

## Integrated Surveillance System (ISS) – MEDUSA

The most important thing we build is trust



The Integrated Surveillance System (ISS) – MEDUSA provides the user with the capability to observe key Lines of Communication (LOC), Named Areas of Interest (NAIs) and Target Areas of Interest (TAIs), micro-terrain choke points and critical areas of interest in order to inform, improve and affect the overall intelligence picture and deliver the higher commander's intent. Key to MEDUSA is the ability to rapidly deploy a Surveillance Module, enabling the user to conceal communications and cameras in pre-fabricated hides or indigenous materials. Such hides will blend into the environment, providing persistent day/night and all weather video observation of the target area.

MEDUSA is comprised of a modular suite containing a Base Monitoring Station (BMS), 4-off Mobile Monitoring Stations (MMS), and 4-off Surveillance Modules (SM) comprised of a modular suit of cameras, transceivers, Unattended Ground Sensors (UGS) and hides. Both stations utilise Cobham's proprietary secure COFDM video radio transceivers, Unattended

Ground Sensors (including Passive Infrared, Magnetic, Seismic and Acoustic), fixed and PTZ cameras in order to provide appropriate mission flexibility for Line of Sight (LOS) and Non Line of Sight (NLOS) operations.

MEDUSA limits the exposure and number of personnel to hostile actions by enemy or criminal elements by conducting remote, secure, video surveillance of the target area. The threat from Blue Forces setting an obvious "Pattern of Life" due to operational maintenance will be greatly reduced through effective power management of the concealed and/or overt cameras, secure COFDM video radio transceivers and UGS triggers. The combination of power management and specialist batteries provides the user with a greatly extended mission duration, with 4-hours of triggered video transmission per day, before requiring replenishment.

### Key Features:

- Modulation Scheme: Coded Orthogonal Frequency Division Multiplexing (COFDM). Highly robust and operationally proven high bandwidth communications
- Spectrum: Highly spectrum efficient enabling high-quality, low latency, video transmission (MPEG4)
- Range: Line of Sight: >7 to 30 miles (dependent upon the height of the receive antenna)
- Range: Non Line of Sight: >1 mile (dependent upon the height of the receive antenna)
- COTS Technology: MEDUSA is comprised of integrated COTS/modified COTS products drawn from proven communications and technology in-service with UK and US Forces
- Open Architecture, Modular and Scalable
- Encryption: Proprietary AES 256-bit encryption (subject to export licence approval)

## Integrated Surveillance System (ISS) – MEDUSA

### **Base Monitoring Station (BMS):**

Designed to be located at the Command Operations Centre (COC) and provides overall Command and Control (C2) of the surveillance operation and full Situational Awareness. It is used to control all deployed UGS, cameras and audio devices.

Common installations for the Base Monitoring Station would include

- Forward Operating Bases
- Patrol Houses
- Field Headquarters
- Mobile Command Posts
- Sniper/OP Rear Protection

A complete ISS contains one (1) Base Monitoring Station.



### **Mobile Monitoring Station (MMS):**

Provides the lightweight mobile Command & Control Base Station for the Marine displaying own position, sensor position, co-ordination and monitoring of all visual and audio events/triggers.

#### **Mapping:**

- Both BMS and MMS have geo-referenced 2 & 3-D digital terrain mapping capability, detailing all deployed sensors
- During an event this facility enables full situational awareness for the Commander including the direction and nature of the threat
- Real-time video can be viewed from the deployed Surveillance Modules

A complete ISS system includes four (4) Mobile Monitoring Stations.



### **Surveillance Module (SM):**

Modular kit consists of the following:

- Camera: PTZ, Fixed, Low-lux, TI
- Camera Control Interface Unit (CCIU): Provides the ability to interface both a camera (PTZ or fixed) and microphone to a 100mW/1W Amp TX.
- PTZ "slew to Cue"
- UGS: PIR, Magnetic, Seismic, Audio, Break-wire
- UGS Transmitter: The battery powered UGS transmitter has a tamper alarm which indicates that the unit has been compromised
- Concealments & Mimicry: RF transparent hides (wood, rock, etc)

A complete ISS contains four (4) Surveillance Modules.



### **Summary**

- Supports the continuous monitoring and recording of selected targets, real and potential threat areas
- Rugged links outperform WiFi and WiMax in security applications
- 2D and 3D digital terrain mapping details all deployed sensors
- Variety of rapidly deployable, easily concealed and user configurable sensors and cameras for mission flexibility

For further information on our Military & Force Protection Products, please speak to your Account Manager.

Alternatively, contact:

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## Sniper Surveillance System (S<sup>3</sup>) – TISIS

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Photo Courtesy of U.S. Army by Cpl. Bertha Flores, U.S. Army

The Sniper Surveillance System (S<sup>3</sup>) – TISIS allows swift, bi-directional transfer of video, audio (voice over IP) and data files between a covert observation/sniper position and a static or mobile command/control post.

Targets of interest can be positively identified and the team 'in contact' can act whilst remaining covert. Information gathering can be done at significant stand-off ranges with vital data exchanged in near real time with no need to risk compromise or break cover. The modular and robust system is simple to configure and easy to use. TISIS provides a rapidly deployable ground surveillance capability to enhance operational situational awareness.

### Key Features

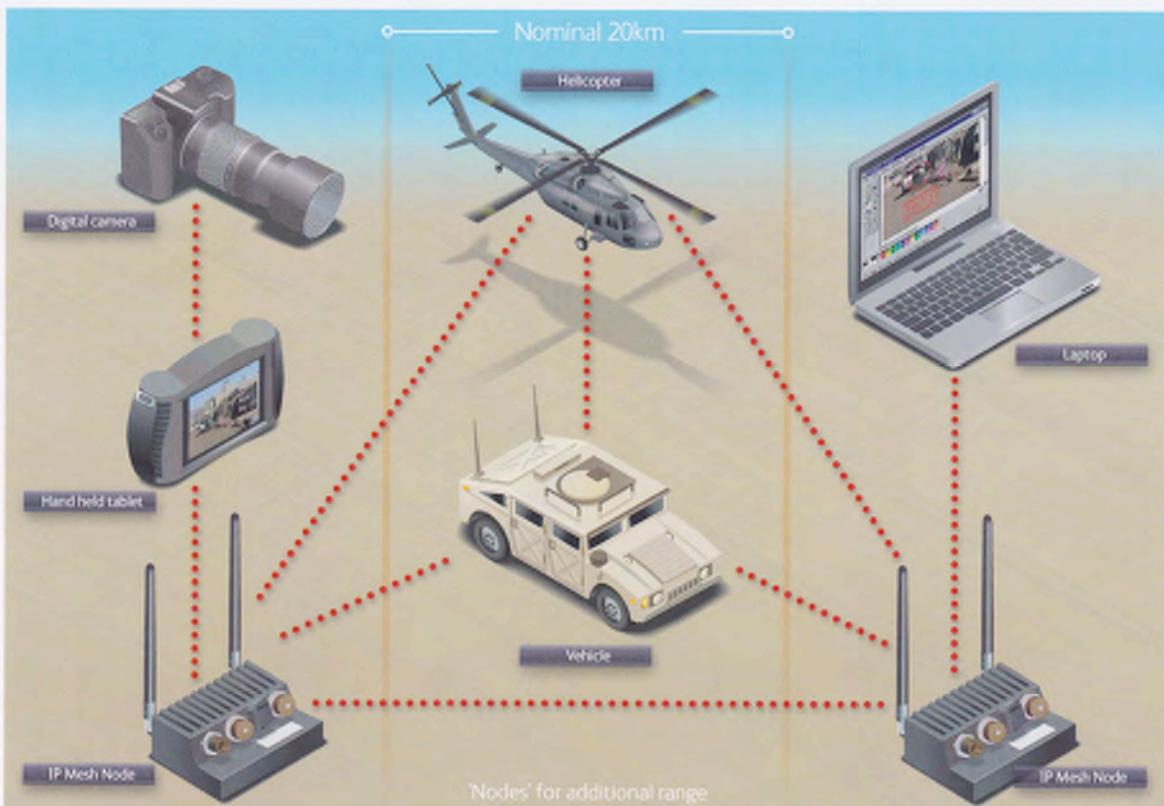
- Intuitive and simple to operate
- Secure, stand alone, ad hoc network
- Self forming, self healing COFDM IP Mesh
- Spectrum efficient, single frequency operation
- Bi-directional automatic data exchange
- Timely and accurate Intelligence transfer
- Nominal ranges > 20Km LOS  
    > 1Km NLOS
- User manipulation of captured digital stills
- Ruggedised COTS components
- Windows OS environment; familiar to users
- 2 COFDM diversity for up to 12 IP Mesh nodes

### System Components

Ultimate system configuration is user-defined. A typical system configuration could comprise:

- 4 (off) IP Mesh Radio Nodes
- Ruggedised Tablet PC (observation position)
- Data Manipulation and Transfer Software
- Command/Control Post Ruggedised Laptop
- Digital Camera and Lens (customer specified)
- Patrol Sack for Observation Position
- Antennas and Cables

## Sniper Surveillance System (S<sup>3</sup>) – TISIS



### Summary

- Near real-time exchange of annotated intelligence imagery
- No need for SATCOM backhaul
- Typical mission duration: 3 days using two hours' file transfer per day from a single battery
- Full frame rate video transmission option
- Final mission configuration to be discussed with Cobham
- Mission flexibility enabled through COFDM LOS/NLOS waveform

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