

Innovation

Air Force SBIR/STTR Innovation Story

SBIR Topic Number:
 AF04-068

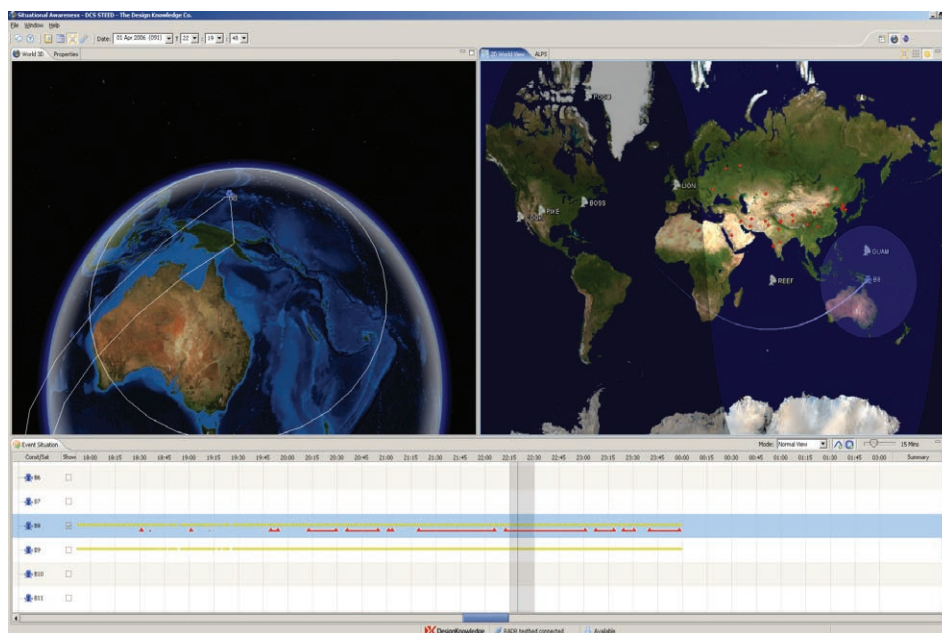
This Air Force SBIR/STTR Innovation Story is an example of Air Force supported SBIR technology that met topic requirements and has outstanding potential for Air Force and DOD.

Title:
 Work-Centered Support System for Counterspace Operations

Contract Number:
 FA8650-05-C-6543

SBIR Company:
 The Design Knowledge Company, Dayton, OH

Technical Project Office:
 AFRL/HE
 Wright-Patterson AFB
 Ohio



This figure shows the STEED operator console station that is used for track management and overall situational awareness.

Support System Developed to Aid Counterspace Operations

- SBIR contracts are assisting development of a work-centered support system to provide greater collaboration across echelons, while providing better information incorporated from a wide variety of data sources
- Improved technologies are required to detect attacks on United States space assets

SAF/PAX-06-303
 AFMC-06-208

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Air Force Requirement

Space assets are critical to our military superiority thus making them targets for attacks. These attacks may be difficult to detect using current tools available at Space Operations Squadrons (SOPS) because the degradation effects may be gradual and appear to be isolated. Improved user work-centered technologies are needed to assist the operator in detecting otherwise imperceptible trends and to rapidly gather the information needed to report the incident. Neural networks that are being refined for counterspace operations can detect some trends but this technology lacks the flexibility needed for warfighters to perform their own analyses. Current technology lacks advanced collaboration methods to communicate results of analyses across echelons; an example of this is communicating a finding from SOPS to the 14th Air Force. To address this problem, AFRL/HE sought innovative proposals to develop a Work-Centered Support System (WCSS) that bridged the gap between the analyst and the numerous information sources available, as well as collaboration across echelons. This capability will be a requirement for Rapid Attack Identification Detection and Reporting System (RAIDRS) Spiral II, due to start development in 2009.

SBIR Technology

The Design Knowledge Company (TDKC) is developing the Satellite Threat Evaluation Environment for DCS (STEED), a work-centered support system built on the Eclipse Rich Client Platform. STEED incorporates a wide variety of data sources, including Satellite As a Sensor (SAS) fused data (developed by AFRL/VS contractors), space weather, proximity, radio frequency interference, intelligence, and threat data. STEED provides a flexible and robust environment that is based on open-source tools, cross-platform technology. STEED incorporates collaboration tools, decision support aiding based on an innovative data visualization technique, work management support that includes an innovative navigation/control graphical user interface widget, and product development support.

Potential Air Force Application

STEED technology and the data fusion feeds provided by AFRL/VS data fusion contractors are directly applicable to the RAIDRS Spiral II capability required by the Air Force to detect, analyze and counter attacks on US space assets.

Company Impact

"The STEED program is developing a state-of-the-art capability in defensive counterspace that is vitally important to our country's national defense. This SBIR is allowing TDKC to be in the forefront of this technology development that will be used for major systems acquisitions in the near future. Based on this SBIR success, TDKC is now positioned to participate in this major acquisition as a product provider. The potential for sales growth is phenomenal. Sales growth is viewed not only from the system development perspective, but also the sustainment through the system life cycle. Major acquisitions have life cycles in the tens of years, allowing TDKC to maintain this product throughout the system lifecycle. We anticipate direct sales from STEED technology to exceed a million dollars in future years."

Eric Loomis
The Design Knowledge Company



U.S. AIR FORCE

SBIR/STTR

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