

# PEO IEW&S — Providing Capabilities to Enhance Warfighter Survivability

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**F**ostering an environment where needs of the Soldier are met in both the present and the future is the challenge the Program Executive Office Intelligence, Electronics Warfare, and Sensors (PEO IEW&S) excels at meeting. Headquartered at Fort Monmouth, NJ, Program Executive Officer BG Thomas Cole and seven project/product managers lead a team of Soldiers, DOD civilians, and contractors in the development and sustainment of systems that cover the gamut of military needs.

PD ASE's mission is to equip all Army aircraft with self-protection systems that will ensure survivability across the range of operations. CH-47 ASE includes CMWS and APR-39. With the entire aviation force equipped with CMWS, the enemy quickly learned that their missiles were no longer effective. (U.S. Army photo courtesy of PEO IEW&S.)

“Having the opportunity to lead the IEW&S team is extremely special because of the amazing impact we have on Soldiers, Sailors, Marines, and Airmen,” said Cole. “You’d be hard-pressed to find a Soldier in Iraq or Afghanistan who is fighting in the global war on terrorism [GWOT] without directly using or benefiting from a system we are responsible for fielding and sustaining.”

PEO IEW&S’ success is achieved through the ability to rapidly transform requirements and requests from the field into reality. The PEO budget is equally divided between programs of record such as Distributed Common Ground Systems-Army (DCGS-A), Aerial Common Sensor (ACS) and Common Sensor Payload, and Quick Reaction Capabilities (QRC) — including Rapid Aerostat Initial Deployment (RAID), Base Expeditionary Targeting and Surveillance Systems-Combined, and Task Force (TF)

Observe, Detect, Identify, and Neutralize (ODIN) systems.

The following are the teams that contribute to the overall continual success of PEO IEW&S.

### Product Director Aircraft Survivability Equipment (PD ASE)

PD ASE’s mission is to equip all Army aircraft with self-protection systems that are modular, integrated, and optimized to ensure survivability across the range of operations.

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The most sophisticated ground-to-air threat systems in the world today use radar detection and radio frequency guidance systems. The objective of the PD ASE Radio Frequency (RF) Countermeasures Office is to provide and improve RF survivability for

Army aviation. The accurate detection, identification, prioritization, and

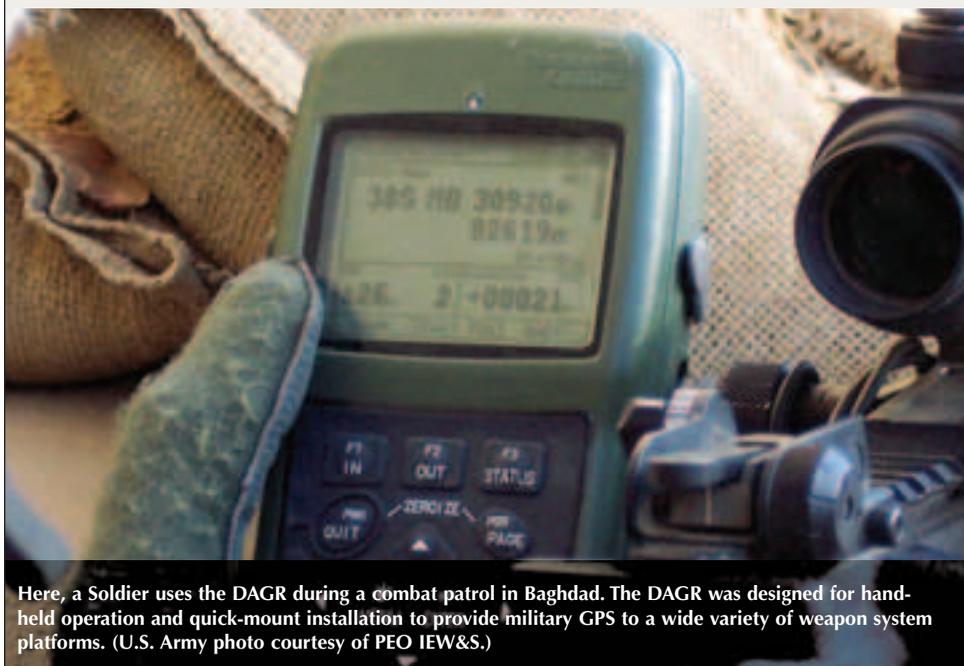
reporting of RF emitters in the operational environment provide Army aircrews one of many facets of the situational awareness (SA) required for mission success.

Many modern aviation threat systems are either laser-guided or laser-aided (e.g., laser range finders). Laser warning increases aircrew SA and is designed to enable the aircrew to take appropriate actions. The latest Army laser warning device is the AN/AVR-2B(V) Laser Detecting Set (LDS). The LDS is vital to force protection and provides warnings to aircraft pilots of laser threats and laser-aided air defense networks such as surface-to-air missiles, air-to-air missiles, and anti-aircraft artillery.

Following the loss of a CH-47 Chinook helicopter to an enemy missile in November 2003, then-Acting Secretary of the Army R.L. Brownlee called for a plan, “... to equip all our helicopters in Iraq and Afghanistan with the most effective systems we have in development or procurement.” In response to this challenge, Common Missile Warning System/Improved Countermeasure Dispenser (CMWS/ICMD) production was immediately accelerated. Today, more than 500 aircraft are deployed in Southwest Asia with fully operational CMWS/ICMD systems that have flown more than 551,000 hours in combat theater.

### Project Manager (PM) ACS

Modernizing existing programs has been the mission of PM ACS since January 2006, when it assumed responsibility for modernization programs for the Guardrail Signals Intelligence (SIGINT) system and Aerial Reconnaissance Low Multi-INT system, and the System Development and Demonstration Program for the unmanned Tactical SIGINT Payload.



Here, a Soldier uses the DAGR during a combat patrol in Baghdad. The DAGR was designed for hand-held operation and quick-mount installation to provide military GPS to a wide variety of weapon system platforms. (U.S. Army photo courtesy of PEO IEW&S.)

With the growing urgent need for aerial reconnaissance, surveillance, and target acquisition (RSTA) in support of ongoing operations, PM ACS assumed responsibility for integration of multiple aerial RSTA QRC systems into TF ODIN ground equipment. This further led to PM ACS assuming management of the Constant Hawk and Highlighter aerial sensor platforms and development of the Aerial Reconnaissance Multi-Sensor System.

Recent developments within the PM office include Army Requirements Oversight Council approval of the ACS Capability Development Document, officially establishing Army requirements for the revised ACS program. ACS will provide SIGINT payloads to the U.S. Army Special Operations Command for integration on its air vehicle. PM ACS also completed successful fielding of the Guardrail Ground Baseline (GGB) equipment to four Aerial Exploitation Battalions while supporting ongoing operations. The GGB equipment significantly reduces logistics footprint and has allowed the U.S. Army Intelligence and Security Command to facilitate capability-based rotations tailoring Guard-rail capability to operational needs.

### PM Navigation Systems (NS)

PM NS' contribution to the warfighter is centered on its Meteorological Measuring Set-Profiler (MMS-P), Joint Combat Identification Marking System (JCIMS), and Global Positioning System (GPS).

The AN/TMQ-52A MMS-P uses a suite of meteorological (MET) sensors and MET data from communications satellites along with advanced weather modeling to provide highly accurate MET data. By providing accurate MET data through the Advanced Field Artillery Tactical Data System to the guns, MMS-P enables the artillery to have a greater probability of first round fire for effect with indirect fire.

With all the perils the fog of war could cause, the JCIMS assists in the prevention of friendly fire casualties. JCIMS provides Soldiers with a low-cost combat identification (ID) capability. JCIMS consists

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of Combat ID Panels (CIPs), Thermal ID Panels (TIPs), and Phoenix Infrared (IR) Lights. CIPs provide ground-to-ground and limited air-to-ground target ID. The TIPs provide air-to-ground and a limited ground-to-ground target ID capability. Phoenix Lights are IR blinking strobes visible through night vision goggles, which provide ground-to-ground and air-to-ground target ID.

With Soldiers constituting the majority of military GPS users, PM GPS manages most military GPS'. The PM is responsible for various receivers, including the state-of-the-art hand-held receiver, AN/PSN-13A Defense



Here, a Prophet vehicle stands with its mast extended in the streets of Baghdad. (U.S. Army photo courtesy of PEO IEW&S.)

Advanced GPS Receiver (DAGR), an embeddable state-of-the-art GPS receiver, the Ground-Based GPS Receiver Applications Module, and the legacy hand-held receiver — the AN/PSN-11(V)1 Precision Lightweight GPS Receiver. Since initial fielding of DAGR in FY04, more than 116,500 have been delivered to Army users. DAGR was designed for hand-held operation and quick-mount installation to provide military GPS to a wide variety of weapon system platforms.

### PM Night Vision (NV)/RSTA

PM NV/RSTA has the distinction of being responsible for the greatest number of systems within PEO IEW&S. The program is comprised of PM Forward Looking Infrared (FLIR), PM Robotics and Unmanned Sensors, PM Radars, and the RAID Office. All are dedicated to developing, providing, and supporting world-class tactical

sensor systems and sensor solutions that produce actionable information for U.S. and coalition forces to enable warfighter supremacy.

PM FLIR provides Soldiers with the Fire Support Sensor System, Driver's Vision Enhancer, AN/VAS-5, Multi-Platform Replacement Sight, Long-Range Advanced Scout Surveillance System, Close Surveillance Support System, and the Horizontal Technology Integration Second Generation FLIR.

PM Robotics and Unmanned Sensors develops, produces, fields, and sustains Army and DOD multipurpose RSTA sensors and sensor systems for unmanned and unattended air and ground applications in support of the 21st century warfighter. Supported systems include:

- Persistent Surveillance and Dissemination System-of-Systems.
- Persistent Threat Detection System.
- NS Microwave Tactical Surveillance System.
- Unattended Transient Acoustic Measurement and Signature Intelligence System.
- Rapid Deployment Integrated Surveillance System.
- Unmanned aerial vehicle Synthetic Aperture Radar/Ground Moving Target Indicator.
- Future Combat Systems Unattended Ground Sensors.

PM Radars provides centralized management of Weapon Locating Radar Systems developed to meet Army fire support requirements. The array of radars this PM supports includes the Firefinder Radars AN/TPQ-36(V)8 and AN/TPQ-37(V)8, Fire Support Digitization AN/TPQ-37, Lightweight Counter-Mortar Radar, and Firefinder Radar Enhanced AN/TPQ-36.

The RAID Product Office rapidly develops, tests, fields, and manages a low-cost, elevated sensor system that improves coalition force protection and enhances tactical decision making. Featured systems include the RAID, 17M Aerostat System, 107' Tower System, and Mobile Eagle Eye.

**PD Signals Warfare (SW)**

While focusing on warfighter needs, FY07 proved to be a very productive year for PD SW. With a combined \$677 million executed, PM Counter Remote Controlled Improvised Explosive Device (IED) Electronic Warfare (CREW) and PM Prophet, were able to contribute vital resources to the GWOT with PD SW.

PM CREW is responsible for developing and fielding ground-based electronic countermeasure devices that neutralize the pervasive IED threat encountered in *Operations Enduring* and *Iraqi Freedom (OEF/OIF)*.

PM CREW fielded more than 10,000 Duke systems to theater, bringing the total to more than 22,000 systems fielded to *OEF/OIF*.

The CREW team's Integrated Logistics and Supportability team won the 2007 Assistant Secretary of the Army for Acquisition, Logistics, and Technology Acquisition Excellence Award as the best team in the Equipping and Sustaining Soldier Systems category.

The Prophet serves as a 24-hour, day or night, all-weather, near-real-time, interoperable asset for the Army that

provides electronic order of battle and combat information to the warfighter. PM Prophet fielded 15 Prophet Block I Sensors and six Prophet Block I Controls in 2007.

**PM DCGS-A**

Allowing commanders and other decision makers to leverage multiple sources of information to synchronize the elements of Joint and combined arms combat power is PM DCGS-A's mission. DCGS-A enables and supports situational understanding to execute maneuver and effects, visualizing the threat and environment (terrain and weather), targeting and information operations, and integrating intelligence, surveillance, and reconnaissance (ISR) assets.

DCGS-A is the net-centric ISR component of the Army's Future Force Battle Command System and

DCGS-A provides access to theater and national intelligence collection, analysis, and early warning and targeting capabilities, and emphasizes the use of reach and split-based operations to improve accessibility to data and reduce the forward footprint.

the primary system for ISR tasking, posting, processing, and using information about the threat, weather, and terrain at the Joint Task Force level and below. It provides access to theater and national intelligence collection, analysis, and early warning and targeting capabilities. DCGS-A also emphasizes the use of reach and split-based operations to improve accessibility to

data and reduce the forward footprint.

DCGS-A consolidates the capabilities found in the following Current Force systems and will integrate select capabilities of the Digital Topographic Support System, Integrated Meteorological System, and Enhanced Trackwolf.

- All Source Analysis System (all versions).
- Counter-Intelligence/Human Intelligence (CI/HUMINT) Work Station and Human Domain.
- Tactical Exploitation System (all versions).
- Guardrail Common Sensor ground processors (all versions) (e.g., Intelligence Processing Facility, Guardrail Information Node, Prophet Control, Joint Surveillance Target Attack Radar System Common Ground Station).

### PD Army Space Program Office/Tactical Exploitation of National Capabilities (ASPO/TENCAP)

Allowing Soldiers to identify and track the high volume of potential threats they face in Iraq and Afghanistan is possible due, in part, to two PD ASPO/TENCAP systems.

The Handheld Interagency Identity Detection Equipment (HIIDE) is a hand-held, tactical, multimodal (iris, fingerprint, and face photo), biometric enrollment, and ID device. HIIDE provides users the ability to enroll 1,000 individuals and store up to 10,000 full biometric portfolios (2 iris templates, 10 fingerprints, and a facial image) to identify a subject.

HIIDE proved to be exceptionally well-suited for decentralized use across both special operations and conventional force operations in support of rapid target site exploitation, population enrollment (virtual local census), chokepoint



A Soldier acquires information using HIIDE equipment in Iraq. (U.S. Army photo courtesy of PEO IEW&S.)

identity establishment, and detainee screening. HIIDE device use at the squad level enables Soldiers and Marines to “enroll their neighborhood,” reduce insurgent ability to operate anonymously, and rapidly identify outsiders as a critical component of providing operational security.

The CI/HUMINT Automated Reporting and Collection System (CHARCS) provides collection and reporting automation support for CI/HUMINT information operations, investigations, interrogations, document exploitation, biometrics, and force protection mission requirements. It is

designed to support the commander’s ability to anticipate and react to a wide range of HUMINT and force protection threats and situations.

### The Future of PEO IEW&S

PEO IEW&S stands poised to continue thinking outside the box to provide Soldiers in the field the tools and equipment necessary to fight today’s war as well as those to come. “The Joint warfighter, along with our coalition partners, will continue to benefit from the outstanding ingenuity and forward thinking across departments, agencies, and industry,” Cole said. “Our ability to address the needs of Soldiers and provide them with the capabilities to enhance survivability and lethality in the most effective and financially responsible manner is paramount to our success,” he concluded.

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