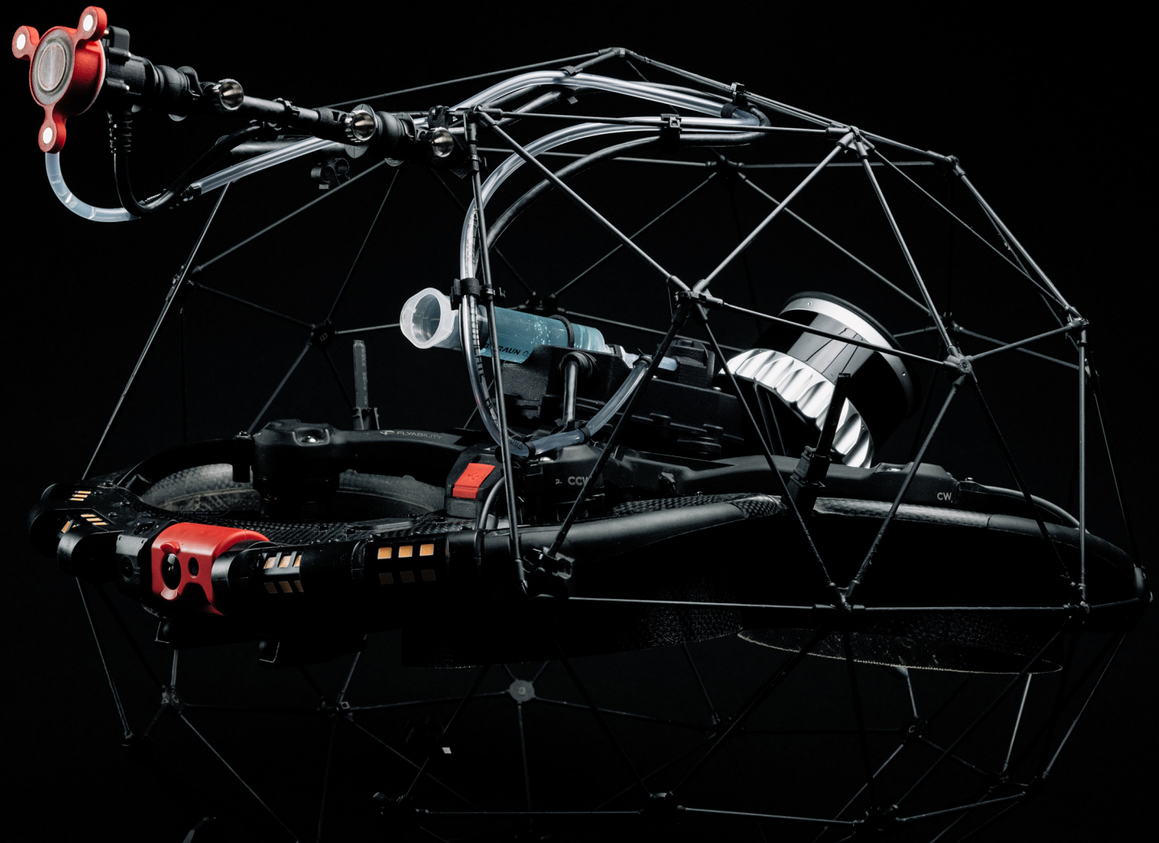
ELIOS 3 UT PAYLOAD

Safe remote thickness measurements

In partnership with Cygnus Instruments

See the Elios 3 UT Payload in action



Remotely capture A-scans at height and in hard-to-reach spaces

Beyond safe-access A-scans

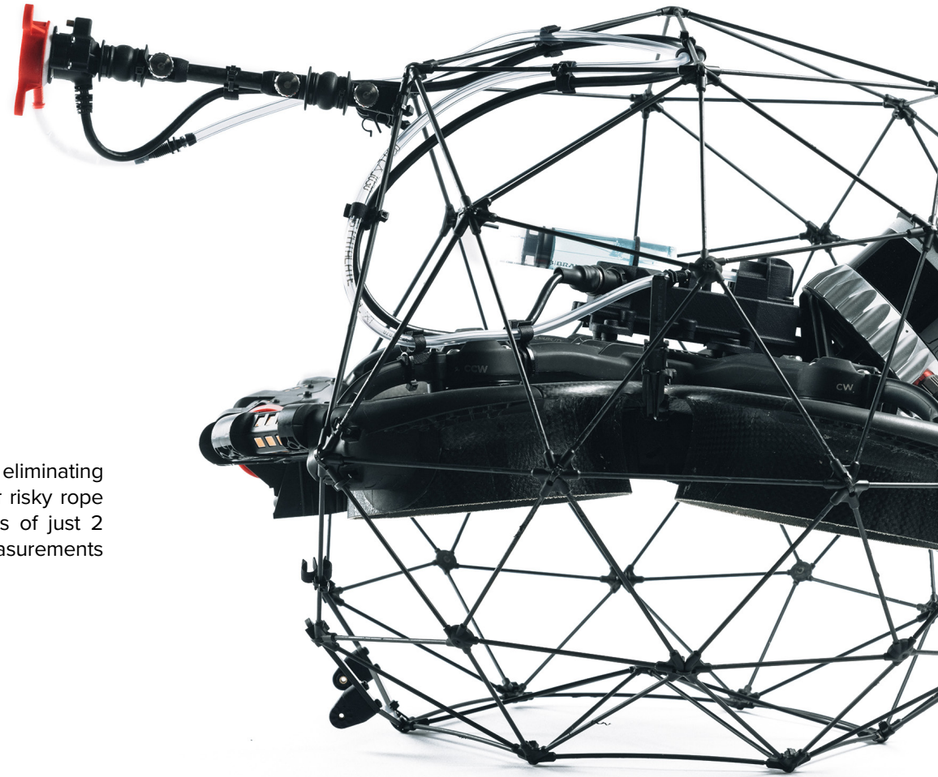
Eliminate human risks associated with work-at-height and confined space entry by using the Elios 3 UT to conduct inspections safely from a distance.

All the payloads you need - in one

With a visual inspection payload, an embedded LiDAR sensor, and a cutting edge UT probe, the Elios 3 is an all-in-one solution covering most inspection needs.

Uplifted efficiency

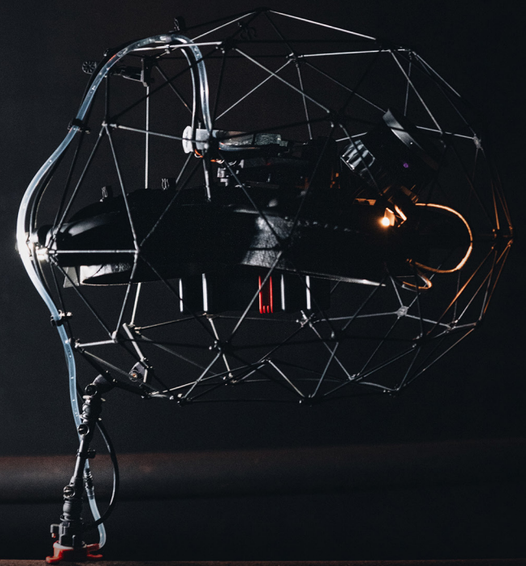
Save up to 90% of costs by eliminating unnecessary scaffolding or risky rope access. Inspect with teams of just 2 people and capture UT measurements up to 10x faster.



In partnership with Cygnus Instruments

Developed in partnership with Cygnus Instruments, the UT Payload turns the Elios 3 into a flying UTM gauge that can take accurate thickness measurements backed up with high-resolution A-scans in the most challenging areas.

Equipped with the Elios 3 UT, industry professionals can perform regular integrity inspections in minutes - reducing the likelihood of unplanned downtimes.



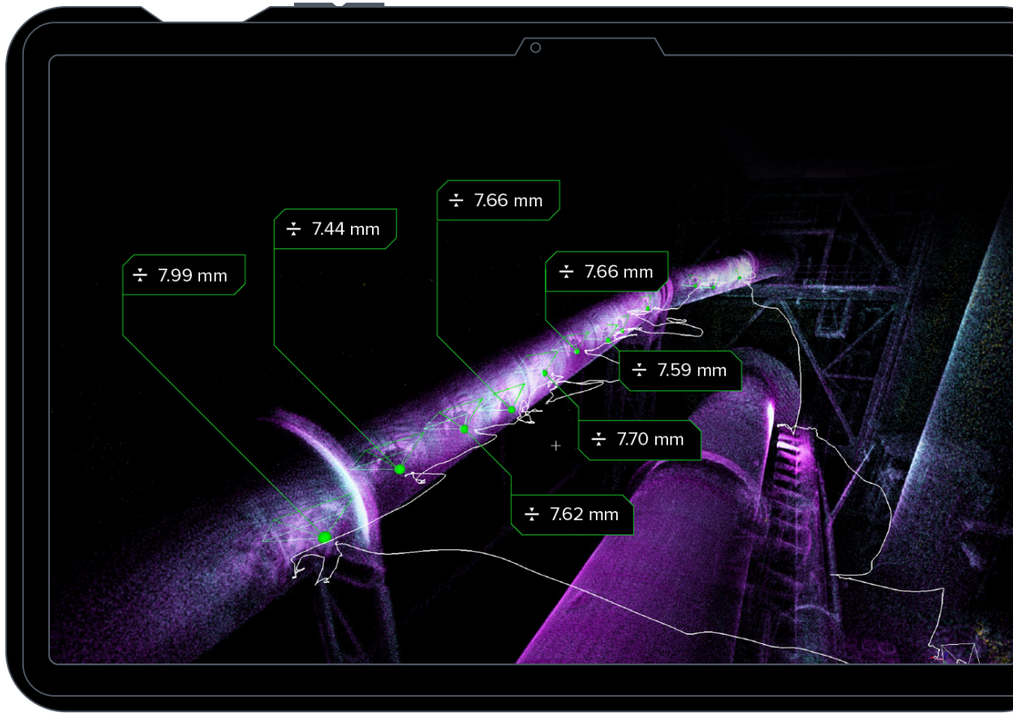
- Location-Tagged UT Measurements
- Smart Couplant Dispenser
- Smart Probe Arm
- Modular Probe Head
- Cleaning Module
- Live A-Scan

Location-Tagged UT Measurements

Live 3D data localization

The Elios 3 can accommodate the UT Payload in parallel with the LiDAR payload enabling precise localization of the measurements on a digital twin of your asset during data capture.

Combined with the Asset Management software extension and Cockpit's Live Map widget, the location-tagged UT measurements provide exceptional situational awareness, allowing you to easily track the completeness of your inspection.



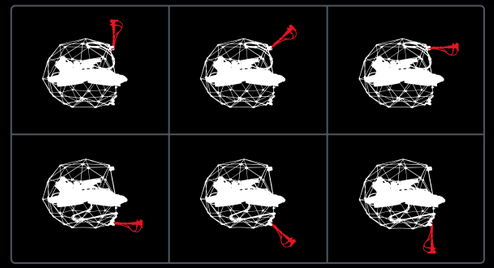
Smart Couplant Dispenser

Optimal ultrasound coupling

The Elios 3 UT Payload features a remotely operated couplant dispenser with the probe to ensure just the right amount of couplant is dispensed for perfect ultrasound transmission into the material under test. The operator can monitor the couplant level through Cockpit and return home for a quick refill or rapid swap of the dispenser's syringe when running out of gel.

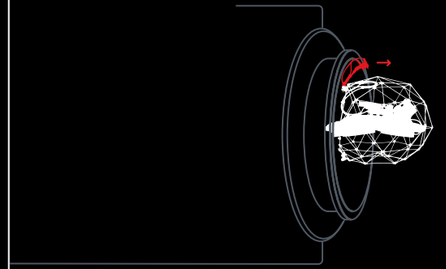
Smart Probe Arm

The smartest probe arm ever built on a drone.



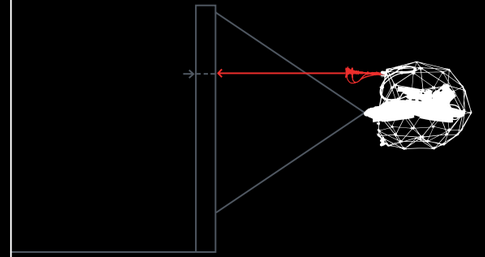
Versatile orientation

The Elios 3 UT Payload can be mounted on top of, in front of, or below the drone, and the probe arm can be shaped to your needs, ensuring the necessary adaptability and accessibility to perform thickness measurements in a wide range of locations.



Undisrupted navigation

The probe arm is designed to fold onto the drone to pass through the narrowest manholes or navigate inside the most complex spaces without disrupting the flight.



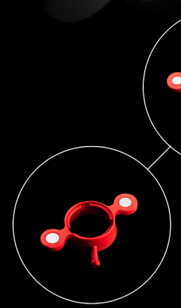
Laser-focused targeting

The UT Payload's probe features a laser pointer for accurate targeting and aiming during flight, so you can arrive quickly at the precise spot you wish to measure.

Modular Probe Head

A comprehensive selection of probes & hoods

The Elios 3 UT Payload features a set of probe hoods to match the shape of various surfaces as well as interchangeable twin crystal piezo-composite probes with the choice of 2MHz, 5MHz, or 7.5 MHz. The probes are particularly suited to measuring heavily corroded metals and feature an Echo-Echo mode to measure through up to 1 mm (0.040 inch) of surface coating.



Interchangeable probe hood

Probe specifications summary:

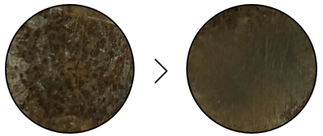
Probe Frequency	Ideal for
7 Mhz	Thin walls, small pipes
5 Mhz	General purpose
2 Mhz	Thick walls, dirty surfaces

Cleaning Module

Never miss a measurement

The probe head can be replaced with a cleaning module to remove deposits and prepare surfaces for measurement. Thanks to location-tagging, you can easily return to the cleaned location to perform the measurement with the probe head attached.

Image below represents: Side by side comparison, showing a metallic surface pre and post cleaning.



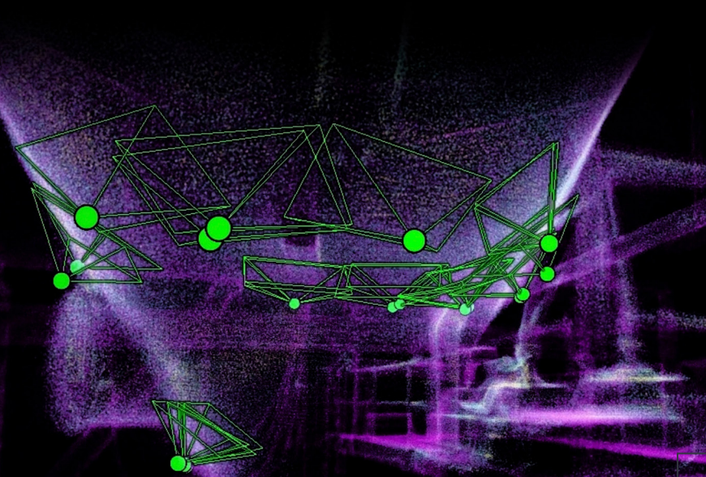
Live A-Scan

Refine measurements in real-time

Cockpit's Live A-Scan widget provides operators with advanced measurement controls, enabling either fully automated or manually obtained measurements using adjustable gain and gates. This flexibility allows users to refine measurements on the spot even in less-than-ideal conditions.

SOFTWARE

Advanced Data Post-Processing



Convert UT data into actionable insights

Review your data points in post-processing using the Elios 3's companion software, Inspector 5.

Navigate through POIs

All data points from your flights are displayed and located in a digital twin of your asset, easing navigation between points of interest.

Review and refine measurements

During the analysis, the A-scan is retraced in the software, allowing you to verify the measurement or refine it by re-selecting the most appropriate echo signals.

Data alignment

Data points can be documented by assigning them a critically level and adding a description.

Learn more

TECHNICAL SPECIFICATIONS

ELIOS 3 UT PAYLOAD

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UT PAYLOAD

Probe type	Dual element transducer (piezo-composite crystals)
Probe manufacturer	Cygnus Instruments
Measurement Range in Steel	0.8mm to 250mm[1]
Measuring Mode	Mode 2 (Single Echo) and Mode 3 (Echo-to-Echo)
Gain and Gate Control	Automatic or Manual Gain and Gate Control
Accuracy	±0.1 mm (±0.004”) or 0.1% of thickness measurement whichever is the greatest
Resolution	Display 0.1 mm (0.005”) or 0.01 mm (0.0005”)

UT PAYLOAD

Calibration Mechanisms	Automatic V-path correction for twin crystal probes. Option of One or Two point calibration for twin crystal probes.
Gel acceptable viscosity	1:1 mix of standard UT gel with water for optimal performance
Display	Dedicated UT tab in Cockpit with A-scan display
Certifications	RoHs, CE, FCC, FDA, IC (only for final MP)

1. Depending on probe and configuration, material, temperature.

AIRCRAFT WITH UT PAYLOAD MOUNTED[1]

Modification from nominal specifications

Flight time while hovering[2]	7min40 E3 + LiDAR Rev7 + UT with probe
Flight time in normal UT use (4 POM / Minute)[3]	7min E3 + LiDAR Rev7 + UT with probe
Operating Temperature Range[3]	0°C - 45°C

1. All tests run at Sea Level, 20°C, 0% humidity, no wind, in ASSIST, Lighting by default (20W), new battery full capacity 98.8Wh, 100% to 0% on tablet (a margin of 10% is kept by the system)
2. Hovering, No Collisions
3. One measurement every 10 seconds, measurement duration > 5s

UT PACKAGE

Drone and core module The UT payload is available either as a package with the Elios 3 drone or as a standalone payload option for existing Elios 3 users.	**Asset Management Extension** This software eases the Elios 3's processing and reporting workflows by merging data from subsequent flights into a single view of an asset.
Probe and cleaning module The Elios 3 UT Payload comes with an optional set of probes and a cleaning module to ensure accurate readings even in challenging conditions.	**Online or in-person training options** From the best flight practices to processing and refining A-scans, our training programs offer comprehensive guidance.

Flyability

About Flyability

Flyability is a Swiss company building solutions for the inspection and exploration of indoor, inaccessible, and confined spaces. By allowing drones to be used safely inside buildings, it enables industrial companies and inspection professionals to reduce downtime, inspection costs, and risks to workers. With thousands of customers in over 50 countries in Power Generation, Oil & Gas, Chemicals, Maritime, Infrastructures & Utilities, and Public Safety, Flyability has pioneered and continues to lead the innovation in the commercial indoor drone space.

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Cygnus Instruments

About Cygnus Instruments

Cygnus was founded in 1983 with an original product line for the NDT of ships' hulls. With headquarters in the UK and offices in Singapore and the UAE, Cygnus specializes in making robust and simple-to-use ultrasonic testing (UT) equipment for all industries around the world. As well as a full range of ultrasonic thickness gauges, Cygnus manufactures ultrasonic hatch cover leak detectors and ultrasonic Flooded Member Detection (FMD) systems – providing reliable ultrasonic measurement above and below water.

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