Tagging, Tracking, and Locating (TTL)

The tagging, tracking, and locating (TTL) area encompasses: active beacons, coatings and stickers for passive detection, labeling targets from a distance, and maritime and terrestrial sensors. Technologies are being researched and/or developed to meet Combatant Commanders' (COCOMs) requirements with emphasis in: space based tracking and locating, narco-terrorist transportation detection, new beacons/blue force development, non-lethal aircraft tagging, maritime acoustic sensing, maritime tracking and locating, tags, and underwater tags. Developed technologies are being reviewed to ensure technical expertise, training, and on site installation time are minimized while reliability and accuracy are maximized.

There are several technologies in development nearing completion: air deployed remote alert sensor, counter narcotic acoustic buoy, and iridilog. The air deployed remote alert sensor is designed to be deployed from altitudes greater than 600 feet and detect people, light vehicles, and small aircraft. Counter narcotic acoustic buoy proto types were successfully tested in the Pacific Northwest. Pre-production buoys were constructed and tested off Key West, FL and the west coast of Colombia. The buoys performed poorly in the operational setting and are undergoing extensive review. Preliminary findings have revealed the vendor made mechanical and electrical modifications from the proto type versions to the pre-production versions that severely impacted performance. Solutions are being proposed to correct the findings. Iridilog is a satellite based GPS tracking device and data logger. It provides near real time position tracking or records the tracking information for later transmission. This equipment is commercially available to law enforcement and DOD agencies.

The CNTPO TTL program collaborates with multiple agencies both within DOD and the law enforcement communities. Any organizations interested in collaborating or desiring a more detailed briefing of technologies researched, developed, and/or under development are encouraged to contact CNTPO.

Counter-narcotics Technical Symposium: Pursuing Threat Solutions '04

On March 3rd and 4th the Counter-Narcoterrorism Technology Program Office (CNTPO) sponsored a technical symposium at the Joint Interagency Task Force South (JIATF-S) in Key West, Florida. The theme of the conference was "Pursuing Threat Solutions". The conference was attended by representatives of the Office of the Secretary of Defense, the Combatant Commanders (COCOMs), the Office of National Drug Control Policy, federal law enforcement agencies, as well as other members of the national counterdrug community. The focus of the symposium was defining the technology requirements from the COCOMs and JIATFs.

Over the course of the two day conference various command representatives presented requirements and key initiatives. Among the most pressing requirements are a real-time visualization tool to provide tracking, monitoring, status of blue forces and friendly collection assets operating within the AOR; a C3I system that would provide a better ability to store, mine and fuse counterdrug and biometric data; a better hidden compartment and contraband detection capability; an integrated wide area surveillance system; a significantly improved, all-weather, round the clock radar capability; improved high frequency direction finding; improved imagery; a real time tactical data link; and a non-lethal vessel stopping technology.

Following the presentations by command representatives, CNTPO briefed current technologies in Surveillance; Tagging, Tracking, and Locating; Non-Intrusive Inspections & Interdiction; and C3I to answer the command requirements. From this meeting, prioritization of technology development was established by OSD.

C3I

The technologies summarized in this article are intended to fulfill immediate or near-term requirements of the Combatant Commanders (COCOMs). Specific COCOM stated requirements include the ability to: better understand narco-trafficking infrastructures; perform data mining of very large sets of disparate data; and derive knowledge from data associated with narco-terrorist targets, as well as tactical biometrics and improved common operational picture tools.

For over five years, the CNTPO has led the development of product enhancements associated with the software application Web-based Timeline Analysis (WebTAS). WebTAS contains a...
suite of decision support tools which can be used to fuse large amounts of disparate data from multiple sources using a common interface. Users can easily query their data and display the results either on a map, in a timeline, or in one of several tabular or graphical plots. A predictive analysis tool is built into WebTAS. WebTAS has been certified as a ‘go to war’ system by USCENTCOM leadership and is in operational use at most of the combatant commands.

Additional capabilities to be added to WebTAS to meet the COCOM requirements are enhanced web authoring tools, extending to the browser environment, and exchanging information between WebTAS and non-WebTAS systems more transparent.

The program office is currently developing other C3I capabilities which can be used to deliver a common operational picture. These products rely heavily on the manipulation and display of information on a geographic background.

CNTPO continues to fund the development of tactical biometric technology, which focuses on remote identification of personnel by fingerprint, voice, facial features or other unique parameters. The office is working to improve the recognition accuracy by combining two or more biometric solutions.

The CNTPO is exploring the relationships between and among various illicit narco-terrorist organizations as a tool in predicting anomalies. This would assist in developing actionable intelligence for further interdiction operations. Toward this end, the focus has been on tools which can assist subject matter experts in data mining through modeling and interactive analysis.

Non-Intrusive Inspection and Interdiction

The Non-Intrusive Inspection (NII) program provides technological solutions enabling the COCOM's to detect, locate, and identify contraband materials such as drugs and explosives in cars, boats, trains, and planes. The Interdiction component provides the ability to interdict and where appropriate disable the adversary, allowing the appropriate authorities to complete the military or law enforcement activity necessary to stop the adversary.

The NII program has been involved with the earliest projects of CNTPO. Large-scale systems have included the first truck X-ray systems. More recently the Pulsed Fast Neutron Analysis (PFNA) system, Radiation Portal and Rapid Inspection System (RIS) have supported these large-scale inspection systems. The current focus is in the area of smaller portable systems. Several systems are being evaluated that use neutron and gamma rays to allow the operator to detect contraband materials located behind a wall. The next step is to determine to what extent a biological component can be included, and enhance the chemical component to provide a full Chemical, Biological, Radiological, Nuclear, and Explosive (CBRNE) capability.

The Interdiction program is currently developing a binary riot control agent to support non-lethal interdiction of personnel. The program is also investigating novel approaches to stop fast boats using non-lethal methods to support counter drug and counter terrorism efforts.

Surveillance

Wide Area Surveillance (WAS) continues to be a high number one requirement of the Combatant Commanders (COCOM's). Some examples of the requirements of WAS are the detection of a drug laden go-fast boat or a ship possibly carrying Weapons of Mass Destruction; drug laboratories under a dense jungle canopy; and the location and contents of a truck that is traversing a mountain pass.

Maritime WAS technologies being investigated are CODAR, an over-the-horizon high frequency surface wave radar, a maritime enhancement for the Rotatable Over the Horizon Radar (ROTHR) system, and autonomous long life buoys. CODAR, an oceanographers tool for detecting ocean currents, is being investigated for detecting small boats and ships. Research is being considered to give the ROTHR system the capability of ship traffic detection. Autonomous long life buoys could be modified for detecting small boats and ships and reporting their location.

Electro-Optics (EO) is an area that can be applied to maritime as well as over land. A long range EO system is being worked with a Mid Wave Infra-Red (MWIR) camera in conjunction with a coastal microwave radar system. The radar provides primary acquisition and tracking, while the EO MWIR camera provides identification of target. EO systems that employ both color and black and white cameras as well as the different Infra-Red modes are all under consideration for possible development.

The above represents a sampling of technologies that are being considered for development. CNTPO is also continuing to search for other technologies applicable to the Counter-Narcoterrorism mission.

Tagging, Tracking, and Locating Conference

On January 14th and 15th, 2004, the Counter-Narcoterrorism Technology Program Office (CNTPO) sponsored a U.S. Federal Agency Tagging, Tracking, and Locating (TTL) Conference at the US Central Command (CENTCOM) Mission Planning Center, MacDill AFB, Tampa, Florida. The purpose of the conference was to familiarize the TTL community with effort of various community members and to provide an opportunity for collaboration. Collaboration will assist in reducing duplication of effort and ensuring secure technology remains secure.

Presentations focusing on TTL technology and requirements were made by CNTPO, COCOMs, and by several law enforcement agencies including the Drug Enforcement Administration, Federal Bureau of Investigation, Bureau of Immigration and Customs Enforcement, and the U.S. Coast Guard. Representatives also made presentations from related agencies including the National Reconnaissance Office, Air Force TENCAP, and U.S. Navy SPAWAR. More than a dozen vendors, representing a wide range of TTL technologies, made presentations and showcased their technologies in exhibit booths throughout the course of the conference. With more than 350 attendees, representing 45 agencies, the conference was well attended and the conference participants found it beneficial to their mission. Follow on actions are being coordinated between CNTPO and the respective agencies, to include a TTL technology handbook.