

1. Drone Hardware – DJI Matrice 350 RTK

1.1. Technical Specifications

- **Flight Time:** Up to 55 minutes (no payload); ~25 minutes (2.5 kg payload)
- **Payload Capacity:** 2.7 kg (configured to 2.5 kg operationally)
- **Transmission:** OcuSync 3 Enterprise, 20 km range, triple 1080p video feed
- **Obstacle Detection:** Six-directional sensing and positioning
- **Ingress Protection:** IP55 dust and water resistance
- **Max Speed / Wind Resistance:** 23 m/s | 12 m/s
- **Battery System:** TB65 intelligent batteries with hot swapping
- **Night Vision FPV Camera:** Enables safe low-light operations

1.2. Embedded Emerging Technologies

Technology	Application
AI Assisted Navigation	Autonomous flight routing and obstacle avoidance
Smart Battery System	Real-time battery health and thermal monitoring
Redundant Flight Systems	Dual IMUs, compasses, and barometers for fail safe performance
Arm Locking Indicators	Magnetic arm locking with secure flight ready indicators
Low Light FPV System	Enhanced night vision for operations in dark environments
BS65 Battery Station	Smart battery charging and predictive maintenance

2. Drone Software – DJI FlightHub 2

DJI FlightHub 2 is a **cloud-based drone operations platform** that enhances mission planning, real time monitoring, and team collaboration. It plays a critical role in managing and coordinating aerial missions, especially in time sensitive scenarios like Hajj.

2.1. Key Features

Feature	Description
Real Time Data Sharing	Live mission video and data feeds synchronized across all team members
2.5D Base Map	Combines elevation data with satellite maps for enhanced situational awareness
One Tap Panorama Sync	Instantly creates and uploads 360° panoramic overviews to the cloud
Cross Device Access	Compatible with controllers, laptops, tablets, and mobile devices
Virtual Cockpit	Immersive operational interface for real-time drone monitoring and control

Outcomes

- Reduced delivery time from **120-90 minutes to less than 5 minutes**
- Enabled real world deployment of **AI, autonomous navigation, and remote operations in Hajj season**
- Improved coordination and awareness through **cloud-based mission control**
- Reinforced nupco's position as a leader in **emerging technology adoption** in healthcare logistics