



## **CV-TESS** – COMBAT VEHICLE TACTICAL ENGAGEMENT SIMULATION SYSTEM





## **A NEW GENERATION TRAINING SYSTEM** FOR NEW GENERATION CAPABILITIES

Saab provides live ground combat maneuver training for troops in a battlefield environment against an opposing force. The training is conducted in the field with a high fidelity simulator to reinforce correct crew procedures resulting in a realistic and motivating exercise.

We adapt our systems for specific training needs of all U.S. and allied forces and they are in use at all home stations, ground combat training centers, and deployed locations. The simulation systems are instrumentable and interface with Live, Virtual, and Constructive (LVC) training domains. Our instrumented systems provide cost savings in reduce operational tempo, reduced time to train troops, consistency of training results, and immediate response to training needs.



Saab is now fielding a new generation of laser-based simulators called the **COMBAT VEHICLE TACTICAL ENGAGEMENT SIMULATION SYSTEM (CVTESS)**. Within five years every U.S. Army armored combat vehicle crew will be training with Saab's CVTESS. The CVTESS supports every version of the Abrams Main Battle Tank and the Bradley Fighting Vehicle (BFV) for the most realistic force-on-force training.



#### **CVTESS MAIN FEATURES**

The Target Interface Module (TIM) distributes power and interfaces within the system. The TIM controls player and simulator status, event log and target evaluation. The included wireless access point communicates with system components such as Laser Transmitters and Wireless Detector Units. The TIM also indicates the vehicle status to the surrounding players using high performance LED's to provide 360-degree visibility at an 1800 meters distance. The embedded GPS provides accurate position and time data to the system. The vehicle powers the TIM. The backup battery can power the simulator for more than 100 hours and maintain power to an instrumentation kit such as the Data Communications Interface Unit (DCIU).



**WIRELESS DETECTOR UNIT (WDU)** is the key component in the target system. It detects MILES laser codes fired by the opposing forces. The WDU evaluates the transmissions and sends the information to the Target Interface Module (TIM) for a real time casualty assessment.

**LASER TRANSMITTERS** are included in the system for simulation of weapon fire. The vehicle Laser Transmitter (LT) is a small wireless compact unit that simulates the 120mm



and 25mm main gun and the coaxial machine guns from a single transmitter that automatically changes MILES ammunition codes and ranges based on the crew's weapon selection. The LT also simulates the TOW missile. The Canister Laser Transmitter (CLT) simulates the Canister ammunition used in the Abrams tank. The Abrams kit also includes Small Arms Transmitters (SAT) for the crew served weapons M2 and M240.



**THE VEHICLE INTERFACE MODULE (VIM)** interfaces with the vehicle's fire control system. The VIM generates and injects alert tones and audio messages into the vehicle internal communications system.



**THE PLAYER AREA NETWORK (PAN)** is a short-range radio system that connects the various wireless devices mounted on the vehicle. The wireless devices includes; Wireless Detector Units, Small Arms Transmitters, Laser Transmitter, Canister Laser Transmitter and Crew Kill Modules. The PAN connected wireless devices provide a rapid installation of the CVTESS in less than 30 minutes. The wireless radio module is using a software-defined radio that can easily be re-tuned for different frequencies.



# SAAB



## TRAINING EVALUATION

The system retains all stored information regardless of system power status and contains an event memory of more than 2000 events. All stored event data is also transmitted through the instrumentation system to remote after action sites. Recorded firing events include: name of event, time and date of event, PID, weapon type, ammunition type and ammunition remaining. Lethality assessment events include all kill types and near miss. Recorded target events include: time and date of event, lethality assessment, attacker PID, weapon / ammunition type, aspect angle of attack and turret position and the determination of fratricide.

## MODERN, PROVEN AND IN USE

CVTESS is based on 35 years of worldwide experience with 170 different vehicle applications including over 60 different Main Battle Tank and Infantry Fighting Vehicle configurations. With more than 9,000 vehicle systems delivered, Saab has the skills and knowledge to provide highly realistic and effective training. Using the latest technology in a widely accepted product line that has a proven record of on time deliveries eliminates risk in the program to provide the best training solution in the world.

## INCLUDED FEATURES

- Commercial replaceable batteries
- System battery backup when vehicle is turned off
- Built-in GPS
- Built-in Test (BIT)
- Anti-cheat system
- Ammunition management system
- Feedback in Intercom system
- Crew served weapon simulation
- TOW simulation
- Canister round simulation
- Main gun and coax simulation
- DIFCUE and MGSS pyrotechnical indication
- TOW ATWESS pyrotechnical indication
- External audio Weapon Effect Signature Simulation
- Laser Class 3R according to ANSI Z136-1:2007