Snapshot Objectives

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Start Objective

The starting objective of the Drone Flight Path Simulator (DFPS) project is to establish the foundational simulation environment and core interface needed for mission planners to visualize and evaluate SUAS flight paths. This initial snapshot focuses on implementing the essential system components required for basic mission planning and path visualization. This includes the following key components:

- Developing an intuitive 3D visualization interface for displaying drone flight paths over terrain.
- Implementing basic environmental and sensor detection models for audio and visual signature estimation.
- Creating the ability for users to draw, upload, and modify flight paths within the interface.
- Establishing the software architecture for plug-in extensibility to support future mission variables and data sources.

1st Checkpoint Objective

The primary objective for Snapshot 2 is to incorporate core functional features that allow DFPS to generate measurable mission-effectiveness outputs. This includes integrating environmental factors, calculating detection likelihoods, and providing mission success feedback based on user-defined flight paths.

2nd Checkpoint Objective

The primary objective for Snapshot 3 is to expand DFPS capabilities by implementing user-driven customization options, including advanced mission parameters, editable flight-path waypoints, and enhanced sensor modeling. This checkpoint also includes support for saving and loading flight plans for repeated use.

Due Date Checkpoint

The final objective of the concluding snapshot is to refine DFPS for improved usability, performance, and operational stability. This includes correcting software errors, optimizing visual clarity for field use, and improving interface readability under various lighting conditions. Minor enhancements will also be implemented to support smoother mission-planning workflows and prepare the system for demonstration and evaluation.