

THE UGS NETWORK SOLUTION

M-UGS® is a cutting-edge monitoring system. It is based on a set of ground sensors linking themselves into an ad hoc wireless network, and capable of sending alerts to a central monitoring station responsible for collecting and displaying information gathered in a geo-referenced map.

M-UGS® ground sensors are connected to each other by means of a meshed wireless network. Sensors can be combined as desired and include:

- Seismic sensors (MEMS accelerometers or geophones) to identify ground vibration caused by pedestrians or vehicles;
- Magnetic sensors (MEMS magnetometers) to monitor movement of metal objects such as vehicles;
- Acoustic sensors to detect targets by specific acoustic signatures (noise of engine, tracks, etc);
- X-Band Doppler radar sensors to detect movements of objects in a narrow field of view;
- GPS receivers for sensor geo-positioning, build into the above sensors.

M-UGS ADVANTAGES:

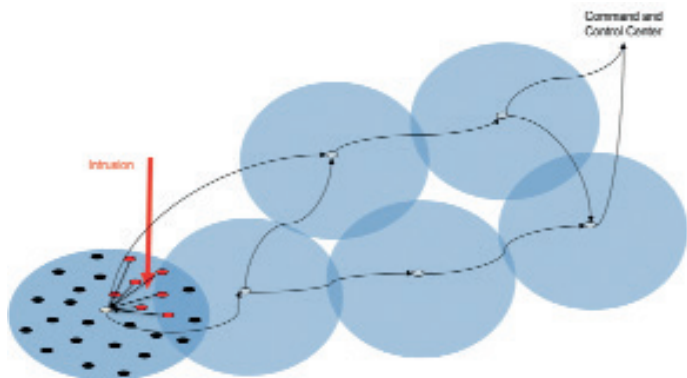
- Battlefield monitoring and force protection;
- Critical infrastructure protection (e.g. airports and runways, defense sites, industrial sites, utility companies, mining corporations);
- Border and wide area protection (e.g. border security, natural reserve surveillance);
- Special events monitoring (e.g. conferences, parades);
- Illegal activities monitoring (e.g. illegal immigration, illegal logging, trafficking);
- Once installed the system is fail safe and left to self operate;
- Invisible
- No maintenance needed
- Detection probability 95% (cumulative)

M-UGS®

Border intrusions are identified by corresponding sensors, analyzed and fused within the sensor network, communicated through the sensor network which is then instantly directed to the command and control system.

Information received from the sensor network is GPS based and contains classification information about the type of intrusion.

Information reception is not just limited to a single command and control center.



TECHNICAL DATA

SYSTEM	M-UGS®
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Water	Waterproof (IP 67)
Service	No maintenance needed
Temperature	-31°C - +85°C
Humidity	Up to condensation point

SEISMIC SENSOR

Detection range	5 - 20 m (*)
Sensitivity	28.8 V/m/s (0.73 V/in/s)
Type	Geophone

GPS

Channel	12 channel/satellite
Protocol	NMEA-0183
Technology	SiRF III technology
Baud rate	9.600 bps & 19.200 bps
NMEA rate	GGA, GSA, GSV, RMC, VTG
Message rate	1 second
Receiving altitude/speed	Up to 18.000 m/s up to 515 m/s

MAGNETIC

Detection range	5 - 20 m (*)
Sensitivity	0.8 - 1.2 mV/Gauss
Bandwidth	DC - 5 MHz
Resolution @ 50Hz	120 µgauss

DOPPLER RADAR

Detection range	5 - 200 m (*)
Design	Proprietary-based security technology
Type	X-Band Doppler radar motion detector

ACOUSTIC

Detection range	25 - 100 m (*)
Sensitivity	-42 dB @ 1 kHz
Bandwidth	100 Hz - 800 Hz
Type	Omnidirectional MEMS microphone

COMMUNICATION

Type	Single chip transceiver for ISM and SRD frequency bands
Transmitter type	QPSK UHF transmitter/receiver
Tuning range	300 MHz - 2.4 GHz
Type	Frequency hopping

(*) Depending on type of intrusion

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LEONARDO Germany GmbH
 Raiffeisenstrasse 10, 41470 Neuss, Germany
 Tel: +49(0)2137 782-0, Fax: +49(0)2137 782-11
 info@leonardogermany.com
 leonardogermany.com

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