

PizzaDronz Requirements Document

1. Functional Requirements

- The drone must deliver pizzas in the exact order they are received.
- The drone can only carry between 1 and 4 pizzas per trip.
- The drone must log all movements in JSON format.
- Hovering events must be recorded using 999 as the movement angle.
- The drone must follow a 16-direction movement system.
- The drone must start and end at (-3.186874, 55.944494).
- The drone must avoid restricted no-fly zones.

2. Performance Requirements

- The drone should minimize delivery time.
- The system must handle concurrent order requests efficiently.
- Movement calculations must be processed quickly to ensure real-time responsiveness.
- The system should maintain stable performance under heavy order loads.

3. Security & Privacy Requirements

- The drone should not store user data (e.g., personal information).
- The drone must not enter restricted zones.
- The system must securely handle API authentication and authorization.
- The system must validate and reject invalid or unauthorized API requests.
- The drone should avoid flying over populated areas to minimize perceived privacy concerns.

4. Robustness Requirements

- The system must handle API failures without crashing.
- Invalid orders (e.g., incorrect payment details) should be rejected.
- The drone must handle unexpected obstacles (e.g., birds, wind).
- The system should log errors and failures for debugging and future improvements.
- The system must ensure correct behavior when restaurant locations or boundaries change dynamically.