



SAAB

LEDS FULL SPECTRUM ACTIVE PROTECTION FOR LAND VEHICLES



LEDS LAND ELECTRONIC DEFENCE SYSTEM

The Land Electronic Defence System (LEDS) combines active signature management, softkill and hardkill mechanisms to provide full spectrum active protection to land vehicles. Full hemispherical coverage is provided to detect incoming threats and alert the crew. When installed in full configuration, the System will neutralize all threats on the battlefield by means of the soft and hard kill capability.

FUNCTIONAL DESCRIPTION

LEDS consists of a sensor suite, a central Active Defence Controller, ADC, High Speed Directed Launcher, HSDL, and countermeas-

ure options, ranging from fast multi-spectral smoke ammunition to instantly obscure the line of sight of an attacking weapon system, through active signature management devices, to hard kill options that destroy the approaching ammunition before it hits the vehicle.

The LEDS system makes provision for various interfaces that allow for comprehensive integration with on-board combat vehicle systems. The system also incorporates a mission data support facility.

The sensor suite provides hemi-spherical coverage. Sensor options include, laser warning and an active threat acquisition and tracking system. The dispensing unit provides hemispherical countermeasure

deployment, in the appropriate sequence, onto the detected threat direction. Dispensing can be controlled manually or fully automatically.

LEDS uses the Mongoose 1 hard kill counter-ammunition against RPG-7 type weapons launched at the vehicle from a distance of > 20 m and ATGM launched from a safe distance outside the application distance of the opposing force's main weapon. Due to the explosion warhead, the Mongoose has extremely low collateral damage effect.

LEDS can also use an active signature management material that can be used for external fire extinguishing and changing the vehicle signature in the IR and radar frequencies.

LEDS-50 LAND ELECTRONIC DEFENCE SYSTEM - LASER DETECTION

LEDS-50 is designed to provide the crews with vitally important situational awareness of laser emissions associated with anti-armour threats and allow fast countermeasure response.

FUNCTIONAL DESCRIPTION

The LEDS-50 forms the basic building block of the Land Electronic Defence System, LEDS, and comprises of an Active Defence Controller, ADC, and a number of laser warning sensors.

LEDS-50 provides 360° azimuth coverage of a platform by using four LWS-310 sensors.

Full hemispherical coverage and anti-reflection capability can be provided by adding a LWS-500 top attack and anti-reflection sensor.

CHARACTERISTICS

- Detects all known lasers associated with anti-armour threats (up to 8 threats simultaneously).
- Provides threat direction.
- Provides voice audio warning to the crew.
- Provides spectral band information.
- Low false alarm rate, <1 in 24 hours, operational conditions.
- Single pulse probability of intercept >95% in a single emitter environment.
- Multi-pulse probability of intercept > 99% in a single emitter environment.
- Stand-alone or integrated mode of operation.
- Redundancy due to multiple sensors.
- Full range threat management option (standard with threat classification and optional identification and library linked prioritisation).
- Large detection envelope counters peripheral laser techniques.
- Unique anti-reflection capability that is extremely efficient in typical high-clutter land scenarios.
- User definable threat library tools.
- Laser training system compatible.



LEDS-50 system.

LEDS-100 LAND ELECTRONIC DEFENCE SYSTEM - SOFTKILL

The LEDS-100 is a Soft kill system developed for land vehicle survivability enhancement. The system consists of a central Active Defence Controller a number of laser warning sensors, a High Speed Directed Launcher, HSDL, and fast multi-spectral smoke.

FUNCTIONAL DESCRIPTION

The LEDS-100 provides a dynamic Softkill countermeasure capability, by means of the HSDL, that denies a threat the opportunity to effectively engage the protected system by interfering with acquisition, tracking, ranging, weapons launch, or guidance. This is achieved by using a combination of sensors, multi-spectral smoke and, where requested by the customer, inclusion of an Infrared Jammer lamp against 2nd Gen ATGM.

The Softkill controller senses which launcher tubes are loaded and controls and fires the smoke grenades intelligently taking into consideration the wind conditions, threat direction and vehicle directional motion relative to the threat.

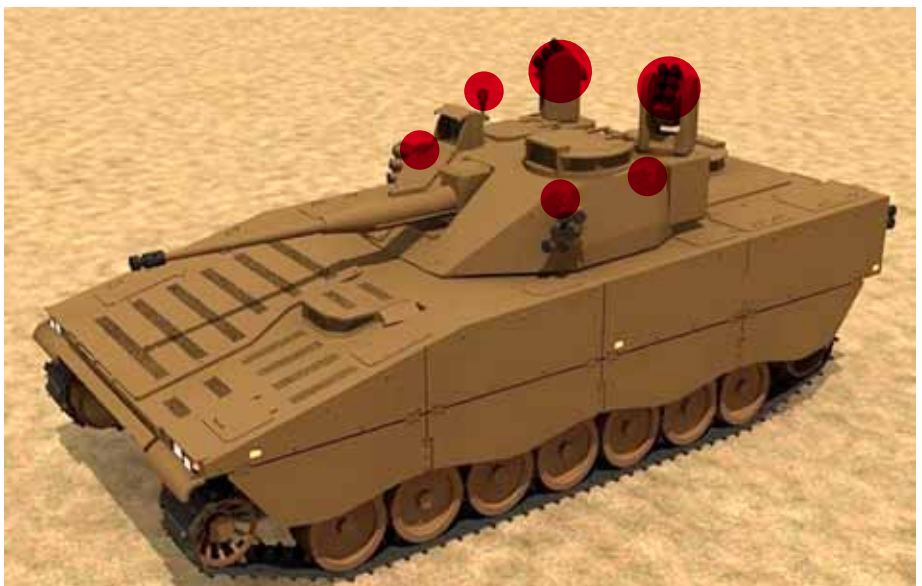
The countermeasure deployment can be selected to be manual or fully automatic. The laser warning sensors will detect the threat direction and the controller will execute the appropriate selected countermeasure actions to defend the platform against the detected threats.

CHARACTERISTICS

- Effective against laser based targeting and guidance systems, like range finders, designators and beamriders.
- Can also be used manually for rapid obscuration of an attacker's line of sight in ambush situations.
- Appropriate smoke screen < 1 second.
- Full hemispherical coverage.
- Can accommodate up to 12 soft kill payloads.



LEDS-100 with high speed directed launchers integrated on MBT.



LEDS-100 with high speed directed launchers integrated on CV90.

LEDS-150 LAND ELECTRONIC DEFENCE SYSTEM - HARDKILL

The LEDS-150 is a progression of the LEDS-100 active defence system and typically consists of Laser Warning Sensors, LWS, an Active Defence Controller, ADC-150, a number of Munition Confirmation and Tracking Sensors, MCTS, and High Speed Directed Launchers, HSDL, which allows the combination of soft- and hard-kill countermeasure deployment capability to the platform, optional displays, and interconnecting harnesses.

The hard kill feature of the LEDS-150 product is characterized by its capability to physically destroy the efficiency of the terminal ballistic capability of attacking munitions without residual penetration of the protected vehicle.

The hard kill system detects and tracks a single or simultaneous threats and calculates if the attacking munition will hit the platform or not. The system determines the best inertial intercept position and provides the slew and firing commands to the launchers.

The Mongoose-1 countermeasure missile is launched at a predetermined time to intercept and neutralise the detected munition off-board at a distance of between 5 – 15 m from the vehicle to minimise the collateral damage to own forces.

CHARACTERISTICS

- Effective against RPGs, anti-armour missiles, recoilless rifles and anti-tank guns firing HE, HESH and HEAT ammunition.
- Low collateral damage, allowing urban operations.
- Threat intercept at > 5 m stand-off.
- Defeat simultaneous threats, including tandem firings.
- Full 360° azimuth and -15° to +65° elevation coverage.
- Can accommodate up to 12 payload of soft-kill, hardkill or any combination thereof.

ADVANTAGES

- Guaranteed Growth Path.
- Modular & Scaleable.
- Integrated design concept.
- Full spectrum Survivability requires layered system.
- Active SIGMAN.
- Multi-spectral Softkill.
- Full-spectrum Hardkill.



Mongoose hard kill missile.



Mongoose intercept.

Specifications subject to change without notice