2021

EMBEDDED LIVE TRAINING PRODUCTS & CAPABILITIES
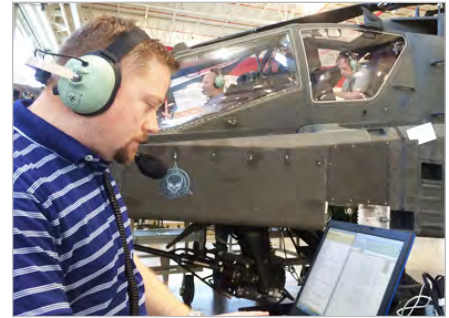
ANY MISSION, ANY ENVIRONMENT, ANY PLATFORM

ICE
INTER-COASTAL ELECTRONICS

Specializing in Embedded Live Training using Advanced Instrumentation and Eye-Safe Lasers

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Indicates the Global Footprint and growing interest for the ICE Tactical Engagement Simulation System (TESS)
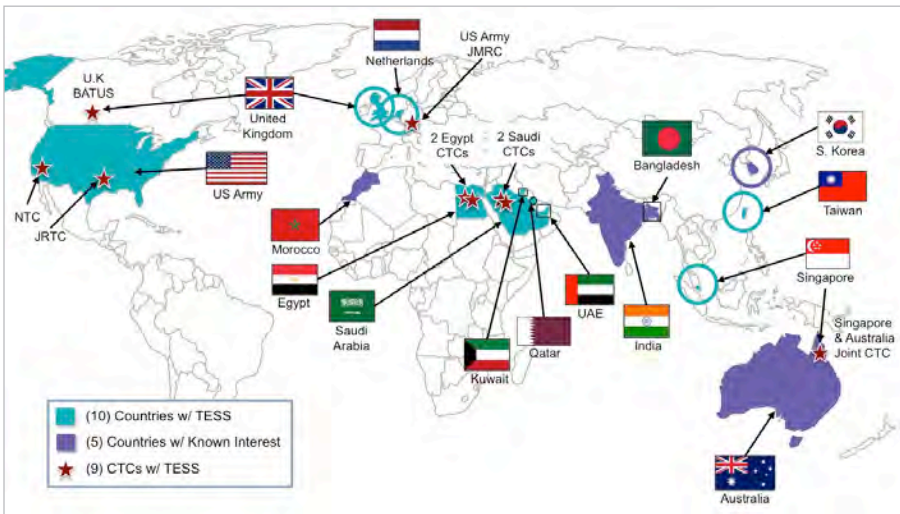
CAPABILITIES
- » Aviation Training
- » Artillery/Gnd Training
- » Simulation
- » Software
- » Networks
- » Manufacturing

SERVICES
- » Acceptance Testing
- » System Fielding
- » Customer Training
- » Field Engineering
- » Logistics Support
- » Worldwide Deployment

SUPPORT
- » Test & Evaluation
- » MIL-STD Testing
- » Airworthiness Release
- » Networks & Gateways
- » Player Tracking

For more information:

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inter-coastal.com

TRAINING ASE STIMULATION SUITE (TASS)

TASS stimulates the Aircraft Survivability Equipment (ASE) when within threat detection and engagement ranges, requiring pilots to take appropriate actions for peer/near-peer threat avoidance. The stimulated ASE triggers the correct audio/visual cues to the aircrew, and inventories and decrements Chaff and Flare countermeasures.

TASS replicates enemy Integrated Air Defense Systems (IADS) threats by providing interrogation, tracking and targeting of aircraft participating in combined arms Force-on-Force (FoF) training at the Combat Training Centers (CTCs).
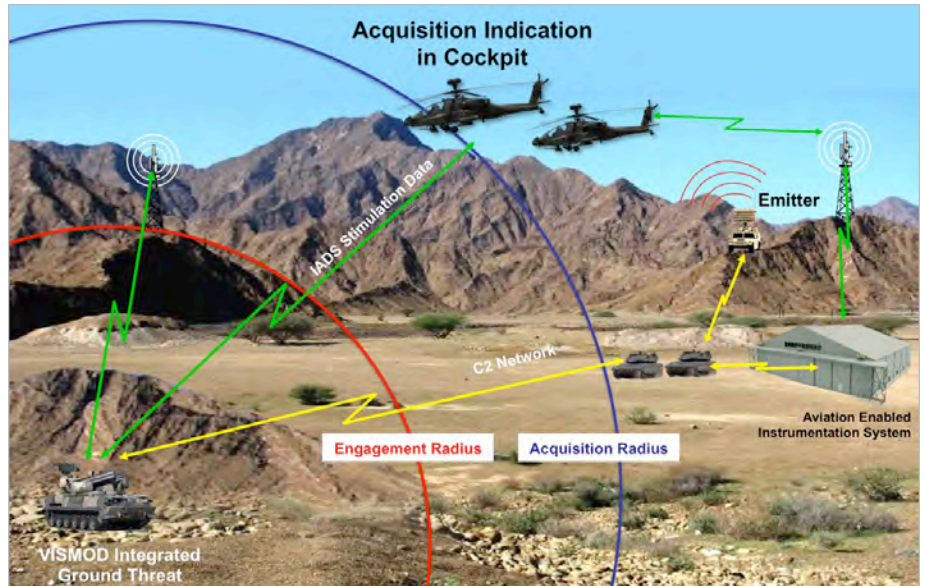
Incoming aircraft are detected by Opposing Force (OPFOR) acquisition systems. Acquisition data is sent to Command and Control (C2) for firing solution and launcher assignment. Firing data is sent to individual launching platforms (MAST, ASET IV, RSE). Launching platforms engage aircraft by stimulating the ASE B-Kit Emulator (ABE).

Apache TESS adjudicates the attack and relays status and performance parameters of the threat for display on the unclassified CTC-IS. At end-game, TASS presents the user with computed miss-distance and probability of kill results to quantify the outcome of the engagement.

TASS COMPONENTS

» Apache TESS B-Kit
» ASE B-Kit Emulator (ABE)
» Aviation MILES Detector Plates (AMDP)
» Ground Threat Emitters (GTE)
» GTE Controller Interface
» Command & Control System
» CTC Aviation Network

Training our Warfighters for Peer & Near Peer Threat Avoidance

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The MicroTracker is a lightweight autonomous device shown mounted onto a UAS platform. It can be used on multiple and future platforms without redesign or additional integration. This R&D effort demonstrates the integration of commercial devices and components into the Combat Training Center Instrumentation System (CTC-IS) using the Long-Term Evolution (LTE) communications network. Internal GPS and LTE antennas provide X-Y-Z position/location tracking within 8 meters and transmit event reports at 1 Hertz report rate to the CTC-IS over the LTE Network.

A MILES engagement capability is provided using built-in 904nm laser detectors with a MILES decoder to decode and transmit MILES weapon engagement messages. It transmits C2 messages to the CTC CIS and is able to receive Admin commands from a MILES Controller Gun or from the CIS through the LTE network. A Kill Indicator light is visible at 450 meters for ground observers, and also visible through the Phantom 4 UAS camera to the UAS operator. Instrumented platforms and engagement events are tracked using an advanced software application.

Works on Any Platform
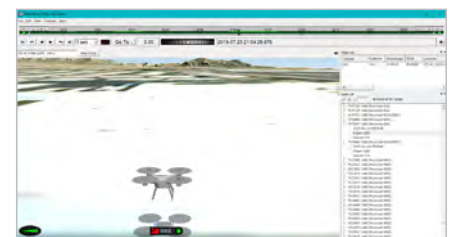
CTC-IS Accreditation and FIPS 140-2 Encryption

APACHE TACTICAL ENGAGEMENT SIMULATION SYSTEM (TESS)

Individual, Crew and Collective Training for Gunnery Operations

PROGRAM OF RECORD SINCE 1998

TLD

TGCU

TTM with FlashWESS & AKI

LIVE TRAINING

Apache TESS is used to safely train personnel in the tactical operations of the AH-64 Apache Attack Helicopter. Live fire training includes cooperative force engagements, evasive procedures, and the use of Aircraft Survivability Equipment (ASE).

Player and event data is transmitted in real-time for tracking and recording on the Modular Mobile Command and Control (MMCC) to provide situational awareness, player-to-player communications, decentralized engagement adjudication, Real-Time Casualty Assessment (RTCA), and After Action Review (AAR).

WEAPON SIMULATION

Apache TESS enables pilots to safely perform force-on-force training without firing a round. Weapon systems acquire and engage TESS instrumented targets. TESS uses MILES Lasers and Geometric Pairing to adjudicate all weapon engagements. SAL Missile and 30mm Gun engagements are simulated with MILES eye-safe lasers. RF Missile and Rocket engagements are simulated with Geometric Pairing. Pilots receive audio cues via aircraft intercom and visual cues via FlashWESS and Aircraft Kill Indicator (AKI).

FEATURES & BENEFITS

» Integrates with other LVC systems including Manned-Unmanned UAS

» FAA/AED Air Worthiness Certification

TESS COMPONENTS

» Advanced Smart Onboard Data Interface Module (ASMODIM)

» GPS & Telemetry Antennas

» Training Laser Designator (TLD)

» TESS Gun Control Unit (TGCU) integrated onto 30mm Gun Turret

» TESS Training Missile (TTM)

The TLD is manufactured by ICE and permanently embedded in the M-TADS M-DSA by Lockheed Martin

TESS provides the player interface to "kill and be killed" while training at CTCs, Unit Home Stations and deployed locations.

Operator/Maintainer training and certification is provided to install, operate, evaluate, service, maintain and remove TESS components.

*Fielded to Combat Training Centers to provide
Observer/Contoller, Opposing Force,
and Offensive Weapons Capabilities*

LUH-TESS provides dual capabilities for the UH-72A Lakota Light Utility Helicopter (LUH) to perform as an Observer/Controller (O/C) and Opposing Force (OPFOR). The **LUH Offensive Weapons Capability** is added to provide target acquisition and simulated offensive weapons capabilities for the OPFOR threat aircraft. Weapons are simulated with a MILES coded Laser. New platform integrated components include the Articulating Sensor Package (ASP) with embedded FlashWESS Laser Transmitter (FLT), Weapons Processor, Hand Controller and two Color Cockpit Displays.

COCKPIT DISPLAY

*AV-TESS training systems use Universal Components
for Integration on a Variety of Platforms*

Aviation TESS (AV TESS) instruments the UH-60 Blackhawk and CH-47 Chinook helicopters for collective training at Combat Training Centers (CTCs) and Aviation Home Stations.

MILES Laser engagement capability is added by integrating the SMODIM, Aircraft Kill Indicator (AKI), and GPS and Telemetry Antennas. AMDPs are added if needed.

AVIATION MILES DETECTOR PLATE (AMDP)

The AMDP provides detection of 904nm MILES Laser engagements. Four to six assemblies per platform are installed to detect, identify and characterize MILES coded weapon engagements.

The AMDP has a viewing window of 120°, 60° off the center line spherically.

AMDP

It is designed with a Built-In Test (BIT) capability and reports BIT status to the SMODIM.

AMDPs are installed and connected to the aircraft Laser Warning System when the aircraft does not have the AN/AVR-2B Laser Detector Set installed. AMDP's are installed in the same locations as the AN/AVR-2B.

TESS BATTALION SET

The TESS Battalion Set provides the equipment necessary to instrument stationary and mobile targets, as well as GPS tracking and monitoring of all instrumented platforms for collective training.

- » 24   TESS B-Kits
- » 2   MMCCs
- » 4   Telemetry Repeaters
- » 10   Stationary Targets
- » 20   Mobile Target Sets

Modular Mobile Command & Control (MMCC)   Repeater   Stationary Target   Mobile Target Set

ADVANCED SMART ONBOARD DATA INTERFACE MODULE (ASMODIM)

QUALIFIED AND FIELDED
ON AH-64E

As the brains of the Aviation TESS training system, the ASMODIM interfaces with air and ground vehicles to provide collective Force-on-Force Aerial Gunnery and Live Fire weapons systems training.

The ASMODIM includes an FIPS 140-2 Level 2 tamper-resistant NIST-Certified Encryption capability that enables constant, secure tracking of instrumented platforms at all times. Encryption secures and authenticates TSPI and event data to support all-country coverage and secure training ranges.

For the AH-64D/E Apache Attack Helicopter, it interfaces electronically to the aircraft weapons systems to provide a training mode, weapons emulation, and a simulated weapons inventory. Player events and engagement data is actively monitored, tracked, recorded and transmitted via the telemetry network to the Modular Mobile Command and Control (MMCC). The Video Digest Utility displays aircraft video with radio and intercom audio to provide After Action Review (AAR) for AH-64D/E Apache Pilots.

SIMULATED WEAPONS TRAINING

The ASMODIM computes MILES Laser and Geometric Pairing solutions and processes Simulated Area Weapon Effects (SAWE) data for all weapons. Aircraft and targeted vehicles are Geometrically Paired by their GPS positions for the purpose of Real-Time Casualty

Assessment (RTCA). The ASMODIM selects a target from its player position database in the appropriate weapons impact footprint, and computes Ph/Pk algorithms specific to each weapon type and player type. It then informs the target via the data link that it is selected for assessment and transmits RTCA feedback directly to the aircraft weapons processor and ground station through the onboard telemetry radio.

ASE EMULATION

The ASMODIM integrates with the AH-64 Aircraft Gateway Processor (AGP) to enable emulation of the Aircraft Survivability Equipment (ASE) functionality of Infrared (IR) Common Missile Warning Systems (CMWS), active IR jamming systems, IR countermeasures, radar warning systems (APR-39), radar jamming systems, and laser warning receiver systems (AN/AVR-2A/B).

Providing Real Time Casualty Assessment and High Fidelity After Action Review for Increased Proficiencies
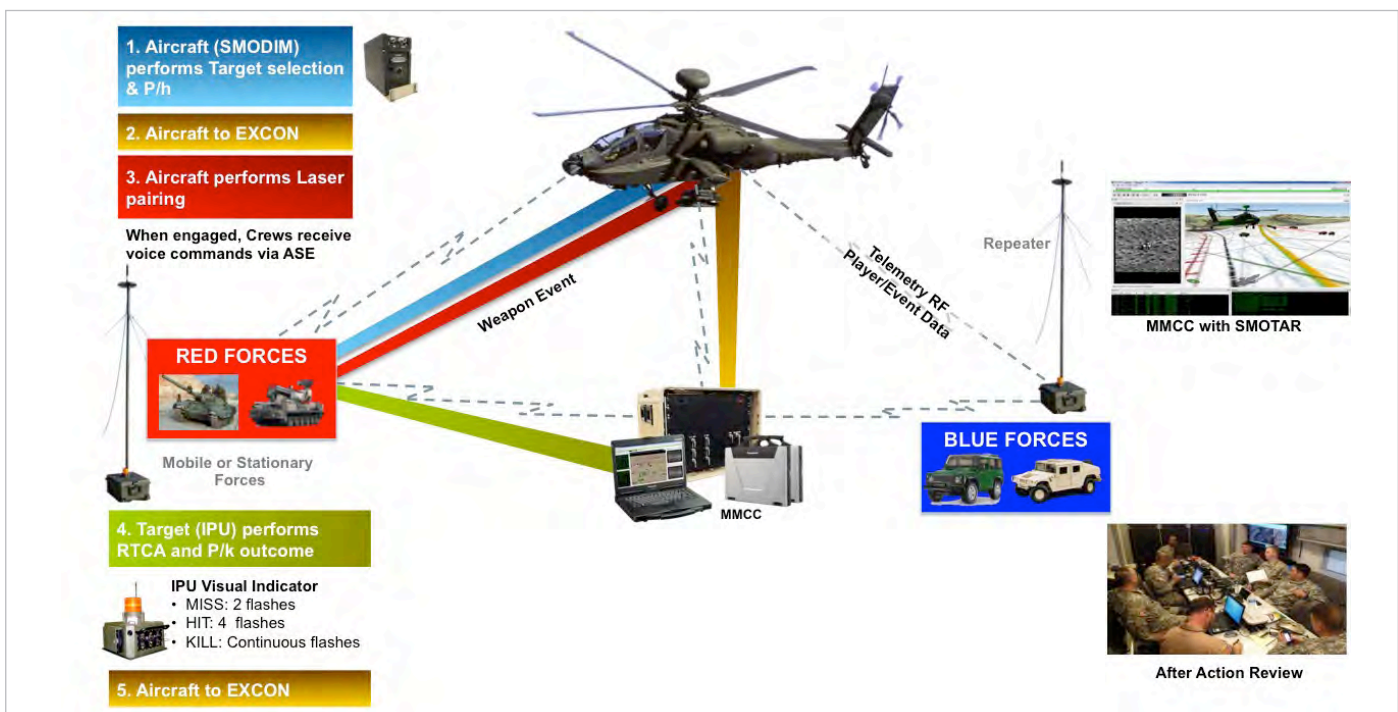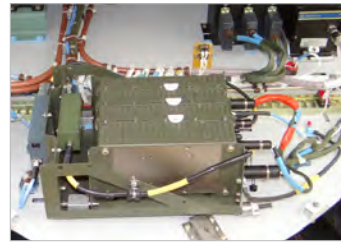
New vs Legacy

SMODIM in UH-60M

SMODIM in UH-72A

SMODIM in CH-47F

NETWORK COMMUNICATIONS

The ASMODIM maintains a dynamic position database through player-to-player communications. The onboard telemetry radio supports simultaneous distribution to multiple locations providing network communications. The radio acts as a message repeater to overcome Line of Sight (LOS) interruptions. Telemetry radios operate at 902-928 MHz for CONUS operations and 220-400 MHz for OCONUS operations.

DATA PROCESSING

The ASMODIM provides continuous Built-In Test (BIT), network radio message processing, MILES Laser decoding, GPS position data, mission data recording, Ph/Pk processing, and RTCA notification.

UPGRADES

The ASMODIM replaces the legacy MSMODIM and is fully backwards compatible with Apache TESS. Upgrades include an interchangeable radio module with 1.3 Mbps data speed, interchangeable receivers, multiple data interface options, expandable memory, HD-SDI and ethernet video, and advanced weapon simulation augmented by Digital Terrain Elevation Data (DTED) and Geometric Ranging.

UAS CONTROL

Supports live training simulation of AH-64 aircrew Level of interoperability (LOI) 1 through 4 control for both tactical and virtual Unmanned Aerial Systems (UAS).

MONITORED PARAMETERS

- » Player ID
- » Position/Location and Heading
- » Pitch, Roll and Yaw
- » Radar Altitude
- » ASE Status (on/off)
- » Ammunition Inventories
- » Range to Target
- » Selected Sight
- » Selected Designator Laser Code and Missile Seeker Code
- » Sight Azimuth
- » Target Position
- » Weapon Event/Release
- » Missile, Rocket and Gun Firing
- » Real Time Casualty Assessment

ASMODIM INTERFACES / MODES

- » (4) RS-232/422/485 Full Duplex Channels
- » ARINC 429 (2) RX, (2) TX Channels
- » (1) 10/100 Base-T, (1) GB Ethernet
- » (3) 1553 Connectors
- » HD-SDI Video from weapon through-sight
- » Optional Encryption Module, FIPS-140-2
- » (1) Expansion Slot to allow for additional components such as a flight data recorder, data management system, image capturing, diagnostics, etc.

Integrates with any Weapons Platform to provide the Total Live Training Experience

SMODIM FIELDED PLATFORMS

- » AH-64D/E Apache Longbow
- » WAH-64 Westland Apache
- » UH-72A Lakota
- » CH-47D/F Chinook
- » UH-60A/L/M Blackhawk
- » OH-58D/F Kiowa Warrior
- » LYNX Attack Helicopter
- » UAS: Gray Eagle/ Shadow/ Raven/ Puma
- » Aircraft Survivability Equipment Trainer (ASET) IV
- » Avenger Air Defense
- » M270, M270A1 Multiple Launch Rocket System (MLRS)
- » High Mobility Artillery Rocket System (HIMARS)

A Program of Record since 1998; in use at Combat Training Centers, Aviation Home Stations, and 10 Countries

NETHERLANDS   SAUDI ARABIA   TAIWAN   U.A.E.   UNITED KINGDOM   U.S.A.   QATAR   KUWAIT   SINGAPORE   EGYPT

ANY MISSION, ANY ENVIRONMENT, ANY PLATFORM
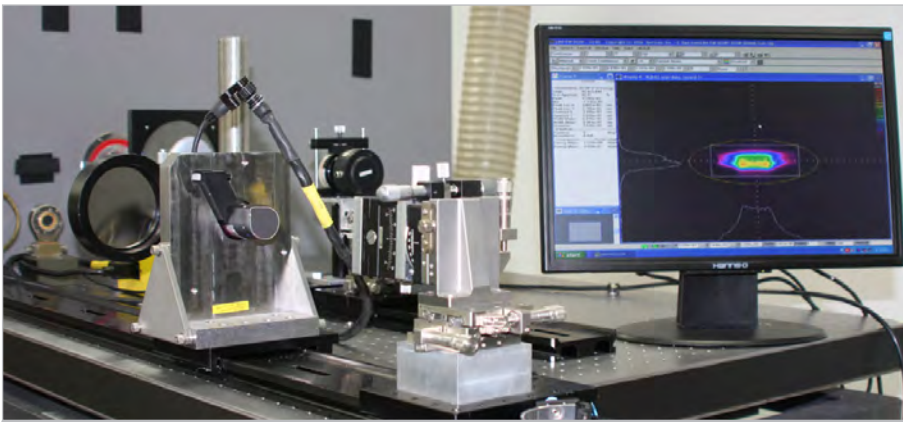
Lasers are designed to integrate with any Weapon System and provide Long Range Target Acquisition and Designation

TRAINING LASER DESIGNATOR (TLD)

The TLD is permanently embedded within the Phase III Modernized Day Sensor Assembly (M-DSA) for the AH-64D/E M-TADS/PNVS. The TLD simulates the designation performed by tactical hardware. The TLD is a self-contained subsystem consisting of a collimated Class 3R (ANSI) 904 nanometer (nm) eye-safe Laser energy transmitter capable of transmitting MILES coded messages to simulate designation during training exercises. It includes the optics required to direct the laser beams and the associated electronics to drive the TLD. MILES output is enabled when firing simulated Hellfire Missiles or Rockets when Aviation TESS is installed and engaged on the aircraft. Parameters for direct fire routine are in accordance with PMT 90-S002A. MILES Player IDs range up to 1320 unique Players and 4 Ammo codes.

The TLD is manufactured by ICE and embedded in the AH-64E M-TADS M-DSA by Lockheed Martin

FLASHWESS LASER TRANSMITTER (FLT)

The FlashWESS Laser Transmitter (FLT) employs a MILES coded Laser for weapons simulation of missiles, rockets and 30mm cannon for the UH-72A Lakota. The FLT is manufactured by ICE and embedded inside the MX-10 Surveillance Turret manufactured by L-3 WESCAM. The combined assembly is called the Articulating Sensor Package (ASP). The ASP provides day/night video and communicates with the Weapons Processor and Hand Controller for target acquisition and engagements. Two color monitors provide a view from the camera angle.

Fielded to NTC, JRTC, JMRC

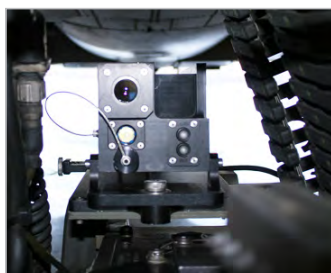*Laser testing is fully automated for MIL-STD consistency and Certified by the U.S. Army Public Health Command*
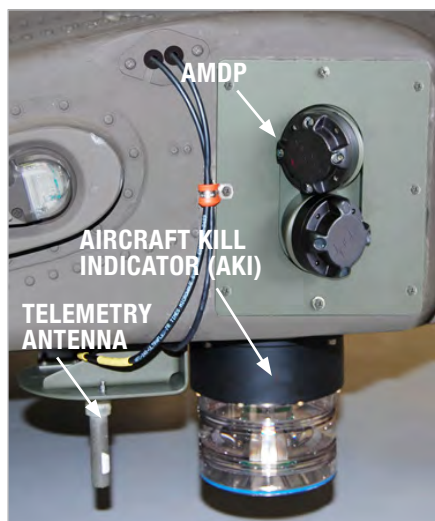

Eye-Safe Laser Range Finder/Designator (ESLRF/D) in M-TADS

TESS Gun Control Unit (TGCU) in 30mm Gun Turret

MORE LASER COMPONENTS

- » ITAS Laser Module Unit (LMU)
- » MAST MILES Transmitter
- » Wireless Shoot-Back Laser
- » Wireless Laser Sensors
- » Wireless MILES Detectors

Installed on UH-60M

AVIATION MILES DETECTOR PLATE

A stand-alone, platform agnostic MILES Detector Set that Supports a Broad Range of Applications

The Aviation MILES Detector Plate (AMDP) is designed to support Opposing Force (OPFOR) and Integrated Air Defense System (IADS) training at maneuver Combat Training Centers (CTC).

The AMDP is used in lieu of the AN/AVR-2B Laser Detector Set to "stimulate" the Aircraft Survivability Equipment (ASE) during engagements. Weapon adjudication is accomplished through a MILES Encoded Laser on the Player Platform and MILES Detectors on the Target Platform.

The AMDPs interface with the Smart Onboard Data Interface Module (SMODIM) to detect, identify and characterize MILES Laser training engagements. Real Time Casualty Assessment (RTCA) status is provided via wave files through the aircraft Intercom Communication System (ICS).

The Aircraft Kill Indicator (AKI) provides a visual indication of player status. The AKI is a hermetically sealed, high-intensity strobe light that transmits standard "Hit", "Kill" or "Near Miss" flash sequence indications when MILES Laser energy is detected.

The SMODIM processes signals received from the Laser Detectors to calculate RTCA for the host helicopter. Depending on the outcome for a given event, the SMODIM will control AKI signaling, inject audio messages via the ICS, and transmit event data via the Telemetry Antenna.

Once adjudication has resulted in a kill, the player's weapons system is deactivated, requiring reset or resurrection from the CTC Core Instrumentation System (CIS), or from a controller gun.

SMOTAR situational awareness software displays the current position/location of all SMODIM players over a moving map using EXCON monitors or an Electronic Data Manager (EDM).

The MILES Detector has a viewing window of 120° (60° off the center line spherically). Four to six assemblies per platform are installed for full coverage, along with an external GPS antenna. The Plate Brackets are mounted at the same location as the AN/AVR-2B Laser Detectors and are connected to the aircraft installed AN/AVR-2B Laser Warning System. The aircraft may have the AMDPs and AKI installed but not active.

AMDP

Modified for UH-72A

AMDP Characteristics	
Weight	10 ounces
Operating Bandwidth	Near InfraRed (NIR) Spectrum, specifically .904µm (± .025 µm)
Sensitivity	Less than 2 pJ/cm^2 @ 904nm
Built-In Test (BIT)	Fully tests via Optical IR Pulse
Reception	120 Degree Conical / -3dB
Operating Temp	-45° to +70°C
Storage Temp	-55° to + 85°C
Environmental	Hermetically Sealed & Nitrogen Purged

Meets or Exceeds MIL-STD-810G and MIL-STD-461F per DO160E Requirements

SMOTAR 6 [Fort Stewart]

File Edit View Overlays Help

2014-02-03 22:04:58   22:06   22:07   22:08   22:09   22:10   22:11   22:12   22:13   22:14   2014-02-03 22:14:58

1 sec   Go To   0.0   2014-02-03 22:08:58.663

17S MR 40195 42748 25 m   Map Config   Video

auto: registration 25 (1)

Apache 25

FLIR

Callsign	Platform	Timestamp	TOOC	Location	AGL ft	Hdg°	Health	Kts	ID	MILES	UTM Grid	Team	TC	AGL m
Apache 25	AH64D	22:08:58	00:00:00	17S MR 40196 42754		089	Alive	85.6	25	25	17 N 440196 3542754	BlueFor		
Apache 29	AH64D	22:08:58	00:00:00	17S MR 36913 43387	0	102	Alive	0.0	29	29	17 N 436913 3543387	BlueFor		0
tgt 1	TARGET	22:08:42	00:00:15	17S MR 39486 42718				0.0			17 N 439486 3542718	OpFor		
tgt 10	TARGET	22:08:42	00:00:15	17S MR 41106 42778			Alive	0.0			17 N 441106 3542778	BlueFor		
tgt 11	TARGET	22:08:42	00:00:15	17S MR 38402 43054				0.0			17 N 438402 3543054	OpFor		
tgt 12	TARGET	22:08:42	00:00:15	17S MR 38739 43024			Dead	0.0			17 N 438739 3543024	OpFor		

24 visible of 247 events

+ 22:07:30 : Apache 25 Designation LASER on
+ 22:07:33 : Apache 25 Designation LASER off
+ 22:07:49 : Apache 25 HIT tgt 12 with 2.75 rocket
+ 22:07:59 : Apache 25 HIT tgt 12 with 2.75 rocket
+ 22:08:06 : Apache 25 Designation LASER on
+ 22:08:44 : Apache 25 fired 30mm chain gun

SMODIM TRACKING, ANALYSIS AND RECORDING (SMOTAR) ~ TODAY'S AVIATION AAR TOOL
### Real-time Command and Control combined with World Class TESS Training Capabilities
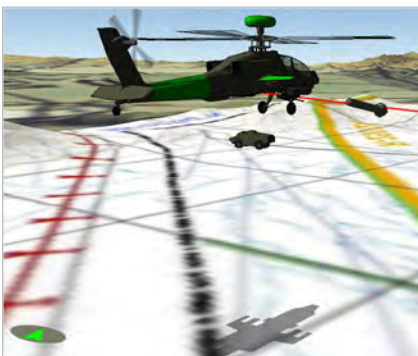
SMOTAR advanced software suite provides a complete overview of the networked area and cooperative players in near real-time. It provides the capability to develop training exercises, monitor live engagements, and record events for playback.

SITUATIONAL AWARENESS

SMOTAR maintains a dynamic position database through player-to-player communications. GPS provides real-time position data as instrumented players are dynamically tracked and recorded.

Player icons are displayed in 3D with color-coded team assignments and user-editable call signs. Player position and status updates are received through the telemetry network with event reports, such as weapon fire and engagement results. SMOTAR creates a 3D rendered visualization using this player position and event data.

Real-time data includes player Position/Location, heading, velocity, sensor heading, sight azimuth, weapon events, dead/alive status, Aircraft Survivability Equipment (ASE) status, and Real Time Casualty Assessment (RTCA).
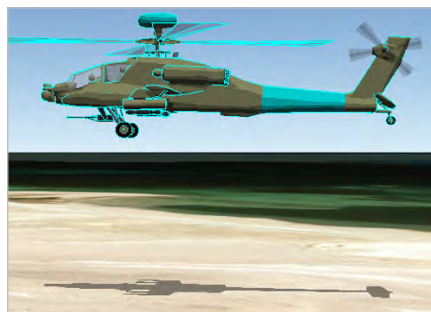
WEAPON ENGAGEMENTS

SMOTAR integrates with TESS for monitoring and tracking Force-on-Force and Force-on-Target weapons training. Weapons are simulated using MILES and Geometric Pairing. SMOTAR automatically adjudicates simulated indirect fires.

SMOTAR also integrates with the Aerial Weapons Scoring System (AWSS) from Meggitt. During live fire training, Command and Control has oversight to deny fires for safety and risk mitigation.

AFTER ACTION REVIEW (AAR)

Aircraft video is collected and imported with Pilot and CPG audio, then synchronized with playback. The user can pause, rewind and fast-forward live data feeds without interrupting recording of new data. Critical events are bookmarked and saved for playback during After Action Review (AAR).

Network Infrastructures provide monitoring and tracking at
U.S. Army Home Stations and Combat Training Centers

The **Army Aviation Data Management System (AADMS)** Lifecycle Upgrade at the National Training Center (NTC), Ft Irwin, CA, replaced the existing Air Infrastructure with five upgraded remote tower sites. AADMS provides the Aviation Network Infrastructure required for tracking players and player events during training, to include AH-64, UH-60, OH-58, CH-47 and UH-72.

The system passed extensive government acceptance tests in the harsh NTC environment and provided support during two unit rotations during implementation.

Mobile and Permanent Telemetry Systems provide scalable
RF coverage and transmit Live Data across Multiple Sites

The **Digital Range Training System / Digital Air-Ground Integration Range (DRTS/DAGIR)** supports both fixed permanent and non-permanent infrastructures to allow for integration across sites and LVC mission domains. The IA compliant Aviation Integration Subsystem (AIS) integrates Aviation TESS into the DRTS overall system. The Aviation Gateway communicates with the SMODIM network and relays position/location and weapon event data to the fixed range processor. The Aviation Gateway collects telemetry data from the air network infrastructure and forwards it to the secure DIS Gateway for integration with the exercise C2 system. The SMODIM Telemetry Test Kit (STTK) allows the fixed range to perform end-to-end testing of the DRTS and TESS components prior to the arrival of any aircraft.

FEATURES & BENEFITS

- » Data Center Systems
- » Collaboration
- » Borderless Networks
- » Backhaul Radio
- » Virtual Private Network (VPN)
- » Information Assurance
- » Fiber/Microwave
- » FIPS 140-2
- » Solar Power Battery Charging

AADMS SOLAR REPEATER AT NTC, FT IRWIN, CA

ICE NETWORKS AND GATEWAYS

- » Army Aviation Data Management System (AADMS), National Training Center (NTC), Ft Irwin, CA
- » Joint Readiness Training Center (JRTC), Ft Polk, LA
- » Joint Multinational Readiness Center (JMRC), Hohenfels Germany
- » Aviation Homestation Interim Package (AHIP); five fieldings to Ft Hood, Ft Knox, Ft Drum, Ft Stewart, and JMTC Grafenwoehr, Germany
- » Digital Range Training System/ Digital Air/Ground Integration Range (DRTS/DAGIR), Ft Bliss, TX
- » Aviation Homestation Instrumentation Training System (HITS), Ft Riley, KS
- » Exportable Training Capability-Instrumentation System (ETC-IS) (redesignated as the Joint Pacific Multinational Readiness Capability (JPMRC)
- » U.K. and Canada CTC; Area Weapons Effect Simulator / British Army Training Unit Suffield (AWES/BATUS)

CISSP Certified Information Systems Security Professional

The **Homestation Instrumentation Training System (HITS) Aviation** integrates two U.S. Army fielded training systems: the Apache Tactical Engagement Simulation System (TESS), and Homestation Instrumentation Training System (HITS). While providing similar training, prior to this integration, these two systems did not interoperate.

Apache TESS provides advanced weapons training for AH-64D/E crew. HITS provides collective maneuver training for platoon through battalion ground forces.

HITS Aviation leverages Apache TESS to integrate aviation players with HITS ground players and provide Force-on-Force/Force-on-Target collective training with real-time performance monitoring, command and control, and After Action Review (AAR).

Aviation units instrumented with Apache TESS utilize the ICE Smart Onboard Data Interface Module (SMODIM) and Aviation Gateway to transmit player and event data to remote tower sites via the telemetry network. Rack-mounted Relay Units (RRUs) located at the remote tower sites transmit data via ethernet to the Aviation Gateway located at the HITS EXCON. The Aviation Gateway is a software package that communicates with both the ICE telemetry network via the RRU and the LT2 HITS communication protocol. Data transmitted from the Aviation Gateway conforms to the approved LT2 PU Interface Control Document (ICD).

HITS Aviation integrates Aviation Weapons Training with Ground Force Maneuver for Combined Arms Force-On-Force Exercises, Real-Time Performance Monitoring, and After Action Review

The HITS ground training experience develops U.S. Army land forces that are decisive, confident and adaptive by training the execution of simultaneous, noncontiguous operations in a demanding and stressful Joint, Interagency, Intergovernmental and Multinational (JIIM) environment.
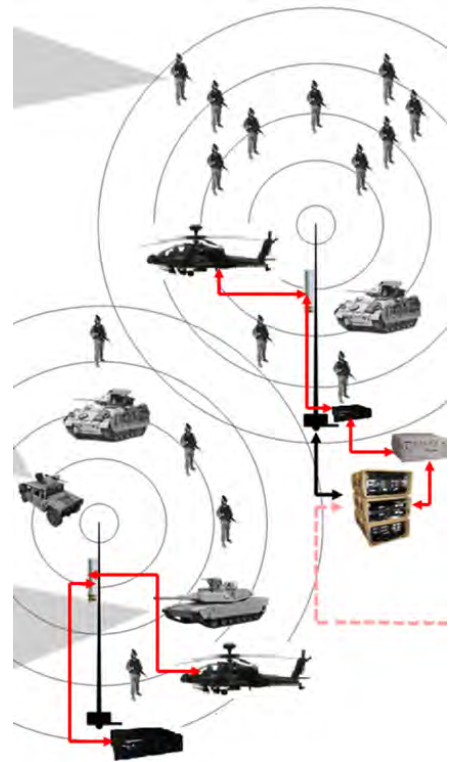
Supports up to 15 RRUs and 135 Aviation Players at 1 Hz update rate

The Telemetry Test Kit (TTK) synchronizes with the Telemetry Network and GPS to test coverage, connectivity and player data transmission.

The HITS Aviation Integration at Fort Riley, KS is complete; Follow-on HITS Aviation locations include:

» Fort Hood, TX
» Fort Bragg, NC
» Fort Stewart, GA
» Fort Campbell, KY
» Fort Bliss, TX
» Fort Carson, CO
» Fort Drum, NY
» Korea
» Germany

LIDAS

Launcher Instrumentation & Data Acquisition System (LIDAS) is used for operational testing of MLRS and HIMARS artillery systems. LIDAS provides real-time monitoring and recording of the data buses and interface devices on the platform tactical system. LIDAS incorporates real-time data reduction and simulation to maximize the volume of data collected. LIDAS has been fielded to Germany, UK, France, Korea and Japan.

All Live Fire training at the White Sands Missile Range (WSMR) requires LIDAS to be installed on the launchers.

PALADIN-TESS

The M109A6 Paladin-TESS is an integrated simulation system that supports artillery weapons training without using ammunition. Crew members execute fire missions as they would in combat using normal Tactics, Techniques and Procedures (TTPs). Real-time monitoring of crew functions provides operator performance evaluation. Paladin-TESS links to other Live-Virtual-Constructive (LVC) simulations and operates with existing MILES training systems for force-on-force participation. System installation is twenty minutes or less.

MLRS & HIMARS TESS

The MLRS-TESS provides munitions simulation for the M270/M270A1 MLRS and M142 HIMARS launchers. MLRS-TESS interfaces with the onboard Fire Control System (FCS) to provide crew cab fire control panel indications of simulated munitions. All operations are conducted using normal TTPs. Weapon faults require emergency action for realistic training. Loading and reloading is conducted when the vehicle is in stow.

Artillery Systems provide Weapons Proficiency training without using Ammunition

MWSA2 WEAPON SIMULATOR

The MLRS MWSA2 Weapon Simulator is designed to simulate all munitions fired by the MLRS and HIMARS launchers. It operates in two modes. In tactical mode, the MWSA2 Weapon Simulator performs high fidelity simulation including tactical responses to all mode sequences executed during pre-launch and launch operations. The MWSA2 exercises the launcher's tactical software and circuits in the same manner as a live round. In non-tactical mode, the MWSA2 provides the "Trainer" capability (also supported by the M68A2 Trainer) using the launcher's non-tactical training software.

The Trainer replicates the weapons interface to the crew but does not activate the tactical interface.

M68A2 MLPA TRAINER

The M68A2 Missile Launch Pod Assembly (MLPA) Trainer operates identical to the non-tactical mode of the MWSA2, functioning as a set of weapon and fault switches read by the launcher to determine which training software is executed.

The M68A2 Trainer is a fielded U.S. Army Program of Record and an economical alternative to the MWSA2.

FEATURES & BENEFITS

- » Quick installation, minimum support requirements
- » Operates on stand-alone power
- » Immediate AAR & THP
- » Real-Time Data:
  - Position/Location
  - Targeting
  - Weapon Events
  - Geometric Pairing
  - Real-Time Casualty Assessment
  - Paladin Gun Orientation
  - MLRS LLM Azimuth & Elevation

MWSA1   M68A2

OVER 520 SYSTEMS FIELDED

A Laser-based system designed to conduct simulated Live Fire Weapon Engagements

The Improved Target Acquisition System-Tactical Engagement Simulation System Field Training System (ITAS-TESS FTS) provides the capability for the Warfighter to train with the TOW anti-tank weapon system and conduct weapon engagements using normal Tactics, Techniques and Procedures (TTPs).

TOW engagements are adjudicated via MILES laser pairings. Training event data is passively collected and transmitted to the Mobile Command and Control (MCC) for real-time tracking and After Action Review (AAR).

The Instrumentation Player Unit (IPU) contains a central processor for MILES weapon engagements, and is also a target in Geometric Pairing engagements. RTCA is indicated visually by the Vehicle Kill Indicator (VKI) and audibly with a built-in alarm.

The Laser Module Unit (LMU) is comprised of a MILES Laser and an eye-safe boresight Laser. An LCD displays system status, BIT data, far target location, ammunition status, ARM and SAFE indications. The LMU retains boresight during movement over rough terrain and is easily verifiable to line-of-sight.

The IPU and wireless components are transferable to any vehicle (mobile or stationary), providing a versatile and customized mobile training system.
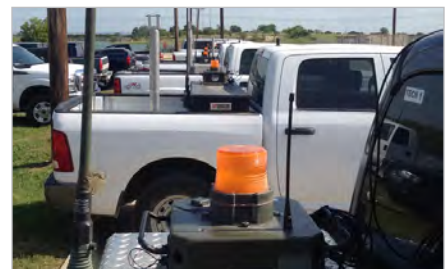

MOBILE TARGET SET

The Mobile Target Set is used to provide an Opposing Force (OPFOR) on the MILES Battlefield for Force-on-Force collective training firing simulated weapons.

The IPU's built-in MILES sensors affiliate with all MILES devices that detect MILES code and transmit engagement data back to the IPU over the 225-400 MHz Vehicle Area Network (VAN). Platform type, player ID, weapon loads, and radio frequencies are programmable during initialization. Weapon engagements are conducted using the Wireless Shoot-Back Laser (WSBL) and Wireless Laser Sensors (WLS). The WSBL is programmed to emit MILES weapon codes by setting the player type to the affiliated control unit. A FlashWESS device is on the end of the gun barrel. The WLS detect MILES code and transmits the data over the VAN to the IPU. Player and engagement data are transmitted to the MCC for real-time recording, monitoring and playback.
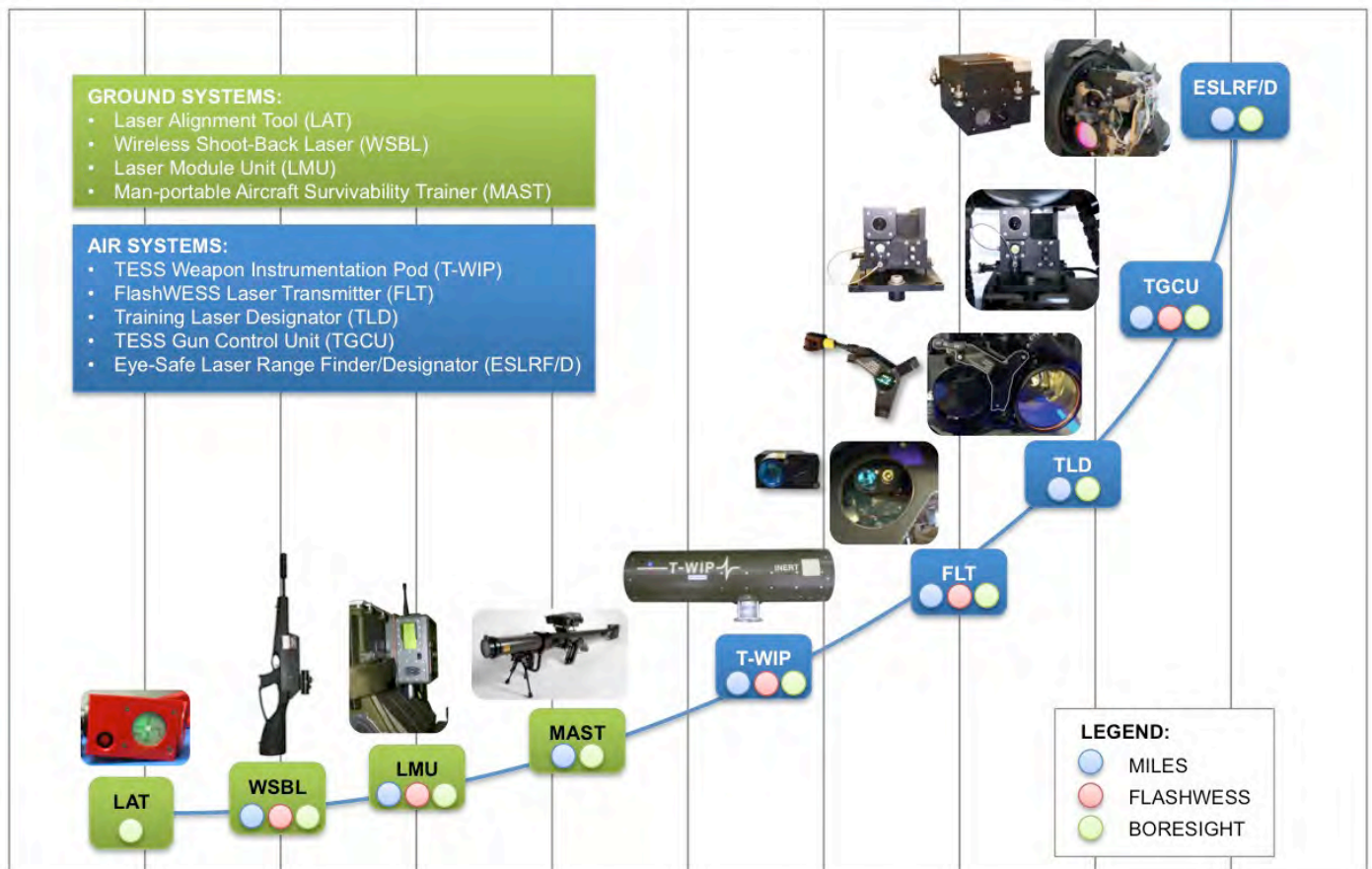
END-TO-END MANUFACTURING CAPABILITIES
VERTICALLY INTEGRATED & MATRIXED

PROUDLY MADE IN U.S.A.

GROUND SYSTEMS:
- Laser Alignment Tool (LAT)
- Wireless Shoot-Back Laser (WSBL)
- Laser Module Unit (LMU)
- Man-portable Aircraft Survivability Trainer (MAST)

AIR SYSTEMS:
- TESS Weapon Instrumentation Pod (T-WIP)
- FlashWESS Laser Transmitter (FLT)
- Training Laser Designator (TLD)
- TESS Gun Control Unit (TGCU)
- Eye-Safe Laser Range Finder/Designator (ESLRF/D)

LAT · WSBL · LMU · MAST · T-WIP · FLT · TLD · TGCU · ESLRF/D

LEGEND:
- MILES
- FLASHWESS
- BORESIGHT

LOW-END TO HIGH-END LASER IMPLEMENTATION

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FIELD SERVICE REPRESENTATIVES

ICE employs permanent Field Service Representatives (FSRs) at the National Training Center (NTC), Joint Readiness Training Center (JRTC), Fort Hood TX, UAE, Taiwan, and United Kingdom. Fort Hood personnel support TESS operations and maintenance training for U.S. Army and international customers.

WORLDWIDE SERVICES

ICE training systems are currently fielded in nine foreign countries and throughout the U.S. Appropriate security clearances are maintained, along with identification and knowledge of ITAR and export regulations.

CUSTOMER TRAINING

Training solutions are customer focused with full analysis of current service operations including installation, maintenance and troubleshooting. Training activities are performed in operational environments and meet military standard requirements. Training Services include:

» Training Management Services
» Courseware and Class Instruction
» Mission Planning
» New Equipment Training
» Hands-on Installation, Operation Maintenance and Troubleshooting
» AAR Production and Presentation

ENGINEERING SERVICES

Experienced with all levels of system integration to routinely provide the following support:

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