Unmanned Aerial Systems (UAS)

IAI is a world leader of fully integrated UAS solutions that are verified – by more than 600,000 operational hours of intelligence gathering, and dissemination and targeting missions.

IAI will present its strategic and tactical UAS

HERON Family

The Heron is a family of strategic MALE UAS System.

A model of HERON I – Medium Altitude Long Endurance MALE UAS System for strategic and tactical missions

HERON I main features and capabilities are:

- Multiple operational configurations
- Adverse weather capability
- Safe, reliable and easy operation
- Multi sensor capability.
- Simultaneously: EO/IR/FLR, SAR/MPR, ELINT, COMINT
- Available Satellite communication for extended range (SATCOM)
- 2 proven simultaneous Automatic Takeoff and Landing (ATOL) systems for maximal safety
- Fully redundant, state-of-the-art avionics
- Retractable landing gear

I-VIEW MK50

The I-VIEW MK50 is a close range, light tactical UAS for operation at the brigade level or with special forces. The system has a minimal footprint, operated on a single vehicle with a crew of two.

I-VIEW 50 main features and capabilities are:

- Small and light weight
- Automatic takeoff and landing
- Takeoff capability: using launcher or on runway
- Landing capability – with a parafoil or on runway
- Parafoil precise landing (less than 50mX50m)
- No cross wind limitations
- Requires minimal landing site preparations
**Bird Eye Family**

**Bird Eye 400** and **650 form** an advanced, affordable family of mini UAS providing real-time day/night imagery, data for urban operation and "over-the-hill" intelligence.

A high level of operational flexibility with latest (third) generation autonomous flight and mission capability.

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**BIRD EYE 650 MINI UAS**

The **Bird Eye 650** system is an advanced solution for low echelon forces to obtain real time intelligence, independent of higher echelon sources. It is based on the operational experience and knowledge accumulated with the Bird Eye 400.

The system is equipped in 2 backpacks and consists of:

- 3 UAV platforms
- EO&IR payloads
- Portable Ground Control System (PGCS)
- Data link
- Power source and repair kit
- It is man-portable with fast field deployment by a team of two

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**MOSQUITO**

The **MOSQUITO** is a Micro UAS, providing real-time imagery data in restricted urban areas. The **MOSQUITO** carries a miniature video camera.

The system offers a fully automated flight with GPS based "in flight" way point control. Missions are planned using digital maps referencing and viewed on a computer monitor.

The **MOSQUITO** is hand or bungee launcher and lands on its belly
**ETOP – Electric Theterd Observation Platform**

The ETOP (Electric Theterd Observation Platform) is a pure electric powered, Tethered airborne platform for observation and other applications. The ETOP has solved the problem of huge amount of energy a HAV must carry on it, by simply living the energy source on the ground. The ETOP can be deployed form a static or moving ground vehicle/station.

The platform is generated by electric powered propellers which can hover at a predetermined altitude above ground for long periods depending on the ground platform energy storage capability. The ETOP can carry a payload of up to 20Kg to a maximum altitude of 100m for an unlimited period of time* by a simple one click operation, thus making it operator free.

* Depending on ground source of energy.

**SAR/GMTI Payload Systems - EL/M-2055**

The new generation of **EL/M-2055** family or SAR/GMTI sensors provides a state-of-the-art solution for all-weather, air-to-surface ISTAR applications onboard manned and unmanned aircraft. The **EL/M-2055** features modular, open architecture. It can be easily configured for a broad range of installations, spanning from small-tactical UASs and light reconnaissance aircraft through high performance MALE UASs and manned reconnaissance system.

Typical **EL/M-2055** Radar Configurations:

- **EL/M-2055D**
- **EL/M-2055DX**
- **EL/M-2055M**
**Integrated UAS COMINT/DF System (IUCOMS) - EL/K-7071**

The **EL/K-7071** is a UAS Integrated Communication Intelligence (COMINT) System. The system is designed to cope with the challenges of modern dense communications network environments and to perform long-range, high endurance COMINT missions. The system’s task are to scan, intercept, measure, locate, analyze, classify and monitor ground, airborne and naval communications transmissions characterized by high mobility, short duration, modern signals and frequent changes in signal parameters. The main purpose of the system is to disseminate intelligence reports including, real-time Electronic Order of Battle (EOB), and to provide tactical and strategic intelligence that can be seamlessly integrated in the nation’s intelligence database. The modular architecture, the compact size, the low power consumption and the flexible interfaces of the COMINT/DF UAV Payload enable its integration in a variety of UAS’s, from Tactical to MALE/HALE UASs.

**Integrated UAS ESM/ELINT System (IUELIS) - EL/L-8385**

The **EL/L-8385** is a UAS Integrated Electronic Support Measures (ESM) and Electronic Intelligence (ELINT) System. The system is designed to cope with the challenges of modern dense radar environments and to perform long-range, high endurance ESM/ELINT missions. The system’s task are to search, intercept, measure, locate, analyze, classify and monitor ground, airborne and naval radar transmissions characterized by high mobility, short duration, modern signals and frequent changes in signals parameters. The main purpose of the system is to disseminate intelligence reports, including real-time Electronic Order of Battle (EOB), and to provide tactical and strategic intelligence that can be seamlessly integrated in the nation’s intelligence database. The modular architecture, the compact size, the low power consumption and the flexible interfaces of the ESM/ELINT UAV Payload enable its integration in a variety of UAS’s, from Tactical to MALE/HALE UAS’s.
**Persistent Ground Surveillance Radar Family - EL/M-2112**

The **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 sector of 90°.

The radars cover detection ranges from 300m up to 20,000m for moving persons and ranges of up to 40,000m for vehicles, depending on its version.

The radars are designed for dual use – ground and sea surface surveillance, even in adverse sea conditions.

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**Man-Portable SATCOM Terminal - EL/K-1895**

The **EL/K-1895** is a lightweight man-pack tactical SATCOM terminal, carried and operated by a single soldier.

The tactical SATCOM terminal provides its operator with the capability to communicate with all network subscribers within the satellite footprint, even Over-The-Horizon (OTH) by sending and receiving, via a secured communication link, voice data and compressed video.

The **EL/K-1895** is a tri-pod mounted, ruggedized self-contained communication terminal that enables a fast SATCOM link deployment, set-up and operation, without revealing the unit’s geo-location. The system is preprogrammed, prior to mission, to automatically direct itself to available Ku-band Geo Communication Satellites.
**EL/M-2133 WindGuard Radar**

The **EL/M-2133 WindGuard Radar** is a four (4) face distributed phased array Pulse Doppler radar designed to detect and automatically track Anti-Tank Rockets (ATRs), Anti-Tank Guided Missiles (ATGMs) and Tank Rounds. The radar is designed to be installed on Armored Fighting Vehicles (AFVs) such as Tanks and Armored Personnel Carriers (APCs), and other Surveillance and Reconnaissance Vehicles, including trucks and jeeps. Upon detection and identification of a potential threat, the radar provides early warning to the AFV crew, indicates accurate 3D direction of the threat, calculates Time-To-Impact (TTI) and automatically and timely activates reaction systems for protection of the AFV.

The **EL/M-2133 WindGuard Radar** can be integrated with any soft-kill and hard-kill counter measures designed to protect the AFVs.

**TED Soldier Alert & Response System – EL/L-8293**

The **EL/L-8293 TED (Transient Event Detection)** is a persistent, day and night, dual-band Infra-red electro-optical (E/O) detection system designed to effectively detect IR signal transients. It enhances the mission effectiveness of a combat soldier operating even in complex battlefield environments. The **TED** is capable of automatically detecting the enemy’s gunshot direction within a wide field of regard (FOR), enabling fast and effective response to the gunshot source. The **TED**, a low weight and easy-to-use system, can be operated in various environments, stationary or on-the-move.
Unattended Ground Sensor Network (UGSN) – EL/I-6001

EL/I-6001 is a state-of-the-art, all-weather Unattended Ground Sensor Network (UGSN) for continuous tactical area monitoring missions. The Unattended Ground Sensor Network (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 Unattended Ground Sensors (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 as-hoc communication network that transfers each Event Of Interest (EOI) to the Ground Command & Control Center (GCC).
**Network Centric Laser Guided Weapons**

IAI has evolved the Network Centric Laser Guided Weapons approach which enables fighting units carrying light weight equipment to effectively “command” weapons from various launchers to targets in the battlefield via an advanced Data Link.

**LHAT – Laser Homing ATtack Missile**

![LHAT Image](https://example.com/lhathit.png)

LHAT is an advanced LAser Homing ATtack Missile for precision attacks. The LHAT is a multi-mission missile fired from a wide variety of Land Vehicles, Helicopters, and Tanks. LHAT, with a length of just one meter and weight of less than 13 kg, is very well suited for use on light-weight helicopters. LHAT launcher fully loaded with four missiles weight 70 kg.

Despite its small size and light weight, LHAT is highly effective against a variety of target types, including tanks, at ranges up to 8 km. LHAT can accurately hit moving targets. The LHAT’s long range enable helicopters to engage and destroy enemy forces while avoiding the enemy's Very Short Range Air Defense (VSHORD).

In its tank version LHAT is handled by the 105mm or 120mm gunner, as a standard gun round. The missile performs precision homing on a laser-designated target, ensuring first shot, tank-kill at ranges over 6Km. LHAT can accurately hit moving targets, including helicopters.

**NIMROD 2 – Long-Range Laser Guided Missile System**

NIMROD 2 is an anti-tank and anti-personnel laser homing missile for up to 36 km range and pinpoint accuracy. It is easily installed on a

![NIMROD Image](https://example.com/nimrod.png)

variety of ground platforms and helicopters.

On land, NIMROD 2 provides standoff strike capability against ground point targets such as tanks, APCs, personnel concentration and guerrillas. A forward scouting team uses a laser designator to direct missiles that are fired from a launcher up to 36 km behind.

Mounted on light vehicles, the system is inherently mobile, and is a natural candidate for rapid-deployment forces. NIMROD is capable of day & night operation, and its flight trajectory can be set below clouds.
HAROP – Loitering Munition System

The HAROP is a loitering munitions missile with a high quality day / night electro-optic seeker. It’s searches, detects and attacks accurately high value static or mobile targets at long ranges. HAROP missiles are launched from transportable launchers and navigate towards the targets area.

Fire Lord

Fire Lord is designed to deal with the Sensor-To-Shooter cycle in a perimeter security scenario and a maneuver scenario as well. The system establishes a network connectivity between sensors and launchers thus enabling the commander to view detections and targets from his sub-units, to manage a Common Operation Picture (COP) and to allocate the optimal launchers to the sensor through the network. The leading operational principle is distributed fire & centralized command.

Precision Strike System

LORA – Artillery Weapon System

The LORA is a Long Range Artillery Weapon System capable of engaging strategic targets deep in the enemy’s territory from mobile or maritime platforms. Typical targets are fixed or transportable including infrastructure assets. The warhead can be delivered accurately of about 10m: CEP across the effective range. The LORA has a high explosive warhead. The missile can be launched within few minutes from unprepared positions. Any target whose location is known within the range of the missile can be attacked within less than 10 minutes from the launch decision. The LORA uses a shaped trajectory flight mode. LORA is stored in a sealed canister with shelf life of seven years without maintenance.
**JUMPER**

The JUMPER System missiles launched from a vertical launcher pack to precisely strike targets at ranges of up to 50 Km. The JUMPER system contains eight canister missiles and one integrated command and a control unit that are arranged in a launcher pack. The JUMPER system provides the maneuvering force commander with autonomous, immediate, and precise fire – regardless of weather and visibility conditions. The system, using the autonomous vertical launcher pack, enables to invest 90% of the budget in the effect rather than in platforms and personnel.

**MOSP (Multi-Mission Optronic Stabilized Payload) Family**

**MOSP 3000**

The MOSP 3000 is the most advanced version of IAI’s well known MOSP family of midsize observation and targeting payloads. MOSP 3000 encompasses the latest technologies in gimbal and sensor design: Single LRU concept, lower weight, improved stabilization, full digital control, advanced image processing and state-of-the-art digital format sensors. MOSP 3000 is optimized for laser designation from airborne, land or maritime platforms featuring internal automatic boresight for all sensors.

**POP Family**

The POP (Plug-in Optronic Payload) is IAI’s small EO payload, designed to meet the short distance observation requirements. The POP was selected for various Aircraft, UAS, Helicopters, Security systems and Gun Sights. The basic POP configuration contains a CCD and FLIR cameras with optional video tracking and laser pointing.
**ISRAEL at EUROSATORY 2010**

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**Your Vision is our Mission**

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**POP 300D (Plug-in Optronic Payload) – "Designator"**

**POP 300D** is a 10.4" compact lightweight payload for observation and laser designation missions that offers the best performance in its class. **POP 300D** is the ultimate solution for day and night Intelligence, Surveillance, Target Acquisition and Reconnaissance (ISTAR) missions. **POP 300D** is based on the POP superb observation EO&IR sensors with the addition of a powerful Laser Designator and Range Finder (LDRF). **POP 300D** laser designator is compatible with US and NATO laser guided munitions including Helfire missiles. 

**POP 300D** has successfully completed live-fire testing and was selected for a leading international program. **POP 300D** is the newest member of the well known POP family currently in high rate production.

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**POP 300LR “Observer” LONG RANGE Plug-in Stabilized Optronic Payload**

The **POP 300LR** is a new member of the **POP** family, providing an excellent solution for long range observation, pointing and tracking for ground and sea missions. **POP300LR** introduces a new sensor slice designed for long range performance. **POP300LR** is an optimized cost effective upgrade solution for customers that already have **POP200/300** and need to enhance its performance, by simple replacement of the sensors slice.

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**GTADS – Ground Target Acquisition & Designation System**

The GTADS is a self contained, tripod mounted, gyro-stabilized EO/IR/LP/LRF/LD system, based on IAI’s field proven Mini POP, integrated with a tablet tactical computer, an eyepiece/joystick hand control and display grip, a north finding module and a power pack. GTADS uses an innovative concept in ground observation and designation, by introducing a single, gyro-stabilized, pre-calibrated and hermetically sealed unit for the sensors and the laser designator. GTADS features remote control operation, thus enabling the operator to safely control the system from a protected location. The system meets the tough "sensor-to-shooter" challenges of the battlefield in a single package, providing enhanced operator survivability.
**Mini POP**

Mini POP is an 8" lightweight payload for day/night observation system designed for military, para-military and civilian applications. The payload provides real-time image, automatic video tracker capabilities and precise target geo-location for small platforms including small Unmanned Aerial Vehicles (UAVs), armored vehicles, Unmanned Ground Vehicles (UGVs) and naval vessels.

Mini POP is a dual axis, gyro-stabilized payload. The payload is one Line Replaceable Unit (LRU), open architecture design that carries up to four sensors. The basic configuration includes a continuous zoom color day camera and a thermal imaging camera. A laser pointer, eye-safe laser range finder and automatic television tracker can be incorporated for greater capabilities and functionality. Mini POP is remotely controlled through RS422 serial communication or by a HAND Control Unit (HCU) (option).

**Micro POP – Micro Plug-in Optronic Stabilized Payload**

**Micro POP** is new, 4" lightweight day/night optronic stabilized payload for close area observation missions. The payload provides enhanced image capabilities for mini Unmanned Aerial Systems (mini-UAS’s), Unmanned Ground Vehicles (UGVs) and for special operations. **Micro POP** is a one Line Replaceable Unit (LRU) open architecture payload, carrying a single sensor, either a "day" continuous zoom color camera or a "night" uncooled thermal imaging camera, that can be switched in minutes.
INERTIAL SYSTEMS

RNAV-IPON - INS/GPS Navigation System with gun stabilization output

The IPON – Inertial, Position, Orientation & Navigation family, has Ring Laser-Gyro (RLG) – technology integrated to INS/GPS land navigation system. In addition to its navigation data, RNAV-IPON provides inertial data for equipment control and stabilization, especially suited for stabilization of tank guns and surveillance equipment. IAI provides also INSs for airborne applications based on the same product line.

ADNNAV – Small Lightweight INS/GPS Navigation System

The ADNAV (Advanced Navigation System) is a self contained hybrid land navigation system (INS/GPS). ADNAV is based on IAI’s inertial sensors (Fiber Optic Gyros (FOGs) and Accelerometers). ADNAV is a small, lightweight inertial system for all types of tracked and wheeled platforms. Typical Applications:
- Tanks
- Air Defense Systems
- Armored Personnel Carrier
- Infantry Fighting Vehicles
- Logistics and Administrative Vehicles

TMAPS – INS/GPS High Accuracy Navigation System

The TMAPS is a self contained hybrid land navigation system (INS/GPS) which performs self alignment and survey. TMAPS is based on IAI’s inertial sensors (Ring Laser Gyros and Accelerometers). Typical Applications:
- Self Propelled Guns
- Towed Guns
- Vehicle Gun Laying & Positioning System (VGLPS)
- Rocket Launchers
- Artillery Radars
**PENS – Personal Navigation System**

The **PENS** – Personal Navigation System is a pedestrian multi sensors inertial navigation system. **PENS** provides the person and/or his commanders with navigation, positioning, pointing and orientation data in any kind of terrain, including urban and indoor areas. **PENS** enables the commanders to perform IFF (Identification Friend or Foe) functions – distinguish between friend and enemy. **PENS** enables autonomous navigation even in periods of GPS disturbances and GPS unavailability.

Typical Applications:
- Infantry soldier
- Special forces
- Rescue forces
- Police forces
- Fire brigade

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**TopGun – A 2D Course Correction Fuze for 155 mm projectiles**

The **TopGun** is a GPS/INS 2D course correction fuze. **TopGun** converts standard 155 mm artillery ammunition into a precision guided projectile, without significantly altering firing routines. TopGun can be combined with any standard 2” thread well 155 mm artillery projectile. The accuracy of projectiles, equipped with **TopGun**, is 20 m CEP, regardless of range. **TopGun** breaks the link between range and accuracy i.e. accuracy is the same even for long range 52 caliber fire.