

1.0 RELEASE SNAPSHOT/STATUS

Field	Information
Platform	Edge 130 sUAS
Release Version	2.0.4 Airframe / 2.0.3 Command Deck
Release Date	May 2026
Components Updated	Command Deck Application/Airframe

Table 1: Release Status

Product	Current Release	Bugs Addressed/Features Added	Next Release	Features Targeted
Airframe	2.0.4	- Autopilot OTA Support - Hold Mode RTL bug - Battery Failsafe bug - Unexpected Manual Flight Mode Bug	2.1.0	Arm 2.1.0 Support
Command Deck	2.0.3	- Battery Warning visual indicators - Level Horizon calibration improvements - Screenshot Capture - Relative altitude in RTO behavior correction	2.1.0	Overlord Support
Overwatch	2.0.0		2.1.0	- Video pipeline improvements - Video bitrate writing capabilities
Mapping Array	2.0.0		2.1.0	- Exposure sync - Image capture pipeline bugfixes
Overlord (Pending Release)	1.0.0		2.1.0	Initial production release with core functionality

2.0 RELEASE OVERVIEW

- 2.1 Version 2.0.4 introduces significant improvements to aircraft maintainability, autonomous flight reliability, mission execution, and automated recovery behavior. This release adds support for over-the-air (OTA) firmware updates for the onboard autopilot computer while addressing issues affecting battery failsafe functionality, mission routing, and Return-to-Home (RTH) performance.
- 2.2 The release improves autonomous recovery logic, mission execution consistency, and low-battery response behavior while simplifying firmware maintenance through OTA update capability. Additional software corrections and quality-of-life enhancements improve overall aircraft stability and operational reliability.
- 2.3 These updates reduce maintenance burden, improve autonomous flight performance, enhance recovery reliability, and increase operator confidence during mission execution.

3.0 FEATURE OVERVIEW & TRACEABILITY

Table 2: Feature Overview Table

Feature	Operational Driver	Operational Value	Audience Applicability	Implemented Improvements
Over-the-Air (OTA) Autopilot Firmware Updates	OTA Autopilot Firmware Updates	OTA Autopilot Firmware Updates	OTA Autopilot Firmware Updates	OTA Autopilot Firmware Updates
Battery Failsafe Reliability Improvements	Improve autonomous low-battery response and aircraft recovery behavior	Provides predictable warning, recovery, and emergency landing actions as battery capacity decreases	Operators, Safety Officers, Flight Test Teams	Corrected battery failsafe logic and improved Warning (30%), Critical RTL (15%), and Emergency Landing (10%) behaviors
Mission Routing Enhancements	Improve mission execution accuracy and consistency	Increases confidence in autonomous waypoint navigation and mission completion	Operators, Mission Planners, Flight Test Teams	Corrected mission routing issues, improved waypoint navigation logic, and resolved mission execution edge cases

Return-to-Home (RTH) Reliability Improvements	Improve automated aircraft recovery behavior	Provides more predictable and reliable autonomous recovery operations	Operators, Flight Test Teams	Corrected RTH routing and transition logic, improving consistency during automated return operations
General Stability Improvements	Improve software robustness and user experience	Reduces software anomalies and enhances overall system reliability	All Users	General bug fixes, stability improvements, performance optimizations, and quality-of-life enhancements

4.0 OPERATIONAL DRIVERS

4.1 OTA Autopilot Firmware Updates

Updating autopilot firmware previously required direct access to the aircraft and additional maintenance procedures.

4.2 Battery Failsafe Reliability

Battery failsafe behavior required improvements to ensure autonomous recovery actions occur consistently when configured battery thresholds are reached.

4.3 Mission Routing

Certain mission routing conditions could affect autonomous navigation performance and mission execution consistency.

4.4 Return-to-Home Reliability

Automated return behavior required refinement to improve transition logic and recovery consistency.

4.5 System Stability

General software improvements were required to enhance reliability and reduce operator workload during routine operations.

5.0 OPERATIONAL IMPACT

5.1 OTA Autopilot Firmware Updates

Operators and maintainers can now deploy autopilot firmware updates remotely through the FlightWave update process, reducing maintenance effort and improving fleet software management.

5.2 Battery Failsafe Improvements

Battery protection and recovery behaviors have been improved to provide more predictable aircraft response as battery capacity decreases during flight.

The Edge 130 utilizes a three-stage battery protection system based solely on **remaining battery percentage**. These thresholds are configurable by the operator prior to flight and provide progressively more aggressive recovery actions as battery state decreases.

Warning Threshold

- Default value: **30% battery remaining**
- Displays a visual warning notification on the Ground Control Station
- Provides an audible battery warning announcement
- No autonomous flight action is taken

This alert is intended to increase operator awareness and provide sufficient time to evaluate mission status and recovery options.

Critical Threshold

- Default value: **15% battery remaining**
- Aircraft automatically initiates **Return-to-Launch (RTL)**
- Aircraft navigates toward the launch location using autonomous recovery logic
- Recovery action may be interrupted at any time through operator control input

This threshold is intended to preserve sufficient battery reserve for safe aircraft recovery.

Emergency Threshold

- Default value: **10% battery remaining**
- Aircraft immediately initiates an autonomous landing sequence
- If operating in Fixed-Wing mode, the aircraft will automatically transition to Multirotor mode before landing
- Emergency landing behavior may be overridden through operator control input

This threshold is designed as a final protective measure to reduce the risk of complete battery depletion during flight.

Operational Considerations

- Battery failsafe actions are based solely on remaining battery percentage

- Distance from the operator, launch point, or mission objective is not considered when triggering failsafe actions
- Operators should evaluate mission requirements and recovery distances prior to takeoff and adjust thresholds as appropriate
- Battery failsafe thresholds may be modified through system settings before arming the aircraft
- Battery failsafe thresholds cannot be changed while the aircraft is in flight

5.3 Mission Routing Improvements

Improved waypoint navigation and routing consistency provide more predictable autonomous mission execution.

5.4 Return-to-Home Improvements

Updated recovery logic improves autonomous return performance and increases reliability during recovery operations.

5.5 Stability and Reliability Improvements

Additional bug fixes and software refinements improve overall system robustness and operational confidence.

6.0 APPLICABILITY

Table 3: Applicability Matrix

Feature	Command Deck
OTA Autopilot Firmware Updates	✓
Battery Failsafe Improvements	✓
Mission Routing Improvements	✓
Return-to-Home Improvements	✓
General Stability Improvements	✓

7.0 SOFTWARE CHANGES

7.1 New Features

Over-the-Air Autopilot Firmware Updates

- Added support for OTA firmware updates of the onboard autopilot computer
- Simplifies software deployment and maintenance procedures
- Enables streamlined fleet firmware management
- Reduces update time and aircraft downtime

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7.2 Improvements

Battery Failsafe Improvements

- Corrected battery failsafe activation behavior
- Improved autonomous battery protection functionality
- Enhanced reliability of configured battery recovery actions

Mission Routing Improvements

- Corrected mission routing issues
- Improved waypoint navigation consistency
- Resolved mission execution edge cases

Return-to-Home (RTH) Improvements

- Corrected return routing logic
- Improved automated recovery transitions
- Enhanced autonomous return consistency

General Stability Improvements

- Software reliability enhancements
- Quality-of-life improvements
- Performance optimizations
- General bug fixes throughout the fuselage firmware

8.0 FIXES & RELIABILITY

8.1 Battery Failsafe Logic

Resolved issues affecting autonomous low-battery recovery behavior and failsafe activation consistency.

8.2 Mission Routing Corrections

Resolved mission execution issues affecting waypoint routing and navigation performance.

8.3 Return-to-Home Recovery Logic

Resolved issues affecting automated return routing and transition behavior.

8.4 General Software Reliability

Implemented software corrections and stability improvements across multiple system components.