THREOD

# A new-generation of small UAS for laser designation and reconnaissance missions

Ultra-light, stable and powerful payload combined with VTOL platform

# WHO WE ARE

Founded in 2012, Threod Systems is one of Estonia's most experienced defense technology companies, focused on the development and manufacture of advanced unmanned aerial systems, electro-optical systems, and launcher systems.

The company develops solutions designed to improve battlefield situational awareness and operational effectiveness in demanding real-world conditions.

**Systems are combat-proven, shaped by operational feedback, and used by armed forces in multiple countries, including Ukraine.**

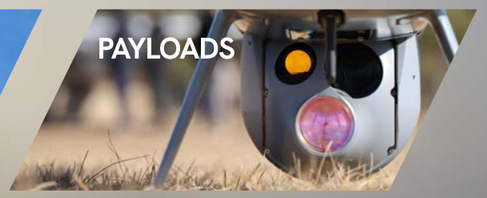
**2012** marks the founding of Threod in Estonia, Northern Europe

**27** countries actively use Threod's systems, including 14 NATO member states and Ukraine

**Thousands** of hours in real combat demonstrate reliability

**200+** professionals design products in-house

## INSIDE THE CATALOGUE




OVERVIEW

# LARGE-PLATFORM CAPABILITY ON A LIGHTWEIGHT UAS

Over the years, Threod's growing family of small UAS has undergone several generations of development, evolving into combat-proven, full-electric VTOL platforms adopted by battalion-level operators in dozens of countries and deployed across multiple armed conflicts.

## Built from operational experience

The new-generation Eos D VTOL UAS builds on the operational legacy of the combat-proven Eos C VTOL reconnaissance platform, refined through thousands of hours of combat experience demonstrate proven reliability.

## Deployable capability in a compact footprint

A compact transport footprint allows system to be moved, assembled, and operated with minimal field preparation.

Runway-free VTOL operation, tool-free assembly, and fast payload handling reduce the time and infrastructure needed to bring aerial capability into the field.

## Precision support at tactical level

With the laser-designation-capable eOpic-6 ISTAR payload, Eos D brings target acquisition, laser designation, and fire-control support to a compact unmanned platform.

Previously limited to larger systems, these capabilities are now available in an easily deployable and cost-effective solution for tactical units.

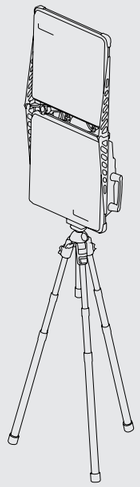
## Resilient operations in contested environments

The system is designed for missions where GNSS disruption, electronic interference, and detection risk are part of the operating environment.

The platform combines low-signature electric flight with resilient navigation and communication architecture to support mission continuity under pressure.

# COMPLETE MISSION-READY SET

## Ground data terminals

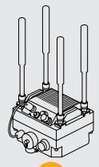


Tripod
**GDT-50P Dual**

Ground data terminal providing secure line-of-sight communication up to 50 km.

**Additional equipment**

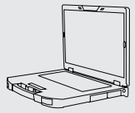
Tripod
**GDT 4x4**



Handheld
**GDT 2x2**

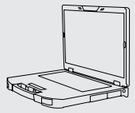
## Ground control stations

Rugged laptop-based ground control stations with sunlight-readable displays and integrated control software.



**UAV operator GCS**

For aircraft control and flight monitoring.



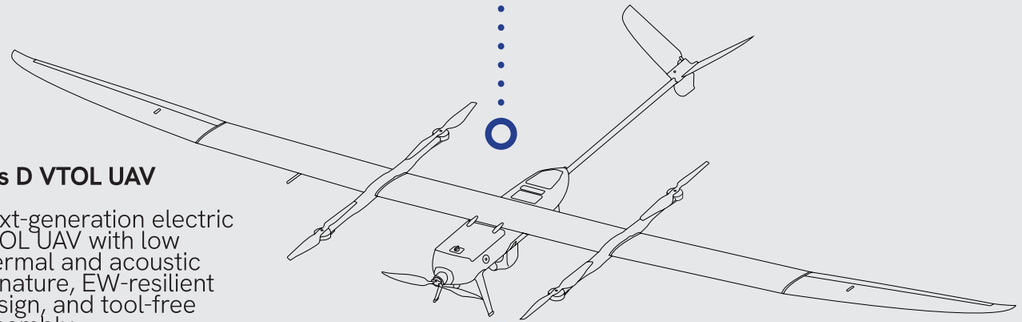
**Payload operator GCS**

For payload control and mission data monitoring.

Physical link

Data link

## Unmanned aerial vehicle



**Eos D VTOL UAV**

Next-generation electric VTOL UAV with low thermal and acoustic signature, EW-resilient design, and tool-free assembly.

## 6-inch payload options

Physical link

**eOpic-6 ISTAR**

Unique in its class integrating a powerful laser designator.

**eOpic-6 ISR**

Day and night imaging payload for reliable situational awareness.

# EOS D VTOL

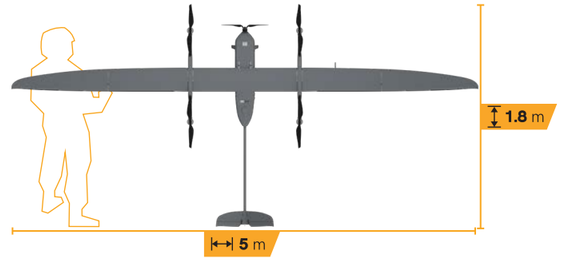




Eos D is a compact full-electric VTOL long-range aircraft designed for rapid field deployment, low-signature operation, and flexible payload integration.

## Technical specifications

| | |
|---|---|
| **Weight** | 15.5 kg (34.7 lb) with eOpic-6 payload |
| **Payload capacity** | 2 kg (4.4 lb) |
| **Endurance** | up to 3 h with eOpic-6 payload |
| **Maximum distance** | 190 km (118.1 miles) |
| **Communication range** | 50 km (RLOS) (31.1 miles) |
| **Max speed** | 90 km/h (55.9 mp/h) |




### Low-signature operations

Electric propulsion and compact airframe design reduce acoustic, visual, thermal, and electromagnetic footprint.

- Altitude up to 4,500 m
- Full-electric platform

### Resilient onboard navigation

Onboard navigation and avionics help maintain aircraft control when interference, signal disruption, or degraded positioning may affect the mission continuity.

- In-house developed autopilot
- Interference and spoofing detection

### Persistent mission reach

Efficient electric VTOL flight provides the altitude, endurance, and payload capacity needed for reliable mission coverage.

- Mission range up to 190 km
- Endurance up to 3h with 2 kg payload

### Payload flexibility

Modular payload integration allows the airframe to adapt to various mission profiles without changing platform class.

- Payload quick release system
- Airframe geometry reduces sensor obstruction

### Modular airframe design

Compact airframe supports fast payload integration, simple servicing, and long-term field adaptability.

- In-house developed avionics
- Sleek and ergonomic design

### Rapid field deployment

Runway-free VTOL and tool-free assembly enable fast transition from transport to flight with minimal support equipment.

- Tool-free quick-latch assembly
- One-person aircraft setup

# EOPIC-6 PAYLOAD FAMILY

The 6-inch payload family is designed for reconnaissance and targeting missions on lightweight unmanned platforms. It offers advanced imaging, onboard video processing, and integrated inertial navigation into a compact payload, with STANAG-compliant laser designation available for precision-support missions.

## § Allied-compatible precision capability

Tested and validated with a broad range of NATO guided projectiles.

Manufactured in Estonia and ITAR-free.

## High capability in a lightweight payload

Brings powerful imaging, target acquisition and fire-control support capabilities to small unmanned platforms, without moving into a larger platform class.

## Zero blind zones

Optimized payload placement helps keep the sensor's view clear, enabling operators to maintain unobstructed observation and minimal interruption from the aircraft structure.

## Flexible mission use

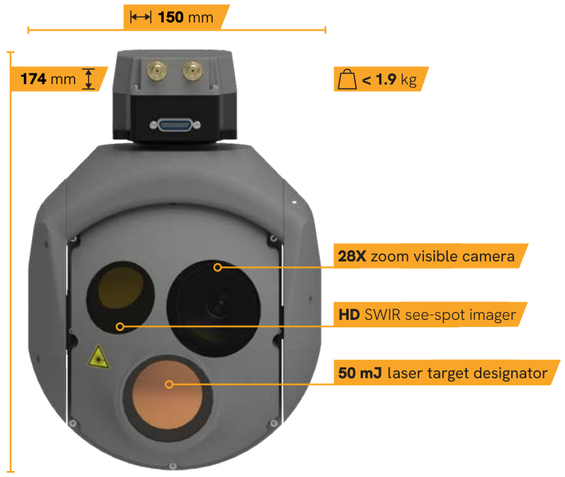
Interchangeable payload options allow the same aircraft to be adapted for different mission requirements, reducing the need for separate platforms and improving operational flexibility.



## Precision support from a lightweight platform

### eOpic-6 ISTAR

The ISTAR payload extends the system beyond reconnaissance by enabling target acquisition, laser designation, and fire-control support from a lightweight unmanned platform.




**Laser target designator**

- Enables precision target marking for fire-control support
- Supports allied guided effects with an EU-made, non-ITAR designator

**SWIR see-spot imager**

- Confirms laser energy on target
- Supports observation through haze, smoke, and fog

**Full HD visible sensor**

- Provides clear daytime identification and assessment
- Extends usability in low light with near-infrared mode

**Technical specifications**

Power:
> 50 mJ
Divergence:
≤ 0.5 mRad
NATO target:
3 km
Extended target:
8 km

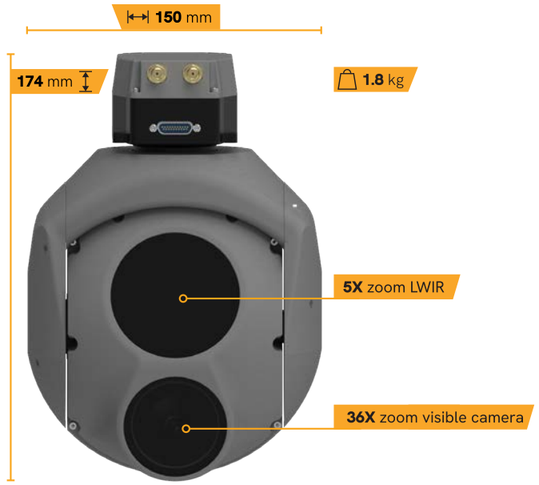
Resolution:
1280 x 1024
Field of view:
4.1°
Zoom:
4x digital
Human DRI:
11.5 / 5 / 2.5 km
Vehicle DRI:
19 / 10.7 / 6.7 km

Global shutter
Resolution:
1920 x 1080
Zoom:
28x optical, 4x digital
Field of view:
43.5° - 2.3°
Human DRI:
25 / 12.5 / 6 km
Vehicle DRI:
31 / 21.5 / 14.5 km

## Long-range observation and reconnaissance

### eOpic-6 ISR

The ISR payload provides stable, long-range electro-optical and infrared imaging for reconnaissance and surveillance missions.




**Laser range finder**

- Measures target distance when positioning data is degraded or unavailable

**LWIR zoom infrared sensor**

- High-performance IR sensor detects and identifies targets in darkness or reduced visibility

**Full HD visible sensor**

- Provides high optical zoom, clear daytime identification and low-light support

**Technical specifications**

NATO size target:
4 km
Extended target:
11 km

Resolution:
640 x 512
Field of view:
30° - 6°
Zoom:
5x optical, 8x digital
Human DRI:
4.5 / 1.5 / 0.8 km
Vehicle DRI:
16 / 7 / 3.5 km

Global shutter
Resolution:
1920 x 1080
Zoom:
36x optical, 4x digital
Field of view
55.6° - 1.59°
Human DRI:
26 / 15 / 8.5 km
Vehicle DRI:
32.5 / 23.5 / 16.9 km

# SYSTEM CONNECTIVITY

## The ground control system connects operator workstations, aircraft, payload, and live data into one secure field command environment.

### Control the mission and live data delivery

Rugged laptop-based ground control stations run Threod's in-house control software and connect to the UAV through the ground data terminal. This setup allows flight and payload tasks to be shared between operators, while commands, telemetry, live video, and mission data remain connected in one secure field workflow.

**Plan**

Pre-installed software supports flight and payload planning before launch.

**Monitor**

Sunlight-readable rugged displays keep live mission data clear in field conditions.

**Control**

In-house developed software supports aircraft and payload control with customer-specific functionality.

## Operators workstations

**Laptop**

Rugged workstation for aircraft and camera control.

**Getac**

**Controller**

Manual control for flight and payload functions.

**Operator Controller**



### Secure and encrypted real-time communication

## Ground data terminals

The ground data terminal provides a secure line-of-sight radio bridge between the ground control stations and the aircraft, keeping the mission connected throughout the flight.

**Options**

Different sizes and configurations available.

**Frequency**

Secure and encrypted communication channels.

**Data link**

Modular data link variations available.

### Range matched to mission profile

Communication options support mission ranges up to 20 km, 30 km, or 50 km depending on the selected antenna and operational setup.

Tripod

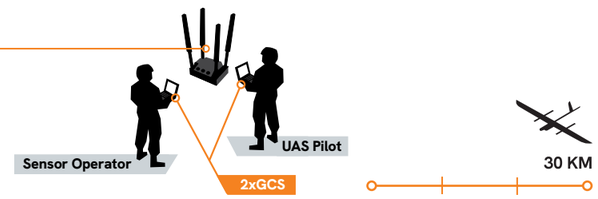
**GDT-50P Dual**

| | |
|---|---|
| **Weight** | 14 kg |
| **Range** | 50 km |
| **Radio** | Silvus Kongsberg DTC |
| **Encryption** | AES-256 |


Tripod

**GDT 4x4**

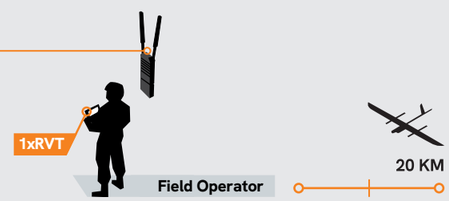
| | |
|---|---|
| **Weight** | 5 kg |
| **Range** | 30 km |
| **Radio** | Silvus DTC |
| **Encryption** | AES-256 |




Handheld

**GDT 2x2**

| | |
|---|---|
| **Weight** | 425 g |
| **Range** | 20 km |
| **Radio** | Silvus DTC |
| **Encryption** | AES-256 |



# PILOT AND MISSION SOFTWARE

**Threod's native software gives operators one connected workflow to fly the aircraft, control the payload, and use live sensor data for mission decisions.**

## Turn live data into mission decisions

Pilot software supports flight planning, aircraft control, and safety, while mission software turns camera feeds, coordinates, and observations into mission awareness. These tools work together as one mission management environment.

## Mission software

Mission software helps operators understand what the aircraft sees, locate and follow targets, support precision tasks, and share verified information during and after the mission.

## One integrated mission workflow

### Understand the scene

Live map video to the mission area

**Features**

- Picture-in-Picture
- Video-on-map
- Video footprint
- Map layers

### Find and identify targets

Link targets to coordinates

**Features**

- Moving target tracking
- Scene tracking
- Geo-pointing
- Coordinates
- Points of interest
- Click-for-coordinates

### Support precision tasks

Prepare target data for fire support

**Features**

- Laser target designation
- Call for fire

### Share actionable info

Turn footage into reports and review

**Features**

- Chat
- Annotations
- Reports
- Recording playback
- Archived footage

### Picture-in-Picture

Show visible and thermal views of the same image side by side.

### Moving target tracking

Track selected moving or stationary targets automatically.


### Video measure and footprint

Measure distances and bearing on video, show sensor coverage on map.


### Search archived footage

Search tagged events across archived mission footage.

# FIRE CONTROL AND COORDINATION

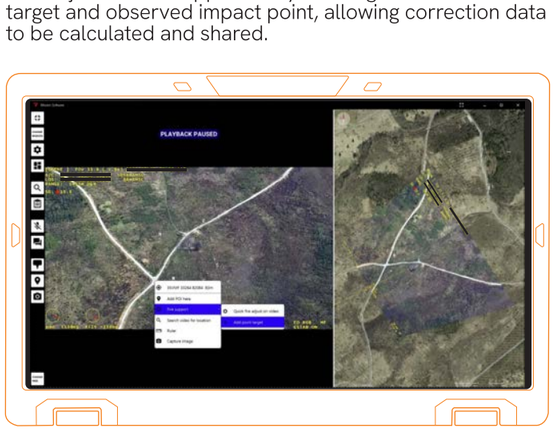
The software workflow helps operators turn live sensor observation into target data, designation, and correction support. It reduces the steps between detecting a target, confirming its location, and sharing fire-control information with the supported unit.

## Call for fire

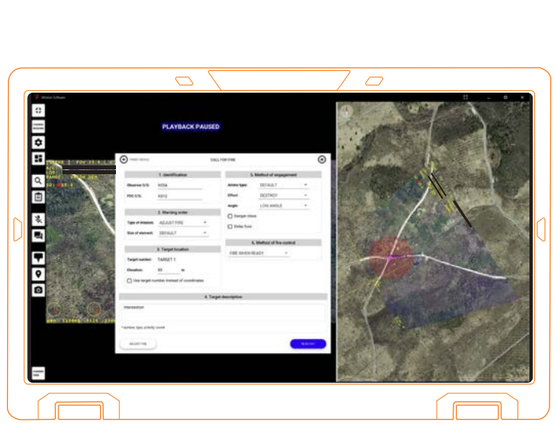
Call for fire converts a selected point on the video feed or map into a structured fire mission request.

Fire adjustment is supported by marking the intended target and observed impact point, allowing correction data to be calculated and shared.

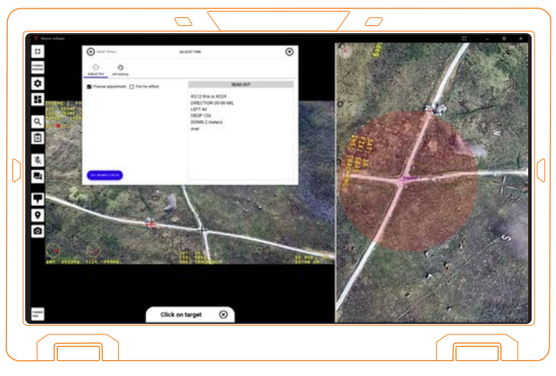
Powerful sensing and targeting in a compact, under 2 kg payload



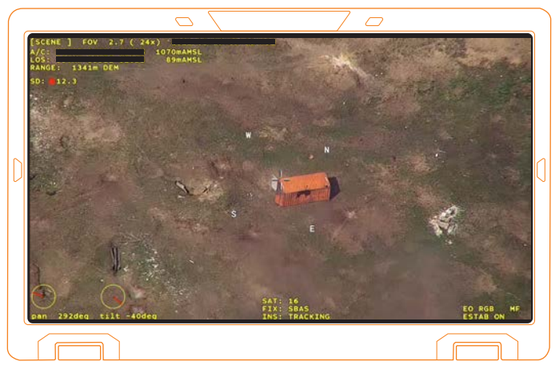

Select a target from the video or map display




Utilize software tools to create and transmit the CFF




Calculate and transmit the required adjustments by clicking on the hitpoints



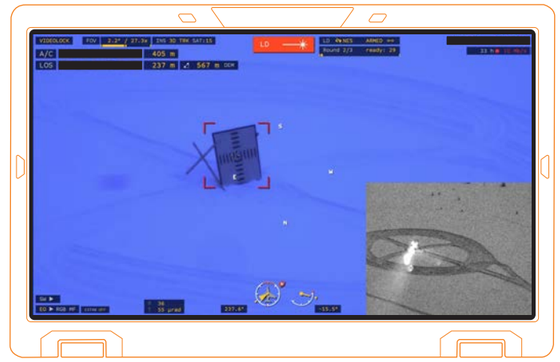

Assess the effects on the target



Precise targeting now enabled on lightweight unmanned platforms

## Laser target designation

Laser target designation connects the sensor view with a laser-capable payload, allowing confirmed targets to be marked from the air while keeping personnel safe from direct threat exposure.



SWIR camera feed confirms laser on target and direct hit with the guided missile.

1. Mark confirmed targets from the airborne sensor view
2. Support precision-guided effects from a lightweight unmanned platform
3. Maintain target context through live imagery and map-based awareness

## Pilot software

Pilot Software is used for planning, validating, and executing missions with greater confidence, keeping flight control, aircraft status, fail-safes, and payload awareness in one workflow.

### Independent architecture

In-house development eliminates reliance on third-party software and supports long-term customer autonomy.

### Fast development cycle

New functions, updates, and mission-specific improvements can be delivered faster.

### Intuitive operation

A streamlined interface keeps planning, flight control, aircraft status, and safety logic easy to manage.

### Continuous improvement

The software can evolve based on operator feedback, operational lessons, and customer requirements.

# TRAINING AND OPERATIONAL READINESS

Threod Systems provides structured training for operators, helping crews move from system familiarization to safe, coordinated, and mission-ready operation. Training program is structured and outcome-oriented. Focus is on planning, briefing, execution and debriefing, not just flying.

## The standard program is designed for operator groups to ensure sufficient hands-on time and instructor attention

### Experienced training team
Delivered by experienced UAS specialists

### Structured, outcome-oriented program
Category-based mission cycle training

### Full crew readiness
Covers both pilot and payload operator roles

### Flight operations support
Support with flight authorizations and permissions

## Training led by experienced operators

### Train the crew in 3 weeks

The standard three-week training program prepares operators for both pilot and payload operator roles, supporting flexible crew setup and coordinated field operation, giving teams a shared understanding of the full mission workflow.

- Aviation fundamentals and operational safety
- System setup, assembly, and preflight checks

### Practical training focus

Training covers the key steps required to operate the unmanned aircraft system safely, effectively, and as a coordinated crew.

- Mission planning and preparation
- Payload operation, postflight workflow, and practical flight training

# CONTACT

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Configuration-specific details, availability,
and integration options are provided upon request.