Research on flags & communication channels

for backend framework

Flags which can be checked for selecting drones for deliveries:

1. Payload capacity available
2. Speed / Proximity of the drone
3. Weather Resistance (Provision of dust shields during dust storms, rain shields, etc. on the drone chassis)
4. Operational Environment & Altitude (some drones may not be suitably constructed for high altitude flying)
5. Battery capacity & Flight time available
6. Health & Proper functioning of components

Frameworks & Technologies for drone’s communication with the backend:

1. Radio Frequency (RF) Communication
2. Cellular Networks (4G/5G/LTE)
3. Satellite Communication (Used in BVLOS drone operations)
4. Mesh Networks & Decentralized Drone-to-Drone communication (mesh network of drones, where the drones in the flight relay flight data to each other and finally back to the fleet command)
5. LoRa (Long Range) Communication which use low-bandwidth communication over long distances, ideal for telemetry data

Examples of Industrial usage of such frameworks:

1. MAVLink (Micro Air Vehicle Link) is an open-source protocol for communication between drones & ground control stations.
2. DJI Lightbridge & OcuSync, proprietary protocol used by DJI drones for transmitting video & telemetry data.
3. Real Time Streaming Protocol (RTSP), used for transmitting live video from drone’s camera to the control center.
4. Message Queuing Telemetry Transport (MQTT), IoT based communication protocols used for drone-to-drone communication and relaying data back to the fleet command.
5. ROS, obviously is there too.