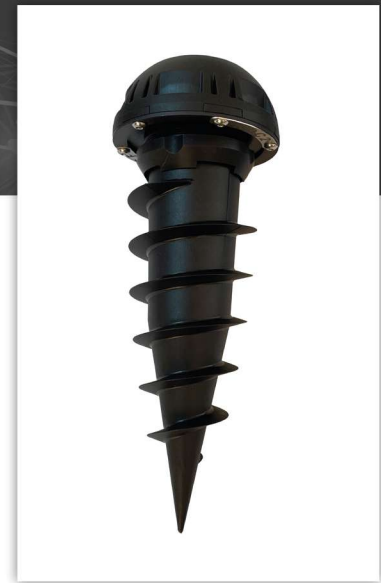# RDC2
UNATTENDED GROUND SENSORS

COVERT REMOTE DETECTION AND CLASSIFICATION SYSTEM

RDC2 is a passive, networked, wide surveillance system that provides continuous monitoring of vulnerable locations, perimeters and operations.
Its lowpower mesh communications, ease of deployment and ability to support multiple sensor types make RDC2 ideal for surveillance and security in remote locations where power and communications infrastructure are limited.

KEEPING AN EAR TO THE GROUND

RDC2 is an Unattended Ground Sensor (UGS) system for covert monitoring of extended perimeters, border regions and remote assets.It is designed around a very low power mesh network that is self forming and self healing, creating a robust and secure platform for transmitting alarm events.

RDC2 includes an innovative seismic sensor node in a unique one piece design, with intelligent processing for target detection and classification in most terrains.

With a low profile, internal antenna and rapid deployment design, RDC2 nodes are simple to conceal for covert deployments. Exceptional power efficiency is available on a single internal battery, with over the air configuration of sensitivity for minimal in eld service. Alternative sensor nodes allow connection of external sensor types (such as PIRs) to extend the applications of the platform. Nodes transmit alarms back to a master node, which can also be connected to EdgeVis Shield surveillance hub for camera integration and backhaul of alarms.

PRACTICAL OPERATIONAL BENETS

• RDC2 is extremely flexible, allowing additional nodes to be added to an existing network. The EdgeVis Shield client allows the user to locate the node positions on a map and to visualise the radio connections and signal strength between nodes. It also reports the radio performance in terms of message success. Other tools enable the nodes to be reconfigured in the field and uniquely to measure the background seismic noise.

Its compact form factor, ease of deployment, intelligent target classification (personnel, vehicles and digging) and falsealarm filtering ensure that RDC2 is simple and reliable in operation – with a minimal training requirement. It is also simple to incorporate RDC2 into a range of solutions, making it a practical, as well as costeffective, UGS option.

KEY FEATURES

• Unique form factor, allowing rapid deployment and concealment of sensor nodes (in under one minute)
• Lightweight system consisting of seismic sensor, alternative and master nodes – easily carried by a single person
• Lowpower, meshnetworked communications – self healing and self forming (sensor nodes automatically identify the most robust comms path to the master node)
• Exceptionally long battery life – sensor nodes can be deployed for around one year on a single battery
• Low cost of ownership and minimal training overhead compared with conventional military UGS systems
•Supports triggering of local PTZ cameras, providing target confirmation, identification and tracking (allowing live video streaming of target)
• A network map in the EdgeVis Shield client assists in the deployment of nodes

OPERATIONAL DOMAINS

RDC2 is flexible enough for use in civil and military applications
– wherever conventional security measures are impractical. Its innovative design makes it ideally suited to covert applications:
• Force protection and forwardoperating base security
• Highvalue asset protection (Oil and Gas, CNI, VIP)
• Temporary security or augmentation of fixed security

RDC2

UNATTENDED GROUND SENSORS

SYSTEM INFORMATION

Key Functions: Detect, classify, conrm, identify and track human, vehicle and digging activity

Key Components:
- Seismic sensor nodes with innovative screw design
- Alternative sensor node with external open/closed relay connection (PIR etc.)
- Master Node: Communications gateway node for network alarm/monitoring outputs
- Sensor Node Deployment Tools
- EdgeVis Shield Client Application
- Staging Tool network setup application
- RDC Config infield node configuration application

MASTER NODE (NETWORK GATEWAY)

Wide Area Network: Direct connect to laptop or interface into cellular, SATCOMS and other networks via EdgeVis encoder
Power Source: External battery (5 to 35V max)
Operating Temperature: -20°C to +70°C

SENSOR NODE

Typical Classification Range: Personnel up to 30m, vehicles up to 100m and digging up to 30m (range varies depending on terrainand environmental conditions)
Battery Deployment Life: Mesh Mode 12 months typical, Star Mode 18 months typical
Power Source: Replaceable D cell lithium battery
Operating Temperature: -20°C to +70°C
Node Weight: <500g
Ingress Protection: IEC 60529 IP68 at 1m for 8 hours

NETWORK COMMUNICATIONS

Radio Frequency:
- Europe: 865-868MHz
- North America: 903-927MHz
Standards Compliance:
- ETSI: EN300 220 and EN 301 489
- FCC: 47CFR part 15
Network Characteristics: Selfconfiguring, self-healing (with remote monitoring of network)
Networking Modes:
- Mesh large, complex networks
- Star extended battery life and low probablilty of RF intercept

Additional sensor inputs (PIR, Ground Radar)

SSN or ASN

Multiple Cameras (slew-to-cue)

Low profile ruggedised BGAN terminal

SATCOM

EdgeVis Live Server

TVI input + device control

Master Node

EdgeVis Live HD-R700

Cellular network

TVI streams (real-time video)

Handheld devices

PC-based Command and Control