

INSPECTOR 5.0

USER MANUAL

v1.02 September 02, 2024



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1. Overview

1.1. Inspector

Inspector 5 is the official Flyability software used to organize and analyze inspection footage gathered from Elios 3 drones. **New projects collected from ELIOS 2 drones are not compatible, however, ELIOS 2 projects present in Inspector 4 will be viewable in Inspector 5.0.** ELIOS 1 data is not compatible, so the previous version Inspector(2.2) should be used here instead.

Flyability drones save the flight data in different locations.

- The videos and still images are saved on the CAM SD card. A new video is automatically created every flight. The maximum file size is 4GB, so when recording in 4K, several videos can be created during one flight.
- The thermal camera data, flight altitude/direction, pointcloud trajectory and raw logs are saved on the embedded SSD.

Inspector is used to download data from the drone, automatically matching log files to their corresponding videos, splicing the videos from one flight together, and saves the data into a project folder on your PC.

During post processing, Inspector allows you to:

- Analyze the video frame-by-frame together with the 3D map. (ELIOS 3)
- Align and manipulate multiple flight maps manually. (Premium feature)
- Provide a lower or higher density point cloud of your asset (Depending on LiDAR scanner employed)
- Make distance measurements
- Annotating points of interest
- Export inspection reports



1.2. Data Organization

Consolidate and organize assets, inspections, and flights in Workspaces allowing for the organization and visualization of historical and current data.



Workspace - Main project folder where Inspector stores all the data. Inspector 5 can only open one workspace at the time

Asset - Represents the physical area or object where Inspections are conducted.

Inspection - A collection of flights, usually limited in time, performed to survey an Asset

Flight - A single round, piloted or handheld, from takeoff to landing.

It is important to maintain folder structure and file naming when sharing and archiving datasets for future access in Inspector 5. Any changes of naming should be done through the edit functions provided in Inspector.

1.3. Asset Management

Asset management provides additional features to help simplify data processing workflows. Automatically merging and visualizing data from subsequent flights into a single digital twin of an Inspection. An active Premium Software Subscription is required in order to get access to these additional Asset Management features.

- Asset-centric data visualization View full Inspections in one consolidated map and video timeline. Point clouds, points of interest, and annotations of all the flights composing an inspection are displayed together on a Digital Twin of the asset.
- Inspection-based reporting Customizable reports from each Inspection consisting of multiple flights.
- Automatically and manually align overlapping flights into a larger reconstruction of the asset and Inspection.



2. Installation

2.1. System requirements

Inspector requires a PC running Windows 11.

Inspector requires an AMD64 architecture (Intel or AMD processor based) machine running Windows 10(64-bits) or newer. It also needs 500 MB of disk space, and it is recommended to have additional 50-100 GB of free disk space for flight data, as each flight produces around 10 GB of data. Currently 16GB of RAM is recommended.

OS: Windows 11

CPU: i7 good from 2021 or higher

RAM: 16 GB minimum

Graphic Card: Required especially for 4K screen. Good integrated one or Nvidia quadro/GTX 10XY for a powerful setup

Inspector 5.0 system requirements						
Minimum	Recommended					
Windows 11 64-bit	Windows 11 64-bit					
Intel Core i5-1135 or AMD equivalent	Intel Core i7-8750H or AMD equivalent					
16GB RAM	16+ GB RAM					
Iris Xe Graphics (Minimum tested)	Nvidia GTX 1050 or AMD RX 560					
30 GB	250+ GB					

2.2. Installing Inspector

Inspector 5.0 is distributed as a standard executable installer (.exe), available on <u>flyability.com</u>. Run the installer and follow the instructions displayed. The mapping and localization features are available for free to all Elios 3 users as the mapping and localization are performed by the drone itself during flight time. An active Premium Software Subscription is required in order to get access to additional Asset Management features.



3. Login screen



It is necessary to log in the first time opening Inspector. Without credentials, it will be necessary to create an account online. Be sure to have internet access the first time Inspector is started.

Inspector 4 users Note : The SSO provider has changed since Inspector 5. When coming from Inspector 4, it will be necessary to create a new password when logging into Inspector 5 for the first time.

3.1. How to update the password

To create a new password:

- Click Forgot password?
- Enter email and Click **Submit**.
- Go to email and click **Reset Password**.
- Enter and confirm a new password.
- Log in to Inspector 5.



4. Assets List Screen

Home screen with a view of all assets in the selected Workspace. Select an asset to view more info and to open it.



Workspace (C:)

Indicates the current workspace. Click the drop down menu to change, create, and delete a Workspace.

Search Bar

The search bar can be used to quickly search for a specific asset, inspection, flight, or annotation.

New Asset

Click the **New Asset** button to create a new asset.

- Enter Asset Name.
- Enter Asset Description (optional).
- Click Create.

Assets

A list of assets in the selected workspace.

• Assets can be sorted according to: Creation date, Last update date, or Name.

News

This section will display recent updates and information concerning Flyability products and software. Show or hide by clicking the bottom bar.

Asset

Each asset contains the following information:

- Name Edit or delete from the dropdown menu.
- Date and time of last update.
- Number of inspections and flights collected, Asset file size, and drone employed.
- Show Inspections Click to access the Inspection Screen for the Asset.
- Click the 3 dot drop down menu to:
 - Delete (Asset) from Disk.
 - Edit.
 - Show in explorer.



4.1. Inspection List Screen

View all inspections related to the asset. *Accessible with an active Premium Software Subscription.



New Inspection

Click the **New Inspection** button to create a new Inspection.

- Enter Inspection Name.
- Enter Inspection Description (optional).
- Click Create.

Inspections

A list of Inspections in the selected Asset.

• Inspections can be sorted according to: Creation date, Last update date, or Name.

Inspection

Each inspection contains the following information:

- Name Delete edit or move from the dropdown menu.
- Date and time of last update.
- Number of flights collected along with features of the Inspection.
- Show flights Click to access Flight screen.
- **Open** Click to open the Inspection. View the combined 3D flight maps, videos, and POIs for the selected inspection. ***Accessible only with an active Premium Software Subscription.**
- Click the 3 dot drop down menu to:
 - Delete (Inspection) from Disk.
 - Edit Edit Inspection name and description.
 - Move- Move Inspection to another Asset in the current workspace.
 - Show in explorer- Opens the Inspection folder in Windows File Explorer.
 - Locate map files Opens the folder containing associated .las files in Windows File Explorer.



4.2. Flight List Screen

View the flights related to an Asset or Inspection(Premium).



Import flight

Click the Import flight button to import a flight from a previous version.

• Select an .efly file from an Inspector 4 dataset to import into the current Asset or Inspection(Premium).

Flights

A list of flights in the selected Asset or Inspection.

• Flights can be sorted according to: Creation date, Last update date, or Name.

Flight

•

Each flight contains the following information:

- Name Delete edit or move from the dropdown menu.
- Date and time of last update.
- Number of flights collected along with features of the flight.
- Open Click to open the flight. View the 3D flight maps, videos, and POIs for the selected flight.
 - Click the 3 dot drop down menu to:
 - Delete (Flight) from Disk.
 - Edit Edit flight name and Description.
 - Move Move flight to another Asset or Inspection in the current workspace.
 - Show in explorer- Opens the flight folder in Windows File Explorer.
 - Locate map files Opens the folder containing associated .las files in Windows File Explorer.



5. Import Screen

The Import screen can be used to import data from the Elios 3, from another Workspace, or to import previous Inspector 4 flights to Inspector 5.



Connection

This is where the connection status between the drone and computer is indicated. For the connection process to start, plug the USB-C cable, and power-up the drone by plugging in a battery pack and pressing the power button. After plugging in the drone, the import page to access the data of the drone will be visible. Please note that drone booting may take about 2 minutes to complete.

Import Data

When connected, click to import Asset/Inspection/Flight data.

Tips to Connect

Tips displayed related to the drone connection.

Connection Troubleshooting

- Always use a high quality USB cable, equivalent to the one provided.
- If encountering connection issues, we recommend connecting the Elios 3 drone through the provided USB hub or equivalent hub. Recommended: USB-A Hub USB 3.2 Gen 1.
- If connection issues persist, disconnect the wifi, and please try again.



5.1. Elios 3 import

Import data from Elios 3.

	Inspector S									○ 🗗 💶 ×
	Imp	ort Data ゝ	Elios 3							
Assets			Name					Status	Drone	Information
▲ Import ① Export	ι ι	J	officeuh		12/03/2024 09:53	15.4 GB	linspections	New data		
Drone	> (כ	📄 cafet		11/03/2024 11:49	1.54 GB	1 inspections	New data		Elios 3
Settings	> (C	🛅 bunker4		05/03/2024 16:07	5.12 GB	1 inspections	New data		E300SA22440028
⊈5 Updates	C	כ	🛅 lii		05/03/2024 15:10	ОВ	0 inspections	New data		174 5:48:59
⑦ Help	C	כ	📄 test		05/03/2024 15:09	0 B	0 inspections	New data		
	> C	כ	bunker3		05/03/2024 14:36	5.2 GB	1 inspections	New data	OBC Storage (SSD) 41 GB available of 463.3	
	~ .	2	bunker2		05/03/2024 11:35	4.15 GB	1 inspections			le of 463.3 GB
			dormitory	[3:37]	05/03/2024 11:33	4.15 CB	3 flights		Camera SD ca	
		\checkmark	137-Flight		05/03/2024 11:36	1.68 GB			79.7 GB availa	ble of 119.1 GB
		\checkmark	138-Flight		05/03/2024 11:40	1.36 GB			The second se	Empty Storages
			139-Flight	[0:47]	05/03/2024 11:43	865 MB				
	> C	C	📄 bunker		05/03/2024 10:11	3.31 GB	1 inspections		De 🔟	elete Debug Data
	>	2	Office 2nd Flo		29/02/2024 14:54	938 MB	1 inspections			
	> (C	🛅 Demo Asset B		18/01/2024 09:44	15.2 GB	3 inspections	New data		
② Jonathan Dennis	> (2	🛅 The Bunker		18/01/2024 09:35	5.6 CB	1 inspections			
E→ Log out	> C	🕽 🤨 Debug 1	files							
24.2.0.551		Total siz	e to import: 21 GB, ava	ilable space: 176 GB	Import debug	DELETE	IMPORT & I	DELETE	IMPORT	IMPORT ALL

Import Data View

List of all the Assets/Inspections/Flights, and Debug files found on the ELios 3. Data is arranged by asset, with the option to expand to individual Inspections and Flights. Each file lists:

- Name Name of asset, inspection, and flight.
- Duration Duration of total inspection and/or flights.
- **Date** Date last updated.
- **Size** Folder size, to include any nested folders. e.g. An asset folder size includes all Inspections/Flights contained within it.
- Info Number of Inspections in Asset folder, or number of Flights contained in Inspection folder.
- Status New, Importing, or Up to date.

How to import

Select a checkbox to import the associated data. Flights will be ordered by Asset, Inspection, and Flights. It is possible to select all or by Asset, Inspection, and/or Flight.

- Browse to select the folder with flights/Inspections/Assets to import.
- Click a checkbox to select data for import.
- Select checkbox to import Debug Files. (Optional)
- Click Import for selected data, or click Import All to import all data.

Drone Information

Data related to the drone connected. To include:

- Drone info Drone ID, # Armings, and Flight time.
- Storage Amount of space available on theOBC Storage (SSD) and Camera SD card.
- **Empty Storages** Deletes all data stored on the drone, including LiDAR scans, Video, Images, and logs.
- **Delete Debug Data** Click to delete IDLE phases logs on the connected Elios 3. (IDLE phases logs are the bag files of when the drone is NOT flying. Basically VIO cameras, automation logs and lidar scans are stored in these)



Bottom bar

- Storage info Total size of import / available space
- Import debug checkbox Select to import debug data.
- **Delete Button** Delete the selected flights from the drone's SD card. Copies previously imported onto your PC will not be affected.
- Import & Delete Button Click to import and delete selected Assets/Inspections/Flights into the Workspace.
- **Import Button** Click to import all selected Assets/Inspections/Flights into the Workspace. Once copied, all data will be accessible through the Assets screen.
- Import All Click to download all assets/Inspections/Flights.

5.2. Inspector 5 - Import from another Inspector 5 workspace

		. □ ×								
	Import Data									
Assets	Elios 3		Inspector 5			Inspector 4				
🛓 Import	Import files from	another works								
⊥ Export	Import files from another workspace									
🕸 Settings	1. Select folder with data	a to import:								
🕼 Updates	C:/Users/jonathan.de	nnis_flya/Desktop/New C	lient Workspace				Q Browse			
⑦ Help	2. Select which data to	mport:								
	Θ	Name [Duration	Date	Size	Info	Status			
	> D	🛅 bunker3		05/03/2024 14:36	5.26 GB	1 inspections	New data			
	~	🛅 bunker2		05/03/2024 11:35	4.2 CB	1 inspections	New data			
	~	dormitory [3:37]	05/03/2024 11:33	4.2 CB	3 flights	New data			
		137-Flight #0 [1:32]	05/03/2024 11:36	1.68 GB		New data			
	O	139-Flight #3 [¹	0:47]	05/03/2024 11:43	867 MB		New data			
		138-Flight #2 [1:18]	05/03/2024 11:40	1.36 CB		New data			
	> O	🛅 bunker		05/03/2024 10:11	3.37 GB	1 inspections	New data			
	🗌 🧃 Debug	files								
② Jonathan Dennis										
[→ Log out 24.2.0.551										
		Total size to import: 3.3	CB, available space	:: 163 CB 🔲 Impoi	rt debug	IMPORT	IMPORT ALL			
FLYABILITY										

Use the Inspector 5 tab to import assets, inspections, or flights from another workspace into the current one.

Import Data View

List of all the Assets/Inspections/Flights, and Debug files in the selected Workspace. Data is arranged by asset, with the option to expand to individual Inspections and Flights. Each file lists:

- Name Name of asset, inspection, and flight.
- Duration Duration of total inspection and/or flights.
- Date Date last updated.
- Size Folder size, including nested folders. e.g. An asset folder size includes all Inspections/Flights contained within it.
- Info Number of Inspections in Asset folder, or number of Flights contained in Inspection folder.
- **Status** New, Importing, or Up to date.

How to import files from another Workspace

Select a checkbox to import the associated data. Flights will be ordered by Asset, Inspection, and Flights. It is possible to select all or by Asset, Inspection, and/or Flight.

- Browse to select the folder with flights/Inspections/Assets to import.
- Click a checkbox to select data for import.
- Click Import for selected data, or click Import All to import all data.
- Select checkbox to import Debug Files.



5.3. Inspector 4 - Import data from Inspector 4



Use the Inspector 4 tab to import flights from existing Inspector 4 datasets to view in Inspector 5.

Import Data View

Lists of the Asset and of Inspection folders from the selected Workspace.

NB: Click the eye icon for more Asset and Inspection information.

Inspector 4 datasets will need to be manually imported into Inspector 5 workspaces.

How to import files from a previous Inspector 4 project folder

- Browse to select a folder containing one or multiple efly files to import.
- Select a folder to import the flights to. Click the **New Asset** or **New Inspection** button to create new folders as needed.
- Click Import.

NB: It is also possible to import Inspector 4 projects from the <u>Flight List Screen</u> using the *Import Flight* button.

Flight data from the Elios 2 is not compatible with Inspector 5 and must be imported into Inspector 4 before being imported into Inspector 5.



6. Export Data Screen

Use the Export data screen to export selected data to other Workspaces and for sharing with others to be viewed in Inspector 5.

			Insp	pector 5			○ ¢ _ □ ×				
	Export Data										
û Assets	Local Export										
🛓 Import	Export current	t workspace files to ar	other workspace								
소 Export		Export current workspace files to another workspace									
😂 Settings	1. Select the destinat	ion folder:									
⊈5 Updates	C:/Users/FLYABILI	TY FPS/Documents/Workspace	_сору				Q Browse				
Help	2. Select which data	to export:									
		Name		Date		Info	Status				
	~ v	📄 rue_du_lac		5/8/2024 2:26 PM	4.5 GB	1 inspections					
	~ <u>~</u>	office_clientX	[5:35]	5/8/2024 2:25 PM	4.49 GB	2 flights					
		487-Flight #1	[2:35]	5/8/2024 2:28 PM			New data				
		488-Flight #2	[3:00]	5/8/2024 2:48 PM	1.95 GB						
	× 🗹	📄 Tank Unit 2-BX		4/5/2024 2:48 PM	16.1 GB	l inspections					
	> 🗹	2024-02 Visual Insp	[66:02]	3/3/2024 3:25 PM	16.1 GB	8 flights					
② Jonathan Dennis	> 🗹 🤨 Deb	oug files									
E→ Log out											
24.7.0.75				Total size to export: 20.6 GB,	available space: 25.9 GB	Export debug	PORT EXPORT ALL				
				Total size to export: 20.6 CB,	available space: 25,9 GB	Export debug EXF	PORT EXPORT ALL				

To export data:

- Select a destination folder to export the data to.
- Select the data to export.
 - Once a destination folder has been selected, the workspace files will be visible for selection with the following data: Name, Flight duration, Date, Size, Info, and Status.
 - Select the appropriate checkboxes. It is possible to export the full workspace, assets, Inspections, as well as individual flights. As selections are made *Total size to export / available space* will be updated.
- Click **Export** to export selected data. Click **Export All** to export all data.



7. Flight View



The flight view displays the 3D map, flight video, and Points of Interest (POIs) for a flight. Clicking on a point or POI in the 3D map will align the video or POI in the video flight screen. Clicking on a point or POI in the timeline will align the drone to the same point in the 3D map.

7.1. 3D map

View and explore the point cloud created from the flight indicating the path, and POIs taken.



The 3D map top toolbar contains:

- View from top Click to view the 3D model from above.
- View from front Click to view the 3D model from the front.
- View from the right Click to view the 3D model from the right side.
- Camera around drone The camera can rotate, but will always be locked towards the drone. This option is ideal to focus on the drone's current position without having to search for it.
- Drone Camera view The camera is in first-person view (FPV), and is locked in the position of the actual camera of the drone. The pitch of the camera during the actual flight is also applied to the user camera.
- Switch Camera to Perspective or Isometric modes.
- 3D Viewer Commands Description.
- Measure a Distance Every two clicks to show the measured distance between two points.
- Measure a Polygon Area Number of consecutive clicks to select an area, display distances between points, and the surface value, as long as the points are approximately located on a flat plane.



- Save Selected Points Click to save Measurement and/or Area selected.
- Reset Selected Points.
- Show / Hide Toolbar.
- Open view settings.
- Separate window.

7.2. Flight Video

Replay flight video footage. Review, edit and add Points of Interests(POIs) from the video.

The data and controls overlaying the video image can be toggled on and off by clicking the **Show Telemetry** toggle. Double clicking toggles full screen mode.



Video Playback Controls

- Play or Pause the video (Space bar)
- Previous / Next frame (arrow left/right)
- Move to the beginning / end of the flight
- Set the playback speed.



The Video Toolbar contains:

- Zoom Control Zoom in during playback.
- Thermal video settings.



- Toggle Thermal display.
- Maximize layer.
- Transparent layer.
- Position on screen.
- Auto/manual normalize.
- IronBow, Rainbow, Greyscale selection.
- Video Brightness/Contrast Settings.
- Copy current image to clipboard.
- Save current image to file.
 - Add new Point of Interest(POI)
 - Name
 - Tags (ability to colorize)
 - Criticality level (ability to colorize)
 - Description
 - 3D Location coordinates.
 - View on map.
 - Save / Delete



7.3. Right Side Toolbar

Toolbar to access additional features related to the selected flight.

- More Information Open sidebar to see additional flight information.
- Show flights Select flights for visualization. and toggle **Trajectory**, **Map**, and **Snapshot** visualization in the 3D map.
- **Points of interest** Open sidebar to show points of interest thumbnails.
 - View POI Show enlarged image and location in 3D map
 - Edit POI Edit Name, Tags(ability to colorize), Criticality level(ability to colorize), and Description.
 - View UT data *UT payload feature
 - Erase POI Delete POI.
- Generate report Select and arrange the contents to be included in the report
 - Preview See a preview of report before exporting.
 - Select Logo Add custom logos to the report.
 - Generate PDF Generate a final PDF of the report.
- Export
 - Flights Choose specific flight data for export.
 - PIX4D Export frames from video for PIX4D processing software.
 - FARO Export to FARO connect.
- UT Chart (UT payload feature) Click to view UT measurements. *UT payload feature



Ultrasonic Thickness chart sample.



7.4. Points of Interest (POIs)

Points of Interest(POI) can be created during flight by pressing the POI button on the controller and created later in Inspector by clicking the 🖸 button in the top toolbar, or right-clicking the timeline..



POIs are used to highlight observations made during the flight, they can also be used to make measurements, and can be annotated with a name, comments and tags. The criticality level can be indicated by color.

Clicking on a POI in the video timeline (criticality colored bar), 3D map (green wire frame), or POI Icon in the sidebar opens the annotations side window where a list of the POIs are displayed.

Information contained:

- Image of the POI. Click the thumbnail to enlarge.
- Add or delete 3D screenshot.
- Name of POI.
- Criticality (ability to colorize).
- Tags (ability to colorize).
- Description Input text description.
- **View** Click to visualize in the 3D viewer.
- Edit Click to edit POI name, tags (ability to colorize), criticality level (ability to colorize), and description.
- View UT data Click to view UT measurements. *UT payload feature
- **Delete POI** Click to delete the POI.





POI toolbar



The settings changed here will only reflect the current POI, and not the entire video.

The POI toolbar contains:

- Zoom Control.
- Thermal image settings.
- Image Brightness/Contrast Settings.
- Copy current image to clipboard.
- Save current image to file.
- Undistort





ORIGINAL IMAGE - DISTORDED





UNDISTORDED

Border of displayed im aged

Due to the fish-eye effect of the optical camera, the image is distorted. Meaning the straight lines appear to be bent in the image. In a POI the image can be undistorted or flattened. As the transformation stretches the image, the resulting frame displayed is slightly cropped. This feature works best on images taken perpendicularly to a flat surface.

• Add Placemark

Specific areas on the image can be highlighted with placemarks. Click and drag to move an existing placemark, double click to edit the name or delete it.

Add Line

Specific areas on the image can be highlighted with lines. Click and drag to move an existing line, double click to edit the name or delete it.





Add Measurement

This feature uses information from the distance measurement sensor on the drone to make measurements using pixel calibration and triangulation. The measurement needs to be made on a flat surface perpendicular to the camera's optical axis. The accuracy of the measurement is \pm 10% of the measured length with a maximum of \pm 5mm accuracy.

The 2D measurement result is displayed on the frame with its estimated accuracy. The button is grayed out in case of unreliable camera distance data.





The user must assess if the measurement makes sense by understanding its limitations. flyability does not guarantee the accuracy of measurements.



7.5. Generate Report



Inspector can generate a PDF report for the selected flight with the option to include Asset, Inspection, and POI information.

- Select contents to be included in the report. It is possible to arrange the order by click-holding the tab and moving to the desired order.
- Click on the **Preview** button to see a preview of the report.
- Click the **Select logo** button to add a custom logo to the report.
- Click **Generate PDF** to export and save.



7.6. Export

The Export icon allows for the export of selected flight data to a separate folder.



Flights

Use the Flights tab to select and export selected data from the open flight/s.

- Select the type of data to export. It is possible to select:
 - POIs (.jpeg)
 - Videos (.MOV)
 - Thermal video (.mp4)
 - o Maps (.las)
 - Trajectory (.csv)
 - LiDAR raw data (.json + .bag)
 - UT data (.csv)
- Select Export.

The exported data will be grouped per flight making it easier when sharing with end-users not using Inspector.

WARNING: The exported data can't be re-imported in Inspector. To archive, use the Workspace export menu instead.



PIX4D/Photogrammetry

Extract images at a constant frame rate over a specified range of the video. These images can be used in photogrammetry software to reconstruct 3D models of the flight environment. Inspector 5 optimizes data for use with Pix4Dmapper, but any other photogrammetry software can be used that can process image files without GEOtags. Available settings:

- Select *Start at* and *Stop at* points of video.
- Select the *Frame rate* Number of frames extracted per second. *Total* shows the number of frames to be extracted for the Frame rate selected.
- Export PIX4D project Toggle to export a .p4d project file of all the frames extracted ready for opening in PIX4Dmapper.
- Export project templates Toggle to export the project using a selected template.
- Select the Fast or Robust processing template.
- Click **Export frames** to export and save the data.



FARO

• Click **Export** to export the data files for processing in FARO connect.



8. Inspection Flight Screen (Premium Subscription Only)



The Inspection flight screen shows a combined 3D map(colorized by flight), flight video, and Points of Interest (POIs).

8.1. 3D map

View the combined point cloud created from the flights showing the path, and POIs taken. Clicking on a feature in the 3D map will cue the corresponding moment in the video timeline.



The 3D map toolbar contains:

- View from top Click to view the 3D model from above.
- View from front Click to view the 3D model from the front.
- View from the right Click to view the 3D model from the right side.
- Camera around drone The camera can rotate, but will always be locked towards the drone. This option is ideal to focus on the drone's current position without having to search for it.
- Drone Camera view The camera is in first-person view (FPV), and is locked in the position of the actual camera of the drone. The pitch of the camera during the actual flight is also applied to the user camera.
- Switch Camera to Perspective or Isometric modes.
- Manual alignment.
 - Manually align active flight.
 - Accept or Cancel alignment.
- 3D Viewer Commands Description.



- Measure a Distance Every two clicks to show the measured distance between two points
- Measure a Polygon Area Number of consecutive clicks to select an area, display distances between points, and the surface value, as long as the points are approximately located on a flat plane.
- Save Selected Points Click to save Measurement and/or Area selected.
- Reset Selected Points.
- View Settings.
- Separate window.

8.2. Inspection Flight Video

View the combined flight videos for the Inspection. Clicking on a point in the timeline will align the drone to the same point in the 3D map. The data and controls overlaying the video image can be toggled on and off by clicking the **Show Telemetry** toggle. Double clicking toggles full screen mode.



Video Controls

- Play or Pause the video (Space bar)
- Previous / Next frame (arrow left/right)
- Move to the beginning / end of the flight
- Set the playback speed.



The Video Toolbar contains:

- Zoom Control.
- Thermal video settings.
- Video Brightness/Contrast Settings.
- Copy current image to clipboard.
- Save current image to file.
- Add new Point of Interest(POI)
 - Name
 - Tags (ability to colorize)
 - Criticality level (ability to colorize)
 - Description
 - 3D Location coordinates.
 - View on map.
 - Save / Delete

Inspection Timeline

00:00 01:00	2:00 03:00	04:00	05:11 ↓	00:00 01:00	02:45	00:00 01:00	02:00	03:00	04:11
Flight #1				Flight #2		Flight #3			

Contains all flights in the Inspection in chronological order. Clicking on a point in the timeline:

- Aligns the 3D map and video playback to the same point.
- When clicking on a Point of Interest(POI) Shows the POI.
- When Right-Click Adds a POI.



9. Drone Screen

With a drone connected to Inspector 5, select the Drone tab to view information related to the connected drone. The *Current firmware* version installed is listed, and if there is an update available for update.

	Inspector 5						
< INSPECTOR	ELIOS 3 Current version: 2023.12.2 Update your drone to 2	1024.02 Update now Flash custom firmware					
Coperation C	Ceneral informations Drone Id E3005922400062 Firmware version 202312.2 OBC version 202312.2 Autonics version 202312.2 Flight hours 532540 Arming count 487 License - Expiration date -	OBC Storage (SSD) 438.4 CB available of 463.3 CB 663.3 CB Full storage	Fill SC Card SD 113.4 CB available of 119.1 CB Full storage				
 ② Jonathan Dennis ④ Log out 24.2.0.551 ④ FLYABILITY 							

General information - Displays the Drone Id, Firmware version, OBC version, Avionics version, Flight hours, Arming count, License type and Expiration date.

OBC Storage (SSD) - Displays the storage available / storage used.

Camera SD Card - Displays the storage available / storage used.

9.1. Update Elios 3 firmware

Near the top of the screen, the current firmware installed is displayed along with the latest version for update when available. To update to the suggested version:

• Click **Update now** to install the suggested firmware.

It is also possible to install firmware versions manually using the Flash Custom Firmware button. With an available file for update:

• Click the **Flash Custom Firmware** button and select the appropriate file saved on the connected computer.



10. Other Menus

Additional menus and options are displayed in the upper right and lower left corner of the window.

- Notifications 🖉 List of notifications. (top right)
- Settings
 - Core Settings
 - Unit system: Change the unit system in which flight data is displayed. The options available are: metric and imperial.
 - Radiation Unit: Change the unit system for the radiation unit. The options available are Sv, and rem.
 - Graphics
 - Palette: inspector comes in a light and a dark color palette; we recommend you use the dark palette in dark environments, and the light palette in light environments, for it to provide you the best contrast.
- **Update** Click to update Inspector.
- **Help** Contains a link to the on-line support page.
- **User** Shows the user who is currently signed in, click the exit icon to sign out.
- Log out- Click to log out.
- About Installed version Click the Flyability icon to review the License Agreement.