Region Adaptation Guidelines - Atmospheric Filtration Drone Swarm

This document provides operational guidelines for adapting drone swarm behavior, spacing, and filtration priorities based on terrain and environmental conditions. It is used to configure drones before deployment in specific biome or climate zones.

Urban Core

- High PM2.5 and VOC density
- Tight hover pattern, <5m spacing
- Avoid GPS dead zones between buildings
- Filter priority: Hybrid or Carbon

Industrial Zone

- High NO_2, SO_2, and heavy metals
- Target hotspots near stack plumes
- Use shielded electronics
- Filter priority: Carbon with NOx specificity

Forest Edge

- VOCs from biomass + pollen
- Wide vertical sweep recommended
- Minimize drift to preserve flora
- Filter priority: Mycelium

Coastal Region

- High salt/humidity
- Drift loop mode preferred
- Corrosion-resistant components mandatory
- Filter priority: Hybrid

Mountain Valley

- Inversion risk traps pollution low
- Vertical sweep critical at dawn/dusk
- Stable hover priority due to wind

- Filter priority: Carbon or Hybrid

Desert Urban

- High dust and ozone

- Operate during cooler hours only

- Solar assist ideal

- Filter priority: Carbon or Hybrid