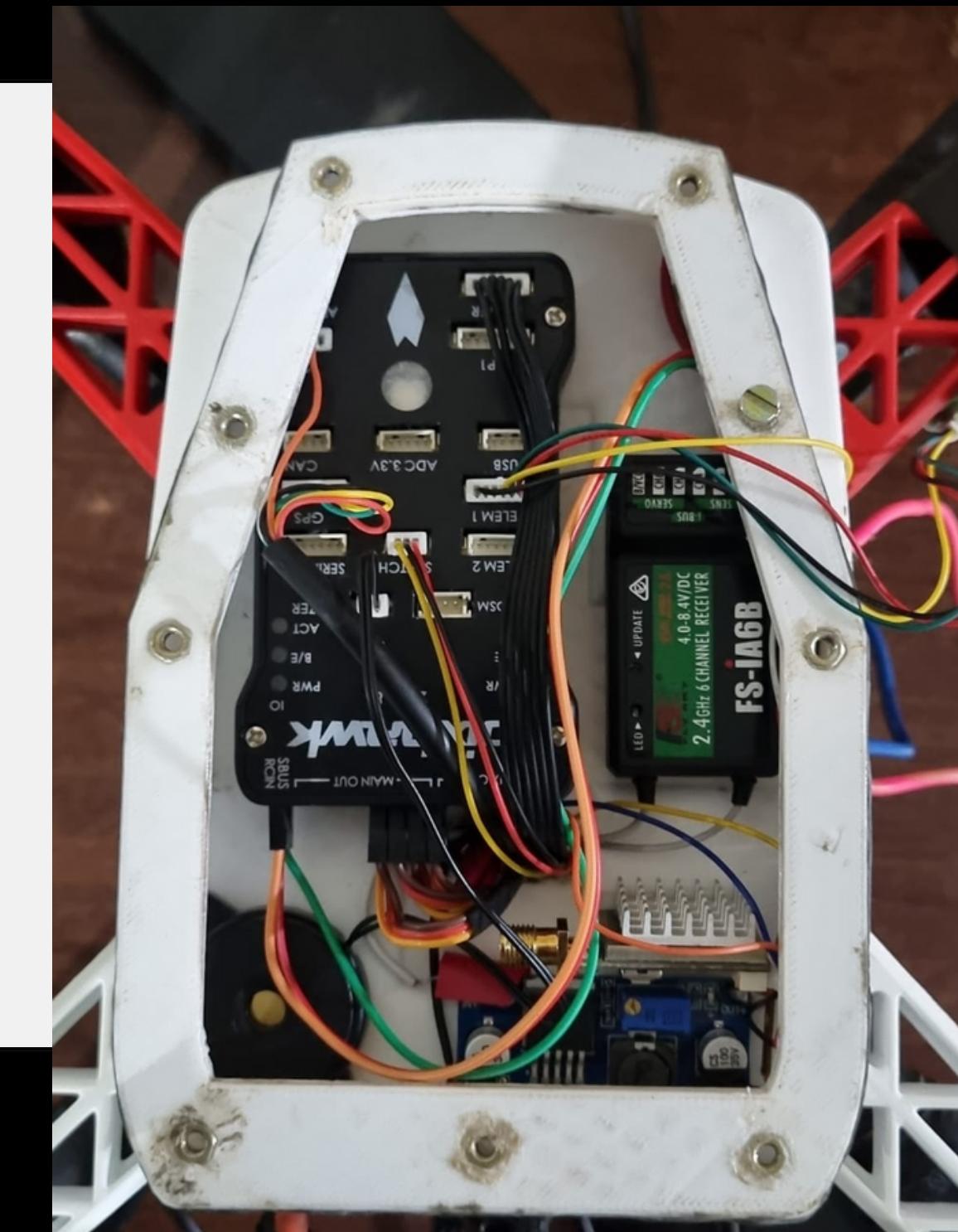
ROVER MK_1



FINAL PRODUCT



EXTERIOR



INTERIOR



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