

MICROOBSERVER™

UGS SYSTEM



DELIVERING RELIABLE, ACTIONABLE INTELLIGENCE

MicroObserver Unattended Ground Sensors (UGS) are a core component of Textron Systems' flexible unattended sensor family. Designed for deployment in a variety of tactical, law enforcement and perimeter security applications, MicroObserver UGS deliver long mission life, a streamlined user experience and reliable performance. Ruggedized to withstand a wide spectrum of climates and terrains, the system helps users detect, classify and track threats for enhanced situational awareness and force protection.



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SYSTEM FLEXIBILITY AND PERFORMANCE

UGS are intended to provide a persistent, reliable operational picture; however, many UGS systems fail to deliver this information dependably, covertly or consistently over time. Textron Systems' MicroObserver UGS solve these issues with rugged construction, discreet emplacement and proven results over a long life. The MicroObserver system offers seismic detection and tracking with infrared image capture and wireless image transmission. Backhaul capability enables storage and sharing of both seismic and image data with the larger network.

MISSION LIFE

The MicroObserver system includes nodes designed specifically for short- and long-term emplacements, with the former proven to offer one-month mission life and the latter providing life of more than two years. Minimal battery replacement reduces system maintenance and life-cycle cost, while safeguarding the location of sensor emplacements. The system can be programmed so that individual nodes or the entire system hibernate at predetermined times to further extend battery life.

PERFORMANCE

Advanced detection algorithms and a field-tested, integrated tracking system ensure that cameras are cued to verifiable threats, rather than needlessly scanning a wide field of view. The MicroObserver system automatically adapts to changes in the seismic environment, ensuring a very low false alarm rate. The system's store and forward capability is ideally suited for persistent surveillance applications.

COVERTNESS

MicroObserver components are compact and rugged. They can be buried just below the surface or flush with the ground, and remain fully operational when covered with sand, dirt or snow. Because the sensor nodes have no external antennas or cables, their locations remain concealed and protected from identification and damage.

COMMUNICATIONS

The MicroObserver system utilizes a hybrid hub-and-spoke network architecture to reliably deliver long communications distances without draining system power. A low-power radio achieves ground sensor-to-sensor communication. Even without a repeater, the system delivers gateway-to-sensor standoff distances of one to five kilometers, with options for up to 10 kilometers. The MicroObserver system can detect a person's movements at a distance up to 100 meters, and the movement of light vehicles up to 300 meters away.

EASE OF USE

MicroObserver UGS create a self-forming, self-healing network. The system's self-configuring and self-locating sensor nodes can download new detection software over the air. They also can be powered up in one step before emplacement, and the system's detection algorithms automatically adapt to environmental conditions. Users receive reliable intruder data on a FalconView® operator terminal and can monitor system performance and health remotely. With so little operator involvement and maintenance, only a single day of system training is required.

Further, the MicroObserver system uses standard interfaces for simple integration and system scaling. The system utilizes TCP/IP out of the gateway. In addition, the system can be deployed on a stand-alone basis or networked with other surveillance systems via an Ethernet or Recommended Standard-232 (RS 232) interface.

CREATE YOUR IDEAL SYSTEM

GATEWAY

Bridges the sensor nodes and the user's command, control, communications, computers, intelligence, surveillance and reconnaissance (C4ISR) system

- Combines sensor inputs to minimize false alarms
- Provides time of detection, direction and speed of threats
- Operates up to 5 kilometers from the sensor field (expandable to hundreds of kilometers)
- Supports hundreds of sensor nodes in a single sensor field
- Interoperable with C4ISR systems using Internet Protocol (IP) formats with multiple backhaul options
- Deploys flexibly in the field, at a command post or in a command vehicle



7.5 x 11.2 x 4.9 inches (in.)/
19 x 28.4 x 12.4 centimeters (cm)

OPERATOR TERMINAL

Displays detections and tracks against node and gateway locations, along with network health

- Local or in-field command and control (C2) display
- Displays detection and track history, communication link quality and tamper data
- Utilizes an IP-based interface to interoperate easily with the C2 terminal and C4ISR system
- Reports network, node and gateway health
- Displays captured image data
- Allows adjustment of system configurations and sensitivity settings, including hibernate mode



MO-1045 NODE

Small, lightweight and portable seismic sensor node for temporary, tactical missions

- Delivers one-month mission life
- Powered by three AA lithium batteries
- Self-locating capability and onboard GPS preclude field programming
- Rapid, one-step activation
- Conformal antenna requires no external components, enhancing covertness



4.1 x 3.0 x 5.7 in./
10.4 x 7.6 x 14.5 cm

MO-2730 NODE

Small, self-contained seismic sensor node for long-term, permanent installations

- Provides greater than two-year mission life
- Self-locating capability and onboard GPS preclude field programming
- Can be buried just below the surface for the ultimate covertness
- Minimal maintenance required
- Rapid, one-step activation
- Conformal antenna requires no external components, enhancing covertness



5.7 x 12.2 in./
14.5 x 31 cm

REPEATER

Extends the backhaul range from the gateway to C4ISR system

- Provides up to 25-kilometer, line-of-sight communication
- Supports multiple deployment options on a tower or on the ground
- Can also be configured as an Operator Terminal receiver



4.4 x 7.6 x 1.8 in./
11.2 x 19.3 x 4.6 cm

IMAGER NODE

Wireless infrared camera triggered by the sensor nodes

- Camera activated only upon sensor detection, conserving battery life
- Captures images only when target of interest is within field of view
- Delivers three simultaneous images, which appear to the user as video without the bandwidth and latency issues of video



3.5 x 3.5 x 4.0 in./
8.9 x 8.9 x 10.2 cm

A VARIETY OF APPLICATIONS



The MicroObserver system's reliable performance, flexible deployment options and ease of use make it an ideal asset for both military and civil applications.

BASE SECURITY

A robust emplacement of MicroObserver UGS around a forward operating base or tactical operations center provides persistent intelligence, surveillance and reconnaissance.

FORCE PROTECTION

MicroObserver UGS can be emplaced quickly by dismounted teams to protect their positions, and also are ideally suited for convoy protection.

CRITICAL INFRASTRUCTURE PROTECTION

Persistent monitoring protects high-value assets including oil pipelines and refineries, water processing facilities, power plants and government facilities.

BORDER SECURITY

MicroObserver UGS provide covert, long-term situational awareness along borders or trails of ingress and egress, assisting personnel in identification of unauthorized persons or vehicles.

REMOTE INTELLIGENCE GATHERING

Covert unattended sensor systems are unobtrusive but potent in collecting data on illegal activities for evidentiary purposes.

EMERGING APPLICATIONS

New applications for UGS are uncovered frequently, such as air-to-ground situational awareness and human intelligence collection.



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