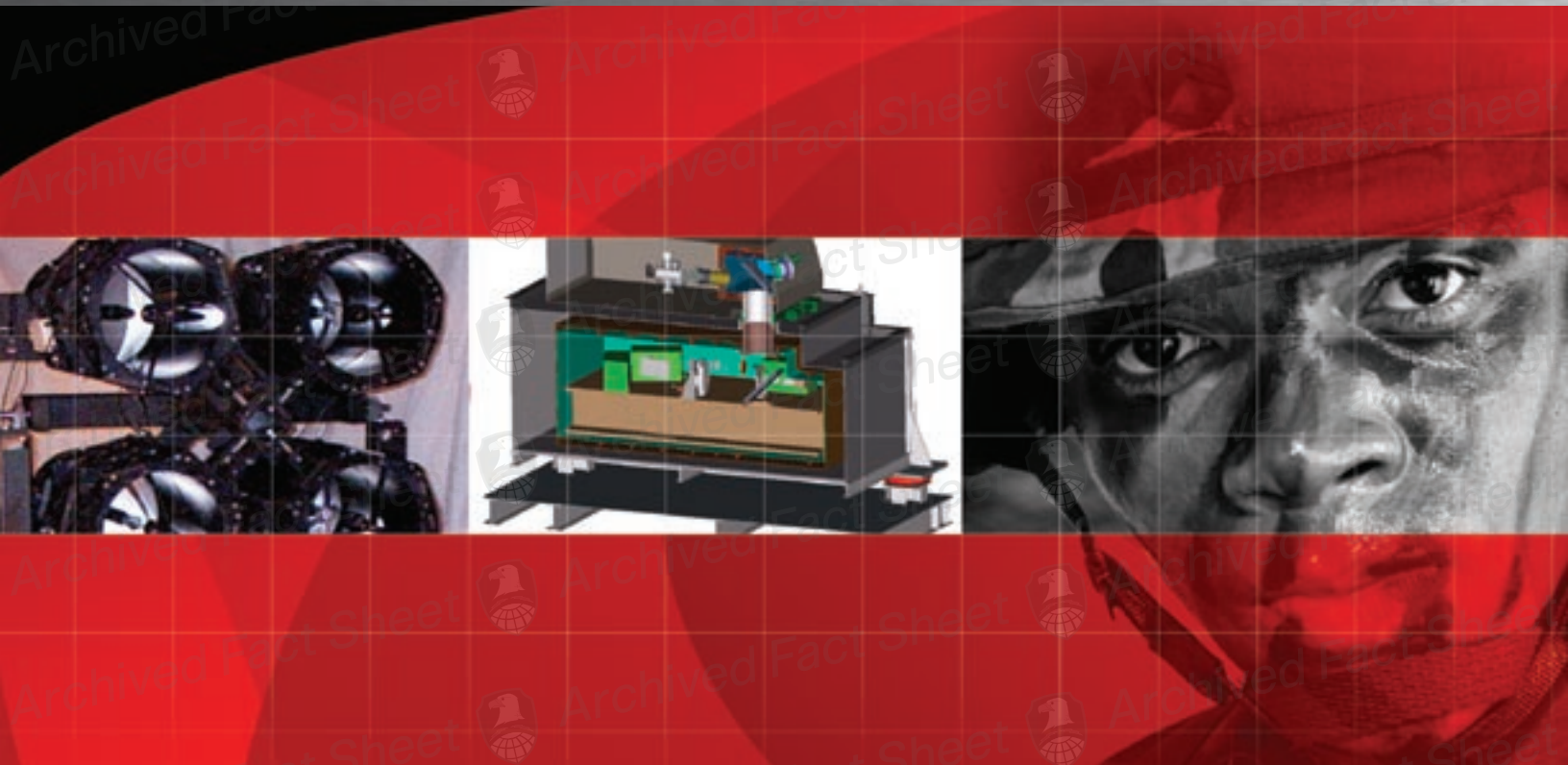




Survivability



Summary

- Develop and demonstrate radiation-hardened electronics and optics
- Support MDA acquisition programs and the user agencies
- Support nuclear test facility enhancements
- Develop innovative solutions for identifying radiological contamination on the battlefield

U.S. Army Space and Missile Defense Command (USASMDC) Survivability pursuits will ensure the nation's space and missile defense systems will operate effectively when called upon to engage a nuclear threat.

The Survivability Program enhances the future force by maintaining a balance between technology development and acquisition support, responding to space and missile defense system challenges now and in the future. The program leverages past experience in above-ground and underground nuclear testing to develop and demonstrate radiation-hardened technologies. As the required performance and complexity of missile defense technologies increases, test facilities and computer simulations must also be enhanced to support developmental and operational testing. Continued interface with ongoing Missile Defense Agency (MDA) programs and the user community is critical to ensure survivability requirements are considered and planned for early in the acquisition process.

Overview

The Survivability Program ensures that space and missile defense systems can survive and operate in hostile battlefield conditions including nuclear, chemical, conventional blast and fragmentation, electromagnetic, and natural environments.

All phases of acquisition are supported with activities ranging from requirement allocation to concurrent survivability engineering and hardware validation. Direct acquisition support is provided to the Missile Defense Agency (MDA), the U.S. Army Program Executive Office Missiles and Space, and the U.S. Army Aviation and Missile Command.

The Survivability Program also pursues survivability technology research and development. Survivability Technology programs support multiple services, including MDA, and leverage some of the most advanced research facilities in the world.

Benefit for Tomorrow's Defense

In cooperation with MDA, the Survivability Program supports missile defense program managers' efforts to assure their systems operate in hostile environments, including those with weapons of mass destruction. Close coordination with the Ground-based Midcourse Defense (GMD) program and the user and U.S. Northern Command (NORTHCOM) allows the definition of specific test requirements and the necessary nuclear test capabilities required at the Department of Defense (DoD) major test ranges.

Recently, training was provided to the Multiple Kill Vehicle (MKV) technology program to ensure nuclear hardness is considered early in the design stage of this critical GMD subsystem.

Technical Concept

As a working member of the DoD Radiation Hardened Oversight Council (RHOC) and partner with commercial sector manufacturers, government labs, and other government agencies, the High Performance Microelectronics program has developed key methodologies to ensure the availability of state-of-the-art hardened linear, digital, and nonvolatile electronics. Current efforts include development of high resolution analog-to-digital (A/D) converters, ultra-low power A/D converters and a hardened Electronically-Erasable Programmable Read-Only Memory (EEPROM). The current Hardened Infrared Optical Cryo-component program laid the foundation for understanding the physical processes of radiation effects in thin film interference filters, as well as providing an extensive database of effects observed in optical components in Long Wave Infrared (LWIR) sensor subsystems.

The Eagle Eyes program, conducted by the University of Southern Mississippi, is researching nuclear material detection of fissile material at greatly extended ranges. Future applications include battlefield assessments and port and border protection for the Department of Homeland Security.

The Survivability Program maintains a balance between technology development and acquisition support, responding to space and missile defense system challenges now and in the future.



For more information, please contact:
U.S. Army Space and Missile Defense Command
Public Affairs Office
P.O. Box 1500
Huntsville, AL 35808
Phone: 256-955-3887
Fax: 256-955-1214
Email: webmaster@smdc.army.mil