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**U.S. SPACE & MISSILE DEFENSE TECHNICAL CENTER  
HUNTSVILLE, ALABAMA**

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## **ABSTRACTS**

### **Joint Wavelet Transform of Hyperspectral Data (JWaTH)**

JWaTH is a program to develop and evaluate algorithms for characterization, identification, and discrimination of military targets and imbed them in software for implementation with a hyperspectral sensor. The JWaTH demonstration will simulate an airborne search for targets indicative of terrorist camps using JWaTH-developed algorithms. The spectral sensor will collect the raw data and we will display the near real-time processed data, indicating target detections, via a wireless downlink at the ground station.

### **Frequency Agile Low Cost Next-generation (FALCoN) Radar**

FALCoN meets the needs of the next generation warfighter with a low-cost, man portable, radar platform. Extreme agility is achieved through the use of state-of-the-art, high-speed, low-power electronics and advanced signal processing algorithms to provide an adaptive, digitally controlled radar for surveillance and tracking. The driving force behind this new "breed" of radar system is the need for a small, lightweight, man-portable device that can function in short-range urban environments for perimeter surveillance as well as front-line situational awareness for threat detection and tracking. The needs of the end-user are driving the design requirements and the requirements demand flexibility. This flexibility allows the transmission scheme to be optimized for the mission-at-hand without sacrificing the requirements of low-cost and small size.

### **Vertical Integration (VI)**

VI is an advanced architecture, which supports data acquisition, data fusion, intelligent decision support employing fuzzy logic, and GIS. Employing input from subject matter experts, a rule-based system has been implemented that provides for the foundation of advanced decision-support. Those rules, along with the input from various data sources, are ingested by the fuzzy logic engine to produce a decision recommendation. A user-friendly interface provides the decision-maker with the information / data necessary to direct specific courses of action. The JSU presentation will show the potential of the technology by simulating a simplified anti-submarine warfare mission.

### **Transfer Missile Power System Program (TMPS)**

This technology was developed under the TMPS Program and is currently undergoing demonstrations powering a HMMWV- Mounted Laser System. The presentation will include information on stationary and on-the-move electric power generation of three-phase 208 V/single phase 115 V at power levels up to 7kW continuous and 10 kW peak. Power frequencies are selectable at 50, 60, 400 Hz.