



The Future of Training and Testing Today

Delivering state-of-the-art Tactical Engagement Simulation (TES) training systems for the warfighter's edge

SAIC
From Science to Solutions

TES Systems

Science Applications International Corporation (SAIC) is known for innovation, design, quality and production of superb tactical training products for warfighters. SAIC delivers cutting-edge solutions to respond to your training challenges – from basic Multiple Integrated Laser Engagement System (MILES) components to the most recent MILES variant, the Combat Vehicle System (CVS), and exciting, emerging efforts like One Tactical Engagement Simulation System (OneTESS), Operational Test - Tactical Engagement System (OT-TES) and geometric-bearing (GB) systems.

Here are some of our innovations that provide future capabilities today:

Wireless Systems

Wireless systems are easy to install and adaptable to the user. Wireless means there are no cables that can be cut or damaged during an exercise; this reduces your support cost. This also reduces soldier intrusiveness, allowing the user to “train as you fight.” Quick installation replaces the burden of previous, cumbersome products. This helps save valuable installation time and provides more of what you want – tactical training time.

Lightweight, Low-Power Components

Lightweight, low-power components minimize interference with training and weapon systems, especially for the dismounted warfighter. This enables you to train as you fight. SAIC replaces the heavy, outdated equipment and batteries of the past to significantly ease the warfighter’s load. This enables tough, realistic training without distracting cables and harnesses of past systems. Batteries recharge on the go, using embedded solar panels or vehicle battery power.

Common Components and Interoperability

Common components and interoperability throughout SAIC’s dismounted and mounted systems allow you to combine capabilities of different wireless components to fit unique training needs. This lowers production costs and provides the opportunity to procure more systems to support your training objectives.

Driving this technology is a powerful base of experienced professionals. SAIC technical personnel have been involved in virtually all generations of MILES fielded today. SAIC engineers hold a number of patents in the tactical engagement system field and are sought-after experts in the industry.

Embedded and Non-Line-of-Sight Technology Experience

- Demonstrated non-line-of-sight GB technology at Army training bases
- Successfully embedded training products inside vehicles



GB MK-19 Shown as Mounted



Non-line-of-sight Demonstration at National Training Center (NTC)

Individual Weapon System (IWS)

SAIC's fifth generation, wireless, IWS lightweight design provides maximum flexibility and adaptability to the warfighter during training. IWS is lightweight, small and low-power, making it one of the lightest individual live instrumentation systems fielded to date. The total weight of the small arms transmitter (SAT), wireless user interface (WUI) and wireless detector is less than 0.5 kilogram.

IWS supports individual and crew-served weapons configured to fire the NATO 5.56mm, NATO 7.62mm, .50 CAL, AK 7.62mm, 5.45mm and 12.7mm ammunition types.



Features include the following:

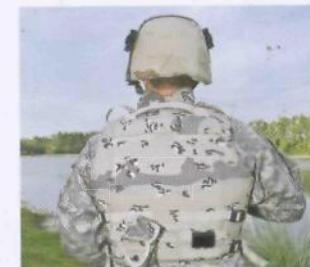
- Wireless system solution to easily accommodate all warfighter uniforms
- Handheld controller with graphical user interface
- Audio cues
- Four detectors to provide full zone detection, head, front and rear
- Rechargeable in-place in transit case to accelerate power restoration during storage
- Devices on Personal Area Network (PAN)
- Automatic learn procedure to rapidly configure and reduce setup time
- Radio frequency (RF) interface to associated individual and crew-served weapons



Soldier Wearing IWS



Checking IWS WUI



Back View IWS with Vest and Helmet Detectors

Tactical Vehicle System (TVS)

TVS is based on an advanced wireless, modular, open architecture and provides maximum flexibility and adaptability across the entire vehicle inventory, enabling significantly reduced total cost of ownership. TVS provides noncombat trucks and vehicles and targets, such as bridges and buildings, with a high-fidelity detection system for real-time casualty assessment in a MILES-based live training environment or combat training center.

TVS is software-adaptable to support the full range of tracked and wheeled logistics, utility and light armored vehicles in service today.



- Eliminates costly damage-prone cables and associated maintenance
- Cuts expensive detector belt maintenance
- Shortens installation and verification time to less than 10 minutes
- Provides a multiyear battery life
- Installs flexibly and easily to all targets, regardless of configurations
- Simplifies technology insertion through a modular design

Features include the following:

- Eighty externally programmable vehicle types and probability of kill (PK) tables
- Proven instrumentation interface-compliant at all three Army Combat Training Centers
- PMT 90-S002 MILES Communication Code (MCC) standard-compliant
- Liquid crystal display (LCD), membrane switch panel and audio speaker for ease of user interface
- Improved player ID and zone of impact decoding
- Infrared data association (IrDA) port for external re-programmability
- Built-in Global Positioning System (GPS) receiver
- Power module battery recharges through embedded solar or vehicle power

Comparison of MILES



Original Wired System



Tactical Vehicle System (TVS)

Combat Vehicle System (CVS)

The SAIC MILES CVS incorporates a modular and adaptable wireless, tactical engagement and instrumentation system. It provides enhanced training fidelity in force-on-force training exercises. Designed for the different combat vehicles of today and tomorrow, the CVS Common Kit is the backbone of a versatile training system.

CVS Common Kit



Hull Orientation Module (HOM)



Vehicle System Hub (VSH)



Optical Repeater Module (ORM)



Combat Vehicle Kill Indicator (CVKI)



Vehicle Signal Module (VSM)



WUI



Wireless Detector Module (WDM)



Visual Indicator Module (VIM)



Wireless Laser Transmitter

Features include the following:

- Wireless system design that reduces installation time and soldier intrusiveness
- Major components designed to support OneTESS
- Simplified, automated boresight increases transparency
- Built-in GPS receiver and multi-channel RF network helps ensure connectivity in noisy environments and prevents system interference
- Energy-efficient design combines with use of embedded solar panels to provide extended battery life
- No requirement for user to replace batteries
- Recharges while in transit case and performs built-in test (BIT) while in transit case



- Features modular, adaptable wireless system
- Delivers realistic training and testing capability
- Helps reduce life-cycle support costs
- Provides logical transition to OneTESS

CVS Adapter Kits

Abrams Adapter Kit

The Abrams Adapter Kit combines with the CVS Common Kit to outfit variants of the M1 series of main battle tank and can be modified for use with any contemporary main battle tank. The laser transmitter adapter mounts to the main gun or coaxial (COAX) machine-gun flash shroud and mounts the wireless laser transmitter (WLT) and other components from the CVS Common Kit to function over the wireless network as an Abrams weapons system.

Features include the following:

- Laser transmitter adapter mounts on the COAX gun flash shroud and provides adjustable laser beam to account for lead/elevation angle offsets
- Embedded solar panel with rechargeable battery/ recharges adapter kit components in the transit case
- Loader module mounts in the ammunition-ready storage area and provides positive training by engaging loader
- Machine gun simulators - common small arms transmitter (CSAT) with weapon-specific adapters
- Tracer effects injected into gunner's eyepiece for



M2 SAT



M240 SAT



Loader's Module with WUI



Abrams Adapter



Abrams Adapter with WLT

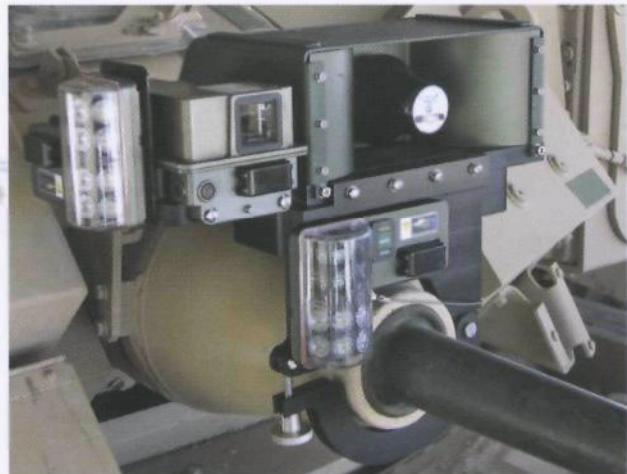
Bradley Adapter Kit

The Bradley Adapter Kit combines with the CVS Common Kit to outfit numerous variants of the Bradley family of vehicles and can be modified to work with any contemporary infantry fighting vehicle equipped with missile and/or cannon weapons systems. Unlike the Abrams Adapter Kit, the Bradley laser transmitter adapter has aural weapons effect signature simulator (WESS) to replicate weapons firing.

A cable-free, tube-launched, wire-guided (TOW) weapon effect simulator (WES) mounts in the TOW launcher. This supports realistic loading and unloading of the system. Built with safety in mind, SAIC's cable-free TOW has multiple safety features to protect the warfighter from accidental discharge.

Features include the following:

- Laser transmitter adapter mounts on the main gun receiver
- Aural WESS for 25 mm firing
- Embedded solar panel with rechargeable battery
- Recharges adapter kit components in the transit case



MK-19 Simulator Player Unit

Through its modular design, the MK-19 Simulator Player Unit provides an interoperable solution that simulates the firing and actual effects of an MK-19 in a MILES-based environment. It provides the common approach for the Stryker Remote Weapon Station, M113 pintle mount, Autonomous Armored Vehicle (AAV), Humvee® (HMMWV®) and ground mount.

Controller-selectable features include the following:

- Four ammunition types along with unique ballistic characteristics
- Accurate time-of-flight simulation based on range and ammunition type selected
- Compensation for super-elevation due to ammunition ballistics
- Independently adjustable vehicle and man-worn hit profiles
- Integrated detection system for casualty assessment
- Non-line-of-sight GB solution successfully demonstrated at National Training Center (NTC) and Fort Benning
- Consistent laser footprint of 20 meters over the entire effective range
- Uses actual weapon sights or optical sights
- Easy boresight verification requiring no external devices
- Firing indication to operator
- Firing flash cue visible out to maximum range
- External software re-programmability
- Two lines by 16 characters backlit LCD
- Membrane switch panel for ease of navigation
- Storage of 1,000 time-tagged events
- Sixteen most recent events available for immediate review
- Industry standard RS-232 and RS-485 serial ports for future growth
- Industry standard IrDA noncontact upload and download interface
- Audio cue device replicates the sound of the weapon firing

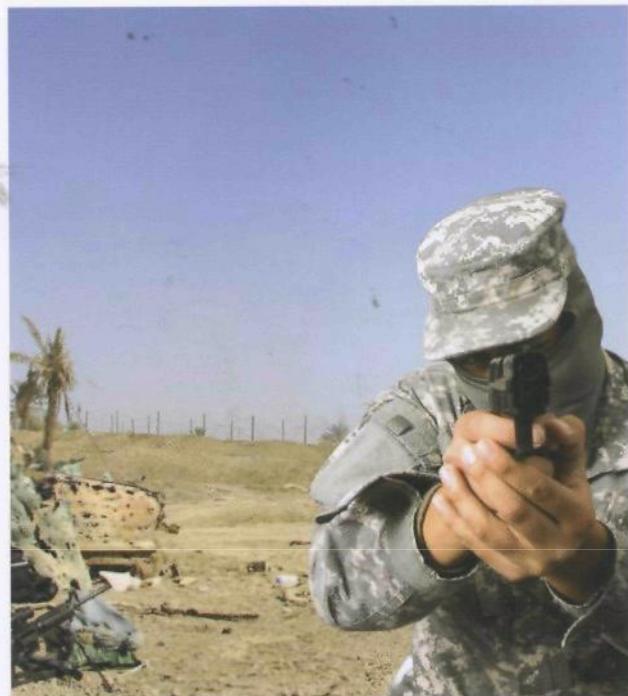


MK-19 Simulator Player Unit

Mini MILES Pistol Simulators

With an increased focus on security operations, combat in urban terrain and close quarters combat, today's warfighting environment has made the personal sidearm a key component of the individual warfighter's equipment. These weapons demand a high level of skills in target identification, rapid decision-making and precision during engagement. This capability allows the warfighter to train and exercise the full range of force options in a realistic live training environment.

The SAIC Mini MILES product line can be quickly fitted to a warfighter's standard issue service sidearm. Our in-barrel conversion kit provides a MILES firing solution without weapon modification and yet retains all of the normal soldier-to-weapon procedures, from target identification and engagement to ammunition reload. The SAIC Mini MILES can be used dry fire or with a special blank round uniquely adapted to provide the tactile and auditory cues of small arms engagements. The Mini MILES device fits into a barrel insert and is fully interoperable with legacy and existing MILES and WES systems and seamlessly integrates with existing training ranges or systems.



Mini MILES In-Barrel Solution

Air Defense Weapons Systems (ADWS) MILES Kits

The ADWS MILES expands force-on-force live training capability and fidelity from infantry-based and armor-based exercises to the inclusion of simulated air defense engagements—ground to air, and air to ground. The ADWS provides an adaptable, wireless, tactical engagement and instrumentation system for contemporary air defense weapons manufactured domestically and internationally.

The ADWS delivers a high-fidelity detection system for real-time shot assessment in MILES-based live training environments or combat training centers across the globe. Through its modular design, the ADWS is an interoperable solution that simulates the firing and actual effects of a variety of air defense weapons in both contemporary and older MILES-based technology environments and combat training centers (CTCs).

The ADWS provides MILES kits for the following air defense weapons systems:

- TOW
- ZSU-23
- ZPU-2
- Strela
- Rocket Propelled Grenade (RPG)



TOW Shown as Mounted



MILES Transmitter for Air Defense ZSU and ZPU Weapons



Strela SA-7 Simulator



RPG Simulator

Features of ADWS include the following:

- Integrated detection system to track effects of MILES-based weapon firings
- Wireless system design that reduces installation time of ADWS kits
- Batteries re-charged and BIT performed while in transit case
- Proven instrumentation interface-compliant with all three Army Combat Training Centers (CTC)
- PMT 90-S002 MILES Communication Code (MCC) standard-compliant
- Uses actual weapon sights or optical sights
- Firing indication to operator
- Firing flash cue visible out to maximum range

Selectable features of the ADWS Controller Device include:

- Two lines by 16 characters backlit LCD display
- Membrane switch panel for ease of navigation
- Storage of 1,000 time-tagged events
- Sixteen most recent events available for immediate review
- Industry standard RS-232 and RS-485 serial ports for future growth
- Industry standard IrDA noncontact upload and download interface

For More Information

Jeffrey Jancek
Business Development Manager
12901 Science Drive
Orlando, FL 32826
tel: 407.243.3507
email: jeffrey.m.jancek@saic.com



Visit us online at www.saic.com

Energy | Environment | National Security | Health | Critical Infrastructure