SMS

SOLDIER MONITORING SYSTEM

Enabling real-time exercise monitoring to protect personnel during live training
PERSONNEL SAFETY NET DURING TRAINING, SURVIVAL AND EXERCISE

Anything can happen in severe training environments—from heat injuries and hyperthermia to snake bites and unexpected medical or life-threatening emergencies. Preventing injuries and deaths, and protecting the safety and lives of military and civilian personnel, during live training is paramount.

The Leidos Soldier Monitoring System (SMS) provides a personal safety net for every member during live training, survival and other exercises for 500 to 10,000 participants.

For personnel, the SMS provides:
- Real-time GPS position/location
- The means to send an emergency alert (EA) message in the event of trouble
- EA confirmation and immediate response to participant’s location

For training leadership, the SMS delivers:
- High fidelity after action review (AAR)
- Powerful, rapidly deployable communications technology
- Superior radio coverage in the high VHF band, and
- Reduced life-cycle logistical costs.

SMS SYSTEM ARCHITECTURE AND SUBSYSTEMS

The SMS system, developed by SAIC/Leidos with team-mates Riptide Software, Inc. and Raveon Technologies Corporation, consists of four proven Subsystems:

1. The Soldier Wireless Device (SWD)
2. Communications Subsystem (CS)
3. Tactical Operations Center (TOC) Monitoring System (TMS), and
4. TOC Mobile Monitoring System (TMMS)

1. SOLDIER WIRELESS DEVICE (SWD)

The SWD is a small, ruggedized radio that gives participants the means to send an EA message in the event of an accident or life-threatening emergency during training. Sending an EA is fast and easy; personnel depress a switch for one second and receive confirmation on the SWD LED which changes color to confirm receipt by the TOC. The SWD automatically generates an EA if a participant goes outside training boundaries, or when no motion is detected by internal MEMS (microelectromechanical systems) after 15 minutes or less. The SWD radio cannot be turned off by the participant.
Preventing Injury and Death and Protecting Lives

FEATURES OF SWD INCLUDE

- GPS accuracy to within five meters
- Sized to fit into a shoulder pocket or OTV
- Less than 1.5 lbs
- 24-hour operation using the internal battery, or up to 48-hours with extended battery attachment
- Water immersible for up to 30 minutes in one meter of water
- Recharging transit case for up to 10 SWDs.

The SWD provides 48 hours operation with a 90-second reporting rate, or 24 hours with a 30-second reporting rate. It uses a single 25 KHz radio channel in VHF 136 – 154 band with

- 99 percent coverage on most training ranges
- 99 percent message reliability.
**KEY SMS FEATURES**

- Pocket-size, lightweight SWD radio – ruggedized and waterproof – for participants
- Rapid receipt and acknowledgement of Emergency Alert (EA) messages
- Internal MEMS accelerometers for no motion detection
- Up to 48-hour battery life with easy-to-replace external battery for longer exercises
- Superior radio coverage in high VHF band
- Feature-rich TMS display for SMS exercise controllers
- Lightweight TMMS Tablet computers for in-field Cadre Trainers
- After action review (AAR) to improve training effectiveness
- Single mobile communications tower/trailer for entire communications infrastructure
- Reduction in life-cycle logistics costs
2. COMMUNICATIONS SUBSYSTEM (CS)

The SMS CS provides the entire communications infrastructure, mounted on an 85-foot, towable communications tower/trailer that can be erected in less than 45 minutes. The CS tower/trailer includes

- A self-contained generator
- Electric winch
- Redundant power supply
- Master radio, and
- Choice of connections, either hardwiring via Ethernet or via broadband IP RF link

The CS controls the overall Time Division Multiple Access (TDMA) network protocol, allowing up to 520 SWD radios with a flexible reporting rate setting from 30 seconds to five minutes.

3. TACTICAL OPERATIONS CENTER (TOC) MONITORING SYSTEM (TMS)

The TMS runs on a ruggedized laptop with large screen display and is designed for easy, intuitive use by a single operator with a minimum training. The TMS hardware and software enable viewing and tracking of

- Participants’ individual locations
- Their status
- Receipt of any alerts – No Motion, Outside Range Boundary, or EA – accompanied by a distinct audible sound, and
- Rapid response to an EA

The TMS main screen requires immediate operator acknowledgement of any EA with confirmation appearing on the participant’s SWD LED. The TMS operator’s map identifies the participant’s position or last known location.

Additional TMS software capabilities include:

- Automatic generation of audio and visual out-of-boundary and no motion alerts based on individual SWD locations
- Drop-down menus for easy setup and editing of SWD reporting rates, and
- Use of NASA’s World Wind terrain map generation
Providing Rapid Receipt, Acknowledgement and Response to Accidents and Life-Threatening Emergencies
4. TACTICAL OPERATIONS CENTER (TOC) MOBILE MONITORING SYSTEM (TMMS)

Every Cadre Trainer in the field carries a small, lightweight ViewSonic® TMMS Tablet computer to monitor their own position and the locations of all personnel in their area. The TMMS enables the trainer to immediately acknowledge EA messages from the TOC, and to locate, track and reach downed participants in the training area.

The TMMS Tablet has the same SWD radio and RF channel as the participant SWD devices, allowing a single CS system to handle both individual SWDs and the Cadre Trainer TMMS message communications requirements. This also reduces both the logistics and frequency management costs.

Inside a vehicle, both the SWD and TMMS devices are powered by a vehicle power adapter. Outside the vehicle, the SWD and Tablet use their individual internal batteries.

THE PORTABLE SMS-LITE

For remote location exercises and survival training, the SMS-Lite provides a small-footprint, lower cost system with the same capability as the full SMS while eliminating the need for the 85-foot tower/trailer. The SMS-Lite combines the TMS ruggedized laptop, GPS antennae, CS master radio, and RF I/O in one transit case.

PROVEN EXPERIENCE BEHIND SMS

The SMS uses proven COTS hardware and software products, and subcontractors to deliver a cost-effective, fully compliant solution. Leidos and SAIC have over 30 years experience in developing and delivering live training range instrumentation systems for the U.S. Army, and the National Training Center Instrumentation System (NTC-IS) GPS tracking and communications instrumented player units (IPU), supporting up to 10,000 exercise participants.

Protecting the safety and lives of soldiers, sailors, airmen, marines, first responders, firefighters and others during live training is paramount. The SMS delivers a highly effective, easily deployable solution that provides safety and protection for personnel wherever and whenever live training exercises occur.
About Leidos

Leidos is a science and technology solutions leader working to address some of the world’s toughest challenges in national security, health, and engineering. The Company’s 23,000 employees support vital missions for our government and the commercial sector, develop innovative solutions to drive better outcomes, and defend our Nation’s digital and physical infrastructure from ‘new world’ threats. Leidos is headquartered in Reston, Va. and had approximately $6 billion in revenues for fiscal year 2013, on a pro forma basis, following the spin-off of the company’s technical, engineering and enterprise IT business on Sept. 27, 2013. For more information, visit www.leidos.com.

FOR MORE INFORMATION:

Greg Williamitis
Vice President, Business Development Manager
(O) 407.243.2931
(M) 407.271.7320
gregory.m.williamitis@leidos.com

David J. Rees
Senior Vice President, Manager Live Training
(O) 407.243.3750
(M) 407.271.7320
gregory.m.williamitis@leidos.com

LinkedIn: linkedin.com/company/leidos
Facebook: facebook.com/leidosinc
YouTube: youtube.com/leidosinc
Twitter: twitter.com/leidosinc or @Leidosinc