FLYABILITY

ELIOS 3

March release notes

Bug fixes, new features and known limitations

April 4th, 2023
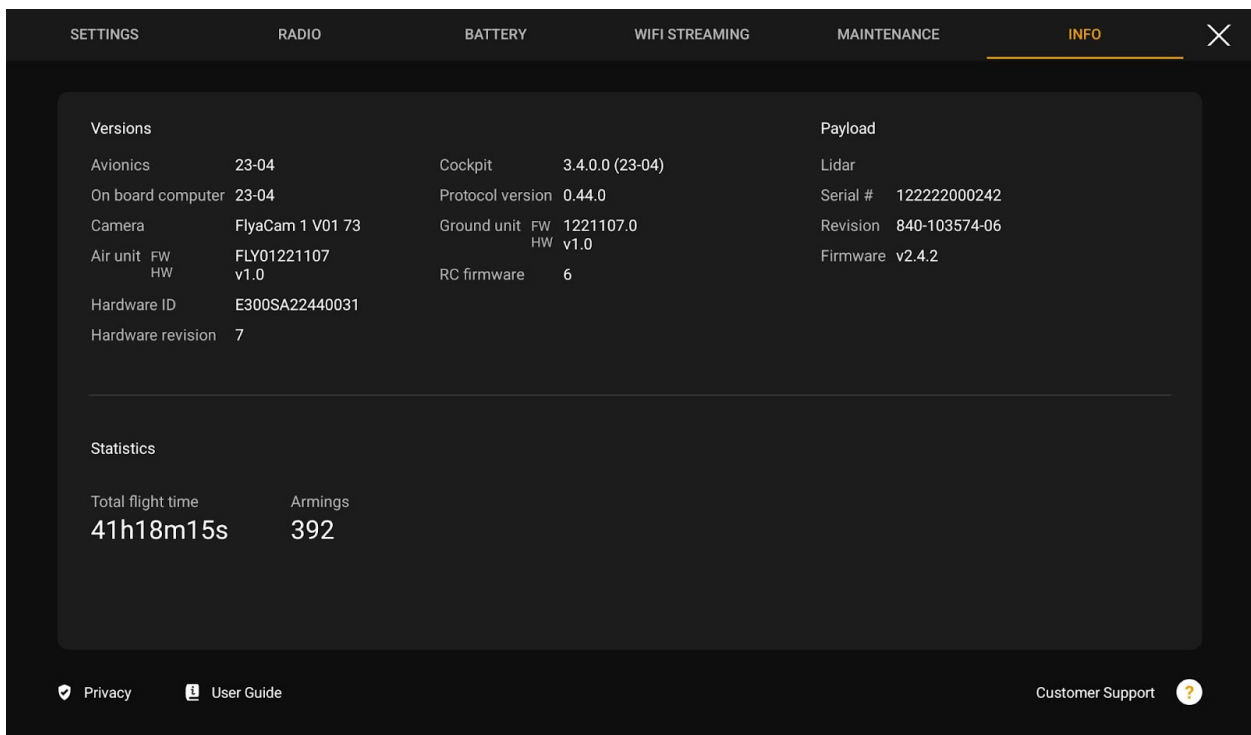
Updated E3 components versions

NEW : Drone firmware: gaston_23-04.swu

NEW : Cockpit software: Flyability-Cockpit-3.4.0.0-full-release.apk

NEW : Inspector software: InspectorSetup-4.4.0.276-x64-Release.msi

INFO panel version after update

SETTINGS	RADIO	BATTERY	WIFI STREAMING	MAINTENANCE	INFO	✕

Versions

Avionics	23-04	Cockpit	3.4.0.0 (23-04)		Payload	
On board computer	23-04	Protocol version	0.44.0		Lidar	
Camera	FlyaCam 1 V01 73	Ground unit FW	1221107.0		Serial #	122222000242
Air unit FW	FLY01221107	HW	v1.0		Revision	840-103574-06
HW	v1.0	RC firmware	6		Firmware	v2.4.2
Hardware ID	E300SA22440031					
Hardware revision	7					

Statistics

Total flight time
41h18m15s

Armings
392

Privacy   User Guide   Customer Support ?

IMPORTANT NOTES

New updated elements

1. LIDAR : The Lidar firmware will be automatically updated when the drone update is made. It may take 5 minutes more than a usual update. New Lidar fw version : **2.4.2**
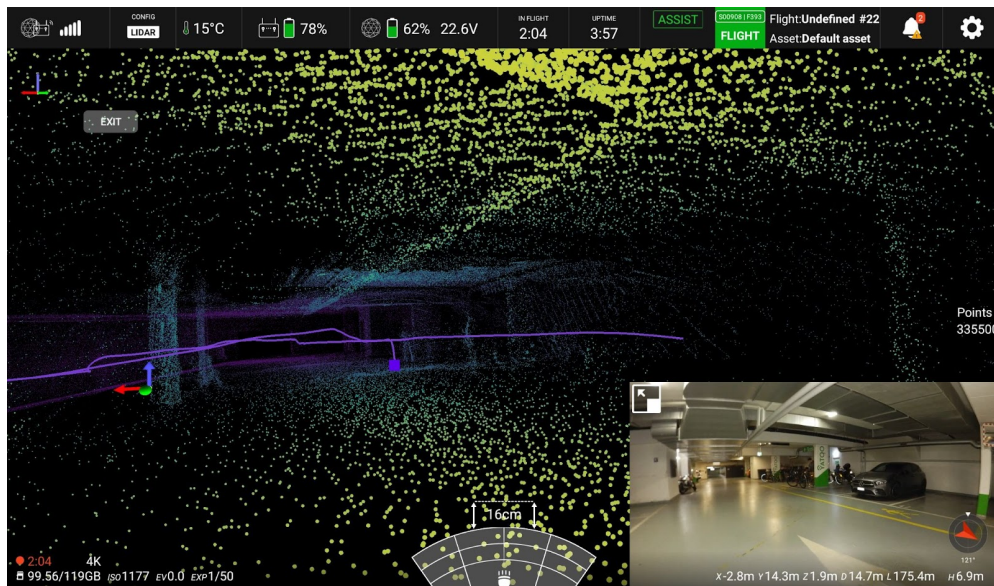
What's new?

FPV mode live lidar map

An additional view mode has been added to the live map. You can now view the live FlyAware point cloud in FPV mode.
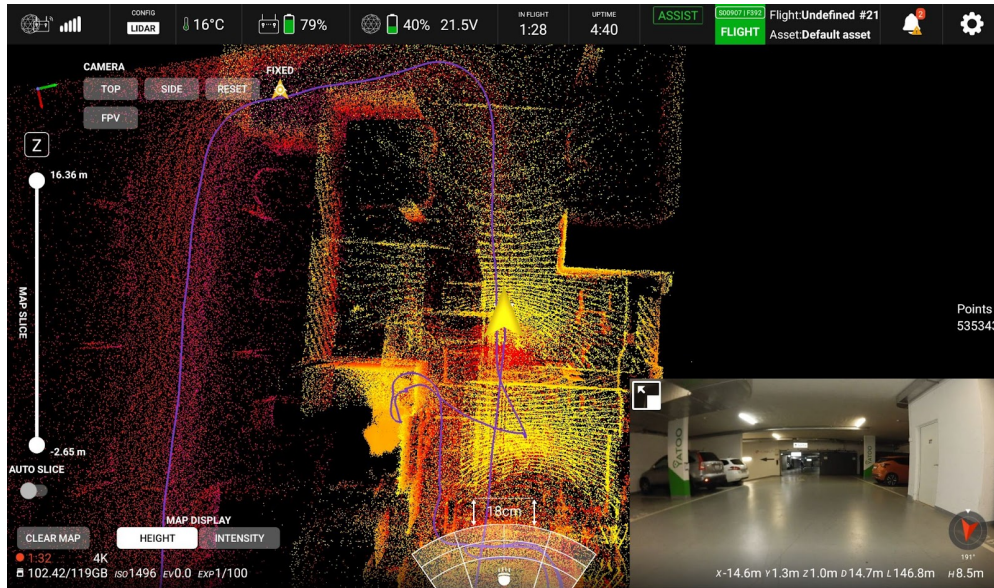
Normal FlyAware view

FPV FlyAware view

Improvements

The FlyAware live mapping has become significantly more robust in chimneys, tunnels and galleries

FlyAware mapping now works in all types of environments including long and slender tunnels, chimneys and galleries with very little geometrical features.

Battery temperature on battery maintenance tab in Cockpit is wrong

The battery contains two temperature probes, when one of them is broken or does not communicate correctly, then the average temperature on the BATTERY tab in Cockpit is wrong. This is now mitigated by displaying both temperature probe values. If the difference between both is greater than 5°C (41°F) a warning will be displayed.

All cockpit messages now have an error code

Some errors and warning messages were missing code numbers.

Samsung "S8 wifi" - tablet is now also compatible with Cockpit

The following list of tablets have been tested with Cockpit:

- Samsung Galaxy tab S7 LTE
- Samsung Galaxy tab S8 (Wifi only)
- Samsung Galaxy tab S8 LTE

Camera SD card is automatically named

The camera SD card name is now automatically set by the drone onboard computer. This ensures that after a repair and change of the camera SD card for example, the card is automatically named correctly to enable Inspector to connect with the drone.

Bug fixes

In-flight drone reboot

In extremely rare cases the avionics of the drone could reboot in flight.

Barometer saturation warning is triggered incorrectly

In some situations, the barometer saturation warning was triggered wrongly.

Lidar internal calibration

Due to a production quality issue, some lidars contain a wrong internal calibration. (SV1 to SV8 series) The issue was fully solved in production from SV9 drones forward. The lidars with a wrong internal calibration will yield live maps with more distortions and overall less coherent maps.

Drone shows USB connected while not

On some occasions it can happen that upon startup of the drone, it wrongly detects a USB connection to a computer, showing "USB Connected - Drone cannot be armed [S14]" on the tablet.

Stability issue in low below sea level altitude

On some occasions when flying at extremely high depths below sea level, the flight control can start to oscillate and become unstable as soon as the drone takes off.

Uncontrolled roll over upon take-off / Z-axis spin when switching to ATTI-mode

On some rare occasions when the main flight-control IMU of the drone does not initialize correctly and sends wrong data, the drone will roll over right after take-off and be uncontrollable. Alternatively the problem can manifest itself in-flight on the Z-axis when the drone switches to forced-ATTI.

Drone not properly detecting the lidar

Occasionally it can happen that the lidar payload is not recognized by the drone and therefore no live map nor lidar payload data is shown in the Cockpit app, nor is there a FlyAware point cloud created, nor is there lidar data recorded.

Drone EEPROM memory reset

In an extremely rare case it can still happen that the drone EEPROM memory is reset, causing Inspector not to be able to import the flights.

Remote controller mapping mode not correctly displayed in Cockpit

When choosing the remote control mapping mode 3 in Cockpit settings, the setting was set in the drone flight controller, but not correctly displayed in Cockpit settings.

Cockpit does not show the correct VIO camera when one is broken

The status of the different VIO cameras was not mapped correctly on the Cockpit maintenance tab.

If the OBC resets in flight, the drone loses ASSIST until end of flight

In an extremely rare case it can happen that the OBC resets in flight. When that happens the VIO stability system does not restart correctly and the drone remains in forced-ATTI for the rest of the flight. Similarly, if the OBC reset happens during startup of the drone, the drone will remain in forced-ATTI.

RGB video in Inspector is inverted

In a rare case it can happen that the RGB camera is not initialized correctly during startup of the drone or after a reset in-flight. In that case the video in Inspector is recorded upside down.

Known product limitations so far

Stability may fail in very dusty environments

The three cameras on the payload head are used to track visual features of the environment in order to stabilize the drone. When flying in very dusty environments it becomes very difficult for the camera's to see through the dust to detect visual features on the surrounding walls. In that case the stability will automatically turn off and request the pilot to fly in ATTI flight mode.

Wobbliness in very confined spaces

Elios 3 is inherently more susceptible to its own turbulence, and also creates more turbulence due to its higher weight compared to Elios 2.

Thermal camera lags on RGB video in Cockpit

The delay on the thermal camera video stream is higher than the one on the RGB video. Since the first is overlaid on the latter, it is quite noticeable. This delay is inherent to the different HW and SW architecture.

Flights below 1300 meters below sea level

The barometer saturates at 1200hPa of pressure, which typically corresponds with a depth between 1300 meters to 1700 meters below sea level, depending on temperature and humidity. In consequence the drone will force the ATTI MAN flight control mode.