Pass Orchestrator

For missions with frequent ground station passes

Satellite missions with many ground station contacts can't afford to waste time on manual scheduling and night-time commanding. Pass Orchestrator is a standalone, automation-first solution that makes planning and executing passes effortless, while integrating smoothly with your existing C2 systems.

It's easy to set up with any flight dynamics tool, supports both LEO and MEO missions, and gives operators the control and visibility they need — without the manual workload.

Struggling with real-time visibility?

Get a full overview of every pass, with centralized monitoring of activity, performance, and status — giving operators confidence that no contact window is wasted.

Concerned about operational workload?

Pass Orchestrator automates routine pass execution, so your teams can concentrate on mission-critical decisions instead of manually sending commands at inconvenient hours.

Worried about integration with your FDS tools?

With built-in flight dynamics for orbit propagation and contact generation, and easy integration with any 3rd-party FDS product, Pass Orchestrator adapts to your setup instead of locking you into one ecosystem.

Already using a C2 system?

No problem. Pass Orchestrator plugs right in, adding advanced pass planning and automation without disrupting your existing environment.

# Key Features

Pass Planning & Scheduling

- Automatic computation of ground station visibilities and contact windows.
- Operator-friendly UI to plan and schedule passes for single or multiple satellites.
- Allocation of commands, files, and activities to specific contact windows.
- Offline scheduling (e.g., evenings/weekends) to reduce manual interventions.
- Integrated orbit cartography (2D/3D) with ground station footprints for contact prediction.
- Intelligent pass capacity utilization to maximize contact efficiency.
- Multi-stage passes to model and optimize stages of a pass, with automated actions and progression rules.

Automated Execution & Monitoring

- Automated execution of commands, scripts, and file transfers during passes.
- Live pass monitoring with KPIs, bandwidth usage, and success/failure status.
- Real-time progress tracking and visual indicators for uplink/downlink activity.
- Manual abort, reschedule, and recovery options for operators.
- Centralized event logs capturing ground and space events, operator notes, and anomalies.
- Sequential Timing: Precise command timing with delay management during execution.
- Test Mode: Simulate live passes for testing and validation without impacting operations.

Flight Dynamics & Integration

- Built-in FDS tools for orbit propagation and contact generation.
- Easy integration with external Flight Dynamics Systems (FDS).
- API-first architecture for seamless interoperability with existing C2 or Mission Control Systems.
- Unified workflow: from visibility computation to execution within a single application.
- Multi-satellite support with conflict-free scheduling and resource optimization.
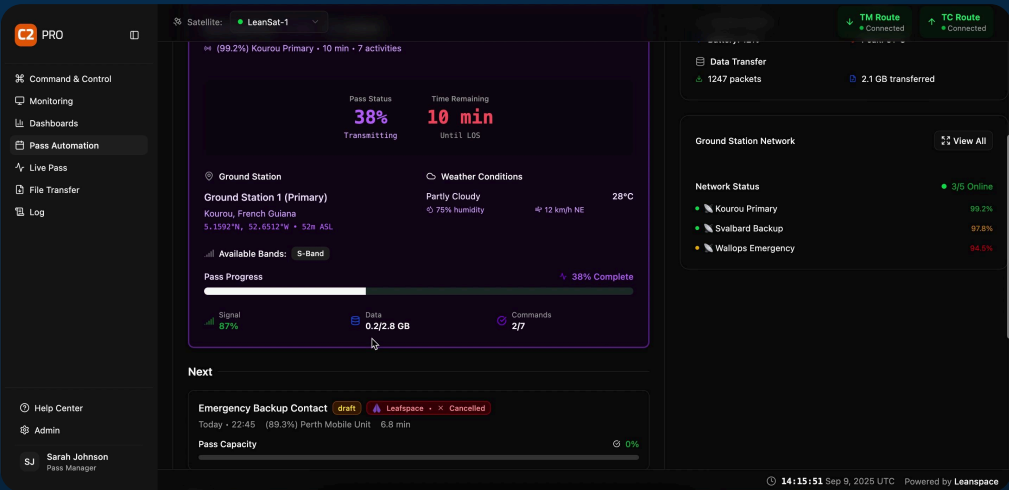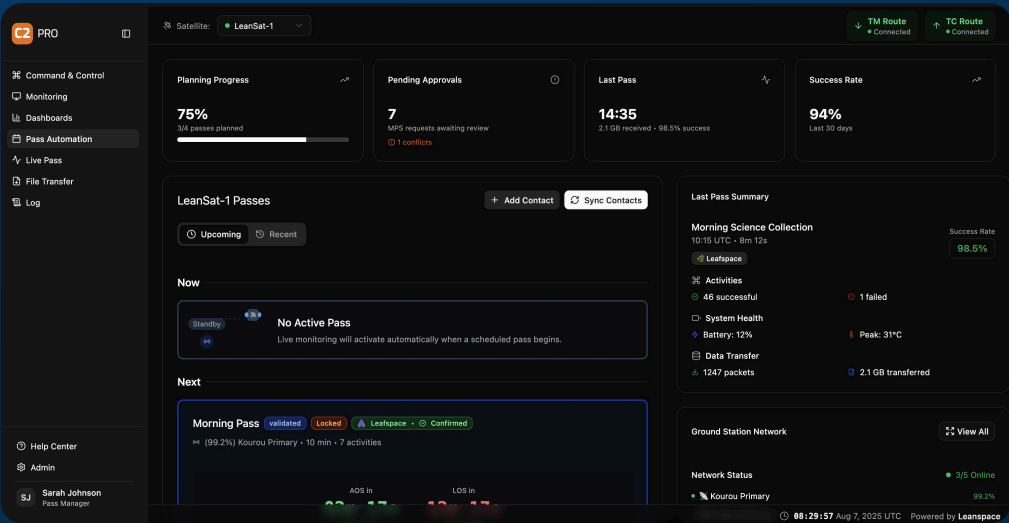
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