



RigiCloud Release Notes

RigiCloud Release Notes

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 - RigiCloud and Edge Node - v1.16.0:
 - New features
 - Fixed/Improved
 - Onboard software (OC) - v1.1.0:
 - New features
 - Fixed/Improved
 - Autopilot (AP) software - v2.9.0:
 - Fixed/Improved
 - Failsafe Computer (FS) firmware - v1.1.0:
 - Fixed/Improved
- RigiTech Software Update - June 2, 2025

- RigiCloud and Edge Node - v1.15.0:
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 - Fixed/Improved
- Onboard software (OC) - v1.0.0:
 - Fixed/Improved
- Autopilot (AP) software - v2.8.0:
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 - Fixed/Improved
 - Onboard software (OC) - v0.26.0:
 - Fixed/Improved
 - Autopilot (AP) software - v2.7.0:
 - Fixed/Improved
 - Failsafe Computer (FS) firmware - v0.18.0:
 - Fixed/Improved
- RigiTech Software Update - October 28, 2024
 - RigiCloud and Edge Node - v1.13.0:
 - New Features
 - Fixed/Improved
 - Onboard software (OC) - v0.25.0:
 - Fixed/Improved
 - Autopilot (AP) software - v2.6.0:
 - Fixed/Improved
 - Failsafe Computer (FS) firmware - v0.17.0:
 - Fixed/Improved
- RigiTech Software Update - July 22, 2024
 - RigiCloud and Edge Node - v1.12.0:
 - New Features
 - Fixed/Improved
 - Onboard software (OC) - v0.24.0:
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 - Autopilot (AP) software - v2.5.0:
 - New Features
 - Fixed/Improved
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 - Fixed/Improved
- RigiTech Software Update - April 8, 2024
 - RigiCloud and Edge Node - v1.11.0:
 - New Features
 - Fixed/Improved
 - Onboard software (OC) - v0.23.0:
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- Fixed/Improved
- Autopilot (AP) software - v2.4.0:
 - New Features
 - Fixed/Improved
- Failsafe Computer (FS) firmware - v0.15.0:
 - New Features
 - Fixed/Improved
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 - RigiCloud and Edge Node - v1.10.0:
 - New Features
 - Fixed/Improved
 - Onboard software (OC) - v0.22.0:
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 - Fixed/Improved
 - Failsafe Computer (FS) firmware - v0.14.0:
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 - RigiCloud and Edge Node - v1.9.0:
 - New Features
 - Fixed/Improved
 - Onboard software (OC) - v0.21.0:
 - New Features
 - Fixed/Improved
 - Autopilot (AP) software - v2.2.0:
 - New Features
 - Fixed/Improved
 - Failsafe Computer (FS) firmware - v0.13.0:
 - New Features
 - Fixed/Improved
- RigiTech Software Update - June 26, 2023
 - RigiCloud and Edge Node - v1.8.0:
 - Added
 - Fixed/Improved
 - Onboard software (OC) - v0.15.0:
 - Added
 - Fixed/Improved
 - Autopilot (AP) software - v1.13.2:
 - Added
 - Fixed/Improved
 - Failsafe Computer (FS) firmware - v0.12.0:
 - Added
 - Fixed/Improved

- RigiTech Software Update - April 3, 2023
 - RigiCloud and Edge Node - v1.7.0:
 - Added
- Onboard software (OC) - v0.14.0:
 - Fixed/Improved
- Autopilot (AP) software - v1.13.1:
 - Added
 - Fixed/Improved
- Failsafe Computer (FS) firmware - v0.11.0:
 - Fixed/Improved
- RigiCloud and Edge Node - v1.6.0:
 - Added
- Onboard software (OC) - v0.13.0:
 - Added
 - Fixed/Improved
- Autopilot (AP) software - v1.13.0:
 - Added
- Failsafe Computer (FS) firmware - v0.10.0:
 - Added
- RigiCloud and Edge Node - version 1.5.0:
 - Added
- Onboard software (OC) for Eiger + Minto - version 0.12.0:
 - Added
 - Fixed/Improved
- PX4 (autopilot for Eiger + Minto) - version 1.12.7
 - Added
- Failsafe (backup computer for Eiger + Minto) - version 0.9.0
 - Added
- RigiCloud - version 1.4.0 (including changes in 1.3.0 that was unreleased):
 - Added
- Onboard software (OC) for Eiger + Minto - version 0.11.0 (including changes in 0.10.0 that was unreleased):
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 - Fixed
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- RigiCloud - version 1.2.0:
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 - Fixed
- Onboard software (Eiger + Minto) - version 0.9.6:
 - Added
 - Fixed
- RigiCloud - version 1.1.0:
 - Added
 - Fixed
- Onboard software (Eiger + Minto) - version 0.9.3:

- Added
- Fixed
- Changed
- Autopilot software (Eiger + Minto) - version 1.12.4:
 - Added

Quarterly release - 2026-06-01

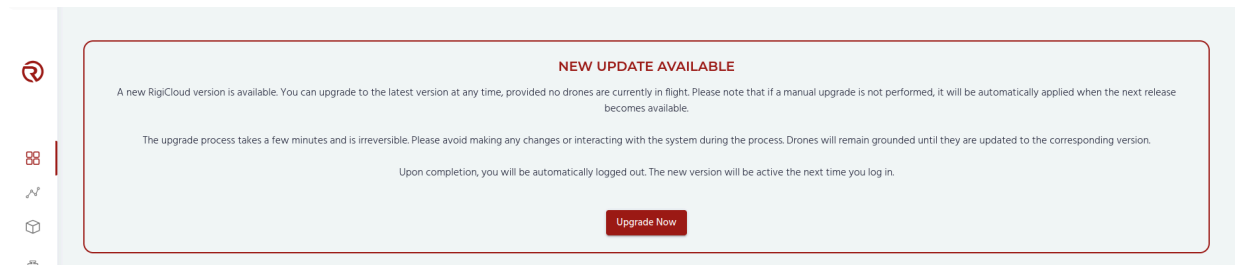
Information on software updates, hotfixes and documentation is available in [Zendesk](#).

RigiCloud and Edge Node - v1.19.0:

New features

- **Multiversioning capability:**

- RigiCloud can now support multiple versions of its core services simultaneously, allowing operators more flexibility in the upgrade process. When a new software version is released, the past version remains active, allowing Head of Operations users to update their portal at a time of their choosing.
- Once an upgrade is triggered, all drones will also need to be upgraded to the new version, and there is no possibility to downgrade. The previous version remains supported for a limited time period. Critical hotfixes may still result in mandatory upgrades to the new version.



- **Live air traffic:**

- A new air traffic layer is available from data supplier [SafeSky](#). The data will be available to all clients on a trial basis after release until commercial terms are defined.
- The **INVOLI** air traffic layer has been deprecated.

- **Enhanced video server:**

- A new backend for video streaming increases stability and reliability. Support was added for additional external video stream sources within the Control Tower.

- **Improved telemetry display:**

- Invalid telemetry values now display as '-' instead of '0'.
- Removed FS LTE link status in Edge Node RigiCloud.
 - **Note:** By design, this information could not be displayed in Edge Node RigiCloud.

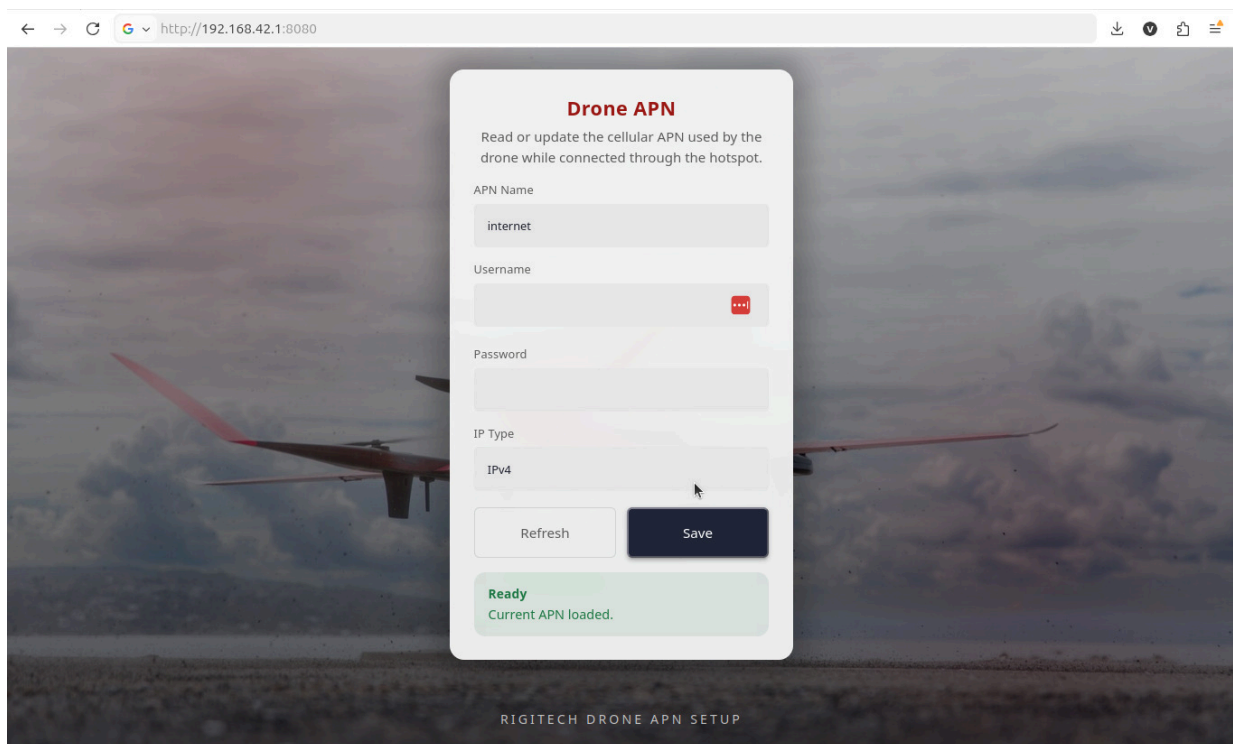
Fixed/Improved

- Improved post-flight analysis tools with expanded error detection.
- General bug fixes and reliability enhancements across systems.

Onboard software (OC) - v1.4.0:

New features

- **APN management enhancement:**
 - Connectivity settings such as the APN for the drone's LTE link or a local WiFi connection can now be set directly through the drone's WiFi hotspot. This removes the need of an active secondary link (FS LTE, Edge Node) to set initial connectivity.



- **Safety settings simplification:**
 - Simplification of safety settings options, aligned with safety requirements. The following safety actions have been removed:
 - **Pregeocage breach:** Hold and Warning removed as available actions
 - **Lower altitude deviation:** 2-layer configuration (warning + action) is now mandatory, Warning is no longer accepted as an action, Action maximum limit reduced from 10,000 m to 100 m
 - **Upper altitude deviation:** 2-layer configuration (warning + action) is now mandatory, Warning is no longer accepted as an action, Action maximum limit reduced from 10,000 m to 100 m, Action minimum limit raised from 10 m to 20 m
 - **DAA:** Hold and SRP removed as available actions for High and Critical levels

- **C2:** RTO removed as available action

Fixed/Improved

- Enhanced tracking of custom drone software versions with grounding enforcement for non-reviewed versions (per SAIL-III requirements).
- Refactored networking backend for more reliable datalinks.
- Improved CPU performance.
- General bug fixes and reliability enhancements across systems.

Autopilot (AP) software - v2.12.0:

New features

- **Transition improvements:**
 - Automatic retransition to fixed-wing: After triggering CO, RTO or SRP when the drone is in multicopter mode, the drone will return to fixed-wing mode after having flown to the branch-in point if it is situated on a fixed-wing segment of the original route.
 - Note: No automatic retransitions are attempted after a previous transition failure or quadchute trigger on the same flight.
 - Quadchute timing before pregeocage breach: if Hold is triggered **manually** while in fixed-wing mode but the resulting loiter loop is predicted to breach the pregeocage, the drone executes a quadchute into multicopter mode.
 - Note: Hold behaviours triggered automatically by a failsafe action do not have this check and will remain in a fixed-wing loiter until a pre-geocage breach triggers further actions.
- **Guidance, navigation, and control improvements:**
 - Fixed-wing altitude acceptance that could lead to spiraling climbs is deactivated.
 - Better alignment for next-waypoint targeting during multicopter alignment phase while executing a MC U-Turn.
- **RTK improvements:**
 - RTK can now be applied to specific GNSS devices (none, front, back, or both) to avoid bad RTK data affecting both GNSS devices.

Fixed/Improved

- Enhanced DAA algorithms to reliably detect multiple aircraft within range.
- Improved RTK packet handling.
- General bug fixes and reliability enhancements across systems.

Failsafe Computer (FS) firmware - v1.4.0:

Fixed/Improved

- Fixed SD card remounting issue for logging.
- General bug fixes and reliability enhancements across systems.

Hotfixes:

RigiCloud and Edge Node - v1.19.1 - 2026-06-08:

Fixed/Improved

- Fix drone command history.
- Improved video streaming reliability.
- Air traffic layer now shows traffic based on map zoom level.
- More reliable email notifications.
- General stability improvements.

RigiCloud and Edge Node - v1.19.2 - 2026-06-09:

Fixed/Improved

- Improved Go To validation.
- Improved live map behaviour when mission data is missing.
- Improved drone connection status.
- General stability improvements.

RigiCloud and Edge Node - v1.19.3 - 2026-06-11:

Fixed/Improved

- Improved failsafe reliability, telemetry-based positioning, and go-to command validation for safer drone operations.
- General stability improvements.

RigiCloud and Edge Node - v1.19.4 - 2026-06-23:

Fixed/Improved

- Stable video session identity across reconnects.
- SafeSky integration improvements.
- General stability and performance improvements.

RigiCloud and Edge Node - v1.19.5 - 2026-06-27:

Fixed/Improved

- SafeSky integration improvements.

- General stability and performance improvements.

RigiCloud and Edge Node - v1.19.6 - 2026-07-08:

Fixed/Improved

- Improve VPN connection services to directly assign an IP on connection.
- Increase video receiver service resources to fix video streaming issues.
- Add control tower buttons to disables takeoff safeties by the operator, when false positives are detected or specific requirements do not apply.
 - Motor detection failure.
 - Remote ID requirement.
 - BID detection requirement.
 - Takeoff vertical position thresholds.
- Better flight review thresholds for flight validation.
- General stability and performance improvements.

Onboard software (OC) - v1.4.1 - 2026-07-08:

Fixed/Improved

- Fix networking packet size mismatch leading to communication losses to RigiCloud (affection video streaming, software update).
- Fix an issue showing custom software version incorrectly.
- Added automatic reboot of the video streamer process if unavailable.
- General bug fixes.

Autopilot (AP) software - v2.12.1 - 2026-07-08:

Fixed/Improved

- Automatically detect and flag loss of pusher motor in MC mode.
 - The drone will continue flying in MC mode without using the pusher. Any transitions will be skipped.
- Prevent arming of autopilot when facing internal publishing issues.

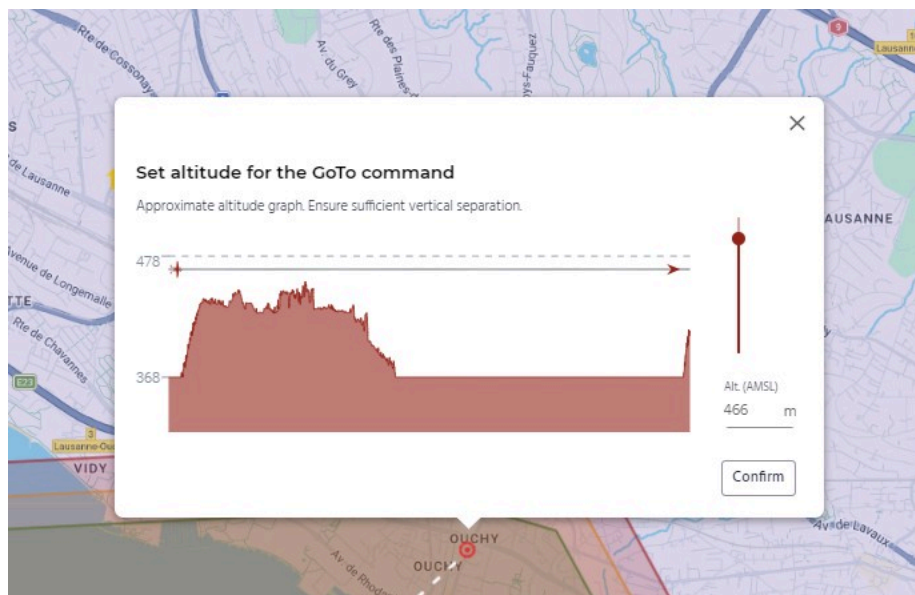
🏠 > RigiCloud Release notes > RigiTech Software Update - March 2, 2026

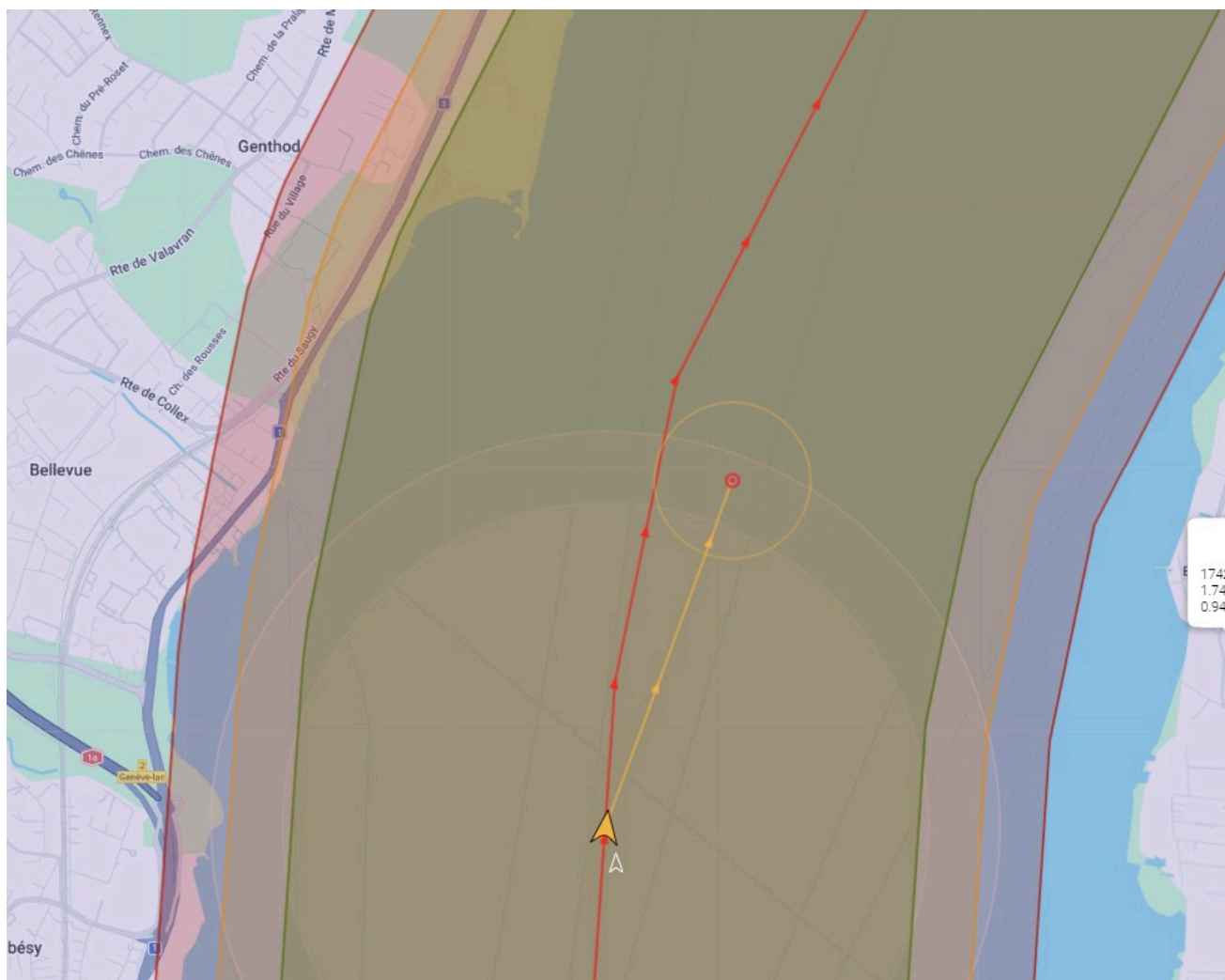
Quarterly release - 2026-03-02

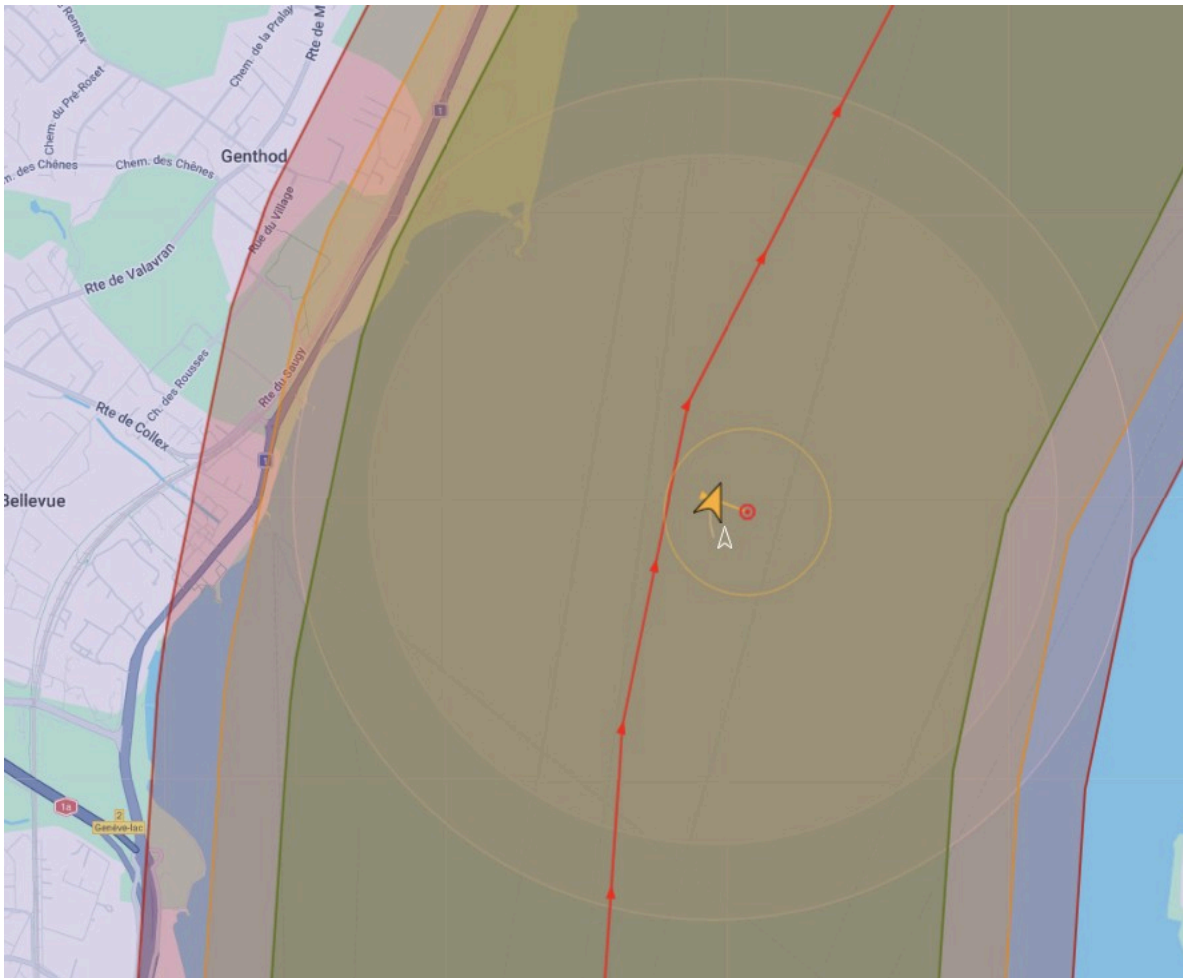
RigiCloud and Edge Node - v1.18.0:

New features

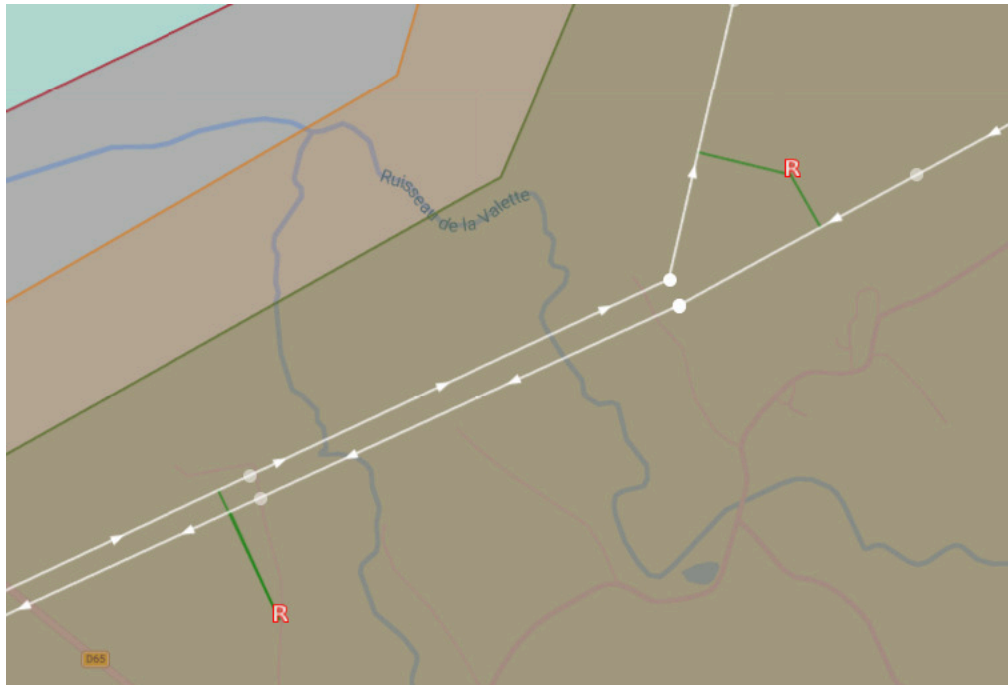
- **GoTo command** added in both Control Tower and the public API.



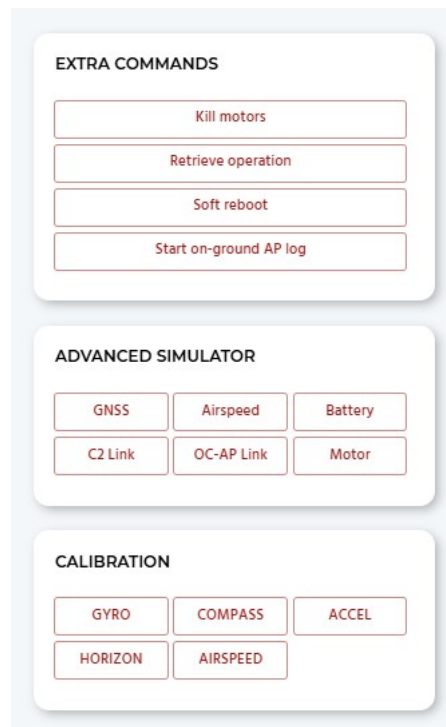




- **SRP projection in Airbridge Planner:** The same rally point can now be projected onto up to three mission segments allowing to fly A-B-A and/or loop missions with optimal route to the RP. The threshold distance between segments which lead to a valid rally point projection can be selected while planning a route.



- **Simulator failure injector** introduced for training scenarios and battery reset testing.



- **Airspeed calibration** button now available (R&D, production and debug from RigiTech support).

Fixed/Improved

- Simulator relocation between sites is now significantly faster.

Others

- RTK is now enabled by default in all projects where available. When planning routes, operators must use markers properly for takeoff and landing locations to avoid deviations.

Onboard software (OC) - v1.3.0:

New features

- Improved firmware for fixed-wing motor failure detection for more reliable monitoring.
- Hold commands **sent manually** are now rejected if the command leads to a breach of the pregeocage.

Fixed/Improved

- Enhanced validation of running AP/FS versions to prevent software mismatch issues.
- Default APN configuration now sets IP type to **IPv4**.

Autopilot (AP) software - v2.11.0:

New features

- **GoTo:**
 - New mode which allows to go to a location selected on the map.
 - Fixed-wing: the UA will loiter around the GoTo location with a fixed loiter radius.
 - Multicopter: the UA will Hold at the GoTo location.
 - To exit the Hold pattern, a new command must be sent (e.g. RTO, CO, SRP, etc.). Once the new command is received, the algorithm determines the most logical point on the flight plan for the vehicle to rejoin or continue its route (the "branch-in" point) from its current location.
- **U-turn (for RTO, CO, and SRP):**
 - If the geocage is predicted to be breached during a fixed-wing turn, instead of rejecting the mode change, the UA will now accept the mode change and perform an MC turn (BT + 180 + FT).
 - If the mode change is triggered during a FT and a U-turn is required, the FT is aborted (allowing to fly the previous segment in MC mode).
- **Reverse to Takeoff (RTO):**
 - RTO is now running directly in the autopilot.

- **Smart-Rally-Point (SRP):**

- SRP now selects the “closest” rally point by minimizing the along-route distance from the UA projection to the RP’s branch-off projection (plus a penalty of 4 km if a fixed-wing U-turn is required).
- SRP now rejects candidates whose path (branch-off to rally point) breaches a geocage.
- If there are no rally points available, SRP falls back to the closest mission endpoint (takeoff or landing) based on the same path-cost logic (instead of continuing to the mission-end).
- Coinciding segments: the same rally point can now be projected onto several segments allowing to fly A-B-A and/or loop missions with optimal route to the RP.
- Fixed-wing SRP can now go “behind” to reach a rally point by flying the mission route in reverse, but it is discouraged via a 4 km penalty.
- Rally points can now be projected onto loop jump segments.

Fixed/Improved

- All rally points are now considered as potential candidates in all modes despite consecutive mode changes.

Failsafe Computer (FS) firmware - v1.3.0:

Fixed/Improved

-

Hotfixes:

Onboard software (OC) - v1.3.1 - 2026-03-02:

Fixed/Improved

- Fix issue with on-ground sync of recorded videos after landing.

Autopilot (AP) software - v2.11.1 - 2026-03-02:

Fixed/Improved

- During a multicopter U-turn, compensate for the altitude gained during the back transition before aligning and performing the front transition.

Onboard software (OC) - v1.3.2 - 2026-03-12:

Fixed/Improved

- Fix issue leading to wrong display of mode in flight.
- Fix issue not being able to execute mission after first mission start failure.
- Improved logging of CPU usage.
- Tighter horizontal and vertical tolerance for takeoff when in RTK mode.

Autopilot (AP) software - v2.11.2 - 2026-03-12:

Fixed/Improved

- Optimization for CPU usage.

Onboard software (OC) - v1.3.3 - 2026-05-01:

Fixed/Improved

- Updater fix when pulling autopilot firmware.

Autopilot (AP) software - v2.11.3 - 2026-05-01:

Fixed/Improved

- Reduce time constraints to avoid unexpected stale targets leading to missed precision landings.

Quarterly release - 2025-12-01

RigiCloud and Edge Node - v1.17.0:

New features

Fixed/Improved

- Refactored Air Traffic Aggregator for increased stability and reduced unavailability occurrences.
- Removed integration with Altitude Angel due to service discontinuation (Airspace layer).
- General bug fixes and reliability enhancements across systems.
- Codebase refactoring for maintainability and performance.
- Improved simulator management in the backend, enabling support for a larger number of simulators.
- Improved Edge Node LED behaviour to simplify diagnostics:

Onboard software (OC) - v1.2.0:

New features

- Added support for future expansion of sensing capability.
- Enabled soft reboot and 30-second sleep functionality with armed parachute. Disarming the parachute is now only strictly required during updates.

Fixed/Improved

- Improved updater robustness to function in degraded or localised network conditions.
- General bug fixes and reliability enhancements across systems.
- Codebase refactoring for maintainability and performance.

Autopilot (AP) software - v2.10.0:

New features

- Added warning for GNSS fallback conditions.

Fixed/Improved

- General bug fixes and reliability enhancements across systems.

- Codebase refactoring for maintainability and performance.
- Improved front transitions behaviour.
- Fixed issue that could make the ground distance measure unavailable in telemetry.

Failsafe Computer (FS) firmware - v1.2.0:

Fixed/Improved

- General bug fixes and reliability enhancements across systems.
- Codebase refactoring for maintainability and performance.

Hotfixes:

Onboard software (OC) - v1.2.1 - 2025-12-03:

Fixed/Improved

- Fix precision pad detection.

Onboard software (OC) - v1.2.2 - 2026-01-07:

Fixed/Improved

- Improved motor failure check prior to takeoff.

Autopilot (AP) software - v2.10.1 - 2026-01-07:

Fixed/Improved

- Better front transition tracking.

Onboard software (OC) - v1.2.3 - 2026-02-02:

Fixed/Improved

- Enhanced system-wide CPU usage logging
- Removed forced disarm logic triggered after mission switch activation to prevent unintended disarm events during arming and transition to mission mode.

Autopilot (AP) software - v2.10.2 - 2026-02-02:

Fixed/Improved

- Improved arming logic to block arming when system delays or unhealthy states are detected.

RigiTech Software Update - September 1, 2025

RigiCloud and Edge Node - v1.16.0:

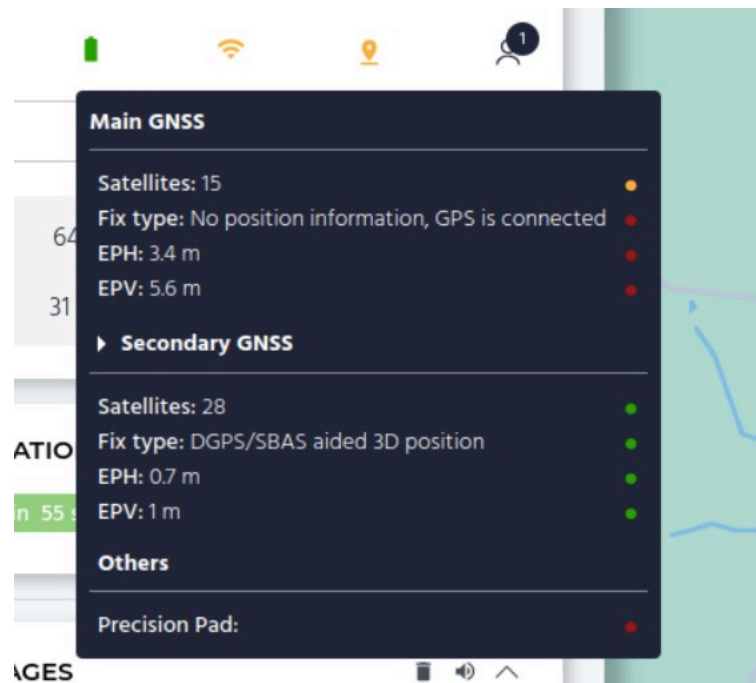
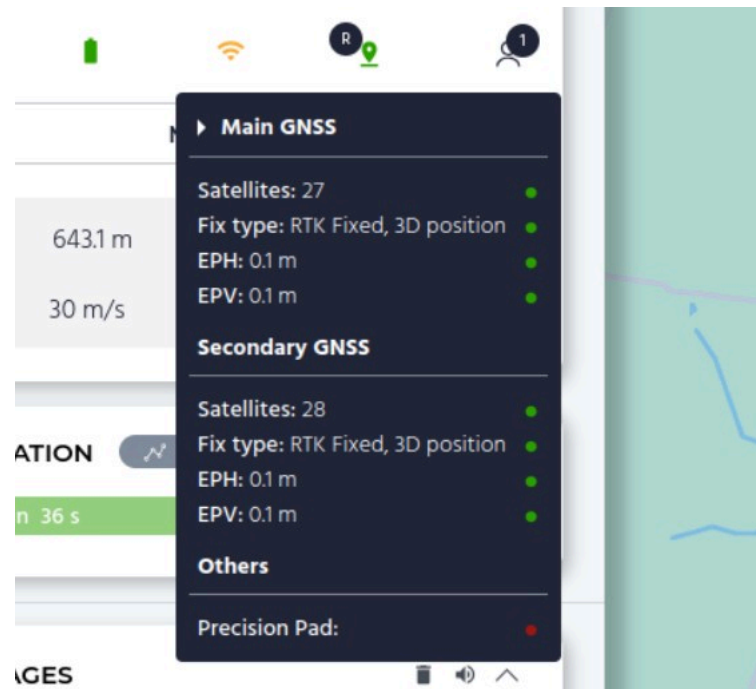
New features

- **Enhanced Authentication Security**

- Two-Factor Authentication (2FA) now available for all users for increased cybersecurity
- Magic Link Login available for a seamless and passwordless sign-in experience
- Overall increased platform security for user accounts

- **PPP-RTK Precision GNSS Integration**

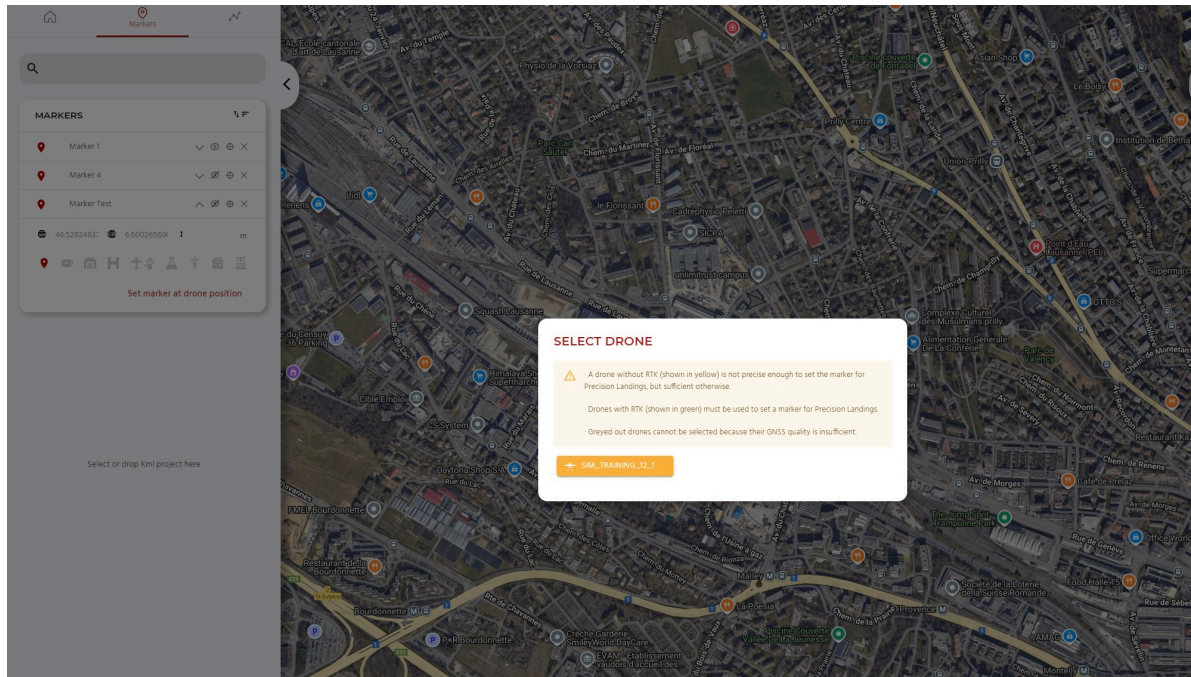
- The Eiger will now be able to navigate using precise cm-level GNSS positioning. In particular, this will increase the robustness of precision landing even in the absence of the Precision Pad, increasing safety and simplifying workflows.
 - **The PPP-RTK service will be enabled on a per-drone basis for existing drones by RigiTech's support team, in order to ensure proper backwards compatibility.** This process may take several weeks after release. The drone will continue to fly with standard GNSS precision in the meantime.
- This service is available in supported countries
 - **Europe:** Albania, Andorra, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Holy see, Hungary, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Monaco, Montenegro, Netherlands, Norway, Poland, Portugal, Romania, San Marino, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, UK. Excluding Sardinia and Corsica.
 - **Contiguous USA and Canada:** All US states, excluding Alaska, Hawaii, and offshore US territories.
 - **Australia:** New South Wales , Victoria, South Australia (Adelaide and periphery) , Queensland (Brisbane and periphery), Tasmania , Western Australia (Perth and periphery).
 - **South Korea**
- GNSS used and RTK availability is shown in the Control Tower HMI interface



- **Improvement of Marker functionality**

- **Markers** are now gaining more importance with the release of RTK technology, as the position of Takeoff and Landing waypoints now needs to be set more accurately. Markers will become mandatory for every ground point - Takeoff, Landing and Rally Points - to simplify the accurate setting of their position across all routes. New tools are being created to simplify this workflow:

- Every new route must now be linked to Markers for their Origin and Destination. A new button appears when they don't match the Takeoff and Landing waypoints of a route to allow the route to be updated.
- The position of a Marker can be updated from a drone's current position when in RTK mode, allowing a cm-level setting of the Marker's position. If a Marker is moved, all routes connected to this Marker are re-set to Draft status, as they will need to be updated with this new position.



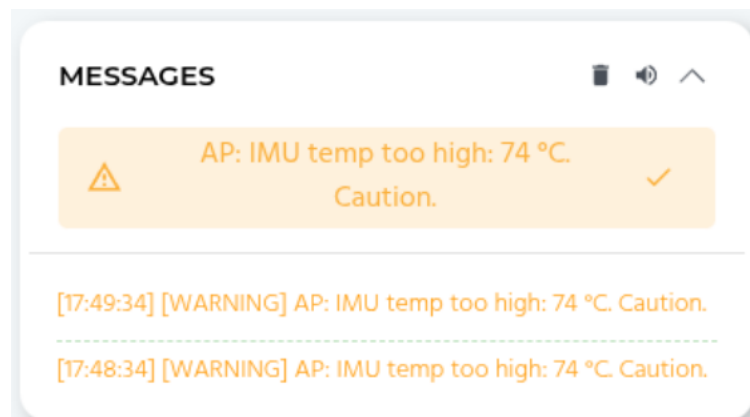
• Improved Flight Review Experience

- More detailed post-flight data visualization
- Better layout and readability enhancements for reviewing flights

RIGITECH - TRAINING AND EXAMPLES



- **Extreme Temperature Alerts**
 - Automatic status alerts when the drone operates in extreme temperature conditions



Fixed/Improved

- General bug fixes
- Reliability enhancements across systems
- Codebase refactoring for maintainability and performance

Onboard software (OC) - v1.1.0:

New features

- The pusher/fixed-wing motor now performs a pre-takeoff validation spin to ensure it is functioning correctly before every mission

Fixed/Improved

- Enhanced Flight Altitude Deviation failsafe logic, preventing rare SRP corner cases during landing
- General bug fixes
- Reliability enhancements across systems
- Codebase refactoring for maintainability and performance

Autopilot (AP) software - v2.9.0:

Fixed/Improved

- General bug fixes
- Reliability enhancements across systems
- Codebase refactoring for maintainability and performance

Failsafe Computer (FS) firmware - v1.1.0:

Fixed/Improved

- Introduced a new parameter to disable FS logging, allowing smoother handling of custom firmware versions
- General bug fixes
- Reliability enhancements across systems
- Codebase refactoring for maintainability and performance

🏠 > RigiCloud Release notes > RigiTech Software Update - June 2, 2025

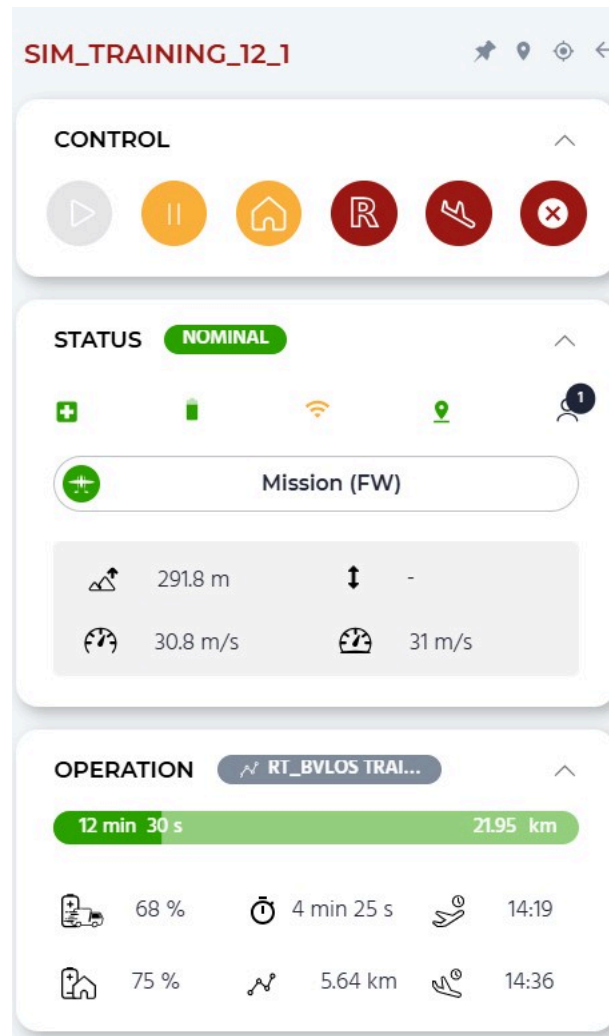
RigiTech Software Update - June 2, 2025

RigiCloud and Edge Node - v1.15.0:

New Features

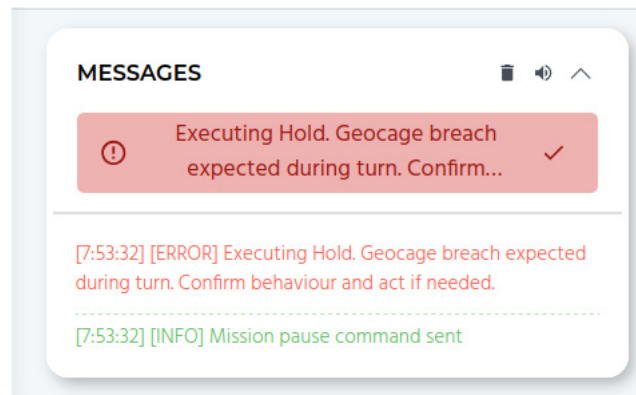
Control Tower

- **Status box and left-hand menu:**
 - Important information previously only visible in the Telemetry box (AMSL altitude, ground distance, air and ground speeds and precision pad detection) are now displayed directly in the Status box. The **Telemetry box is no longer required** for normal operations and can remain hidden, freeing up space on the flight map.
 - The left-hand sidebar has been simplified through reduction of whitespace and moving of some icons into the right-hand sidebar. This results in a cleaner interface for the operator.
 - The flight control tools have been moved to the right-hand buttons, thus avoiding the need to hide the left-hand sidebar when using them.



- **Improved Messages Interface**

- Some messages are now **classified as Important** and thus requiring active acknowledgement from the operator. **These messages remain visible until they are dismissed by the operator.** All other messages and information can be hidden from the Messages box during operation.
- The full list of possible messages received from the drone (from OC, FS and AP) and from RigiCloud, including recommended actions from the operator, is now documented and available in the Unmanned Aircraft Flight Manual. Message texts have been re-worded for clearer understanding.



- **Improved simulator:**

- Better handling of flights that land at lower altitude than the takeoff point.
- More realistic simulation of dual GNSS sensors and improved precision landing and dropping functionalities.

Fixed/Improved

- Improved handling of BatteryID (BID) hardware, improving support for future battery types and reducing ground interactions
- Improved data analysis of flight logs through new database infrastructure, allowing more in-depth historical performance analysis of each aircraft and identification of potential degradations
- Improved testing infrastructure for new code, including end-to-end testing of some RigiCloud elements
- Bug fixes, reliability improvements, software refactors.

Onboard software (OC) - v1.0.0:

Fixed/Improved

- Bug fixes, reliability improvements, software refactors.

Autopilot (AP) software - v2.8.0:

Fixed/Improved

- Improved SD card management.
- Improved GNSS redundancy mechanisms.
- Bug fixes, reliability improvements, software refactors.

Failsafe Computer (FS) firmware - v1.0.0:

Fixed/Improved

- Bug fixes, reliability improvements, software refactors.

🏠 > RigiCloud Release notes > RigiTech Software Update - March 3, 2025

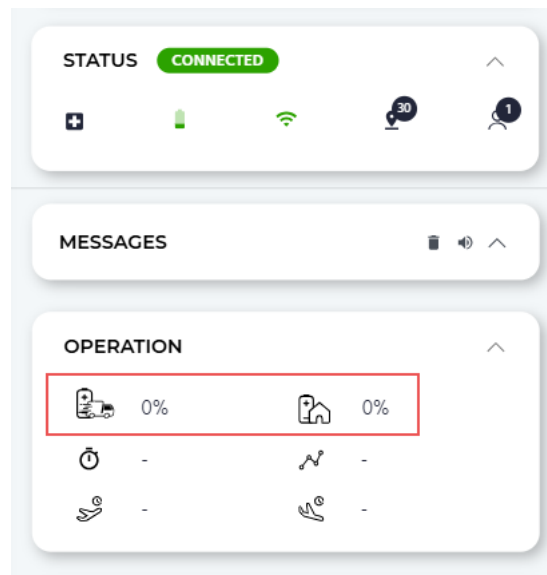
RigiTech Software Update - March 3, 2025

RigiCloud and Edge Node - v1.14.0:

New Features

Control Tower:

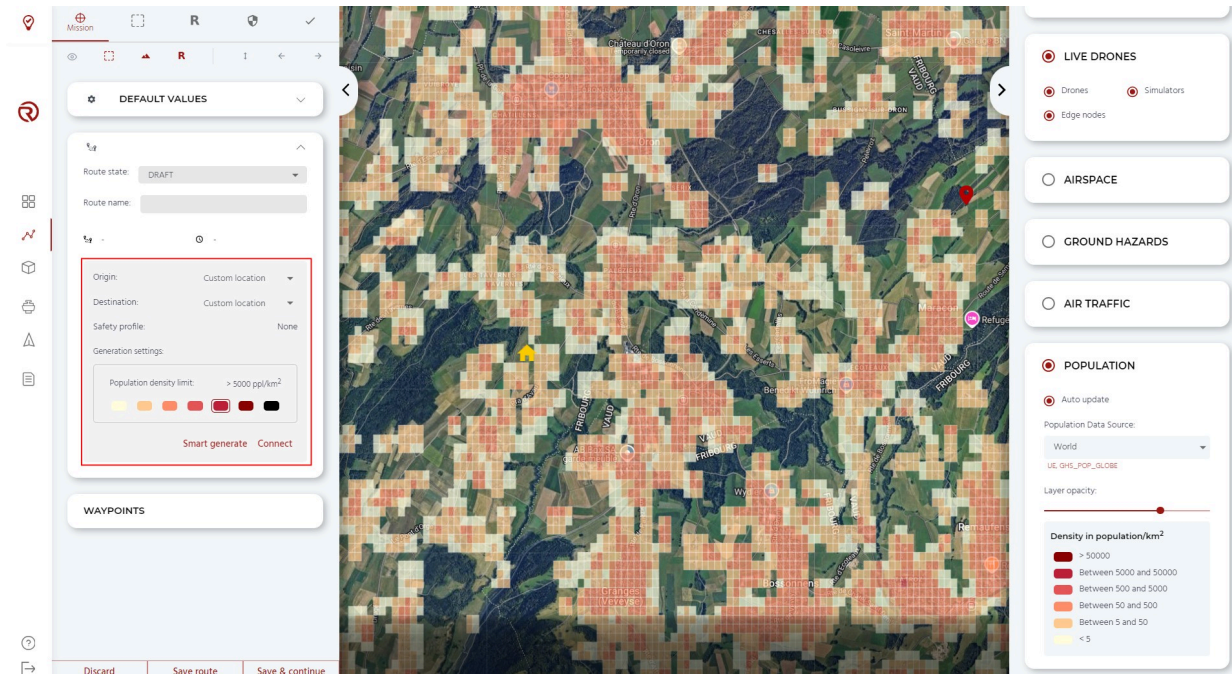
- **Range Estimator - battery level estimation:**
 - New feature in the Operation box (Control Tower), estimating the remaining battery percentage at landing and in the event of RTO. This allows the operator to make more informed decisions on allowing a flight to continue in high-wind situations, for example.



- New messages and warnings when the estimated battery at landing (and RTO) is below the warning and the emergency level.
- Distance Flown is now displayed more clearly in the Operations box to avoid confusion.
- Bearing (ground course) is now available in the Telemetry box and through the API.
- Permissions for "Operator" users are changed to allow them to switch between cameras live stream.

Planner:

- **Smart route generation now includes population data integration:**
 - The user can select a maximum population density over which the drone can fly. The Smart Generate algorithm will then automatically generate an entire route based on the population density, terrain and geocages.

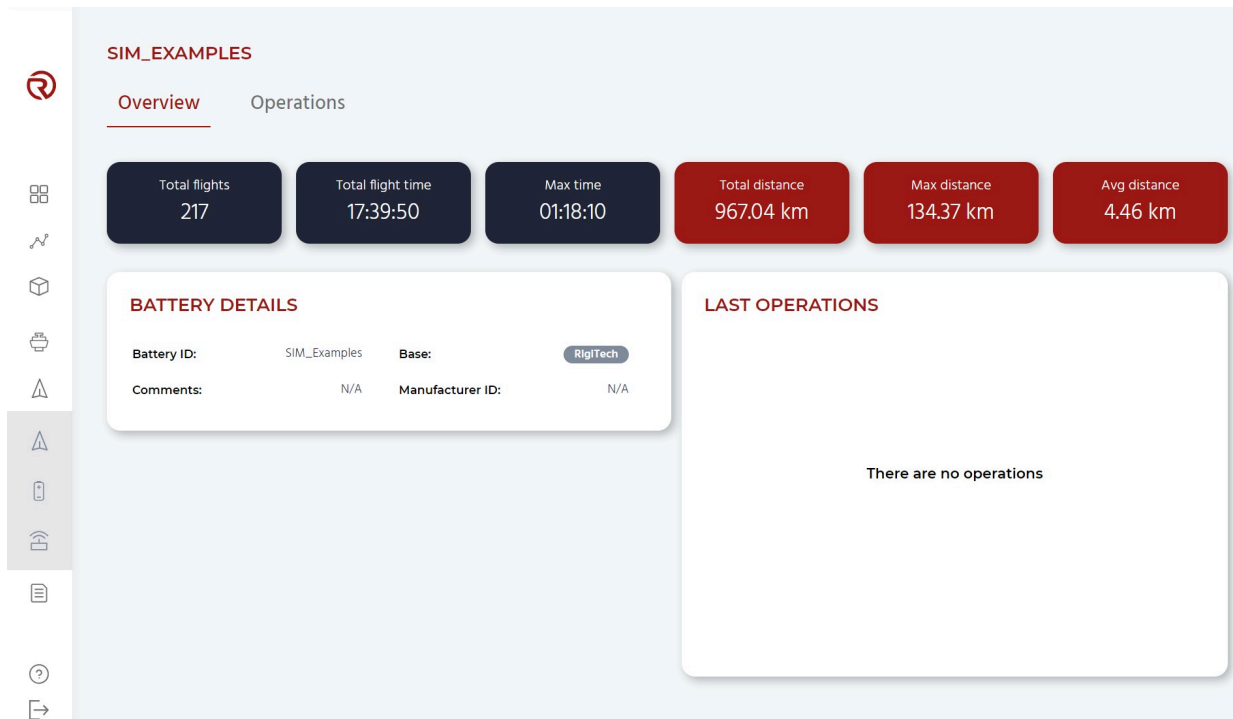


- **Planner safety checks improved:**
 - Inclusion of new automatic checks, in line with the Flight Manual.
 - This improvement simplifies the planning process and reduces the risk of errors.

Fleet Management

- **Improved Battery statistics and operational history:**
 - A new dashboard for every battery provides insight into the history of that battery including a list of operations in which it was used.
 - High-level battery statistics help identify when a battery requires maintenance or replacement.

- Head of Operations users can now edit the name of the Battery.



- Support for future battery auto-identification hardware.

Server infrastructure

- New container orchestration system being deployed that is more adapted to scalability and upcoming server-based features.
- Upgraded Onboard Computer (OC) logging system for greater insight into flight performance.
- New logging system for cloud-based modules.

Fixed/Improved

- Bug fixes, reliability improvements, software refactors.

Onboard software (OC) - v0.26.0:

Fixed/Improved

- Improved camera initialisation and handling.
- Bug fixes, reliability improvements, software refactors.

Autopilot (AP) software - v2.7.0:

Fixed/Improved

- Improved battery level initialisation.
- Very high wind is now categorised as a Warning and not an Error.
- Bug fixes, reliability improvements, software refactors.

Failsafe Computer (FS) firmware - v0.18.0:

Fixed/Improved

- Bug fixes, reliability improvements, software refactors.

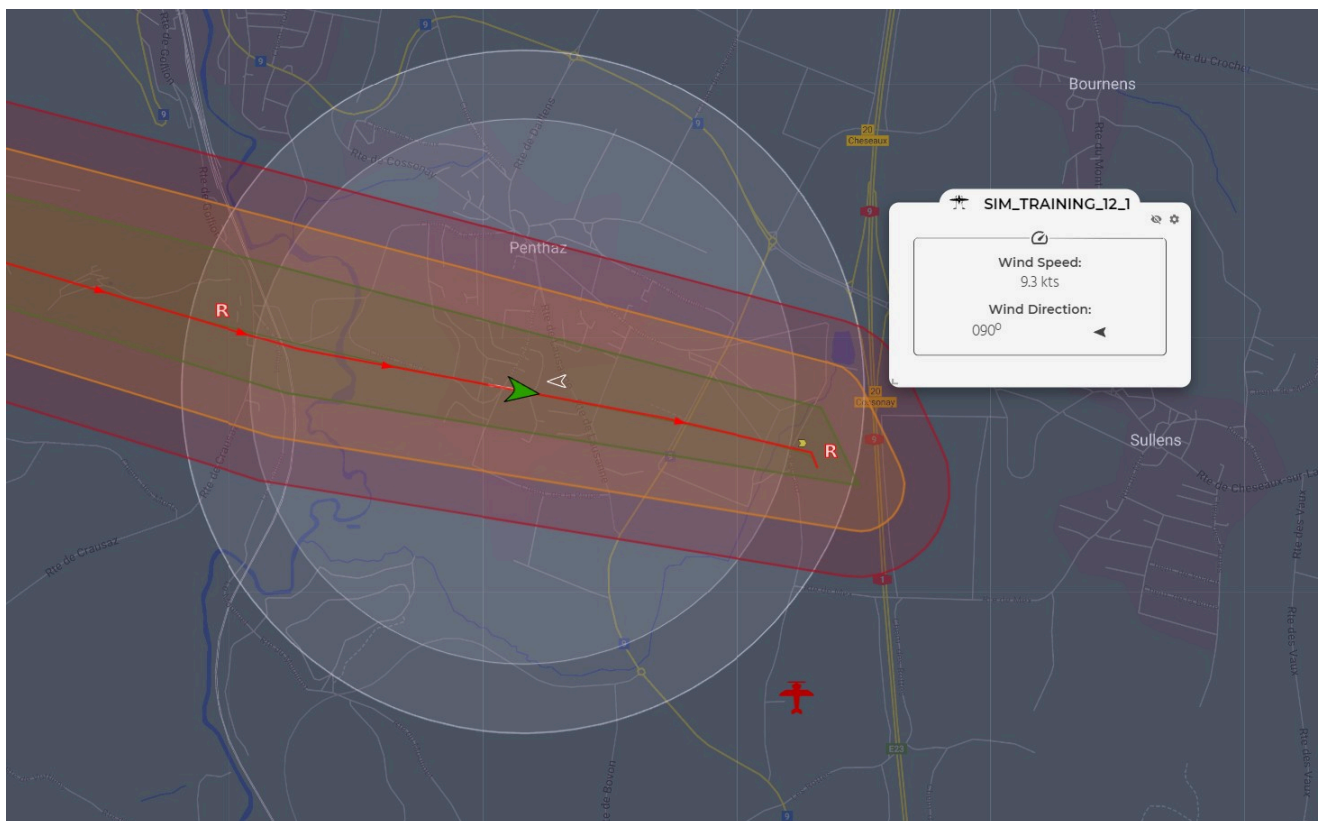
RigiTech Software Update - October 28, 2024

RigiCloud and Edge Node - v1.13.0:

New Features

Control Tower

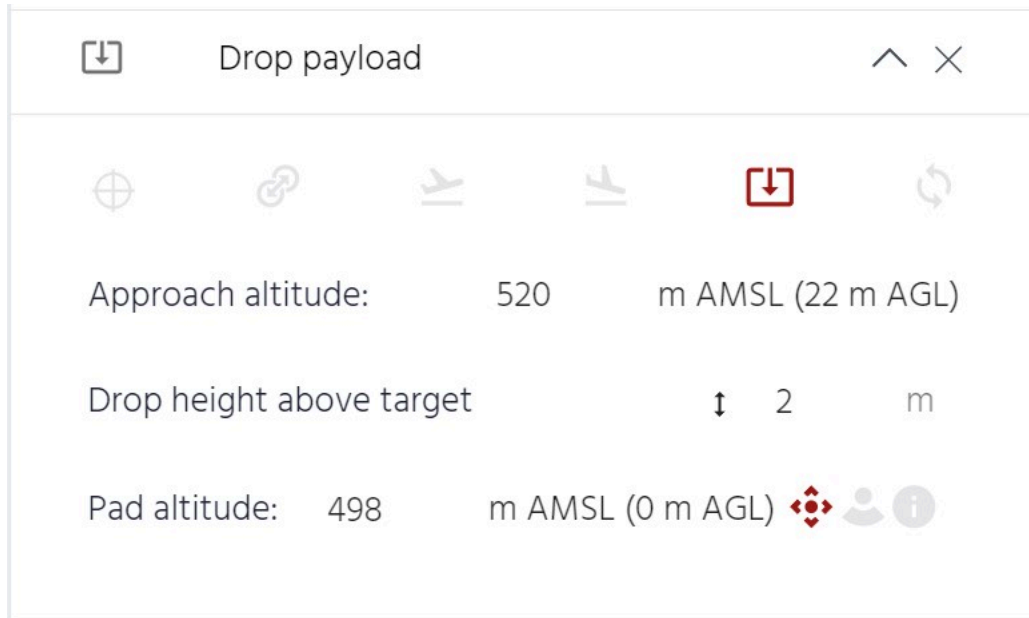
- **Removal of Pre-arm Button**
 - Pushing the pre-arm button is no longer required during pre-flight checklists, reducing the time needed between switch-on and flight and reducing the load on the ground operator.
 - When the parachute is locked, the drone will still refuse to arm.
- **Correction of Wind Direction format**
 - The telemetry now displays the wind angle as the direction from which the wind is coming, aligned with the convention used in manned aviation, rather than the direction it is going.



Planner

- **Dropping Mechanism Integration:**

- Support has been added for planning operations that include a dropping behaviour at the delivery point, using the dropping mechanism add-on for Eiger drones.
- *Note: this feature is only available for drones with a dropping mechanism enabled.*



Drop payload

Approach altitude: 520 m AMSL (22 m AGL)

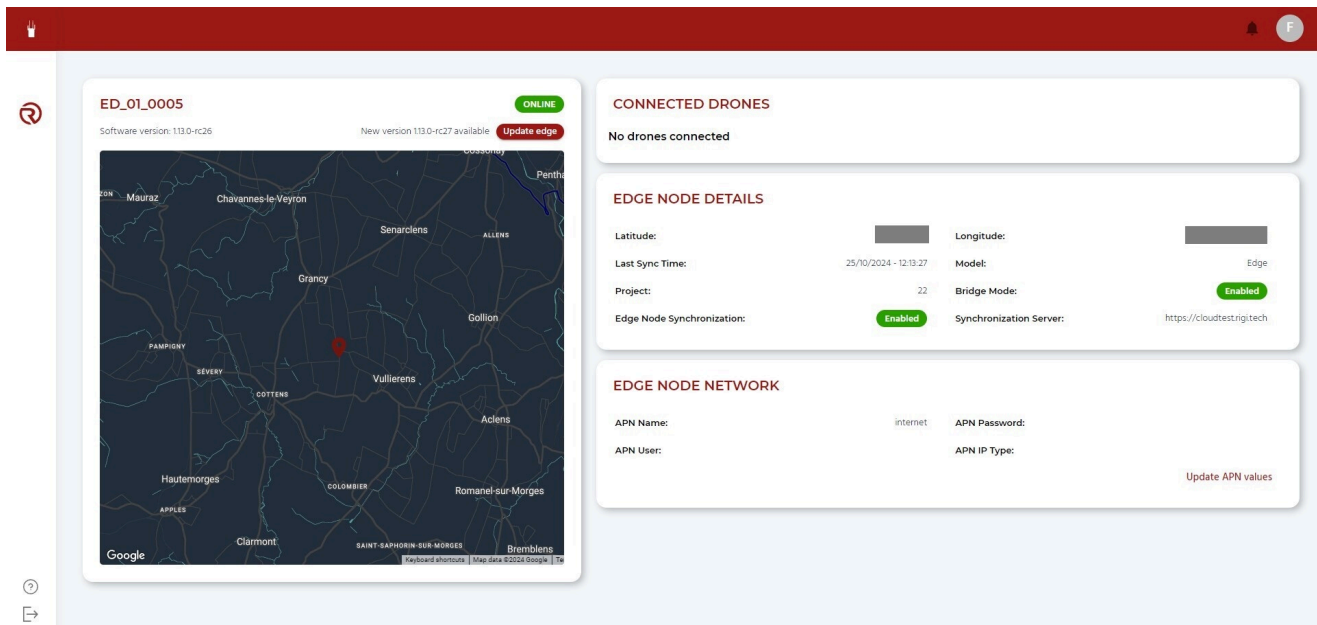
Drop height above target: 2 m

Pad altitude: 498 m AMSL (0 m AGL)

Fleet Management

- **Edge Node Management and Software Update Interface**

- A new interface is available for all Edge Nodes that consolidates metadata including position (when available) and synchronisation status for every Edge Node.
- Software updates can be performed directly from this interface, and a history of previous updates (including date and user that initiated it) is tracked and displayed, starting at the release date of this feature.
- Software updates can also be performed directly from the Edge Node Dashboard, with progress and update status synchronised with RigiCloud.
 - *Note: Edge Nodes updates to version v1.13.0 or posterior need to be done by RigiTech.*



Fixed/Improved

- Simulated drones now have their parameters updated at connection, and no longer require manual parameter synchronisation.
- Remaining distance is now displayed more accurately in the Control Tower during flight, especially during contingency maneuvers such as SRP which alter the destination of the operation.
- A soft reboot of the drone's onboard systems can now be performed by the remote operator, simplifying remote debugging before flight.
- Bug fixes, reliability improvements, software refactors.

Onboard software (OC) - v0.25.0:

Fixed/Improved

- Bug fixes, reliability improvements, software refactors.

Autopilot (AP) software - v2.6.0:

Fixed/Improved

- Contingency actions such as SRP or Hold are handled more consistently during edge cases of multiple consecutive actions.
- Bug fixes, reliability improvements, software refactors.

Failsafe Computer (FS) firmware - v0.17.0:

Fixed/Improved

- Bug fixes, reliability improvements, software refactors.

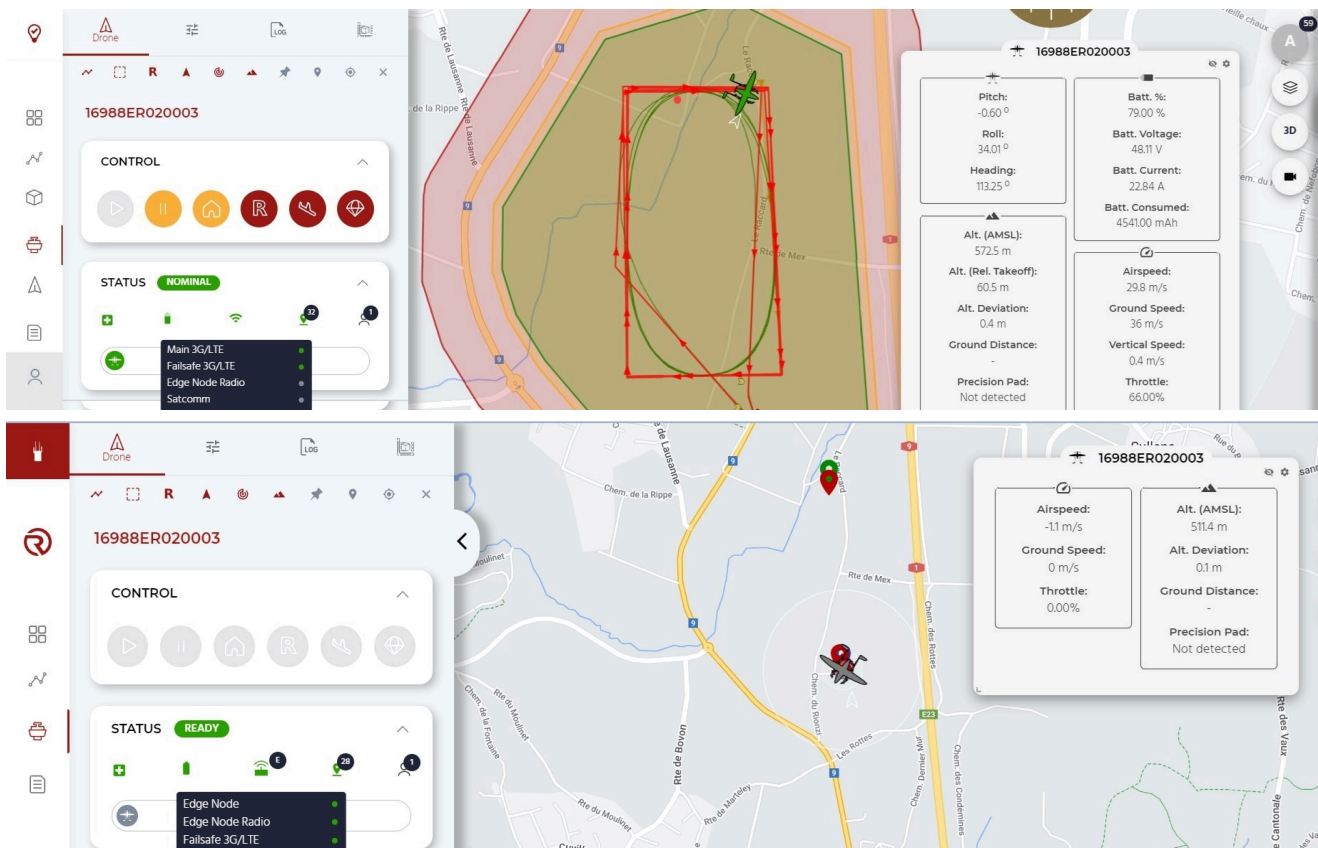
RigiTech Software Update - July 22, 2024

RigiCloud and Edge Node - v1.12.0:

New Features

Control Tower

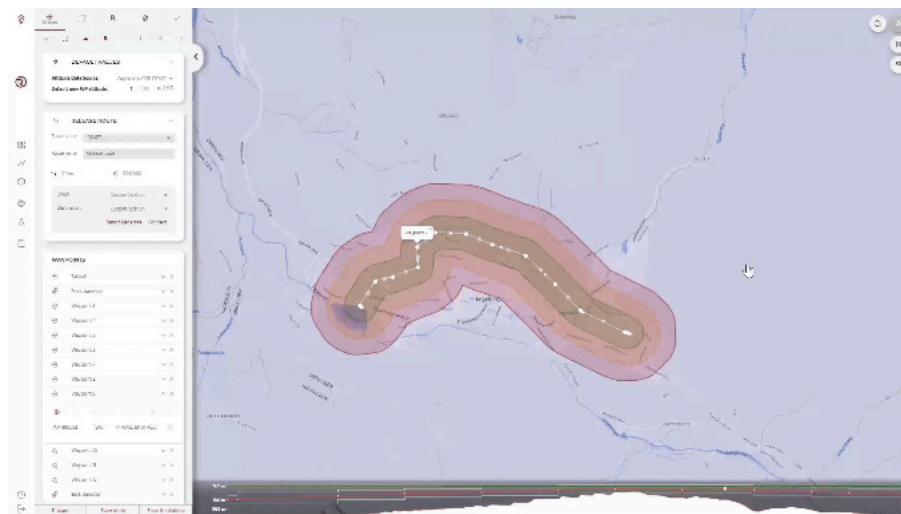
- Re-vamped **Communication Link Tooltip** in the Status box
 - Information about each available datalink - Main link, Failsafe link, Edge node link and SBD-Satellite link - is now displayed in a more straight-forward manner. Link status based on latency is shown as a simple health chip.
 - Total link quality is combined across all links to provide a holistic and simple indication to the operator.
 - Backend improvements in networking for each link allow the system to better gauge each link's quality.



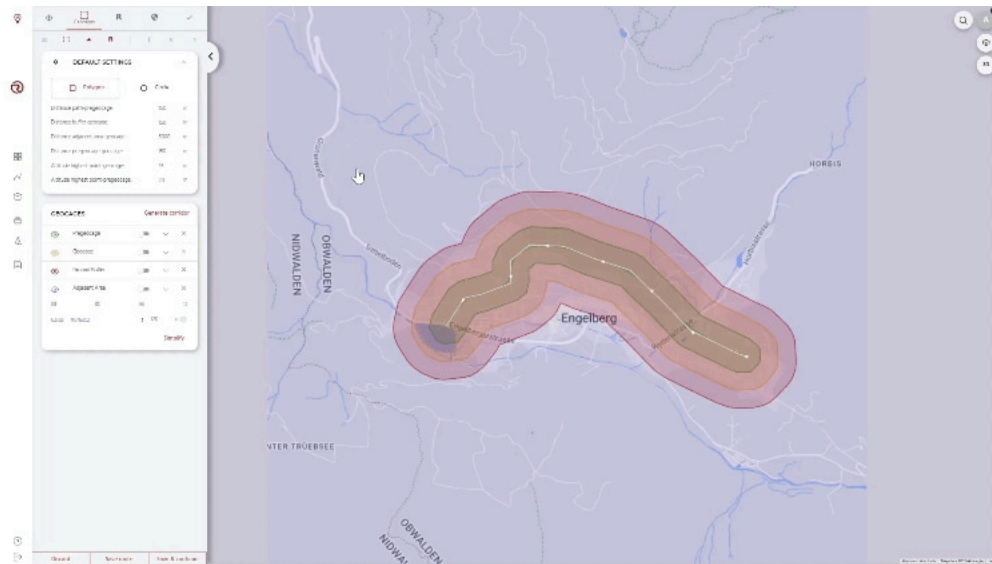
- Additional checks upon route upload ensure that no Rally Points are placed outside of the geocage.

Planner

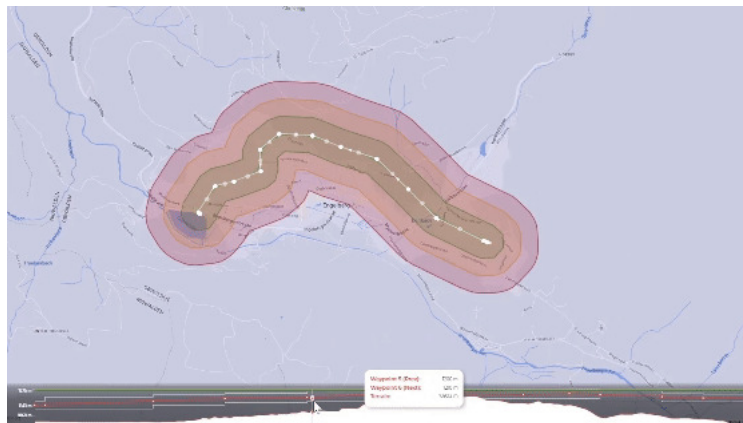
- **The structure of a flight plan has been significantly refactored** to improve the symmetry of routes, better handle climb/approach phases to Takeoff, Drop and Land points (in particular during contingency behaviours), and prepare for future features. This backend change results in some important changes in the way a flight plan is created:
 - **Home Altitude, as a general concept in a Route, has been removed.** It is also no longer possible to plan a route or any waypoints in the "Altitude about Takeoff level" reference frame. All routes and waypoints are now planned strictly in Above Mean Sea Level (AMSL) to avoid reference-frame errors. The Altitude above Ground level (AGL) reference, however, is still shown to aid in planning.
 - Takeoff, Land and Drop waypoints now have a Pad Altitude and a Climb/Approach Altitude. When taking off, the drone will climb vertically to the Climb/Approach Altitude before going to the next waypoint. Conversely, when approaching a Land waypoint (or the Takeoff waypoint during a Return-to-Land manoeuvre) the drone will approach towards the Climb/Approach Altitude before descending vertically towards the Pad Altitude.
 - **All existing Routes will be automatically migrated to the new structure. However, we recommend all active flight routes to be reviewed by clients before flying for the first time to ensure migration was successful. Before flying, make sure to check:**
 - All Pad Altitudes (Takeoff, Land and Drop waypoints) are correctly set to the true landing altitude in AMSL, especially if it is elevated (ie. on a roof or platform). A default value will be suggested based on RigiCloud's terrain model, but the model can have significant inaccuracy especially in hilly terrain.
 - The Climb or Approach Altitudes are set to at least 20m above the Pad Altitude (we recommend 30m).
 - For Land and Drop waypoints, the Precision Landing field is enabled or disabled based on the route's requirements.



- A polygon showing the **Adjacent Areas outside of the planned geocage** is now displayed, aiding in the preparation of the SORA semantic model and documents.



- A new check in the Safety Checks will warn if a route is beyond the flight time specifications of the drone.
- The Terrain Graph in Planner has a zoom function, allowing more detailed review of the vertical aspects of a Route. There is also more information in the tooltips on the Terrain Graph.



- A new terrain database source is available for Luxembourg.

Fleet Management

- **APN configuration for the SIM card for the drone's Main link** can now be done in the Overview tab of a drone's details page. This allows for easier swapping of SIM cards.

RIGITECH - R&D - VUFFLENS & SENARCLENS LOS ROUTES

SIM2 **ACTIVE** OFFLINE

Overview Operations Maintenance Parameters Software Commands Telemetry Status messages Failsafe telemetry

Total flights: 109 Total flight time: 12:18:41 Max time: 00:59:38 Total distance: 870.42 km Max distance: 100.07 km Avg distance: 7.99 km

MAINTENANCE

DRONE DETAILS

ID: 41 Drone Type: SIM2 Base: SIM2
 Serial Number: SIM2 Last Record Update: 15/10/2024 - 12:05:09
 Production Number: SIM2 Failsafe Activations: Unknown
 National Registration Number: Failsafe: 66
 Creation Date: 12/10/2023 - 13:28:44 Simulation: 0
 Registration Date: 10/10/20 - 100:00 PS Parachute Counters: 0
 Requested Command: ICAD Tail Number: 123456
 Comments: Update APN values
 APN configuration: Update APN values
 APN Name: Update APN values
 APN User: Update APN values
 APN Password: Update APN values
 APN IP Type: Update APN values
 Last known position: Update APN values

LAST OPERATIONS

Name	Distance	Takeoff time	Status
20240709 Vufflens - Loops N	6.46 km (00:04:48)	2024-07-09 19:30	Import
20240705 Vufflens - Loops N	0.02 km (00:01:16)	2024-07-05 19:04	Import
20240705 Vufflens - Loops N	0.04 km (00:01:12)	2024-07-05 19:02	Import
20240705 Vufflens - Loops N	0.01 km (00:00:56)	2024-07-05 19:01	Import
20240701 New Vufflens Prod Flight all variation	72.64 km (00:41:43)	2024-07-01 12:54	Import
20240408 Vufflens - Rollercoaster N	1.47 km (00:03:14)	2024-04-08 19:39	Import
20240308 NEW VUF - SAL	10.02 km (00:10:31)	2024-03-08 12:08	Import

Go to all operations

Edge Node Dashboard

- **APN configuration for the SIM card for the Edge Node's Main link** can now be done from the Edge Node's Dashboard page. This allows for easier swapping of SIM cards.
- A list of drones that are currently connected to the Edge Node is displayed in the Edge Node's Dashboard page.

RIGITECH

ED_01_0006 **ONLINE**

Software version: 11215-rc3

CONNECTED DRONES

EDGE NODE DETAILS

Latitude: 46.58579 Longitude: 6.550504
 Last Sync Time: - Model: Edge
 Project: RigiTech - Bridge Mode: **Enabled**
 Edge Node Synchronization: **Enabled** Synchronization Server: https://cloudtest.rigi.tech

EDGE NODE NETWORK

The shown data is not updated

APN Name: example APN Password: example
 APN User: example APN IP Type: example
 Update APN values

Fixed/Improved

- Reduced Edge Node image size for faster software updates.
- Improved Terrain API response times and robustness, especially with many concurrent users.
- Improved End-to-End testing pipeline for software releases.
- Bug fixes, reliability improvements, software refactors.

Onboard software (OC) - v0.24.0:

Fixed/Improved

- Improved networking backend:
 - The drone can now send status messages to the Control Tower through its backup, low-latency links (Failsafe link and SBD link).
- Camera startup optimisation to improve time-to-first-fix (TTFF) for GNSS sensors.
- Bug fixes, reliability improvements, software refactors.

Autopilot (AP) software - v2.5.0:

New Features

- **More robust Position Loss failsafe**
 - The previous **Global Position Loss** failsafe was based on a combination of signals from the GNSS sensors as well as onboard inertial sensors and cameras. If GNSS position was lost, the drone could still continue flying for a time using the other sensors. In some jurisdictions, a loss of GNSS must trigger a failsafe action even with other sensors present. A new parameter provides an option to trigger the Global Position Loss failsafe a fixed time after GNSS loss, even if the other sensors are indicating a robust Global Position. GNSS is considered as loss if the GNSS measurements are not updated or if the GNSS signal's quality falls below the operating requirements.
 - The option to "Terminate" is available as a failsafe action for a global position loss.
- A new wind warning and wind Failsafe allows actions to be performed automatically if the wind speed detected by the drone is outside of its operating limits. The operating limits for the warning and failsafe action can be defined within the safety profile of the route.

Fixed/Improved

- Improved handling of contingency actions after another action has already been triggered.
- Improved handling of Landing algorithm initialisation.
- Bug fixes, reliability improvements, software refactors.

Failsafe Computer (FS) firmware - v0.16.0:

Fixed/Improved

- Bug fixes, reliability improvements, software refactors.

🏠 > RigiCloud Release notes > RigiTech Software Update - April 8, 2024

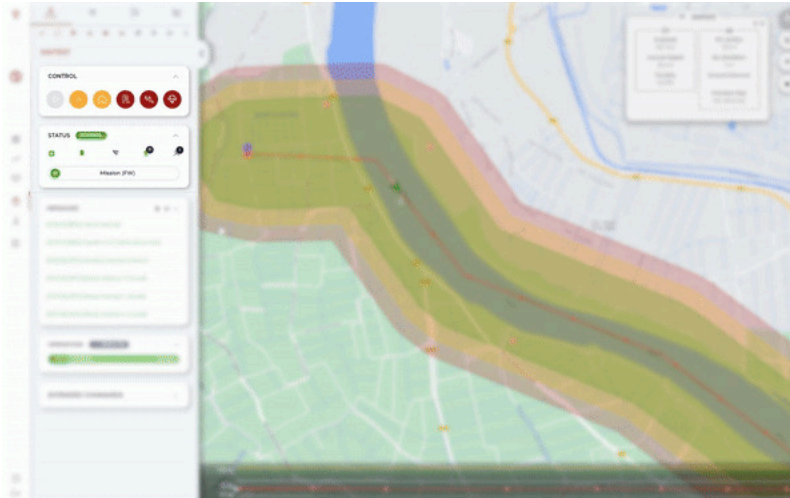
RigiTech Software Update - April 8, 2024

RigiCloud and Edge Node - v1.11.0:

New Features

Airbridge Planner

- **New Smart Rally Point Behaviour**
 - Rather than flying in a straight line towards the closest Rally Point, **the drone will now follow the flight plan to its closest point to the RP, then turn towards the RP for landing**. The drone is thus more likely to remain within geocages even during an SRP behaviour.
 - SRP is **optimised for the flight mode** - when in FW mode the drone will choose the closest RP ahead of the drone, when in MC it will choose the closest RP ahead or behind the drone.
 - Takeoff and Landing locations can be defined as RPs or not, allowing a safe alternate landing site in case the TO or LAND point are in sensitive areas (rooftop, tight area, etc).
 - Planner now displays the estimated path towards the RP along the route.



- **Improved SBD Satellite communications interface**
 - Sending mode now user-selectable through Safety Profiles (send always, from operation upload to landing, only when flying, when only 1 main link present, only when all other links disconnected, never).
 - Bandwidth is optimised to reduce data transfer by up to 3 times.
 - SBD connection status is now displayed in the Status box, along with other datalinks.

Map Tools

- **Improved Airspace and Ground Hazard layers**

- Airspace layer is now split into more practical categories to aid in flight route and SORA preparation.
- A separate Ground Hazard layer is also split into categories.
- Databases and legend for Population Density layer for both World and France updated to latest values

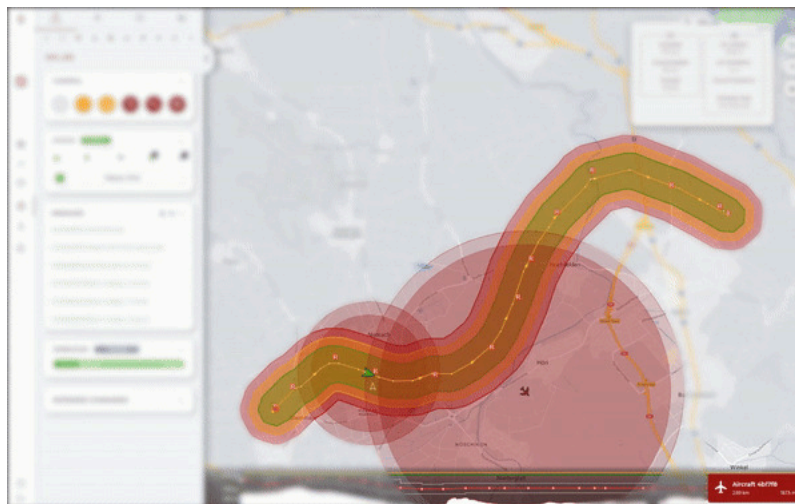
- **Improved Air Traffic Layers**

- Aircraft historical location from the last 30s displayed as a trail behind the aircraft, allowing remote pilot to gauge the future path of the aircraft.

Control Tower

- **Detect and Avoid (DAA) interface**

- Proximity warnings and potential collisions between a drone and another aircraft are now calculated and displayed to the remote pilot.
- Proximity cylinders for both the drone and intersecting aircraft display the level of collision risk without flooding the interface with too much information.
- Proximity is shown through multiple levels of escalating danger, providing the remote pilot time to react in low-risk situations while taking automated actions in high-risk situations, such as breach of Near Mid-Air Collision (NMAC) and Well Clear (WC) volumes.
- Automatic reactions to traffic are set using Safety Profiles, allowing the operator and their respective regulator to choose the amount of automation vs. human interaction in the process.
- The interface and behaviour are aligned with ASTM F3422 standard to provide a path towards acceptance by regulators (though not yet certified).
- An **Air Traffic Simulator** can create fake air traffic for testing of the features, demonstration to regulators and training of remote operators.
- *Please read the Flight Manual and the RigiCloud User Manual in detail before enabling this feature.*
- Vertical and Horizontal GNSS precision is now displayed in the Status box in a more user-friendly format.



Edge Node

- **Simplified Edge Node interface**

- Pages removed to streamline user experience, and focus on the core use of the Edge Node - live control, in-field planning adjustment.

- New dashboard presents Edge Node-related information.
- Database-related actions, such as fleet management, checklist management, user management and others are now only possible through the online RigiCloud interface.

Fixed/Improved

- Additional checks for presence of Rally Points in Planner.
- Bug fixes, reliability improvements, software refactors.

Onboard software (OC) - v0.23.0:

New Features

- New telemetry values added to support new functions.

Fixed/Improved

- Improved drone connection time to RigiCloud on boot.
- Improved software update interface, including mandatory update management and update failure messaging.
- Bug fixes, reliability improvements, software refactors.

Autopilot (AP) software - v2.4.0:

New Features

- Improved integration with the Multi-Band Traffic Awareness Package for compliance of the RemoteID component, both with FAA in the United States and with EASA in Europe.

Fixed/Improved

- Bug fixes, reliability improvements, software refactors.

Failsafe Computer (FS) firmware - v0.15.0:

New Features

- Watchdog enables additional resilience to freezing of the FS.

Fixed/Improved

- Bug fixes, reliability improvements, software refactors.

🏠 > RigiCloud Release notes > RigiTech Software Update - January 3, 2024

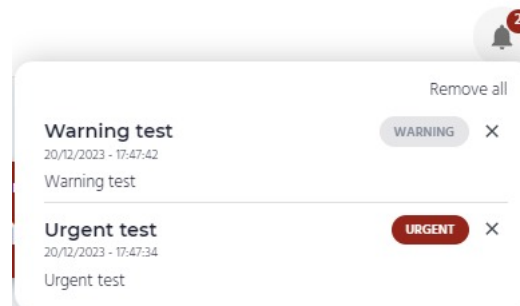
RigiTech Software Update - January 3, 2024

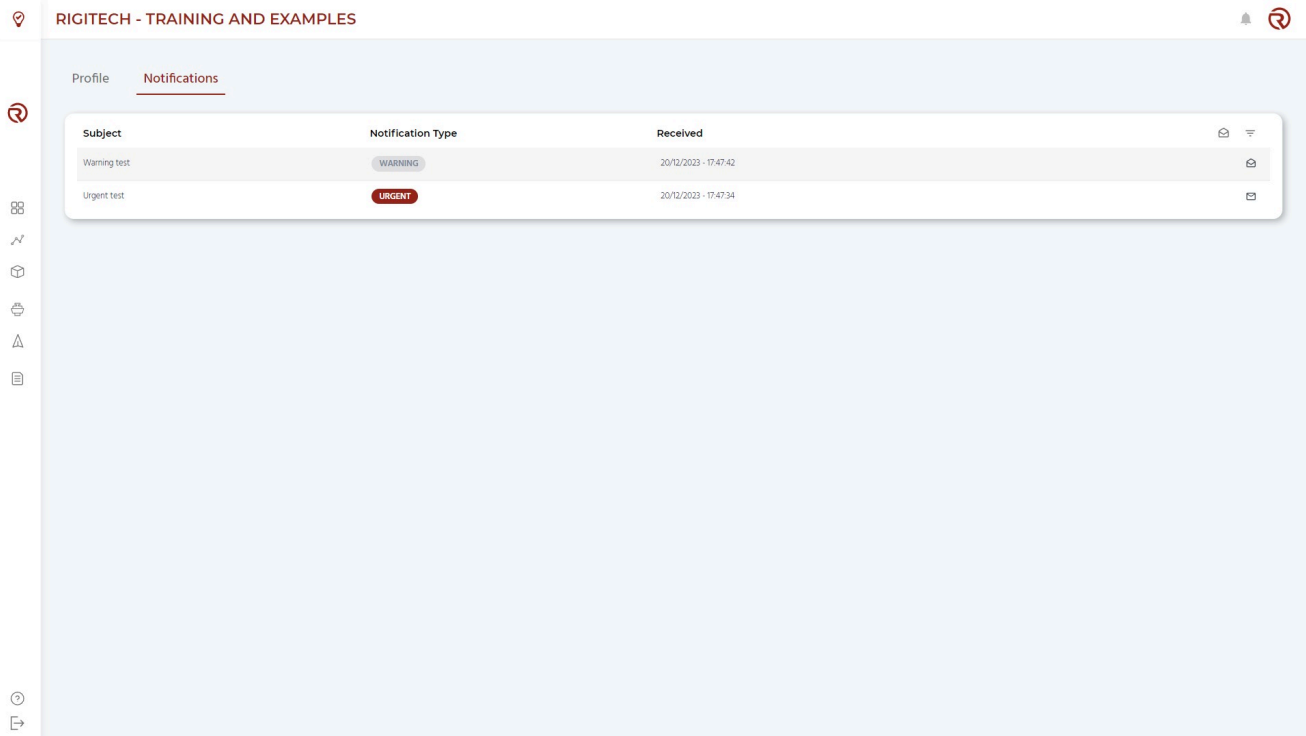
RigiCloud and Edge Node - v1.10.0:

New Features

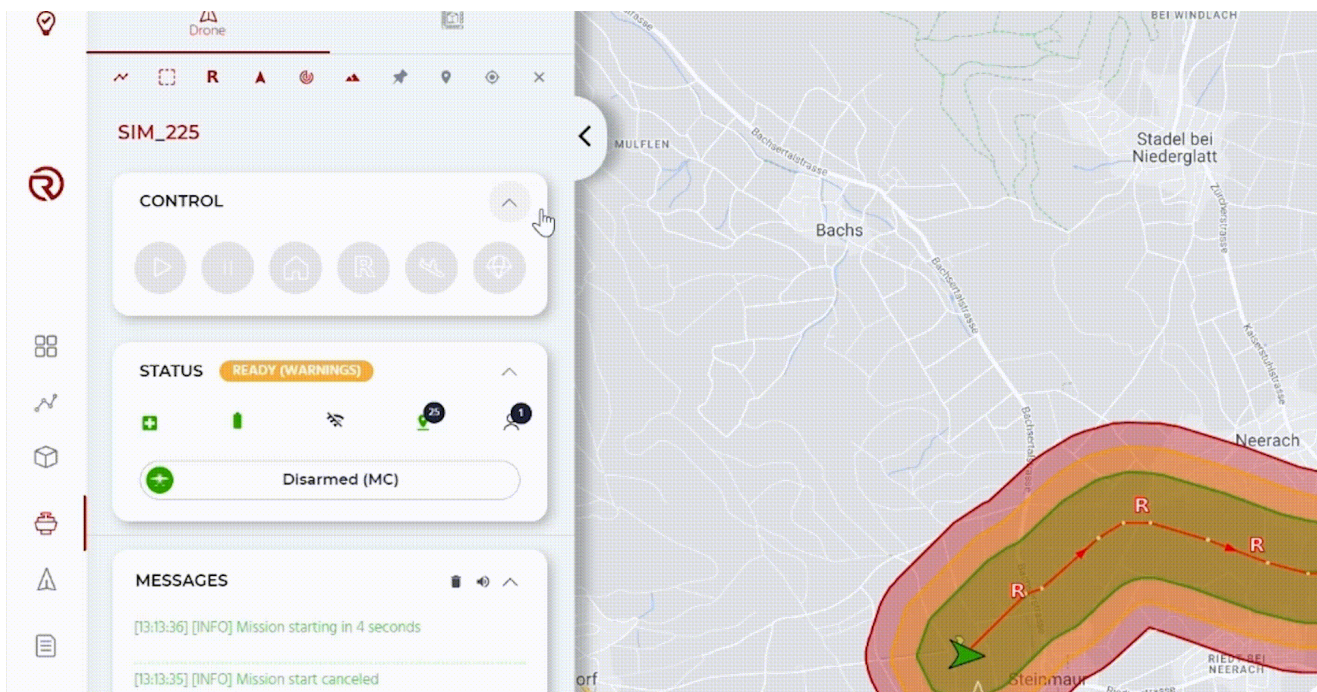
General

- New user-centric **Notification Centre**
 - General notifications, such as software update announcements or operational updates, can be sent from RigiTech staff to all users within RigiCloud
 - Notifications can be sent by email or only displayed within RigiCloud, can be marked as read or acknowledged, and are saved in RigiCloud's database

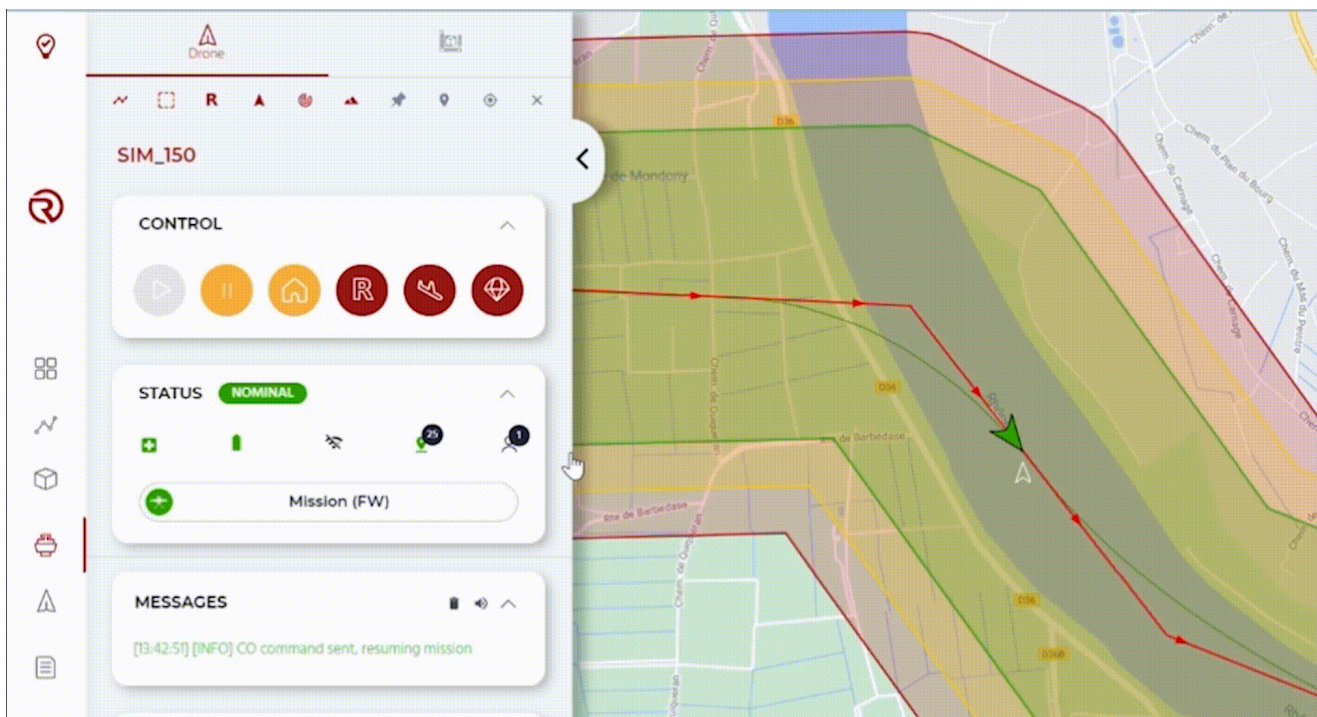


**Control Tower:**

- **Left-side panel re-organised** for better control:
 - The Commands box is now at the top of the menu and visible at all times, even when the operator scrolls down to other menu items, ensuring that commands can always be sent to the drone
 - Other boxes have been reorganised by priority, with the new order (from top to bottom) being Commands, Status, Messages, Operation and Extended Commands
 - The left-hand menu cannot be minimised while the drone is in the air



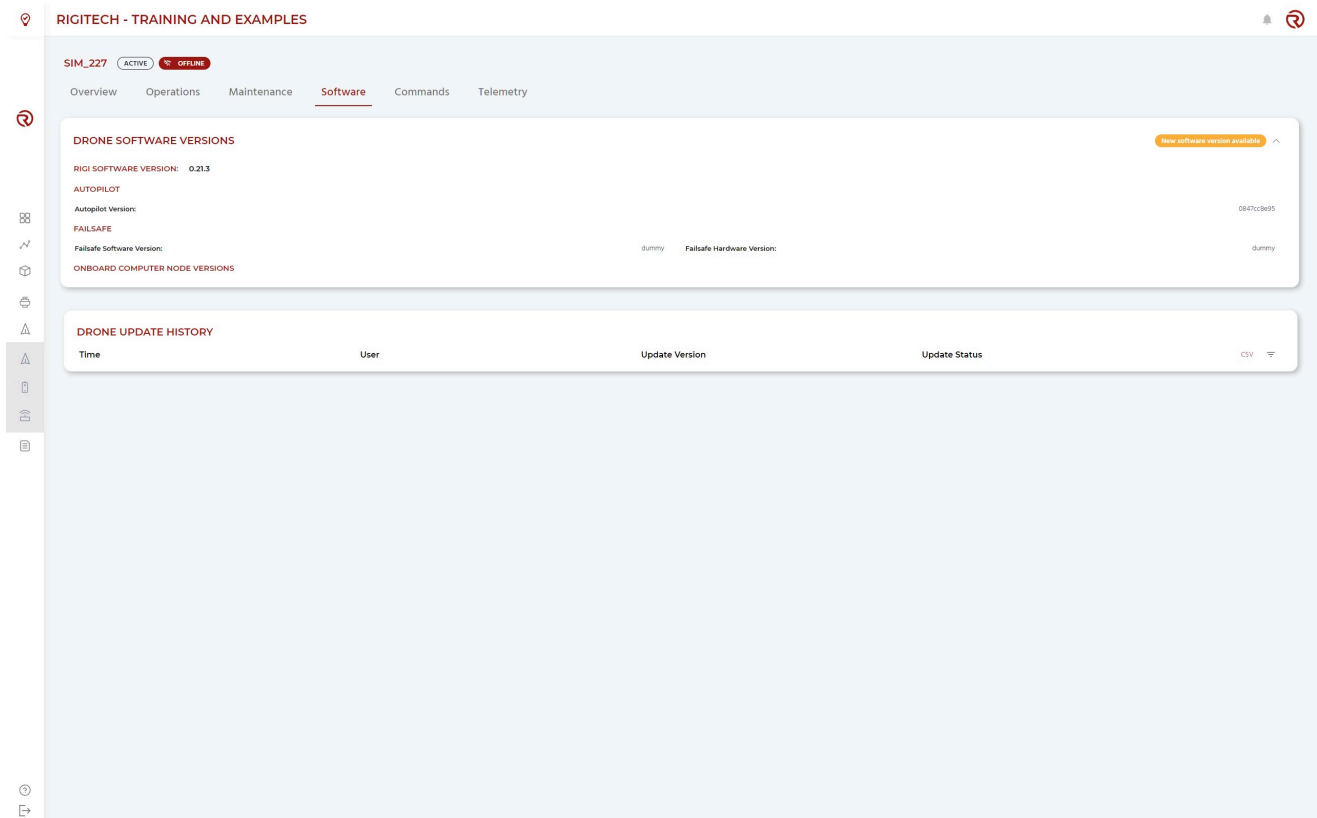
- **Continue Operation behaviour** is now available after a contingency maneuver:
 - A new button is now available to allow return to the original mission when the drone is in any other contingency mode such as RTO, SRP or Hold. Pressing the button will send the drone back on its original flight plan towards the Land point.



- Update of Involi air traffic API to support new generation of receivers

Fleet Management:

- **New Software Update Centre**
 - All software updates can now be performed by Head of Operations users directly from RigiCloud
 - Metadata on every update, including the user that performed it, date, and status, is recorded in RigiCloud's database and displayed in the update history of the drone
 - The list can be downloaded for compliance reporting
 - *Only updates performed since the release of this feature will be recorded*



The screenshot displays the 'SOFTWARE' tab within the RigiCloud interface for a specific drone (SIM_227). The interface includes a top navigation bar with tabs for Overview, Operations, Maintenance, Software (selected), Commands, and Telemetry. A sidebar on the left contains various icons for navigation. The main content area is divided into two sections: 'DRONE SOFTWARE VERSIONS' and 'DRONE UPDATE HISTORY'.

DRONE SOFTWARE VERSIONS

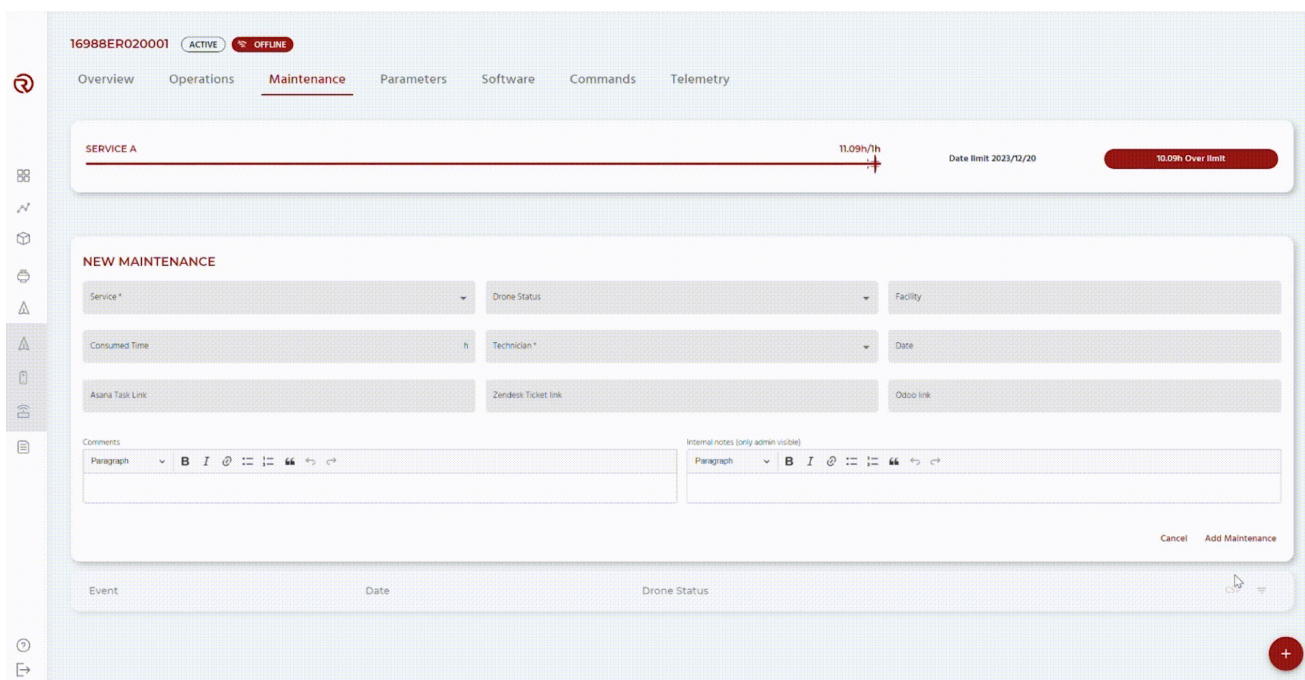
Version	Details
RIGI SOFTWARE VERSION: 0.21.3	
AUTOPILLOT	
Autopilot Version:	0847cc865
FAILSAFE	
Failsafe Software Version:	dummy
Failsafe Hardware Version:	dummy
ONBOARD COMPUTER NODE VERSIONS	

DRONE UPDATE HISTORY

Time	User	Update Version	Update Status
------	------	----------------	---------------

A 'New software version available' notification is visible in the top right corner of the software versions section.

- **New Maintenance Centre**
 - All maintenance and repair actions can now be recorded into RigiCloud's database to provide a comprehensive history of the aircraft for compliance and lifecycle management
 - Regular maintenance services (Service A, Service B, etc) are now tracked, and a timeline for the next required service is displayed in both Maintenance and Overview tabs of the Fleet Management section
 - The list of past maintenance activities can be downloaded for compliance reporting.



- Re-vamped drone List and Overview pages to show more relevant information

Simulator:

- Wind speed, direction, and actual simulator speed now displayed in the drone list in Control Tower

API

- New endpoints added:
 - **Operation Requests** can now be created and updated, allowing the development and use of a third-party front-end application for ordering drone flights which will then appear in the Logistics Centre of RigiCloud
 - **Equipment** can now be queried, allowing external tracking of drones, batteries and Edge nodes
- New datafeeds added:
 - **Live air traffic**, as detected by the drone's internal ADS-B and FLARM receivers, can now be streamed to an external API such as a UTM software
 - **Flight plans** can be uploaded to RigiCloud and used as part of an Operation Request. Flight plans are checked to ensure that they comply with RigiTech's drone specifications.
 - The format of **Commands** has been re-vamped, allowing new behaviours to be called (Continue Operation, RTO, SRP)

Fixed/Improved

- Refactor of flight plan format in preparation of more complex flight plans and networks
- Parameter synchronisation is showing additional information
- Bug fixes, reliability improvements, software refactors.

Onboard software (OC) - v0.22.0:

New Features

- Support for Iridium SBD-based satellite modems added, including the ability to consider it a main datalink for failsafe behaviours
- A voltage and current check is now performed on the battery state during the FTS check and before takeoff to ensure a full battery is connected and the plug is properly inserted

Fixed/Improved

- More unified and streamlined geocage handling between OC and AP
- Refactor of navigation state machine to simplify flight modes and transitions between them
- Bug fixes, reliability improvements, software refactors.

Autopilot (AP) software - v2.3.0:

New Features

- Improved positioning performance during takeoff through the use of Precision Pad as a supplementary positioning source to main GNSS sensor
- Support for more integrated RemoteID functionalities in preparation for certification

Fixed/Improved

- Bug fixes, reliability improvements, software refactors.

Failsafe Computer (FS) firmware - v0.14.0:

New Features

- LTE driver now receives additional information on mobile carrier and connection status
- FTS system check is now shorter, and the system beeps during the test to ensure the operator is aware it is being performed

Fixed/Improved

- Improved management of SD card, GNSS sensor and backup battery manager
- Bug fixes, reliability improvements, software refactors.

🏠 > RigiCloud Release notes > RigiTech Software Update - September 19, 2023

RigiTech Software Update - September 19, 2023

RigiCloud and Edge Node - v1.9.0:

New Features

General and Map Tools

- A new **Settings** page reunites the main project settings that can be modified by Head of Operations roles, including units, interface colours, and enabling/disabling advanced features.
- Head of Operations users can now **select between Metric, Imperial and Aviation units** for most fields (distances and speeds). The settings are applied on a project-wide basis, to ensure that all pilots are using the same units.

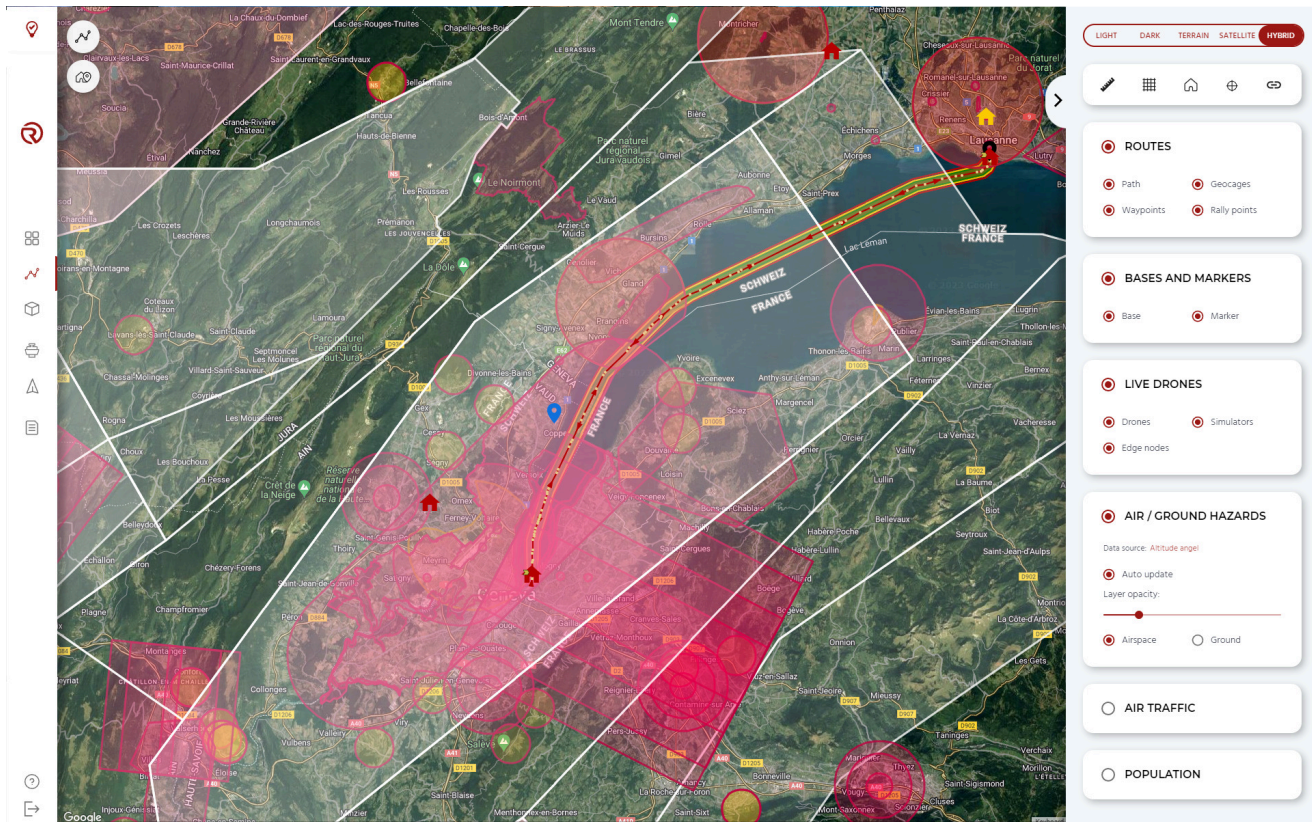
Custom Units - RigiCloud New Feature 2023

RigiTech



Watch on

- Airspace layer has now returned to Map Tools using a new global dataset (**GuardianUTM Cloud**) from Altitude Angel. The layer now also includes Ground Hazards (powerlines, critical infrastructure, etc).



- The Population Density layer has a source selector to choose between the various available datasets.

Airbridge Planner:

- **Improved routes management and permissions**
 - A **Route Status** has been added to routes for better permissions management. Routes begin as Draft, and can be upgraded to Validated and Approved status. The Route Status defines whether a route can be loaded onto a simulator or a real drone. Only higher-level User Roles can change the status of a route.
 - A special Archive status allows clearing of unused routes in the list. Additional filtering and ordering options help organisation of projects with many routes.

Route Status - RigiCloud New Feature 2023

RigiTech



Watch on

- A **Reverse Route** button will automatically clone and reverse an existing route, allowing an easy return trip. Takeoff, Land and Transition waypoints are inversed while conserving the same geocages and safety profiles. *NOTE: once cloned, the routes are not linked, and any change to either route is not copied to its inverse route.*

Reverse Route - RigiCloud New Feature 2023

RigiTech



Watch on

- **Improved route creation and editing**
 - Action waypoints (transitions, loops) are now merged with the Position waypoint they are attached to.
 - Gradient information is displayed between waypoints to help planning altitude changes within limits of the aircraft's capabilities.
 - Waypoints that are not set correctly (bad altitude, too much gradient, insufficient transition distance, etc.) are now highlighted with an error, making it easier to identify and fix route planning issues.

- A "Save & Continue" button will save the latest changes to a route, increasing peace of mind when making big edits with poor internet connection.
- A summary of the Route Safety Checks is displayed when saving a route, similar to the one available in the Safety Checks tab, to ensure that route planning issues are identified and addressed.

Control Tower:

- The **Mission Start Workflow has been re-designed** for safety and efficiency of a sustained delivery operation. The previous Pre-flight Checklist has been replaced by three separate checklists: Daily Checklist, Ground Checklist and Pre-flight Checklist.
 - **Daily Checklist** includes visual inspections and motor tests that can be done only once a day, and are not required before every flight. This reduces the time-to-flight for all but the first flight of the day.
 - **Ground Checklist** is to be done by on-site staff that need to physically interact with the drone (load payload, battery, inspect aircraft, clear ground and airspace).
 - **Pre-flight Checklist** is to be done by the Pilot in Command of an operation who may be located remotely and can be done fully through the RigiCloud interface.
 - Checklists can be done concurrently by different Users, and each User sees when and by whom a check has been completed. Takeoff is only allowed when all mandatory checks have been passed.
 - All checklist actions are saved in the database and attached to the Operation for compliance tracking.
 - Head of Operations Users can **create their own Daily, Ground and Pre-flight Checklists** to customise for their own workflow.

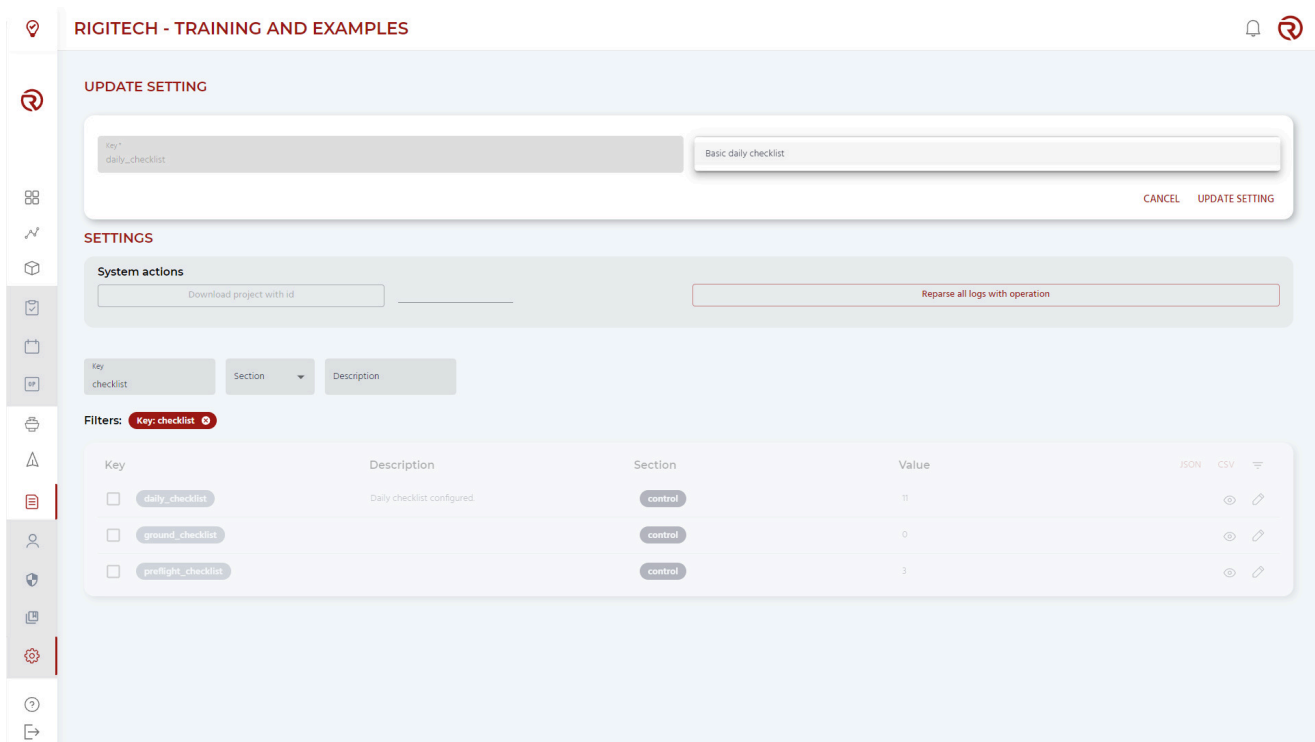
Updated Checklists - RigiCloud New Feature 2023

RigiTech



Watch on

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RIGITECH - TRAINING AND EXAMPLES

UPDATE SETTING

key: daily_checklist, Value: Basic daily checklist

SETTINGS

System actions

Download project with id, Repair all logs with operation

Key: checklist, Section: , Description:

Filters: Key: checklist

Key	Description	Section	Value	JSON	CSV
daily_checklist	Daily checklist configured.	control	11		
ground_checklist		control	0		
preflight_checklist		control	3		

New Checklist Workflow - RigiCloud New Feature 2023

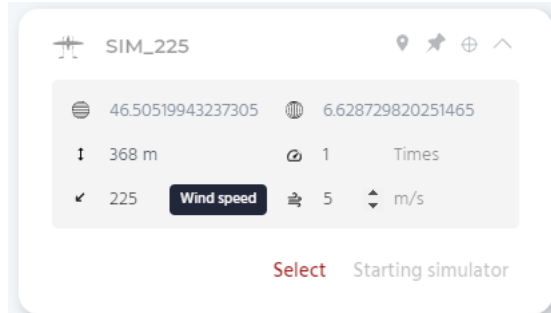
RigiTech



Watch on

- The Vertical and Horizontal Motor Tests have been replaced by a **Full FTS Test** which will spin up all motors at once, cut them using the FTS, release them again and stop. This simplifies the workflow and also complies with EASA certification requirements for the FTS.
- The FTS data link is now added as a datalink source for the DLL Failsafe. The drone will now activate the DLL Failsafe only if both Main and FTS datalinks are down.

- The **Altitude Deviation**, which is the difference in the current altitude of the drone and the expected altitude according to the route, is now displayed in the Telemetry window. This provides additional information on how well the drone is tracking its expected flight path.
- **Improved Simulator features**
 - You can now set the wind speed and direction for a simulator, to test a longer route under high wind conditions.



- The speed of the simulator is now displayed to confirm actual speed to the User.

Fleet Management:

- Several lists can now be downloaded as a CSV for external documentation, including Drones, Batteries, Edge Nodes and Users.

API

- Endpoints created to start/stop simulators directly through the API instead of through the Control Tower interface.

Fixed/Improved

- Better User management by Head of Operations role.
- Bug fixes, reliability improvements, software refactors.

Onboard software (OC) - v0.21.0:

New Features

Fixed/Improved

- Better status message handling
- Better safety management during software updates
- Improved drone-to-cloud communications pipeline
- Increased stability of video feeds for streaming and precision landing
- Improved safety checks before takeoff
- Bug fixes

Autopilot (AP) software - v2.2.0:

New Features

- Precision Landing is now more robust in GNSS-denied conditions, increasing robustness in the final approach when landing in dense or mountainous areas.

Fixed/Improved

- Better handling of trajectory after Quadchutes
- Improved waypoint management between flights
- Improved communication between Autopilot and Onboard Computer
- Bugfixes

Failsafe Computer (FS) firmware - v0.13.0:

New Features

- Added additional capabilities to use failsafe link as redundancy of main link

Fixed/Improved

- Improved logging method

🏠 > RigiCloud Release notes > RigiTech Software Update - June 26, 2023

RigiTech Software Update - June 26, 2023

RigiCloud and Edge Node - v1.8.0:

Added

Airbridge Planner:

- **Safety Profiles**
 - Rather than defining Safety Settings (ie. contingency behaviours on geocage breach, failures, etc.) on a route-by-route basis, all Safety Settings are now defined through Safety Profiles, which can then be assigned to and reused across many routes
 - Changes to a Safety Profile are propagated to all the Routes that use that Safety Profile
 - Multiple Safety Profiles can be defined to represent different scenarios (urban flight, controlled airspace, etc.), allowing flexibility to perform flights using different ConOps

RIGITECH - TRAINING AND EXAMPLES

SAFETY PROFILES

NEW SAFETY PROFILE

Profile name* Description ☐ Disabled
A disabled profile will not appear to be selected in routes.

RTO TURN IN FIXED-WING

RTO turn maneuver: Fixed-wing banking turn

GEOCAGES

Geocage breach: Land
Pregeocage breach: Warning

MAX FLIGHT ALTITUDE DEVIATION

Lower Deviation Limit: 25 m
Lower Deviation Limit action: Warning
Lower Deviation Warning: ☐
Upper Deviation Limit: 20 m
Upper Deviation Limit action: Warning
Upper Deviation Warning: ☐

QUADCHUTE

Adaptive quadchute: 20 m
Low altitude quadchute: 0 m
Quadchute action: spp
Quadchute angle threshold pitch: 30 °
Quadchute angle threshold roll: 70 °

BATTERY

Emergency landing level: 10 %
Emergency landing threshold: 30 %

C2 LINK

Main C2 link loss action: Land
Main C2 link loss time: 01:00:00

ONBOARD COMPUTER

Onboard computer loss action:
Onboard computer loss time: 02:00:00

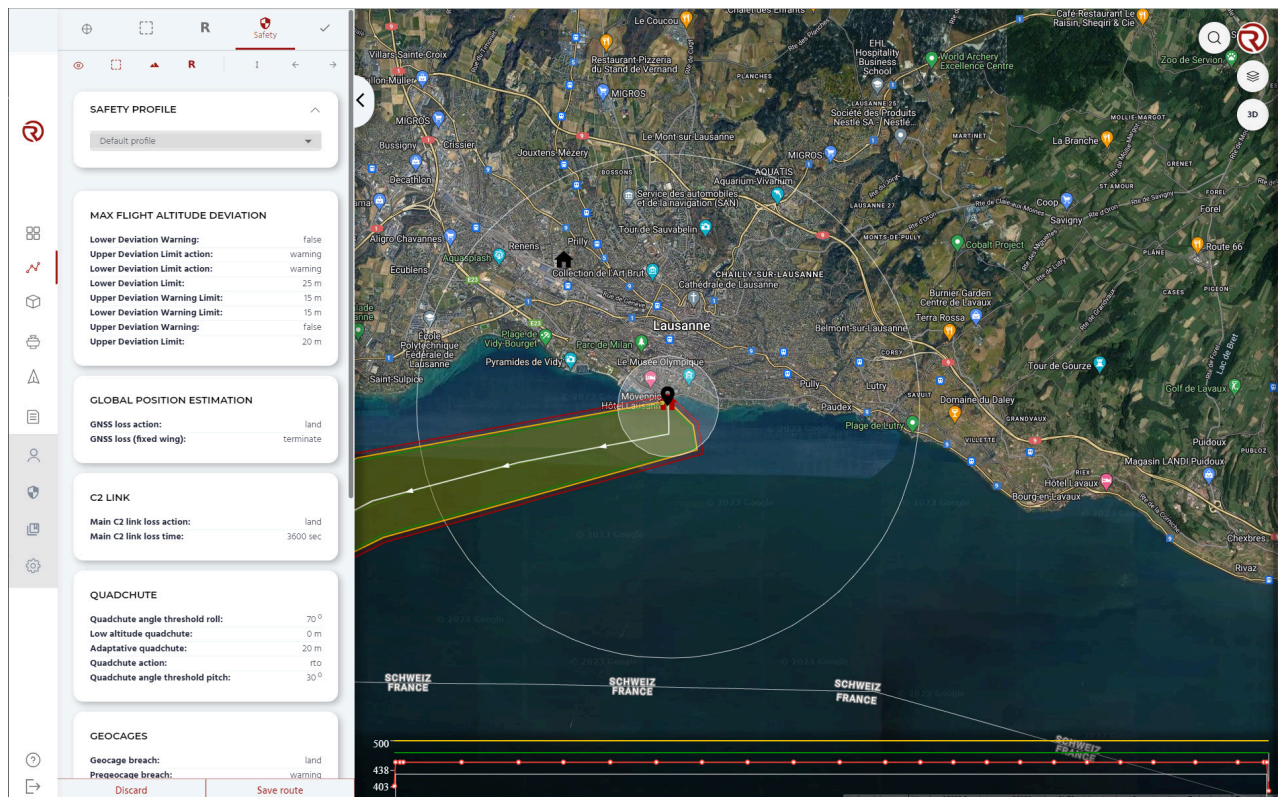
FAILSAFE SYSTEM

Enable parachute: ☒

GLOBAL POSITION ESTIMATION

GNSS loss (fixed wing): Terminate
GNSS loss action: Land

Cancel Add Safety profile



Control Tower:

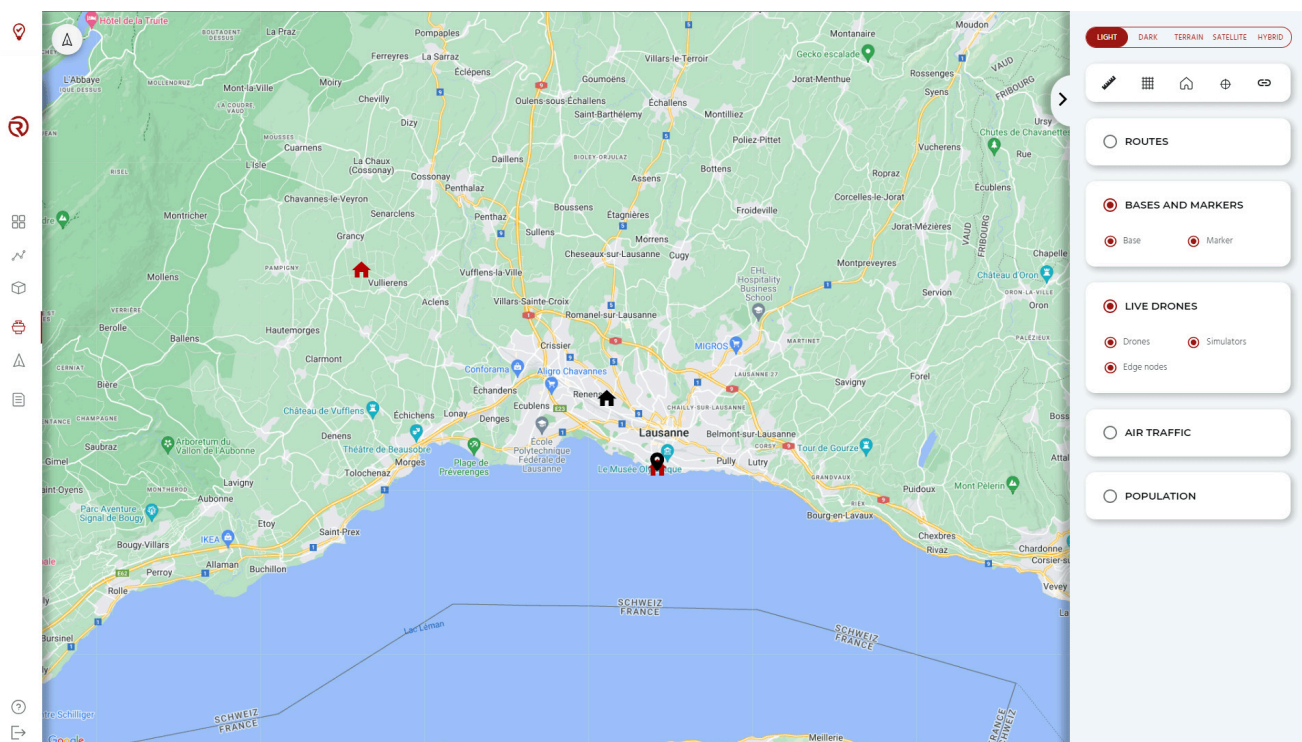
- **Live video streaming** from Forward and Downward-facing cameras

- o A live video feed can now be started from either the downward or forward-facing cameras by the Operator and shown directly in the browser window
- o Video streams are managed through RigiCloud, allowing unlimited users to watch the stream at once without increasing the data stream between the drone and RigiCloud
- o Video streams can be displayed in windowed or full-screen mode
- o Permission levels allow control of the video stream (on/off or switch cameras) to higher-level Users while only allowing streaming with no control for Users with lower permissions



- **Additional map tilesets**

- Existing "Dark" tileset refined with updated colours and data, and a new "Light" tileset added for readability in some lighting conditions



Logistics Center:

- Flight logs for simulated operations are now also synchronised to the server, to allow tracking of flight hours done by operators in simulation before performing real flights.

Fixed/Improved

- Simulator now runs at 1x speed by default (instead of 5x)
- Removed deprecated Airspace and Weather layers in Map Tools that were out of date or no longer supported by data suppliers
- Increased reliability of live telemetry feed through separation from other parts of the RigiCloud software infrastructure
- Improved Elevation data API, resulting in faster planning for complex routes
- Warning now displayed for geocages that have more than 255 vertices
- Bugfixes, reliability improvements, software refactors.

Onboard software (OC) - v0.15.0:

Added

- Support for new mobile radio modems and other hardware modules in Eiger drones

Fixed/Improved

- Improved RTO (Return to Takeoff) behaviour in missions that contain Loops
- Improved Precision Landing accuracy and target detection range in difficult lighting conditions

Autopilot (AP) software - v1.13.2:

Added

- Support for various airspace detection radios, including streaming of detected aircraft positions to RigiCloud

Fixed/Improved

- Improved battery level detection accuracy

Failsafe Computer (FS) firmware - v0.12.0:

Added

- Failsafe Computer now tracks all pre-flight and in-flight activations and synchronises this data with RigiCloud, a required step for the Design Verification of Enhanced Containment in BVLOS flight

Fixed/Improved

RigiTech Software Update - April 3, 2023

RigiCloud and Edge Node - v1.7.0:

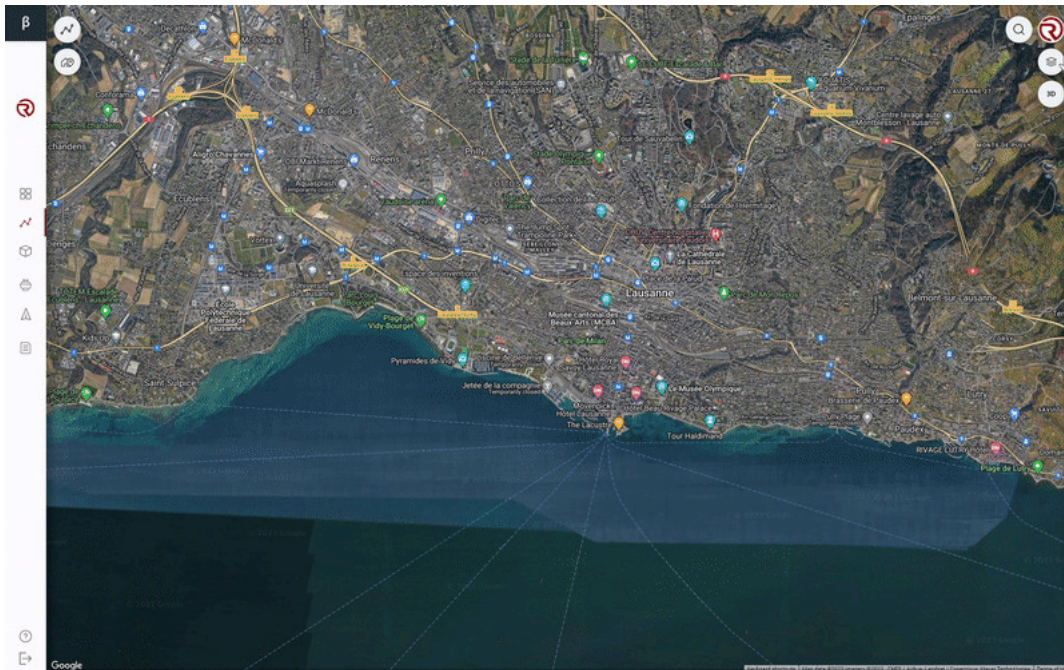
Added

Airbridge Planner:

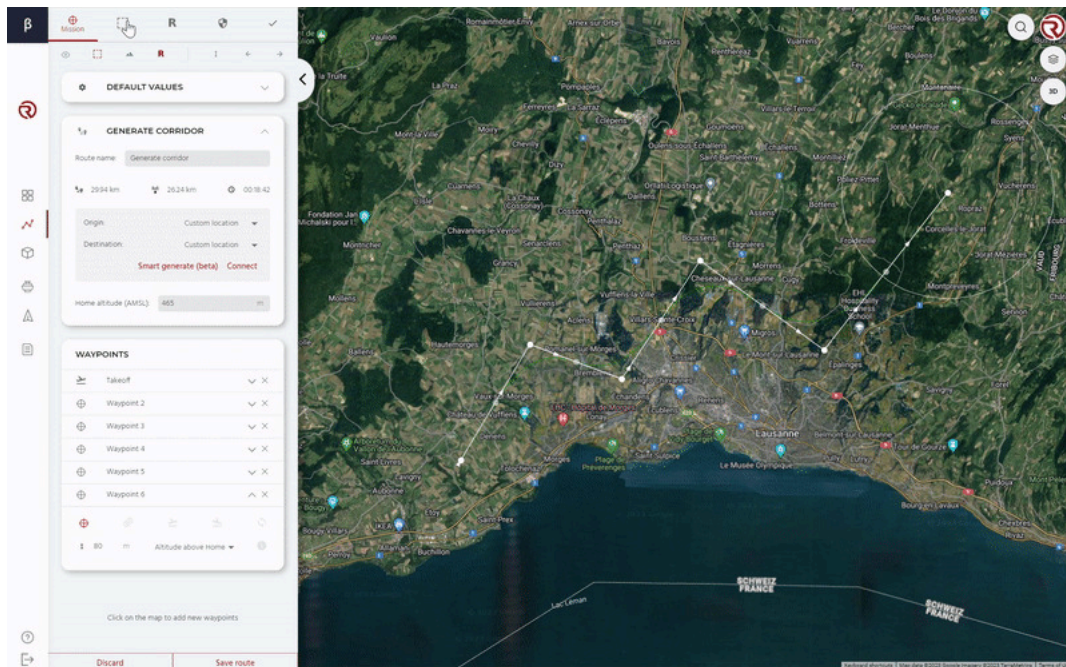
- **Tight-space U-turn:** The type of 180-degree turn (*Fixed-wing banking turn, left, or Multicopter U-turn, right*) can now be defined on a per-route basis in the route Safety Settings, allowing different behaviour for routes with tight geocages than for those with more space to turn.



- **Worldwide population density:** This feature, originally covering only France, has been extended for worldwide coverage through the [Global Human Settlement Layer of the European Commission](#). Note that coverage is best in Europe, with large deviations in America and Asia due to the projection model of the source database.

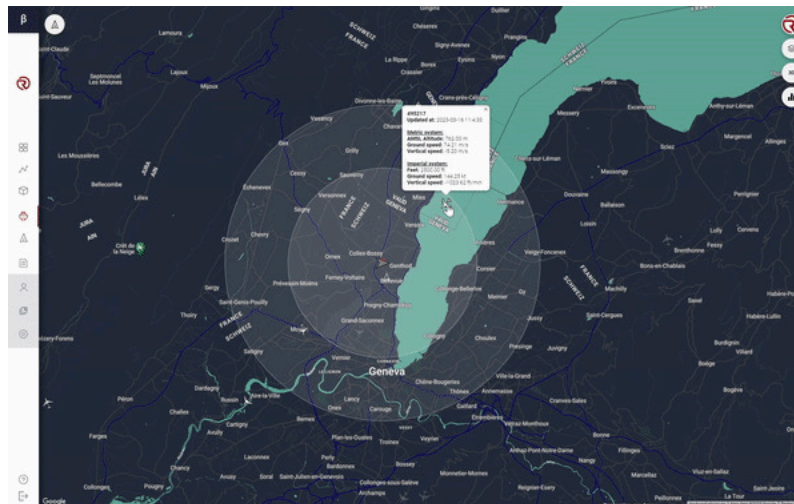


- **Corridor-based geocage creation:** A full semantic corridor (Geocage, Pre-geocage and Contingency Buffer) can be created automatically based on a route and a few distance parameters.
- SRP (Straight to Rally Point) can now be selected for some situations in the Safety Settings, in addition to previously-available options.

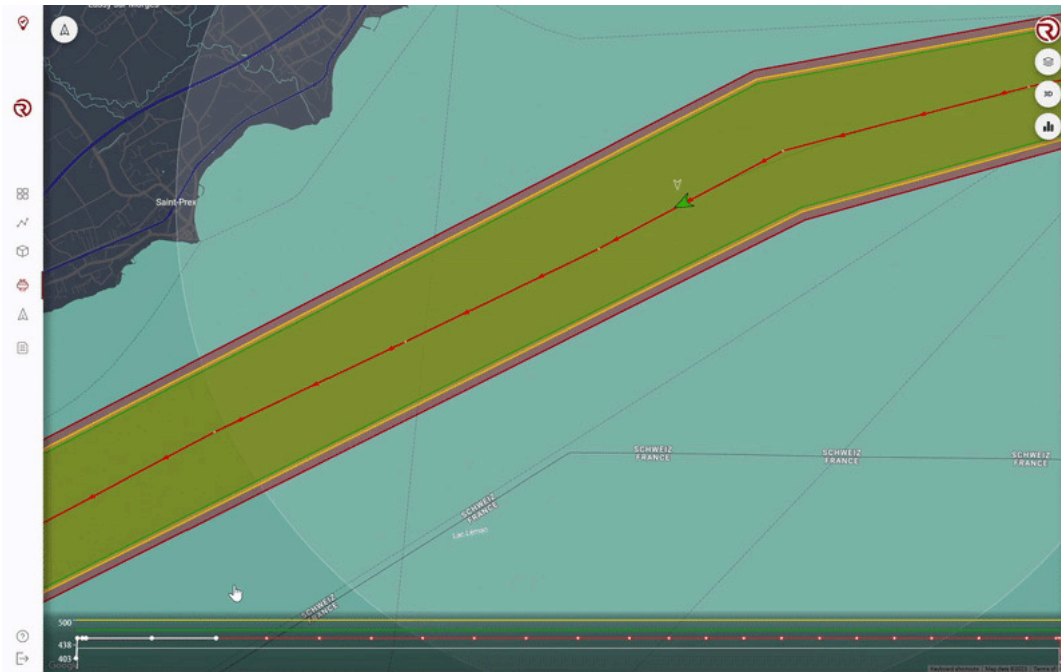


Control Tower:

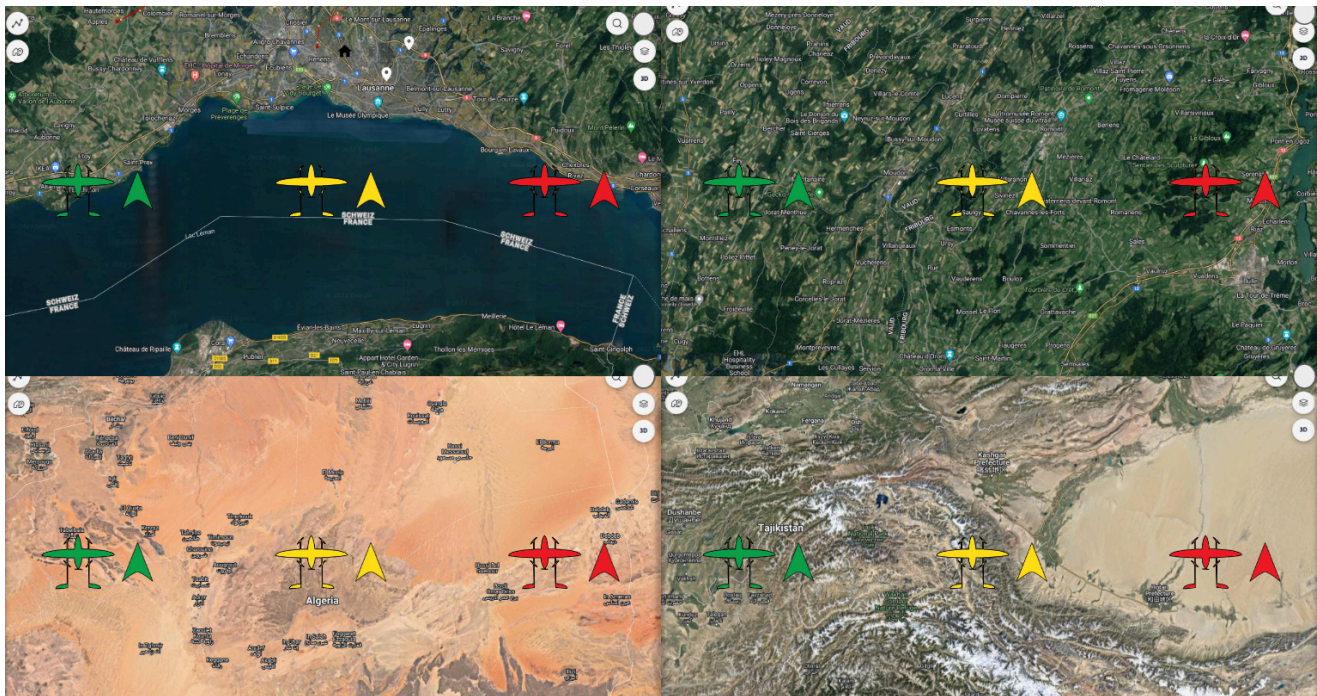
- **Air traffic detection volumes:**
 - Two cylinders can now be defined around the drone's position to represent the "All-clear volume" and the "Collision Imminent volume".
 - If an aircraft is detected in either of these volumes (through RigiCloud's integrated Air Traffic layer) the volume and the intruding aircraft will both change colour (yellow or red depending on the volume).
 - An icon will appear with details on the aircraft's relative position to help the operator make a corrective decision.



- **Verbose messaging:** Messages that are displayed in the Messages box are now dependent on User permissions. Users with lower permissions will not see all the messages seen by higher-permissions Users. This creates a cleaner interface and prevents information overload to the Operator.
- **Altitude Profile Display and Tracking:** The altitude profile of a selected flight plan is displayed at the bottom of the map interface, together with the terrain elevation and the floor/ceiling setpoints. During flight, the completed segments and waypoints switch colours (red to white).



- **Drone icons and colours:** Drones and simulators now have differing icons to make them more easily distinguishable. The colours of drones and simulators has also changed and now represents the status of the drone/simulator (see RigiCloud User Manual for details).



- The Ground distance sensor health is now checked and displayed in the Drone health list.

- If the detected wind speed is above safe limits, a warning will be displayed in the Messages box to encourage the operator to take corrective action.

Logistics Center:

- **Delivery Request interface:**
 - A new Logistician User role is now available specifically for creating Delivery Requests and handling ground operations.
 - A new interface allows creation and tracking of Delivery Requests, which specify the desire for a delivery Operation at a specific Base or Marker.
 - The Operator can see all pending Requests and convert them into Operations, either in the Scheduler or directly in the Control Tower.
 - Once a Request is linked to an Operation, the Logistician receives email updates on status changes and expected delivery/pickup time.

Delivery / Pick-up Interface - RigiCloud - April 2021

RigiTech



Watch on

- In addition to the existing Autopilot Log synchronisation, the drone will now automatically synchronise the Onboard Computer log after every operation.

Fleet Management:

- **Drone-level details page:** A new page that exposes details on an individual drone's flight statistics, performance, metadata and past operations can now be accessed by clicking on the drone's serial number in the Drones page.
- Drones are now all grouped together in a single list instead of being organised by Bases.

General:

- Improved networking and connection time between drones and RigiCloud.
- Bugfixes, reliability improvements, software refactors.

Onboard software (OC) - v0.14.0:

Fixed/Improved

- **Precision Landing improvements:**
 - Precision landing can now be used after an RTO (Return to Take-off) or SRP (Straight to Rally Point) command, if the associated points have a Precision landing pad. Previously, Precision landing was only available in a normally-executed mission at the Land waypoint.
 - Accuracy and speed of precision landing improved through controls optimisation and the integration of new Aruco code dictionary.

- **Parameter persistence for simulators:** Simulated drones now keep parameters between boot. This removes unnecessary error messages and increases simulation fidelity.

Autopilot (AP) software - v1.13.1:

Added

- The maximum number of vertices for a geocage increased from 63 to 255, allowing more complex flight routes.
- Detection of partial clogging of airspeed sensor, subsequent disconnection of the sensor and switch to degraded fixed-thrust flight mode.

Fixed/Improved

- Improved altitude tracking during front and back transitions.
- Improved flight performance when in degraded flight modes.

Failsafe Computer (FS) firmware - v0.11.0:

Fixed/Improved

- Barometer is now logged at a more consistent rate.

RigiCloud and Edge Node - v1.6.0:

Added

Airbridge Planner:

- **Improved elevation data:** A higher quality datasource (Copernicus DEM GLO-30) is now used for elevation data during planning.

Control Tower:

- **ADS-b integration:** aircraft detected by ADS-b transponders integrated in Eiger drones or Edge Nodes are now streamed to RigiCloud and displayed in the Air Traffic map layer. Aircraft data is merged with traffic from **Involi** (when available), and infrastructure is set for future U-Space air traffic services.
- **FTS testing:** The Failsafe can now be tested on the ground through a simple command, as often as required by airspace authorities (ideally once a day before flights begin), in preparation for future EASA Design Verification. The number of tests is tracked in RigiCloud for maintenance purposes.

Logistics Center:

- **Automatic flight log syncing:** the drone will now synchronise flight logs with RigiCloud right after landing, or on bootup if synchronisation is not complete before the drone shut down. Logs become available in the Logistics Center shortly after.
- Additional statistics are calculated on every Operations log for better post-flight diagnostics

General:

- **Server branding:** RigiCloud, Test and Edge Node servers are now branded with different top-bar colours to more clearly distinguish which server the operator is connected to.
- New or updated User Roles created for Observers and Simulator-only profiles
- Bugfixes, reliability improvements, software refactors

Onboard software (OC) - v0.13.0:

Added

- **Vision-based precision landing:** drones equipped with a downward-facing camera will be able to land with higher precision on a Rigi-designed landing pad. This enables the use of smaller takeoff and landing areas. The detection of the landing target is displayed in the Control Tower.
- **Takeoff warning:** the drone will now output a warning sound for several seconds (configurable) before arming for preflight checks and mission start using the Failsafe buzzer as an additional ground safety feature.
- **Tight-space U-turn:** rather than performing a circular U-turn in Fixed-wing mode, the drone can be configured to perform a "Transition-to-Multicopter, U-turn, Transition to Fixed-wing" manoeuvre when we trigger an RTO command. This may prevent the breach of a tight geocage, at the expense of higher total power consumption.

- **Geocage breach prediction:** When a Hold or RTO command is received in FW mode, the drone will issue a warning if it predicts a (pre-)geocage breach. By default no automatic action will be taken, but the drone can be configured to automatically choose the "Transition-to-Multicopter, U-turn, Transition to Fixed-wing" manoeuvre when a geocage breach is predicted upon RTO initialisation.

Fixed/Improved

- **Better parameter handling:** fixes bugs related to parameters blocking preflight checks or mission upload.
- Disabled DLL failsafe action on ground to avoid triggering when the drone does not have a stable connection before takeoff.
- Bandwidth optimization in the messages sent to cloud.

Autopilot (AP) software - v1.13.0:

Added

- **Update to PX4 v1.13:** The autopilot firmware has been updated to RigiTech's fork of the latest stable version (v1.13) which includes numerous improvements in performance, most notably:
 - State estimation robustifications
 - New and improved checks on the airspeed sensor
 - Better altitude tracking during FW climbs and descents
 - Warning if an imbalanced propeller is detected
- **Improved transitions:** New controllers deployed during both front transitions (FT) and back transitions (BT) to better track altitude during this critical phase of flight.
- **Failure detection:** onboard algorithm can now detect a failure in the pusher motor and signal a warning. The drone will execute a Quadchute if it was flying in FW mode.
- **Remote Control (RC) update:** The ability to transition between Fixed-wing and Multicopter flight has been removed. If the RC is used to take manual control of the drone during fixed-wing flight, it will automatically trigger a transition into Multicopter flight. This is part of the roadmap of removing completely the RC from operations.

Failsafe Computer (FS) firmware - v0.10.0:

Added

- **RigiCloud-FS-OC Bridge:** Previously, the Failsafe computer sent its own independent telemetry (GNSS position, altitude, etc) to RigiCloud through a secondary LTE datalink. Now, the Failsafe can bridge data (both telemetry and commands) between RigiCloud and the main Onboard Computer. The result is that even on main datalink loss the operator retains information on the status of the drone and can issue commands to the Onboard Computer and the Autopilot through the secondary LTE datalink, enabling full datalink redundancy.
- More detailed information is logged, especially during launches.

RigiCloud and Edge Node - version 1.5.0:

Added

Airbridge Planner:

- A new failsafe behaviour called **Reverse to Takeoff** or **RTO** is now available as a safety action for some failsafe behaviours, and can be set on the Safety page of a flight plan. The previous RTL behaviour, which results in a straight line-path to the closest Rally, Home or Land point, is still available and has been renamed **Straight to Rally Point** or **SRP**.
- Allow manual update of Base and Marker positions and altitude, making it easier to use the Automatic Flight Planner

Control Tower:

- Left-hand control menu updated with clearer information on drone and operation status:
 - Mission progress moved to a new **Operations box** which includes additional information on the current operation: estimated remaining flight time, takeoff and estimated landing time, total flight time and total flight distance
 - Drone general status improved into a single global status, merging previous information on armed/disarmed, landed/in-air, flight mode and multicopter/fixed wing status.
 - Improved link quality information in Status box for all communications links (Main LTE, 2.4GHz radio, Wifi, Failsafe LTE)
 - Additional information on both Primary and Secondary GNSS sensors in Status box, including satellite numbers, precision and general signal health indication
 - Distance to ground, as measured by Lidar sensor, is now shown in the Telemetry window
- Operation progress calculated more precisely after a contingency action (Hold, RTL, etc.)
- Last connection time is displayed for a live drone, to more easily manage connection loss
- Upgraded telemetry data packet between drone and Control Tower, allowing more detailed information on drone status in the future

API:

- Information related to Operations is now available through the API, including (see documentation for full list)
 - Get list of roles, users, battery types, batteries, and Operations
 - Get information for a specific operation (who was the pilot, which battery was used, etc.)
 - Create a new operation or update an existing one (useful for planning future deliveries through external software frontend)

Edge Node:

- Added ability to bridge communication from drone to RigiCloud through Edge Node, as an additional fallback link if the drone's LTE link is poor when within range of an internet-connected Edge Node

General:

- Upgrade to latest web frameworks for improved performance

- Naming change for map layers (Default becomes Terrain, Rigi becomes Dark)

Onboard software (OC) for Eiger + Minto - version 0.12.0:

Added

- LAND command is now available from the Remote Control (needs manual update of RC)
- Ability to download logs from Failsafe computer remotely

Fixed/Improved

- Improved network discovery protocols for drone connection times
- Improved Failsafe communication robustness
- Improved redundancy of internal communication between system modules
- Improved logging performance
- General bug fixes

PX4 (autopilot for Eiger + Minto) - version 1.12.7

Added

- Improved front transition tracking to better cope with transitions that are not into headwind direction
- Pusher motor failure detection algorithm will change control mode in multicopter flight to fly more smoothly without the use of the pusher motor
- Primary GNSS failure is now detected, with an automatic switch to the Secondary GNSS sensor to allow continuation of the flight in contingency mode
- Better use of Lidar sensor for slow landing approach

Failsafe (backup computer for Eiger + Minto) - version 0.9.0

Added

- Failsafe system now detects additional failure modes and automatically launches the parachute:
 - Autopilot failure
 - Main battery loss
- Improved Failsafe GNSS information and parsing
- Improved Failsafe trigger source logging for post-trigger diagnostics

🏠 > RigiCloud Release notes > RigiTech Software Update - July 11, 2022

RigiCloud - version 1.4.0 (including changes in 1.3.0 that was unreleased):

Added

Airbridge Planner:

- **New safety settings**
 - Previously, a Quadchute after a contingency situation would always be followed by a simple straight-line Return to Land (RTL) action. Now, new actions are available after a Quadchute, including Hold, Land and Terminate.
 - The parachute can now be enabled or disabled for each route.
- **Simplified Home**
 - The Home position is now locked to the same latitude and longitude as the Takeoff position. When Takeoff is moved, the Home is moved together with it. Home is no longer displayed as a point in the Planner map view. The only difference between the two points is the Altitude, which can be set for Home as an absolute AMSL value, and for Takeoff as a relative or absolute value.
 - The Home position of a route can be updated to the current position of the drone by right-clicking on a live-connected drone. This ensures that a flight plan begins at the real position of the drone.
- **New Population Layer (Beta - France)**
 - The population density can be displayed as an overlay of the map, to aid in flight planning using the SORA methodology.
 - Currently, only mainland France is available. Additional countries will be added based on demand.

Logistics Center:

- Autopilot Flight logs can now be downloaded individually for each Operation by the Head of Operations role
- 3D review of flight path improved with Eiger drone model

Control Tower:

- **Status box**
 - Status box icons have been simplified and improved. Cloud and radio connection icons merged together. Battery status is now displayed. Flight number is no longer displayed.
- **Edge Nodes**
 - Edge Nodes are now displayed in Control Tower when they are online, using the position of their integrated GNSS receiver. This first step paves the way for future drone-port integration and logistics network planning features.
- **Improved telemetry**
 - Failsafe telemetry (including secondary position, barometric altitude, and status) are now sent through both main and secondary telemetry links
 - A warning message is now displayed during pre-flight checks when the motors are about to spin
 - A warning message is displayed if the main software of the drone is out of date, recommending a software update
 - Autopilot reboot can be triggered from Control Tower during pre-flight

General:

- Improved general performance when loading RigiCloud for the first time
- Re-organised server infrastructure for performance improvements
- Improved synchronisation of Operations between drone, Edge Nodes and RigiCloud
- Improved communications robustness and telemetry display
- Improved flight log parsing speed

Onboard software (OC) for Eiger + Minto - version 0.11.0 (including changes in 0.10.0 that was unreleased):

Added

- **Improved U-turn behaviour**
 - When a U-turn is requested through a return-mission RTL the drone will now perform the turn with equal distances from the main flight line, rather than turning simply to one side. This provides a better chance of staying within a flight corridor that's centered on the main flight path. It will always do the U-turn in clock-wise direction.
- **Improved safety**
 - A warning is now displayed when the Secondary LTE telemetry link of the Failsafe is not present during arming
- **Improved communications**
 - Drone telemetry now passes through a Gateway node that better manages bandwidth and messages sent between drone and servers

Fixed

- General bug fixes.
- Code optimization on the onboard computer codebase.

PX4 (autopilot for Eiger + Minto) - version 1.12.6

Added

- **Improved Global Position Loss behaviour**
 - After a Global Position Loss the drone will now descend at a higher speed until ground is detected. This limits the drift in the drone's position as it descends, ensuring better containment.
- **Improved Hardware support**
 - Support for new high-accuracy magnetometer in Eiger
- **Improved safety**
 - Autopilot heartbeat frequency increased for faster reactivity to failures

Fixed

- Fixed a scaling factor

🏠 > RigiCloud Release notes > RigiTech Software Update - March 28, 2022

RigiCloud - version 1.2.0:

Added

Airbridge Planner:

- **Improved vertical (altitude) geocaging**
 - Configure and display of new terrain-adaptive Upper and Lower Deviation limits to supplement the absolute Geocage altitude. This Deviation Limit is now adapted between every waypoint to fit with the planned flight route and to allow better following of the terrain
 - The Upper and Lower Deviations, as well as the absolute Geocage altitudes, are shown in the altitude graph in route editing view
 - The absolute Geocage and Pre-geocage altitudes are now set in AMSL (previously set in relative to takeoff point), for better clarity, especially in routes where the takeoff and landing points are not at the same altitude.
 - The number of vertices within a geocage are now displayed to the user to make it easier to stay within the 63-vertex limit for each polygon
- **Flight plan Safety tab:**
 - Previously, the safety actions performed after any safety violation, such as C2 Link Loss or Geocage Breach, were defined as parameters within the drone.
 - These actions are now defined within each flight plan through a dedicated Safety tab, and will be loaded to the drone at the start of a delivery Operation.
 - This feature allows safety behaviours to be tailored to each route's specific conditions, and adds additional safety actions
- The altitude of the Home point can now be set, in AMSL
- Additional elements (routes, bases) can now be seen in 3D view

Control Tower:

- **Actuator pre-flight checks:**
 - You can now test the vertical motors, pusher motors and servo motors before each flight using an automated procedure in Control Tower, rather than using the RC controller
 - This feature increases safety and will allow the elimination of the RC controller in the future
- A customisable (and optional) pre-operations checklist has been added to allow checks that occur before a flight is even selected
- Live wind speed and direction, as detected by the drone itself, is now displayed as an arrow around the drone on the map
- GNSS coordinates are now displayed in the tooltip attached to the drone in the map, as well as in the drone list
- Simulator improvements:
 - You can start a simulator directly on a Marker or Base
 - You can top up the battery of the simulator (simulate a battery swap) without needing to restart the simulator by right-clicking on the drone or anywhere on the map
 - You can re-position the simulator by right-clicking on the map

Compliance Center:

- A new User history dashboard shows statistics and operations history of that user

Fleet Management:

- Users can now register new batteries as they are received through a dedicated form
- Battery high-level statistics (number of operations, etc) are now displayed in the Battery page
- Drones are now organised by Drone type, enabling future features

Fixed

Dashboard:

- Graphs and operations lists now showing correct data in Week view

Airbridge Planer:

- Cloning routes causing some database errors, fixed

Logistics Center:

- Operations history list loading all operations when scrolling down
- General bug fixes, re-factor, etc.

Onboard software (Eiger + Minto) - version 0.9.6:

Added

- **Preflight checks:** services to check servomotors, pusher and quad motors before flights.
- **Safety parameters:** parsing of the safety parameters sent in the operation file.

Fixed

- General bug fixes.
- Code optimization on the onboard computer codebase.

RigiCloud - version 1.1.0:

Added

- **General:** Menu has been re-organised to better fit within high-level categories: Dashboard, Airbridge planner, Logistics center, Control tower, Fleet management (new section), Compliance center.
- **Fleet Management:** this is a new section where we group all the equipment (drones, batteries and Edge Nodes) assigned to your project.
- **Edge nodes:** there is a new page where you can see the Edge Nodes assigned to your project and their status within the new Compliance center.
- **Reverse Mission RTL:** rather than returning in a straight line to the Takeoff position, the drone will now return to Takeoff by reversing it's mission.
- **Automatic flight plan creation:** This new feature that will automatically create a route between two points (Markers or Bases) that is optimised for terrain, climbing/descending, and geocages/fences. This feature is still experimental and only works in Switzerland for the moment.
- **Documents:** the manuals are now available as a downloadable PDF (as well as the existing cloud-based documentation).
- **Release notes:** release notes for this and future software releases are now available in the Documentation section.
- **User creation:** you can now create your own user accounts for other colleagues within your own project.
- **API endpoints:** we've added additional endpoints to the API, including the ability to send commands to the drone and to send a flight plan (still experimental).
- **API telemetry customisation:** we can now change the data points that is available within the drone telemetry feed (RigiTech backend only - please ask Support to change your telemetry feed customisation).

Fixed

- **Planner:** default distance between geocage levels within a flight plan are now saved and recovered when the flight plan is edited again
- General bug fixes, re-factor, etc.

Onboard software (Eiger + Minto) - version 0.9.3:

Added

- **Arming catches:** arming denied if faulty backup battery is used or no backup battery is inserted.
- **Position checks:** printing of position checks before starting a mission to ensure position consistency.
- **Backup GNSS for geocage:** the onboard computer uses the failsafe GNSS in case of autopilot GNSS estimation error.
- **Simulated failsafe:** simulators without FTS will start a "dummy" failsafe sending data to RigiCloud.

Fixed

- General bug fixes.

Changed

- **Better logging:** better OC logs to debug in case of issues.
- **Better connection:** improved connection time of the drone with interface whiteisting.
- **RigiTech modes:** better handling of current drone state to handle RTL in reverse mission.

Autopilot software (Eiger + Minto) - version 1.12.4:

Added

- **Emergency braking:** Faster and smoother braking after quadchute.