

2026

AUTOMATED MISSION PLANNER FOR UAV INSPECTION TASKS

Fully automated 3D flight planner for precise building inspections based on OpenStreetMaps.

This solution bypasses hardware limitations of low-budget UAVs via real-time Virtual Stick control, enabling complex automated inspections for non-enterprise drones. System reliability was successfully verified through a dozen real-world test flights using the DJI Mavic Mini gen. 1.

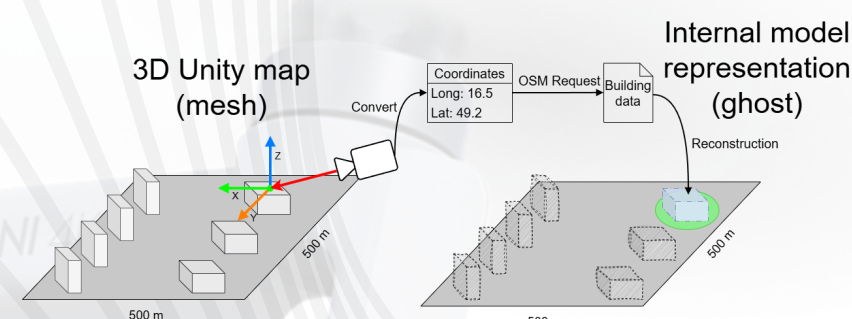


Fig 1: OSM reconstruction process

Target building is selected for inspection



Fig 2: Target selection using global OpenStreetMap data

The flight mission is automatically generated

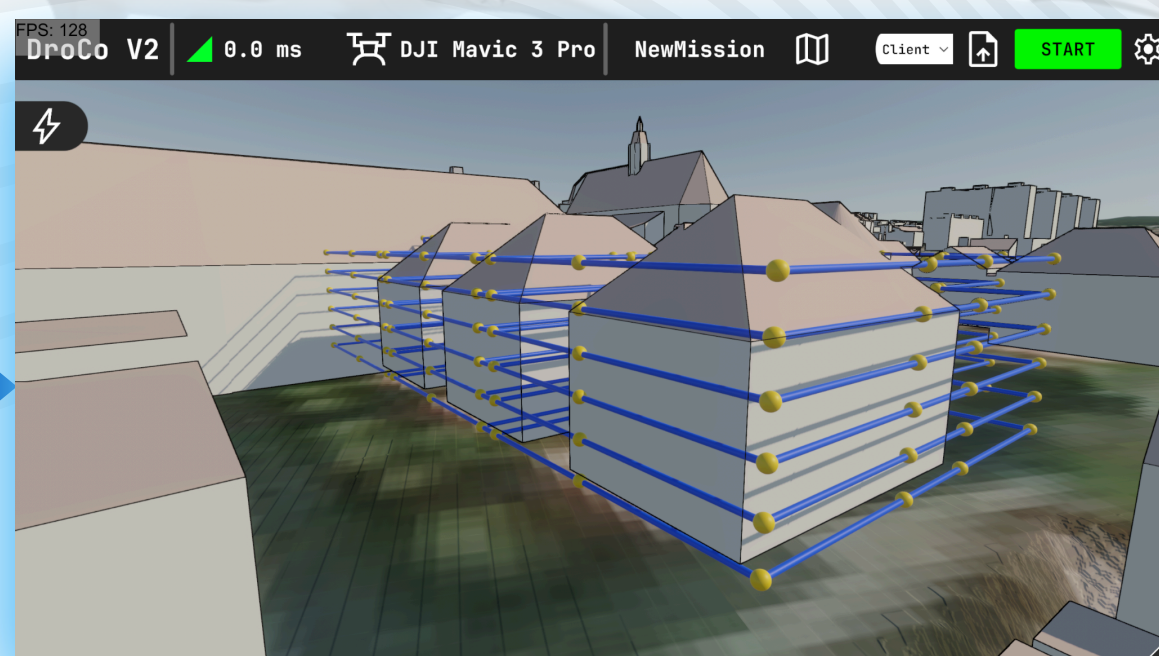


Fig 3: Auto-Generated mission using default parameters



Fly the mission!

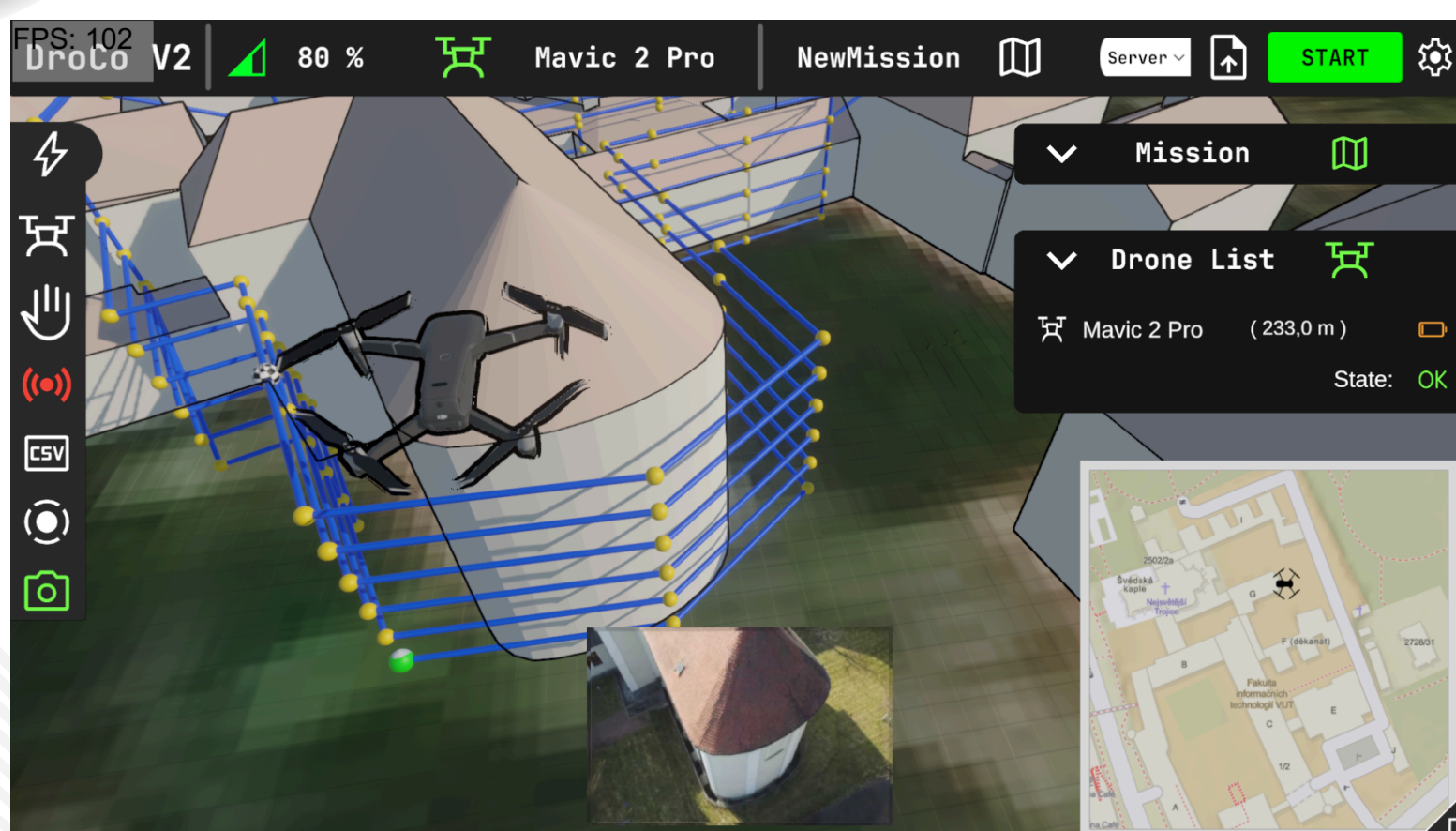


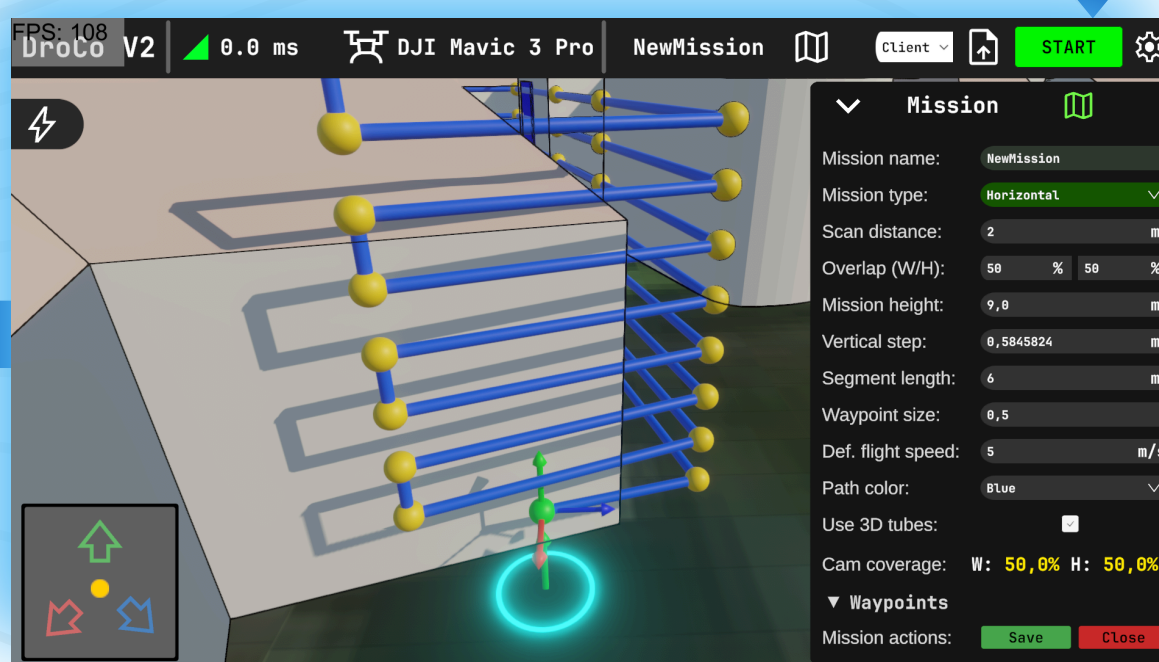
Fig 5: Real-time drone connection and telemetry overview

Fig 6: Automated mission flight with drone camera stream

Developed with



Fig 4: Manual refinement of the generated flight plan



The trajectory is adjusted using 3D gizmos and parameters

The UAV is connected and flight plan uploaded

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