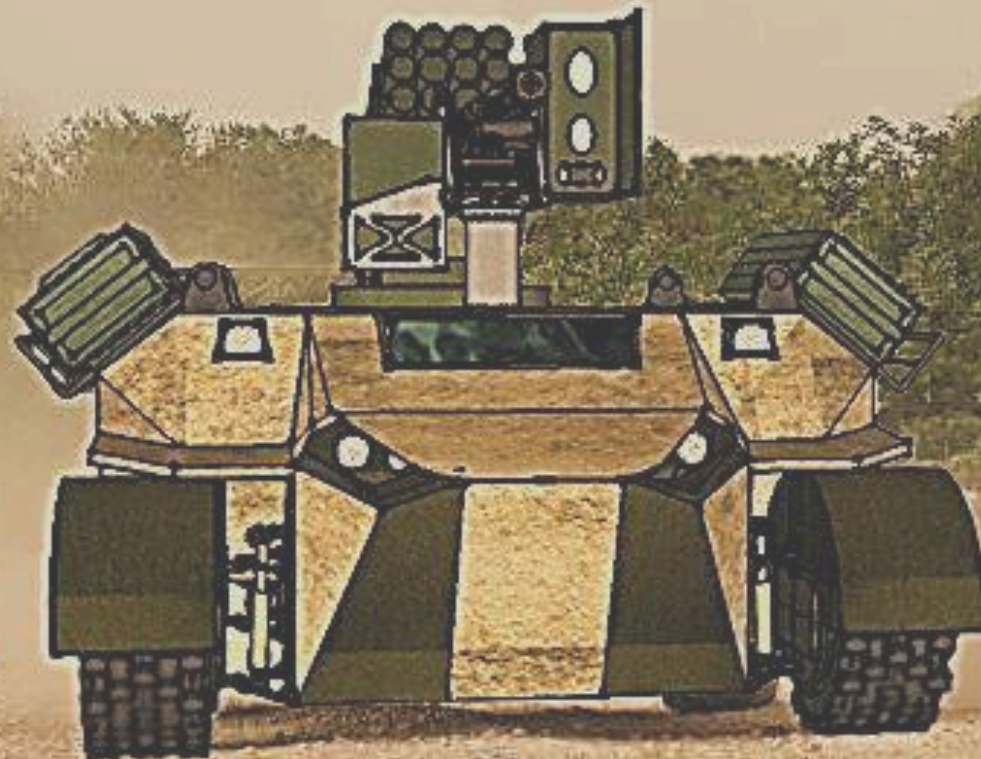


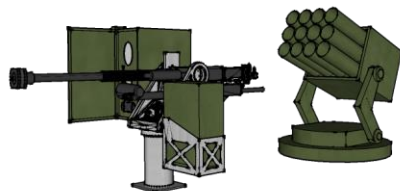


UGV SCORPIO



OVERVIEW

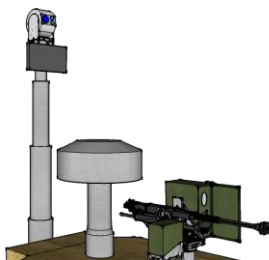
UGV SCORPIO



WEAPON SYSTEMS

TURRET MG NW-12.7
DSHK 12,7x108 mm
Effective range 2 400 m
Smoke grenades 6 pcs
Day / night camera
Thermal imager camera

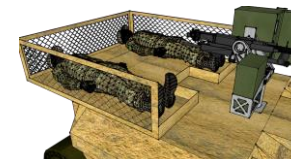
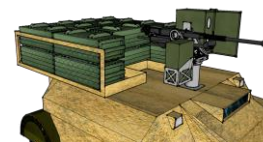
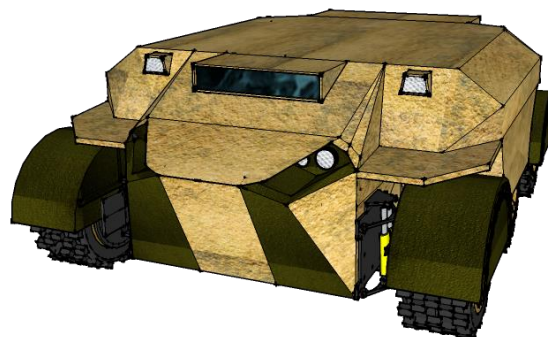
MLRS TR-107
Caliber: 106.7 mm
Number of missiles: 12 pcs
Elevation -3 ° to + 57 °
Swing angle 32 °
Maximum range, 13000m



SURVEILLANCE SYSTEM "SCOUT"

Functions:
Artillery position detection
Detecting enemy vehicles
Detection of enemy soldiers
Enemy UAV Detection

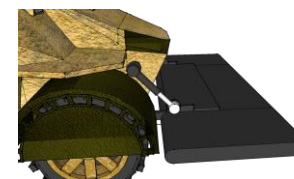
Structure:
reconnaissance radar;
two-channel television surveillance system;
thermal imaging system;
laser rangefinder;
radio monitoring system;
navigation system;
data transmission system;



CARGO / MEDICAL MODULE

CARGO MODULE
1850x1850 mm
Weight Payload 400 kg

MEDICAL MODULE
1850x1850 mm
Payload 2 person



SYSTEM DETECTED LANDMINE

Functions:
Artillery position detection
Detecting enemy vehicles
Detection of enemy soldiers
Enemy UAV Detection

Technical description

UGV SCORPIO



Width	2400 mm
Height	1100 mm
Length	3800 mm
Base	2000 mm
Track	1980 mm
Clearance (variable)	300-500 mm
Front overhang	60 deg
Rear overhang angle	45 deg
Maximum overcome angle of rise	50 deg
Max roll angle	45 deg
Weight (base)	650 kg

Engine type	Diesel
Engine power	81 h.p.
Type of transmission	6x4
Drive type	Hydrostatic
Hydraulic motor power	4x35.2 kW
Nominal torque	4x224.6 N*m
Max speed	30 km/h
Control range	8 km
Weight Payload	400 kg



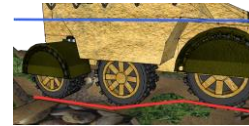
Robotic control system



Automatic clearance control system:

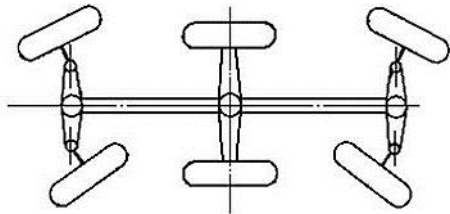
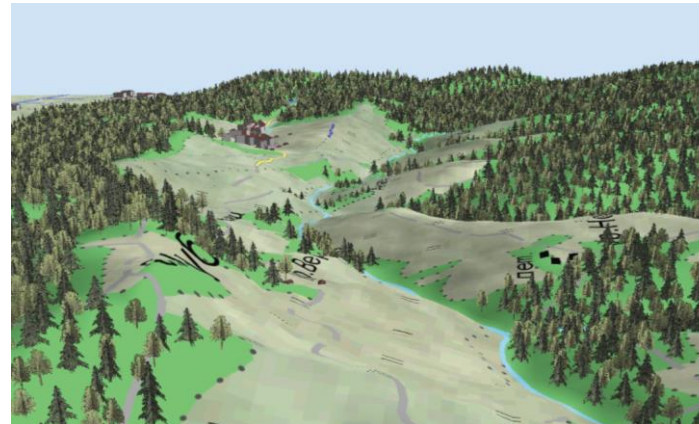
- «Low profile» mode for stealth
- «High Profile» Mode for Off-Road Driving
- «Dynamic mode» quick response to obstructions

UGV SCORPIO



Automatic tilt control system:

- Monitoring and compensation for cross tilt while turning;
- Monitoring and compensation for cross tilt when driving on hill;
- Control and compensation of the longitudinal slope when driving in the hills;
- Monitoring the position of the UGV housing for the correct positioning of the payload (shooting, radar operation)



Steering system

Features:

4 individual rotary mechanisms;
adjustable steering effort (depending on speed);
small turning radius;
high maneuverability;

Robotic pilot assistant

- monitoring data on the operation of all systems;
- control of safe movement, overcoming obstacles;
- the ability of autonomous movement on a recorded tracker;
- independent return to the starting point in case of loss of communication or at the command of the operator;

Main requirements:

- Weight 170kg.,
- 22....30 Volt DC Power Supply,
- International Protection Rating: IP-66,
- Azimuth rotation: 360° + (rotation are not limited)
- Pitch rotation: -20° $+60^{\circ}$
- Guidance actuators: Electromechanical, without manual duplication
- Aiming of the armament in the vertical and horizontal planes of 0.1...15 degree/s
- Transfer speed in vertical and horizontal planes: not less than 60 deg / s
- Designed for installation of heavy machine gun DSHK 12.7x108mm made by Grand Power s.r.o.
- Fire single shots or bursts.
- Provides the ability to install smoke grenades.
- Accuracy: 1.5 Mrad ($0,08^{\circ}$)



Main parameters optoelectronic station:

1. - **Day camera (wide-angle lens):**
 - a. The angle of view of the color television camera in the wide field of view is not less than $11^{\circ} \pm 10\%$ horizontally and $8.2^{\circ} \pm 10\%$ vertically
 - b. Camera resolution: 1280x720
 - c. Frame rate at full resolution, not less: 25fps
 - d. Lens focal length: 50mm
 - e. The detection range of tank-type target by color television camera in wide field of view is at least 2,500 m (side view)
2. - **Day camera (long-focus lens),**
 - a. The angle of view of color television camera in narrow field of view is not less than $2.7^{\circ} \pm 10\%$ horizontally and $2^{\circ} \pm 10\%$ vertically
 - b. Camera resolution: 1280x720
 - c. Frame rate at full resolution, not less: 25fps
 - d. Lens focal length: 200mm
 - e. The detection range of tank-type target by color television camera in narrow field of view is at least 5,000 m (side view)
3. - **Night camera (wide-angle lens),**
 - a. Horizontal angle of view of thermal imaging camera: $6.2^{\circ} \pm 10\%$
 - b. Vertical angle of view of the thermal imaging camera: $4.7^{\circ} \pm 10\%$
 - c. Focal Length: 100 mm
 - d. Camera resolution: 640 x 480
 - e. Frame frequency: 25fps
 - f. Target detection range of tank type, with thermal contrast of object relative to background of at least 2°C , thermal imaging camera is not less than 6500 m (side view)
 - g. Spectral working range camera: 8...14 μm
4. - **laser rangefinder,**
 - a. Measurement Range: 50...4 000 m
 - b. Typical measurement range Man Size Target (0.75 m x 0.75 m, Albedo 30 %, 10 km Visibility) ≥ 2.000 m

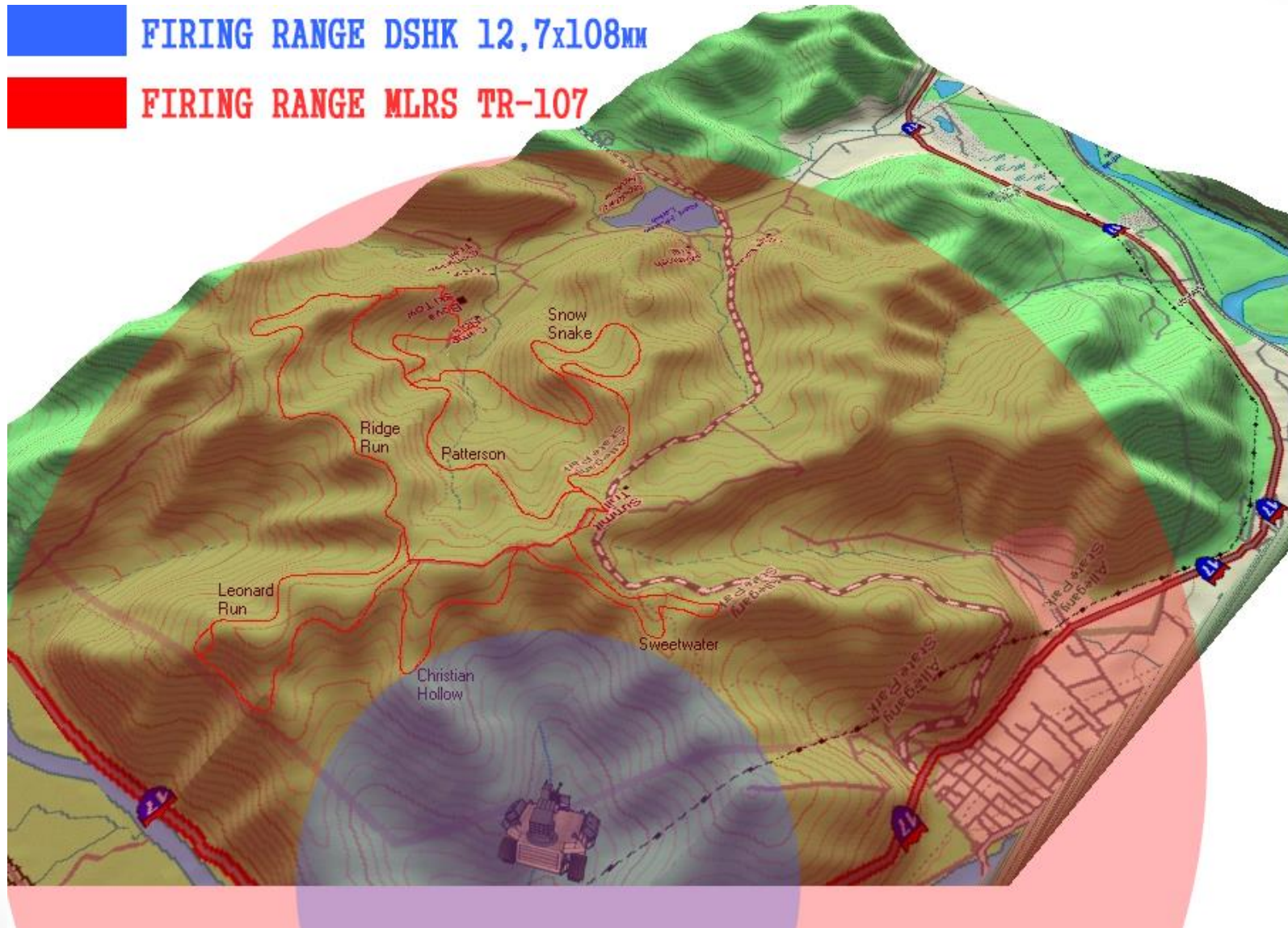
Efficiency of Weapons

UGV SCORPIO



FIRING RANGE DSHK 12,7x108mm

FIRING RANGE MLRS TR-107



Mobile complex of surface recognition and ECM "JAB"

Complex provides:

- automatic detection (with radar) and receiving detail information (with visual channel) about surface moving targets geographically referenced and with output of the information to command center;
- automatic affixment of the complex on the terrain with the help of satellite navigation systems; calculation and record route traffic at PC;

Technical details:

Total transmitted power of the jammer	up to 1300 W
Quantity of jammer sub-channels	up to 14
Jammer frequency bandwidth	(20-2500) MHz (up to 6000 MHz – option)
TV channel	36x
Navigation systems suppression	GPS, GLONASS, GPS+GLONASS
– vehicle	6,6 km.
Radar detection range:	
– person	3 km.
– vehicle	6 km.
IR channel detection range:	
– person	2,4 km.
Operating temperature	-20...+50 C
Options	Radio capture equipment, remote workplace, UAV, signalling complex, communication and data exchange with command center

Radar "BISKVIT-KB"

"Biskvit-KB" is meant for radar reconnaissance of positions of mortars, multiple-launch rocket systems, high-caliber weaponry and automatized transmission of radar data via communication channels to perspective automated systems and ACPs.

The radar is performed on the base of digital active antenna array and can be installed on LAVs, common vehicles or stationary objects.

Detection range:

mortar shells 120 mm – up to 15 km;

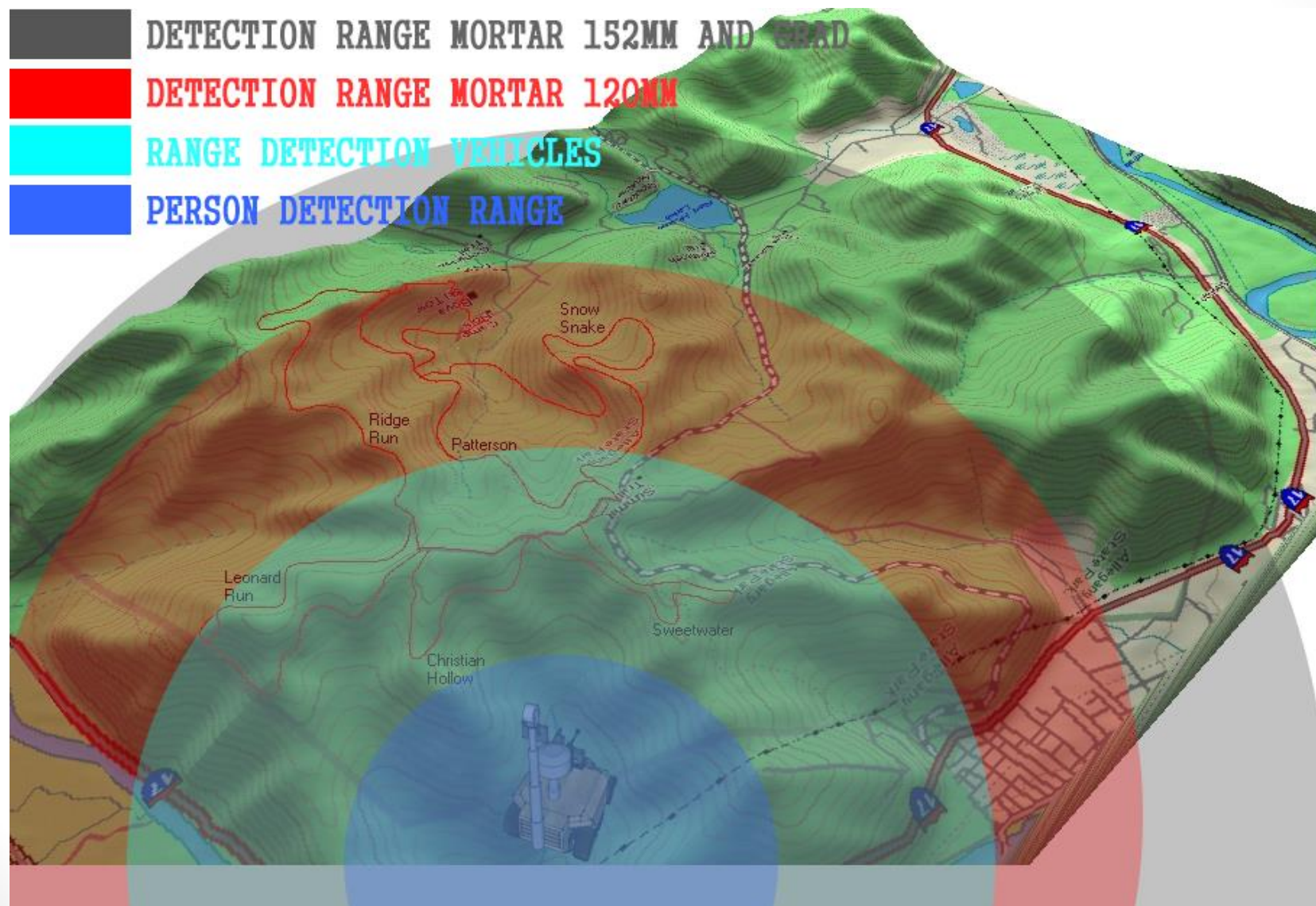
artillery shells 155 mm – up to 20 km;

MLRS rockets of "Grad"-type – up to 20 km;



Efficiency of Radars

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SYSTEM DETECTED LANDMINE

UGV SCORPIO



Counter-IED and Counter Mine Suite (CIMS) is an integrated protection system for detection of surface and underground IEDs, mines, and roadside bombs. The CIMS suite was designed under the guiding principle that no single sensor can provide the adequate detection probability and low false alarm rate required by today's operational C-IED needs. The integration of the sensor suite through a central processing and management system, delivers accurate synergetic real-time mapping of IED threats to the warfighter, requiring minimal training and decision making. The CIMS suite consists of the ADS - Above-surface Detection System, and MIDS - underground Mine and IED

Detection System.

CIMS Suite Subsystems

- CEM2S – Combat Engineering Mission Management System.

Combines and creates synergy between the various sensors,
improving detection capabilities and incorporating advanced

combat engineering mission management ADS

- SIDER (Surface IEDs Detection Radar) – innovative SAR radar

which provides detection of surface IED and mines
deployed

in front or on the sides of the vehicle

- GPODS (GigaPix Optical Detection System) – advanced

electro-optical capabilities for detection of IED and
mines

deployed on the ground in front or on the sides of the
vehicle

Medium wave infrared multispectral IEDs investigator

- MIDS advanced unified detection logic of a metal
detector

with a Ground Penetrating Radar (GPR)

Features

- Integrated multi sensor detection suite
- High-performance detection capabilities of surface and underground IEDs and mines
- 270deg early warning coverage of the combat platform
- Simple user operation
- Works and operates at varying vehicle speeds
- Installed on manned or unmanned platforms
- Day and night, all weather operation
- Disguised IED detection capabilities
- Automatic cueing of the investigating sensors
- Clean Route recording capability of obstacles, IEDs and mines
- Accommodates countering techniques and hard kill systems tailored to customer requests

