

Standard Operating Procedure

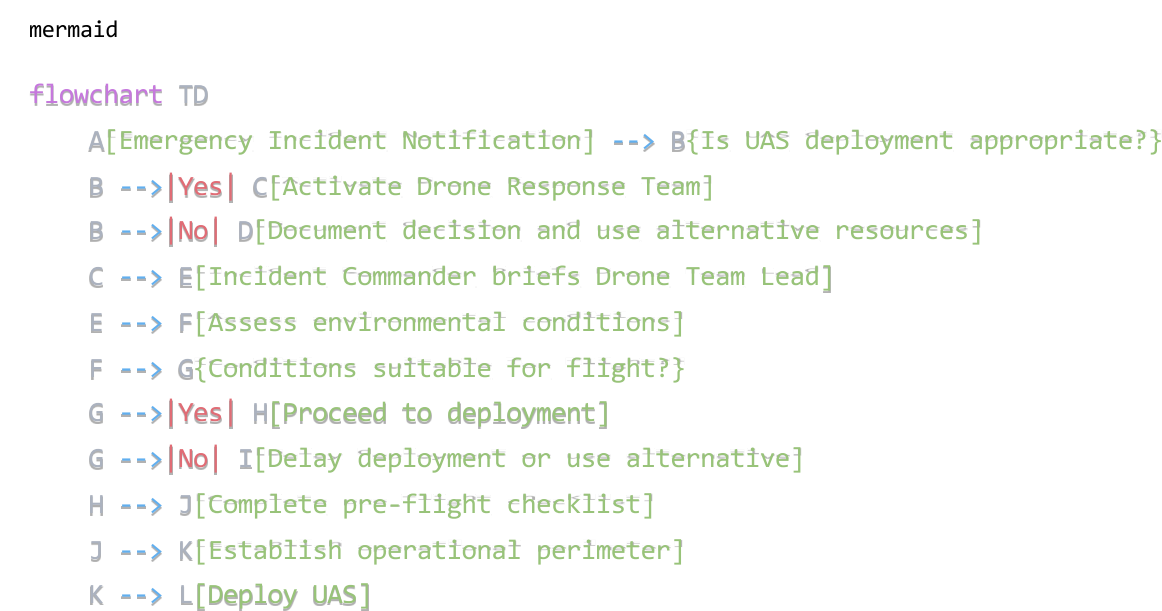
Drone Emergency Response Protocol

SOP-DR-103: Unmanned Aircraft System (UAS) Deployment for Emergency Response

Purpose: This Standard Operating Procedure establishes the protocol for rapid deployment of UAS assets during emergency situations to provide situational awareness, search capabilities, and response coordination.

Scope: This procedure applies to all certified UAS pilots and emergency response personnel within the organization.

1. INCIDENT NOTIFICATION AND ASSESSMENT



2. DEPLOYMENT PROCEDURE

2.1 Initial Response (T+0 to T+10 minutes)

- ☐ 2.1.1 Drone Team Lead receives mission brief from Incident Commander
- ☐ 2.1.2 Assess mission objectives and select appropriate UAS platform
- ☐ 2.1.3 Conduct rapid area assessment for hazards and no-fly zones
- ☐ 2.1.4 Establish launch zone and GCS (Ground Control Station)
- ☐ 2.1.5 Notify ATC or use LAANC for airspace authorization if required

2.2 Equipment Preparation (T+5 to T+15 minutes)

- ☐ **2.2.1** Complete pre-flight checklist (as per Maintenance Checklist document)
- ☐ **2.2.2** Set up telemetry and video feeds to Incident Command Post
- ☐ **2.2.3** Configure mission-specific parameters (flight boundaries, altitude restrictions)
- ☐ **2.2.4** Test communication systems between Pilot, Visual Observer, and Command
- ☐ **2.2.5** Prepare secondary drone if available (backup system)

2.3 Flight Operations (T+ 15 minutes onward)

- ☐ **2.3.1** Launch primary UAS and establish stable flight
- ☐ **2.3.2** Conduct systematic area search according to mission profile:
 - For search and rescue: Grid pattern with 30% overlap
 - For fire assessment: Perimeter mapping followed by hotspot identification
 - For hazmat: Upwind approach maintaining safe standoff distance
- ☐ **2.3.3** Maintain continuous communication with Incident Command
- ☐ **2.3.4** Document findings via:
 - Geotagged imagery
 - Thermal mapping (if equipped)
 - Real-time video feed
- ☐ **2.3.5** Implement 25-minute rotation schedule for extended operations

3. DATA HANDLING AND REPORTING

3.1 Real-time Data Management

- ☐ **3.1.1** Establish data link to Incident Command Post
- ☐ **3.1.2** Designate Data Specialist to monitor and interpret feeds
- ☐ **3.1.3** Implement classification protocol for sensitive information
- ☐ **3.1.4** Create backup of all collected data every 15 minutes

3.2 Post-Flight Procedures

- ☐ **3.2.1** Conduct hot debrief immediately after mission completion
- ☐ **3.2.2** Transfer all mission data to secure server
- ☐ **3.2.3** Complete flight log documentation
- ☐ **3.2.4** Prepare preliminary findings report for Incident Commander
- ☐ **3.2.5** Conduct equipment inspection and recharge/replace batteries

4. EMERGENCY PROTOCOLS

4.1 UAS Malfunction Response

- ☐ **4.1.1** Pilot announces "DRONE EMERGENCY" on command channel
 - ☐ **4.1.2** Attempt to stabilize aircraft if possible
 - ☐ **4.1.3** Initiate Return-to-Home or controlled landing if safe
 - ☐ **4.1.4** If crash imminent, direct to least hazardous area
 - ☐ **4.1.5** Notify Incident Commander and relevant personnel
 - ☐ **4.1.6** Document malfunction and response actions
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Associated Documentation:

- Drone Maintenance Checklist (DOC-UAS-001)
- Emergency Response Coordination Plan (SOP-ER-100)
- UAS Fleet Capabilities Matrix (DOC-UAS-005)
- Approved Flight Zones Map (MAP-UAS-001)

Revision History:

Version	Date	Description of Changes	Approved By
1.0	10/15/2024	Initial procedure established	J. Rodriguez
1.1	12/02/2024	Updated emergency protocols	S. Thompson
1.2	02/18/2025	Added data management section	L. Washington