

JHSR looks at the latest emerging technologies



Rapiscan Systems' Research and Development division, Rapiscan Laboratories, has received a contract for approximately USD2 million from the US Department of Homeland Security's Domestic Nuclear Detection Office (DNDO). Under the terms of the contract award, Rapiscan will complete the development of an advanced technology that would be capable of detecting weapons of mass destruction such as nuclear weapons and radiological dispersal devices. The technology is to be incorporated on the Rapiscan Eagle Portal drive-through x-ray imaging system and used for the inspection of trucking and shipping containers. The enhanced Rapiscan Eagle Portal, incorporating the company's proprietary Auto-Z algorithm which provides automatic detection of high-atomic-number materials associated with nuclear weapons as well as shielding materials, recently completed a preliminary evaluation conducted by government experts at the company's testing facility where it was able to detect simulated nuclear threats in a variety of cargo. Upon completion of the contract, it is expected that the DNDO will deploy the system at a US port for pilot testing where it will be operated under controlled conditions within the port's normal stream of cargo commerce.

GE Security Inc's Homeland Protection business has introduced StreetLab Mobile, a point-and-shoot handheld unknown substance identification system. The Raman spectroscopy-based device's chemical substance identification capability is expected to be complemented soon by the addition of a biological substance identification capability, making it a combined chem-bio detector. According to GE Security, StreetLab Mobile consumes little or no substance sample and uses extended-range wireless technology to allow first responders to quickly deliver results from the field to tactical commanders at remote command centres. GE says that StreetLab Mobile is presently capable of identifying more than one thousand potentially dan-

gerous chemicals, including toxic industrial substances such as formaldehyde and liquid and solid explosives, as well as the chemical components of common explosives. It can also identify chemicals such as Cresol and Benzene. It is expected that StreetLab Mobile will be able to recognise many biological substances when the bio component becomes available. The StreetLab Mobile chemical identification unit (below) is available for customer orders now. These units will be upgradeable to dual mode versions when the biological substance identification capability becomes available later this year.

EADS Defence and Security Systems Ltd has introduced a new cryptographic product range with different levels of security assurance for government and industry. The new security technology, Ectocryp, uses more than one million lines of certified code and EADS DS says that some of the earliest applications will be countering terrorism and organised crime. Historically, sensitive data used by government has needed to be sent over stand-alone networks which can be slow, costly to set up and maintain, and vulnerable to hacking. EADS DS says Ectocryp enables governments to use existing networks and the Internet securely. Ectocryp could be used in systems for undercover surveillance operations where field agents have not had access to secure networks in the past, but need to access data quickly. EADS DS also says the technology can be deployed to allow secure live video streaming over the internet and so could be deployed if suspects are apprehended far from the anti-terrorist base.

Swedish threat detection and security technology company **Portendo** launched its new standoff explosives detection system at the Counter Terror Expo '09 in London, UK in February. P.Eye functions by using a laser to energise molecules in or on an object, thereby creating a scattering of light molecules that is collected by Raman spectroscopy (a technique

that analyses changes in laser light bouncing off individual molecules to indicate their chemical composition). The scattering produces a spectrum that is analysed and matched with a database of selected substances. Developed in co-operation with Swedish defence research agency FOI, the first prototype was delivered to BAE Systems Bofors for test integration in weapons and sensor platforms. Portendo plans to start shipping P.Eye for non-military applications in the second half of 2009.

Cellcrypt Ltd, supplier of mobile and fixed voice security solutions, has developed a one man portable secure PBX solution for military, blue-light and crisis management applications. Cellcrypt's new PBX IAB is a field deployable COTS solution that supports secure Voice over IP (VoIP) landline-to-landline and landline-to-mobile calls. Cellcrypt says this is designed to quickly establish a private, secure fixed and mobile communications telephone network in the field, linking any number of commercial mobile devices and fixed line phones anywhere in the world. Weighing around 10kg, Cellcrypt says the PBX IAB is suitable for use in all weather environments with the appropriate housing. Alternatively, Cellcrypt PBX IAB can be installed in a vehicle using conventional mountings and rack systems or more discreet under-seat placement.

Allen-Vanguard Corporation has released its next-generation Electronic Countermeasures (ECM) system. The new platform is a hybrid multi-function system with next-generation radio frequency sensing and jamming (ESM/ECM) protection against radio controlled improvised explosive devices. Allen-Vanguard says its multi-role capability is fully networkable, with scalable, open software-definable architecture. The system also provides C4I compatibility. Allen-Vanguard has a first order for a limited quantity from an unspecified national security agency in North America. The company also stated that it is in discussions with major defence

electronics companies with a potential interest in licensing or co-venturing the exploitation of this new technology.

Microsoft will launch a software and services initiative, Citizen Safety Architecture (CSA), at its Public Safety Symposium on 14 April in Redmond, US. Microsoft claims CSA will improve multi-agency effectiveness through collaboration and information sharing to help prevent threats to citizen safety and to prepare for and respond to critical incidents.

CSA includes Microsoft's Intelligence Framework (IF), a software platform that incorporates database, portal, geospatial, and data analysis tools to facilitate collaboration and information sharing in enhanced security environments. Andrew Hawkins, Global Public Safety and Justice Solutions Lead for Microsoft Corporation told *Jane's*: "A key challenge is the means to deliver the real 'need to share' imperative while ensuring that this only extends to individuals that are security cleared and trusted."

CONTROP Precision Technologies Ltd has developed a pitch, yaw and roll gyro-stabilised payload for use on tactical aerostats. The three-axis SPEED-A (below) includes a day and night camera as well as a laser range finder. Due to the fact that the tactical aerostat is relatively near to the ground (500 to 3000 feet), the frequent gusts of wind and vast amount of movement of the balloon, require a stabilised payload.



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