INTEGRATED MULTI-SENSOR TETHERED DRONE

AERIAL MONITORING SYSTEM

BR-RFEYE-072-V2-20261103

Maximize your ISR capabilities for land, air, and coastal operations. Silvus Technologies proven RF sensor integrated into a high-performance tethered drone enables variable-height monitoring of VHF, UHF, and SHF transmissions. It supports tactical surveillance, geolocation as part of a TDoA network, signals intelligence, and over-the-hill reconnaissance to enable rapid decision-making.

Portable and rapid to deploy

Aerial RF and optical monitoring system that can be deployed at variable heights up to 100m (320ft) to increase line-of-sight, enabling surveillance over a large collection area.

Quiet

Passive RF sensors have no RF emissions, and the drone is aurally quiet, meaning adversaries remain unaware they are being monitored. This capability enhances the covert nature of ISR operations.

Flexible configuration

The system can be operated as a standalone multi-sensor unit (RF and camera), or form part of a sensor network for precise 2D / 3D geolocation with other fixed or mobile platforms.

Mission-ready solution

Silvus Technologies has partnered with ISS Aerospace, experts in autonomous aerial systems, to deliver a mission-ready turnkey solution: a drone with an integrated RFeye Node and high-performance optical / infrared camera, tether station, and Ground Control Station. Components are all supplied in custom-built Peli cases for maximum performance, functionality, portability, and ease-of-use.

Technical capabilities

- Portable, rapid deployment (deployed in 8 minutes, airborne in 60 seconds)
- Variable height sensor, deployable up to 100m (improving line-of-sight)
- Enhances RF superiority across all engagement types: air-to-air, air-to-ground, and maritime (coastal)
- Enhances 2D and 3D TDoA networks for geolocation
- Turnkey solution consisting of drone, RF sensor and camera payload, tether station, and Ground Control System in three easy-to-deploy portable cases
- Antennas provided are capable of a 30MHz to 18GHz detection range
- High specification stabilized optical and thermal camera with AI-based object detection, tracking, classification, and bounding
- High fidelity (I/Q data) record, capture, stream
- Tactical, covert, enables rapid decision-making

Applications

- Border security monitoring
- Force / base protection
- Coastal / maritime surveillance
- Target acquisition
- Regulatory enforcement

ISS AEROSPACE

SILVUS TECHNOLOGIES
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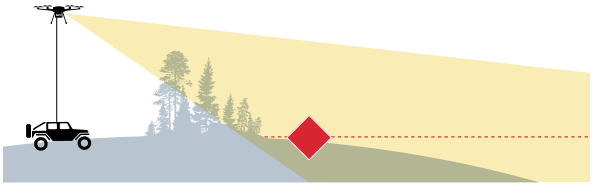
RFeye®

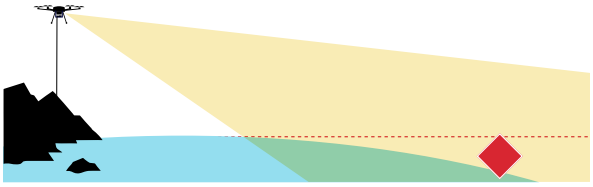
MULTI-DOMAIN INTEGRATION

RFeye Aerial Monitoring System delivers the following benefits:

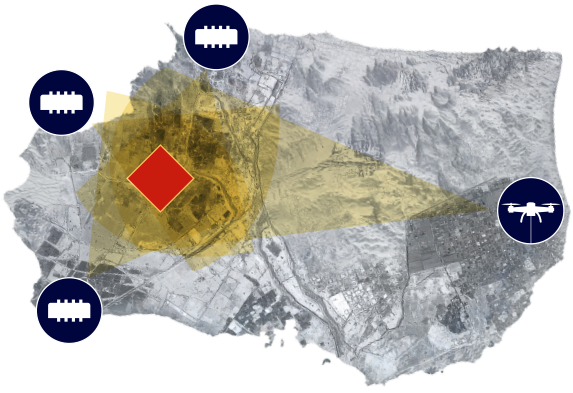
- Improved line of sight, enabling more precise and comprehensive surveillance over a greater coverage area, better geolocation accuracy, and greater visibility and clarity of the RF environment.
- Variable height sensor, which can be deployed anywhere, anytime, provides flexibility and adaptability to changing mission requirements. The drone can be flown at full height or deployed to conduct ISR missions just above the tree line.
- This capability reduces the risk to personnel by allowing remote operation away from potentially hazardous areas.
- The Aerial Monitoring System can reach up to 100m in height within ten minutes of arriving on site, unlike a traditional mast which could take days to erect. This allows operators to passively monitor the RF and visual spectrum almost immediately, and to redeploy quickly if needed.
- The system offers flexibility and connectivity—functioning independently, within a networked C2 system, or as a scalable subsystem for diverse operational requirements.
- TRL-9 (proven NATO, UK MoD and US DoD) RF sensor technology.



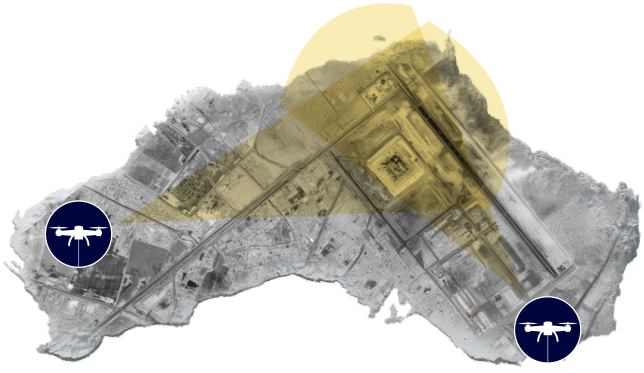
Tethered drone operating at 100m for over-the-hill reconnaissance



Height provides extended line-of-sight and a larger data collection cone



Tethered drone with RF sensor (flying at 100 m) enhances a fixed TDoA network (ground-based RF sensors)



Permanent tethered drones for critical infrastructure / base protection

SUMMARY FEATURES & BENEFITS

Tethered Drone with RF Sensor and Camera Payload

Features	Solutions
Lightweight, high performance RFeye Node 100-18 LW	Wideband radio monitoring and geolocation of transmitters to 18GHz with 100MHz of instantaneous bandwidth capture. GNSS L1/L2 and L1/L5
Dual omnidirectional antennas	30MHz–18GHz fitted as standard
Integrated optical and thermal camera	Track static and moving objects, detect and classify objects such as people, vehicles, vessels, smoke, fire, and license plates
Bespoke ISS Sensus drone with fail safe systems: triple redundant barometer / altimeter, triple redundant IMU / compass, and ballistic parachute with termination controller	Operational confidence from very high levels of performance and reliability
Ingress Protection IP54 (min)	Operates in harsh weather conditions
Max continuous flight time 48 hours	Sustained operation over long time periods
Weight: Air vehicle (incl. battery & air unit) 8.1 kg, Payload 2.5 kg. Total weight in case < 22 kg	Lightweight for portability
Flight envelope	Tethered flying height: up to 100m. Wind resistance: up to 14 m/s Hover accuracy: 1m. Altitude accuracy: 0.5m

Tether Station

Bespoke Peli case with integrated shock / vibration mounted Elistair 100m tether	Portable, rugged, reliable
Environment control system	Reliably operate in harsh environments
16A and 32A power in connections	Versatility in operating conditions
IP ratings: IP65 (closed) / IP54 (with hatch open)	Operates in harsh weather conditions
Weight: 40kg	Lightweight for portability

Ground Control Station

Bespoke Peli case containing two PCs with 17" (43 cm) OLED daylight visible monitors running ISS drone control software and RFeye Site software	Easy to use command centre with connectivity to C2
Hardware UAV interface – tactile / haptic buttons and microcontroller interface for joystick	Three methods of controlling the drone
8TB SSD in dock with payload data purge / wipe system, hard wipe key and UAV purge / scuttle capability	Ability to destroy data / render the system useless in the event of an emergency threat
HDMI & DP output	Display drone and RF / camera information on external screens
Rugged, armoured 15m fibre, ethernet, and power cables for connection to the tether station	Flexibility on location of the GCS
Environment control system	Operates in harsh weather conditions
Weight: 22kg	Lightweight for portability

Environmentals

Min / Max Operating Temp: -19 degC to +50 degC	EMC compliance: EN55032, EN61000-4, EN61000-3-2, EN61000-3-3
Safety testing: IEC62368-1	Vibration tolerance: MIL-STD810H (Secured cargo profile)

ORDERING INFORMATION

Aerial Monitoring System

Part Number	Description
SYS-UAS0024	Aerial Monitoring System bundle includes: • Bespoke ISS Sensus UAV with integrated payload consisting of RFeye Node 100-18 LW, antennas, RF cables, Platform Integration Adaptor, NextVision optical / thermal camera • Bespoke tether station in a Peli case • Bespoke Ground Control Station in a Peli case • RFeye Site software with EMP API and Pulse Detectors

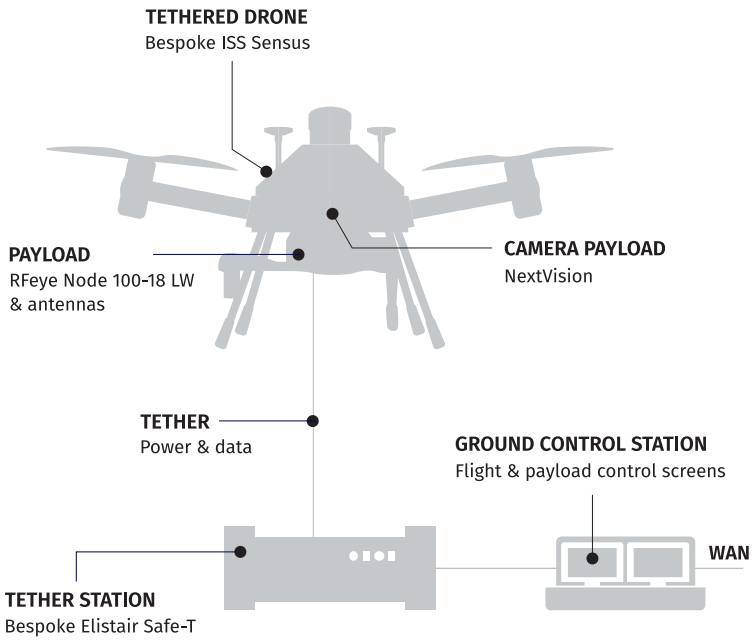
Tethered drone
Bespoke ISS Sensus with dual sensor payloads

Passive RF sensor payload
Consisting of RFeye Node 100-18 LW & antennas

Integrated camera
NextVision optical / thermal camera

Tether station
Bespoke Elistair Safe-T

Ground Control Station
Custom-built



OPTIONAL EXTRAS

- 1-day drone operator (handling) training
- 2-day RFeye Site software introduction and training
- Spares kit (propellers & legs)

FURTHER READING

Scan to read more about RFeye Integrated Drone Solutions.

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