Decision Log

This section explains **why each mission was Assigned or Blocked** based on pilot availability, skills, location, and drone compatibility.

PRJ002 – Blocked

- **Location:** Mumbai
- **Required Skills:** Inspection
- **Priority:** Urgent

Decision: Blocked

Reason:
No **AVAILABLE pilot** is stationed in **Mumbai** who possesses the required **Inspection** skill **and** has access to a compatible **AVAILABLE drone** with matching capabilities.

PRJ001 – Blocked

- **Location:** Bangalore
- **Required Skills:** Mapping
- **Priority:** High

Decision: Blocked

Reason:
No **AVAILABLE pilot** in **Bangalore** has the **Mapping** skill combined with an **AVAILABLE drone** capable of performing the required mission.

PRJ003 – Blocked

- **Location:** Bangalore
- **Required Skills:** Thermal
- **Priority:** Standard

Decision: Blocked

Reason:
Although pilots or drones may exist individually, **no valid combination** of:

- AVAILABLE pilot
- matching **Thermal** skill
- correct **location**

- compatible AVAILABLE drone

was found at the time of assignment.

Decision Rules Summary

A mission is **Assigned** only if **ALL** of the following are true:

1. Pilot status = `AVAILABLE`
2. Pilot location = Mission location
3. Pilot skills ⊇ Required mission skills
4. Drone status = `AVAILABLE`
5. Drone capabilities ⊇ Required mission skills
6. Resources not already assigned to another mission

If **any condition fails**, the mission is **Blocked**.

System Behavior Note

The system prioritizes missions in the following order:

1. **Urgent**
2. **High**
3. **Standard**

Higher-priority missions consume resources first, which may cause lower-priority missions to be blocked even if resources are limited.