VIDEO

CONTROL

SENSOR MANAGEMENT SUITE

VIDEO

VIDEO

CAMERA INFORMATION SERVER

CONTROL

CONTROL

VIDEO

VIDEO

CONTROL

C2 DATABASE

HOSTILE FIRE INDICATORS

ALARMS

ALARMS

TRACKS

ALARM MANAGEMENT SERVICE

ALARMS

VIDEO

CONTROL

C2 CLIENTS

TRACKS

RADAR VIDEO

TRACKER

TRACK MANAGER

VIDEO

CONTROL

C2 CLIENTS

CONTROL

TRACKS

Force Protection Situational Awareness and Sensor Management System

Ultra Electronics Command & Control Systems (UECCS) provides protection systems against terrorist and insurgent threats for service personnel worldwide, through the delivery of cutting edge defence solutions. UECCS delivers innovative, proven technology into arenas such as Force Protection, Surveillance and Maritime Security to governments and defence agencies around the world.

UECCS specialises in the provision of force protection capability specifically in the arena of Forward Operating Base (FOB) protection. With over ten years of experience in providing front-line troops with equipment and systems, UECCS is currently providing solutions that are deployed by key NATO countries, in operational theatres, for the protection of their Forward Operating Bases.

■ Tactical or Strategic Tracking Display
■ Multi Sensor Management and data Fusion
  - Radar
  - Electro Optical and Thermal Camera Systems
  - Unmanned Ground Sensors
  - Hostile Fire Indicators
  - Acoustic & Flash Detection Sensors
■ Vehicle and Personnel Tracking Capability
■ Point of Fire Indication
■ Scalable Solutions
  - observation posts to forward operational bases.

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Key to the effective protection of Forward Operating Bases is the efficient monitoring of the surrounding area. UECCS can provide both off the shelf or bespoke systems solutions which meet the clients' requirements. By providing software solutions for integration with existing sensor suites or complete sensor systems, UECCS offers a professional and responsive service to its clients.

Processing of all sensor data from the forward operating base defensive systems is carried out by UECCS's Situational Awareness Management System (SAMS) which includes Sensor Management and Area Monitoring solutions. Fusion of the sensor data allows for automatic tracking of several hundred individual targets at rapid update rates. This includes the ability to slave one sensor to another, for example, allowing a camera to follow a specific target which has been identified by the system, utilising data received from a radar unit. SAMS core command and control architecture is both robust and flexible, allowing for the addition of newly evolving sensor suites to be integrated as required. Supported sensor packages include Unattended Ground Sensors, radar, electro optical and infra red camera suites, acoustic and flash detection systems. By fusing the data streams together UECCS produce systems which improve the

effectiveness of the operator whilst reducing false alarm. By integrating solutions effectively, SAMS provides reliable, round-the-clock reconnaissance of areas measuring upwards of 20 km in diameter.

Given the widely dispersed nature of the operational theatre, ISR provided to static base locations can be integrated with the overall ISTAR picture. In this way all deployed sensors can, in themselves, be part of a broader ISTAR construct. Similarly, as the ISTAR picture within operational and strategic HQs gains ever increasing fidelity and accuracy, that picture may be shared with the lowest tactical level formations. This creates a genuine, enhanced, shared Situational Awareness thereby facilitating Mission Command. SAMS provides a single, open, reconfigurable and scalable architecture, facilitating a sensor agnostic approach to bi-directional data transfer and visualisation.
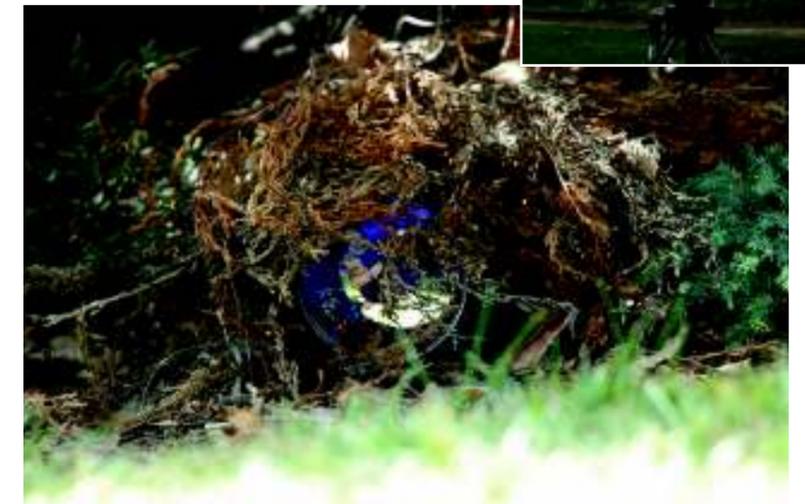

Remote Ground Sensors

SAMS supports various Unattended Ground Sensor (UGS) suites. These provide soldiers with unprecedented situational awareness on the battlefield through improved target detection, location and classification. UGS units can form a modular network of autonomous distributed sensors including seismic, acoustic, electro-optical and miniature ground surveillance radars. These integrated sensor suites can be used to perform mission tasks such as perimeter defence, surveillance, target acquisition and situational awareness. With mesh networked "self healing" communications capability these sensors are extremely suitable for rapid deployment to form part of an integrated solution to Forward Operating Base and observation post protection. By monitoring areas of optical or radar dead ground these sensors can ensure that full surveillance is maintained in difficult terrain.

Optical, Thermal and IR

A wide range of camera systems are supported by SAMS. These cameras range from small, light-weight and covert units to large systems for long range overt/covert surveillance missions either in the visual or infra red spectrum. Cameras can be integrated to other sensor suites thus allowing automatic alignment of the optical system on a target identified from another sensor suite. This facilitates automatic tracking of identified targets for continual surveillance. Integration of specific software allows for facial recognition and automatic number plate recognition to be undertaken at range. Software such as that developed by the University of East Anglia allows for automated lip reading to be conducted on targets within the field of view over shorter distances. Integration of TI or low light sensors allows for operations to continue in near or total darkness.

Radar

UECCS integrates a range of Ground Radar Systems (GRS), from various manufacturers, into the SAMS capability. These include solid state Doppler radar systems which are capable of detecting a human target at a distance of 3-10 km. Airborne threats (such as ULM or UAVs) can be detected and tracked at distance, while vehicles can be detected and tracked at a distance of 10 – 20 km. These radars offer 24-hour battlefield surveillance under all weather conditions. Man-portable Surveillance and Target Acquisition Radars are also supported within SAMS. These radars are light-weight, all-weather battlefield Doppler radars. They are capable of detecting, recognizing and tracking helicopters, slow moving fixed-wing aircraft, tracked and wheeled vehicles and

troops. These types of radar are also ideally suited for border surveillance operations where detection of smuggling and illegal immigration activities is required. Critical infrastructure protection and security can also be augmented by deployment of GRSs.

Hostile Fire Indicators

With the integration of Hostile Fire Indicators (HFI) enemy firing positions can be located and targeted within seconds. HFI systems are capable of detecting both small arms fire and larger calibre weapons such as RPGs or Mortars either by radar, acoustic or flash detection. The data gathered from these systems can be fed into SAMS and enemy positions plotted in real time.