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ETOP - ELECTRIC TETHERED OBSERVATION PLATFORM

General

- MALAT's ETOP (Electric Tethered Observation Platform) is an electrically powered, tethered airborne platform for observation and other applications.
- The ETOP has solved the power supply problem by simply leaving the energy source of the ground.
- The ETOP has a single-click operation capability and does not require any dedicated ground crew for any maintenance activity.
- The ETOP can be deployed from a static or moving ground vehicle/station.
- The platform uses electric propellers to hover at a predetermined altitude for long periods depending on the ground platform energy storage capability.

ETOP - ELECTRIC TETHERED OBSERVATION PLATFORM

Features

- One-click operation
- Few seconds between request to full operation and vice versa
- Zero maintenance
- Operator free, fully automatic
- Low signature
- Operational in all weather conditions
- Unlimited hovering time *
- Easily integrated on any ground vehicle or nautical craft
- Multisensor carrying capability

Applications

- Ad-hoc observation for unlimited time from a static or mobile platform
- Other applications upon demand

Performance

Max PLD:	20 kg
MTOW:	45 kg
Climb rate:	5 m/s
Deploy time to 50 m:	30 sec
Max altitude:	100 m
Dimensions:	160 x160 x 20 cm
Hovering time:	Unlimited*

* Depending on ground source of energy

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EL/I-6001

· Unattended Ground Sensor Network (UGSN)

General

ELTA's EL/I-6001 is a state-of-the-art, all-weather Unattended Ground Sensor Network (UGSN) for continuous tactical area monitoring missions.

The UGSN is a modular network of autonomous distributed sensors including seismic sensors, electro-optic sensors and miniature radars. Each sensor is self-contained with an internal energy source, performing surveillance and communicating the gathered data to the GCC. The UGSs can be located in any area for monitoring the AOI for an extended period of time.

The UGSN was designed for continuous 24/7 coverage of a specific Area of Interest (AOI). It enables reliable surveillance of Targets of Interest (TOI) in a designated AOI.

The autonomous structure of the UGSN enables fast deployment without restricting of power sources and communications to the Ground Command & Control Center (GCC).

Upon deployment, the UGSs form an ad-hoc communication network that transfers each Event of Interest (EOI) to the Ground Command & Control Center (GCC).

Features

- Continuous 24/7 area monitoring
- Simultaneous 360° coverage
- High immunity against weather conditions
- Automatic low-power detection algorithms
- Automatic designation to electro-optic UGS
- High Probability of Detection
- Low false alarm rate
- Network operation
- Friendly Human-Machine Interface (HMI)
- Built-in test and power monitoring

Unattended Ground Sensor Network (UGSN)

System Description

Each of the Unattended Acoustic and Seismic Ground Sensors (UGS) includes:

- Sensitive microphone for acoustic detection
- Sensitive geophone for seismic detection
- High capability power module
- Low-power controller with signal processing capabilities
- Communication modem and transceiver
- GPS receiver

Technical Characteristics

EL/I-6001
Acoustic & Seismic UGS

Operation:
(internal battery)
30-60 days according to event frequency

Detection range:
Pedestrian: 30 m (nominal)
Heavy vehicle: 500 m (nominal)
Weight: typical 0.5 kg

Seismic UGS with attached energy pack

The Ground Command & Control Center (GCC) includes:

- Communication modem and transceiver
- Mission management computer
- Human-machine interfaces

Typical EL/I-6001 HMI Display

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EL/M-2112

DEFENSE AND SELF-PROTECTION

• PERSISTENT GROUND SURVEILLANCE RADAR FAMILY

EL/M-2112 (V2.5)

NO ESCAPE - EVERY MOVEMENT CAPTURED

General

EL/M-2112 Ground Master is a new family of advanced high resolution radars with unique and outstanding capabilities.
Featuring simultaneous multi-beam technology the radar provides persistent surveillance and instantaneous target tracking over a wide area.
In operational use by military, paramilitary and security agencies, the radars immediately detect, monitor and track all moving targets in the Region of Interest (ROI), such as walking persons and moving vehicles.
These radars feature up to 4 stationary (non-rotating) planar antennas, each covering a sector of 90°.
The radars cover detection ranges from 300 m up to 20,000 m for moving persons and ranges of up to 40,000 m for vehicles, depending on its version.
The radars are designed for dual use - ground and sea surface surveillance, even in adverse sea conditions.
The radars are capable of automatically adapting their processing (ground movement detection of sea surface target detection) according to the relevant background map.
This new radar family reflects ELTA's vast experience in surveillance radars and signal processing, utilizing cutting edge radar technologies.

Applications

- Battlefield surveillance
- Border security systems
- Site perimeter protection
- Coastal surveillance (option)
- Artillery support and fire correction (option)

Installation

- Fixed installation on top of a tower or on a building
- Mobile installation on a surveillance vehicle - operating when not in movement
- Portable configuration operated on a quadri-pod

PERSISTENT GROUND SURVEILLANCE RADAR FAMILY

Features

- Uninterrupted operation under all weather conditions
- Instantaneous and continuous coverage of the entire Regions of Interest
- Surveillance sector programming - sectors of interest and alert areas can be programmed and identified
- Stationary planar arrays (up to 4), each covering instantaneously 90^{o} by multi-beam technology
- Automatic and continuous detection and tracking with high accuracy
- High probability of targets interception even if the targets are not persistent
- Easily deployed and operated
- Several radars can be networked, providing an integrated picture in a single C^{2} post
- Local and remote operation modes
- Implementation of 2D and 3D background digital maps (option)
- Low false alarm rate
- Interoperability with Electro-Optic (E/O) sensors and easily integrated in surveillance systems
- Optional dual-mode operation: ground and sea surface surveillance
- Low Life Cycle Cost (LCC)
- Redundancy resulting in graceful degradation
- High reliability ruggedized radar

Specifications

- **Frequency Band** : X Band
- **Sector Coverage** : Instantaneous 90^{o} or 180^{o} or 270^{o} or 360^{o}
- **Range Accuracy** : 1 - 2 m
- **Azimuth Accuracy** : 2 - 5 milliradians
- **Nr. of Tracked Targets** : ≥ 500

Maximum Detection Ranges (m)		
Radar Version	Walking Persons	Vehicles
EL/M-2107	300	300
EL/M-2112 (V2.5)	2,500	5,000
EL/M-2112 (V5)	5,000	10,000
EL/M-2112 (V10)	10,000	20,000
EL/M-2112 (V20)	20,000	40,000

EL/M-2112(V10) Medium Range Persistent Ground Surveillance Radar

Operator Display

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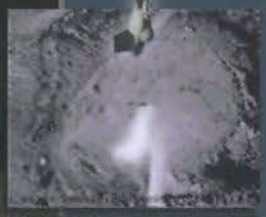
HAROP
Loitering Weapon System



- Extended loitering at long ranges
- Autonomous platform operation
- Man-in-the-loop attack, avoiding collateral damage
- EO seeker: FLIR / color CCD, hemispherical coverage
- Attack at any angle - from horizontal to vertical
- Abort attack capability
- Continuous, persistent threat to enemy targets

Israel Aerospace Industries

HAROP LOITERING WEAPON SYSTEM

20 years of in-service experience of Loitering Weapon Systems

Combining capabilities of a UAV and a lethal missile, HAROP searches, finds, identifies, attacks and destroys targets, and performs Battle Damage Assessment. Independent of real-time intelligence, HAROP is uniquely capable against time-critical, high-value, relocatable targets.

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