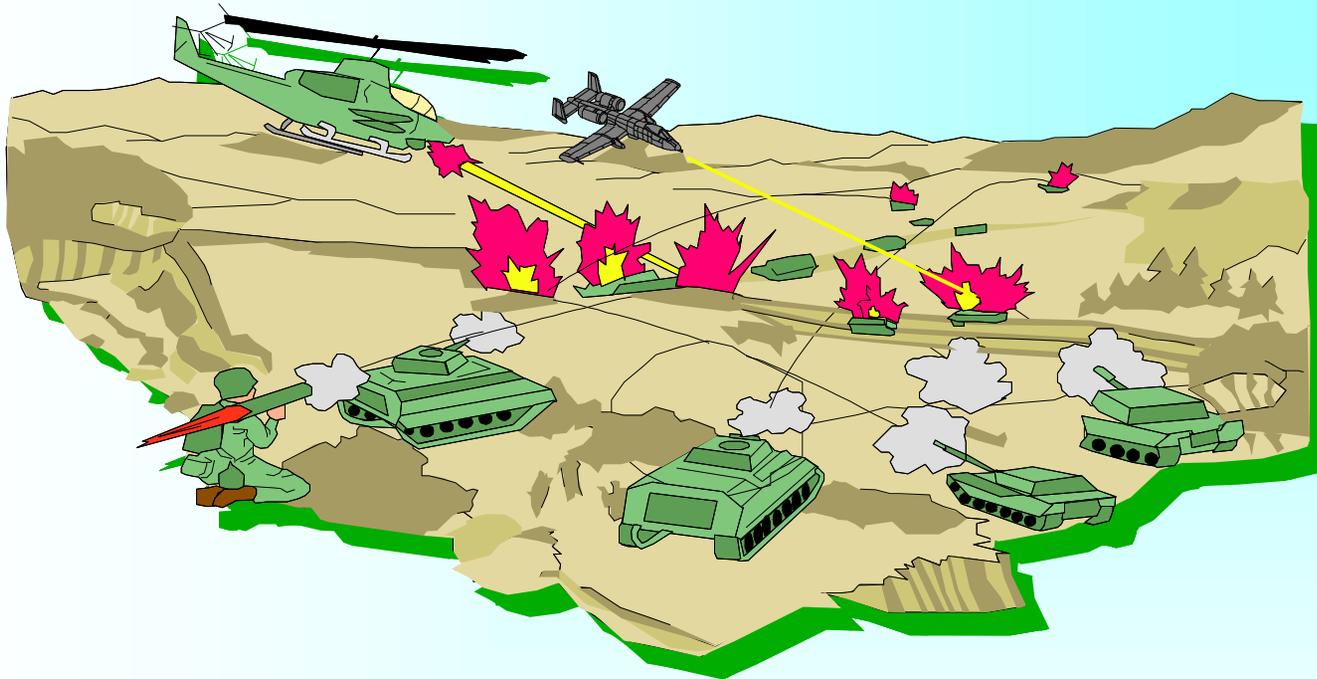


Requirements Overview



CTC-OIS Industry Day

U. S. Army Training Support Center

31 August - 1 September 1999



WHERE TOMORROW'S VICTORIES BEGIN



Topics

- **ATSC/ATMD Role**
- **Army Modernization Challenge**
- **Training Support Infrastructure**
- **Training Instrumentation**
 - *Common Training Instrumentation Architecture*
 - *NTC-OIS*
- **The Bottom Line**

ATMD Mission

Through the DCST, ATMD serves as HQDA Executive Agent and Staff Proponent to provide the following Products and Services:

- ✓ **Live Training Support including Instrumentation, Tactical Engagement Simulation (TES), and OPFOR Programs**
- ✓ Range Modernization
- ✓ Standards in Training Commission (STRAC)
- ✓ **Synthetic Environment (SE) Training Support**
- ✓ Land Management and Integrated Training Area Management (ITAM)
- ✓ **Training Device Requirements Documentation, and Training Aids, Devices, Simulators, & Simulations (TADSS) Management Programs**
- ✓ Fielded TADSS Inventory Management
- ✓ WarMod XXI axis of Army Training XXI Program Management
- ✓ **Army Modernization Training (AMT) Support to Force XXI and Army After Next (AAN)**
- ✓ Training Mission Area (TMA) and Warfighting Lens Analysis (WFLA)



Army Modernization Challenge

Equipping the future Army is today's foremost challenge.

— GEN Shinseki, 1996

Legacy TADSS

1984-1998

Heavy Force
Focus

Influenced by
Desert Shield/Desert
Storm

Cold War &
Industrial Age Oriented

FSCATT Phase I

TWGSS



Live



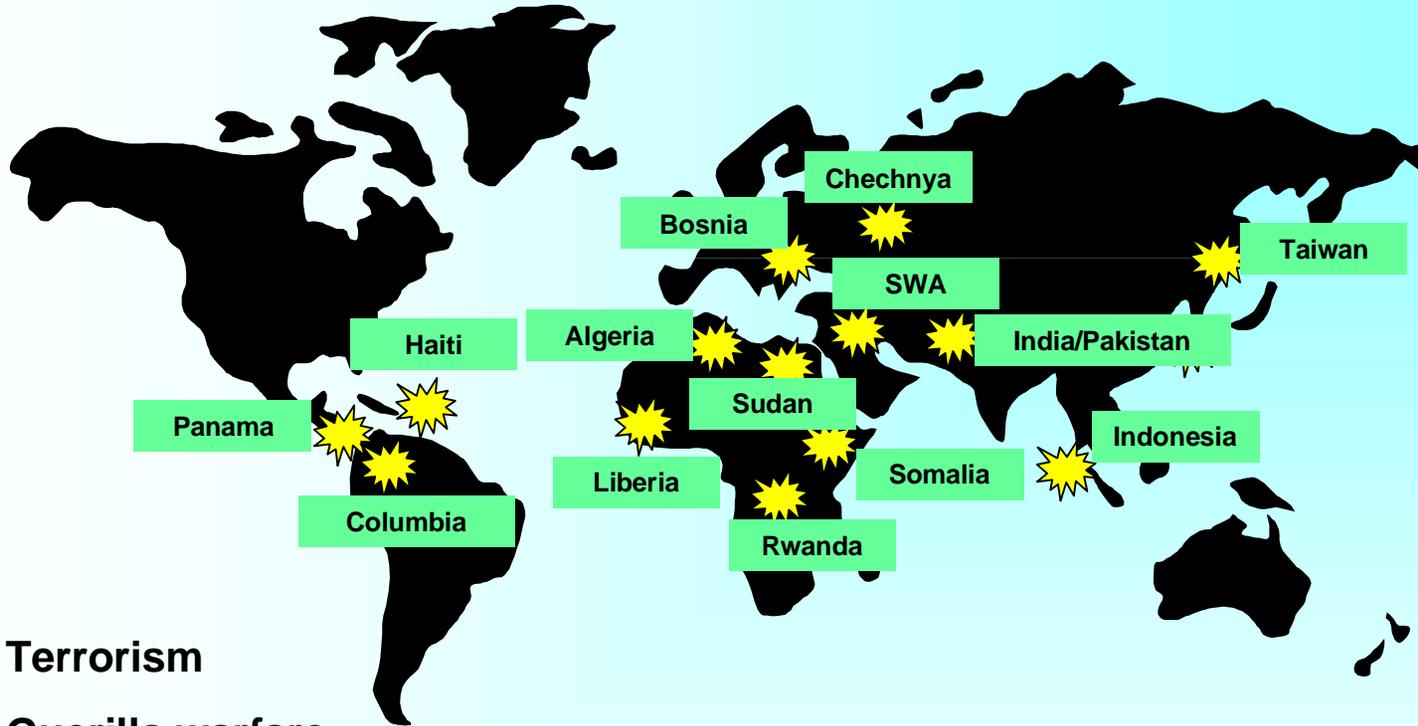
Virtual

FAMSIM



Constructive

The Character of Military Operations is Changing



Terrorism

Guerilla warfare

Access to space

Information warfare and tech

Ballistic missiles (vice air forces)

Night vision equipment

Sanctuary taken in complex and urban terrain

Weapons of mass destruction

Theater missile defense

Mobile/mechanized reserves

Complex relationships forming of terrorists, criminals, failed and non-states

Precision lethality

Army Force XXI-First Digital Division and Beyond



Future TADSS must support the training challenges of Force XXI and Digitization....



Training Modernization Requirements FY02-2010

CTC Modernization

- CTCs training will:
 - Remain focused on wartime missions
 - Stress realistic, sustained, multi-echeloned, and totally integrated training at all levels
 - Support the achievement and sustainment of training readiness in units with virtual and constructive simulations and simulators
 - Achieve instrumentation commonality across the CTCs
 - Provide Standard After Action Reviews linked to homestation and learning institutions
 - Validate training proficiency through live-fire exercises
 - Include an instrumented MOUT training experience during every rotation



Training Support Infrastructure (TSI)

In no other profession are the penalties for employing untrained personnel so appalling or so irrevocable as in the military.

1933

— GEN MacArthur,

Problem Statement

"Providing a future Training Support Infrastructure (TSI) in an environment of limited resources, new technologies, and changing paradigms."

Responding to continuous force modernization initiatives and changing mission requirements

What is TSI?

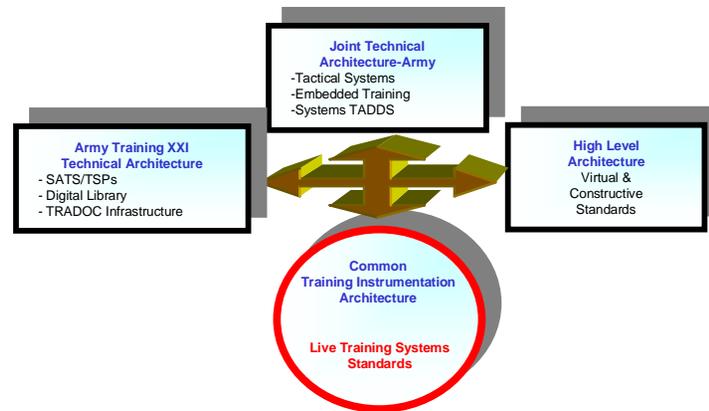
The basic underlying framework of enabling technologies, facilities and services required by homestation, CTC and deployed units to train and sustain force unit readiness.

Why TSI?

- Unit training readiness is job ONE
- Army does not manage training support as an integrated TSI
 - Current training support assets aging; expensive to own and operate; not matched to future requirements
 - Stovepiped Nonsystem TADSS
 - Independent, inconsistent Systems TADSS
 - Technical architectures not mature or integrated
 - Communications infrastructure needs training linkages
 - Management and resourcing structure disjointed
- TSI is necessary to:
 - Satisfy changing force modernization/unit mission requirements
 - Sustain training support product relevance to the training audience
 - Support homestation, CTC and deployed unit needs
- TSI solutions must be:
 - Cost effective
 - Interoperable
 - Supportable
 - Connectable
- TSI must leverage existing/planned Army programs, projects and systems

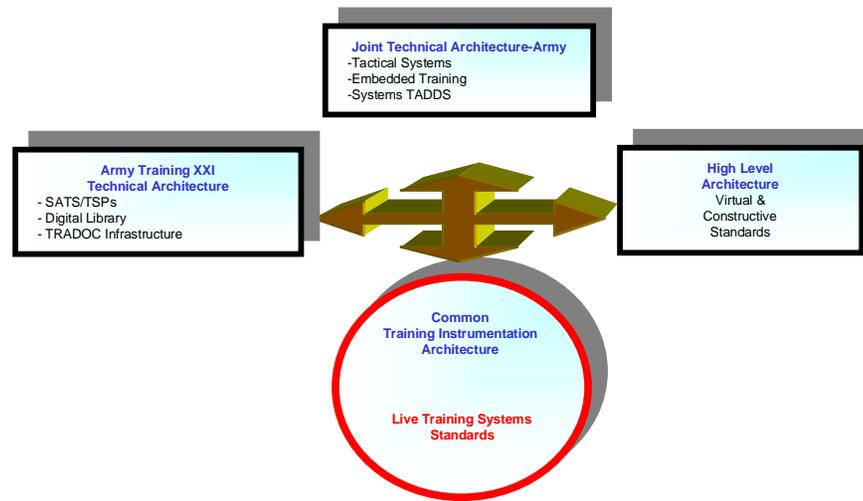
TSI Components

- Communications (Intra/Inter- Installation/Theater)
- TADSS (System and Nonsystem/Embedded)
- Facilities and Training Support Services:
 - Ranges
 - Simulation Centers
 - Contracted Support Services
 - Etc.
- Common Training Support Architectures:
 - JTA-A
 - HLA
 - ATTA
 - CTIA



TSI Goals

- By 2010 establish an Army Training Support Infrastructure that meets critical Armywide individual through collective training requirements.
- By 2006 institutionalize requisite policies and management processes that, through time, enable sustainment of an integrated, efficient, and effective training support infrastructure.

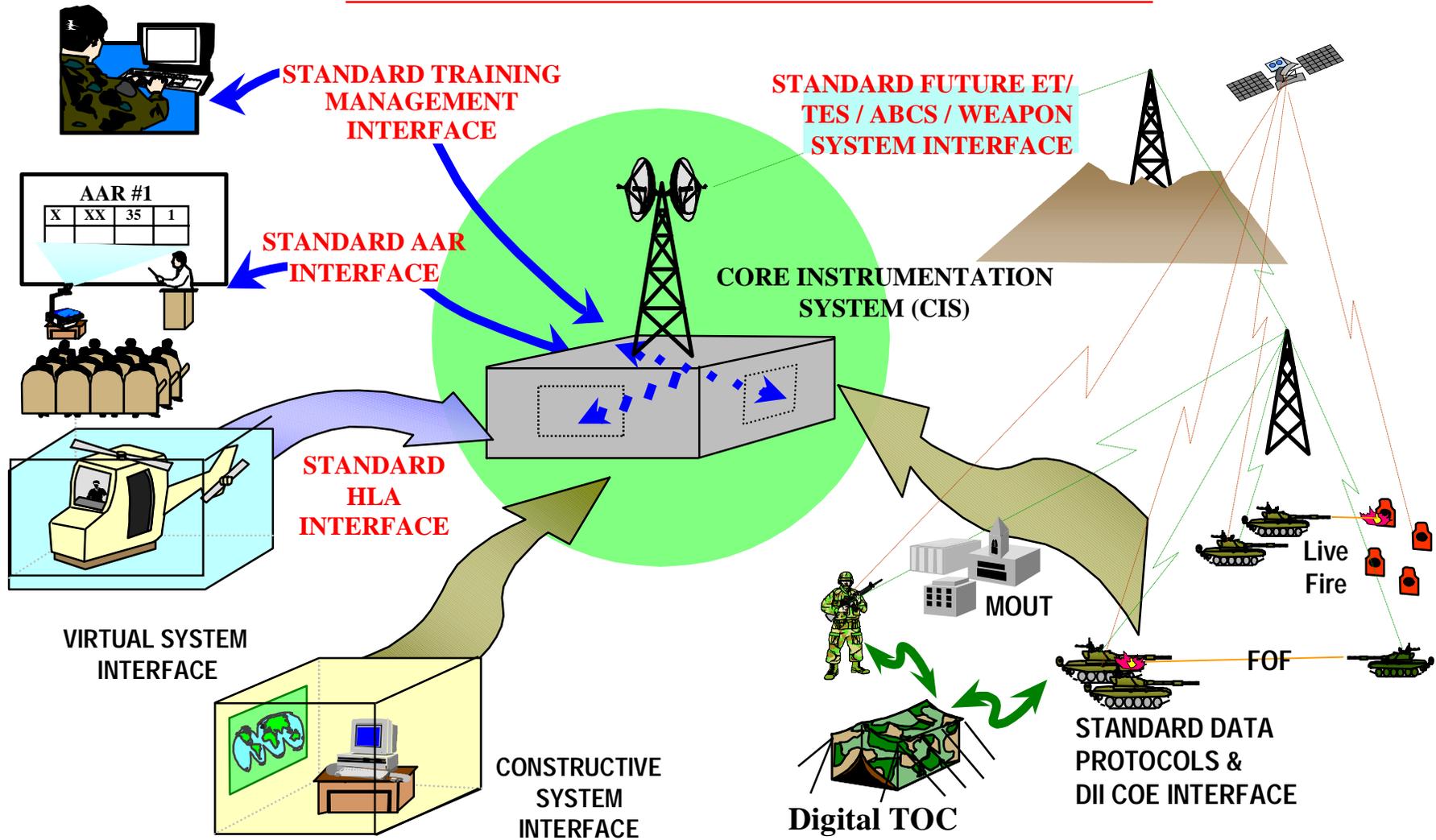


Training Instrumentation

The secret to effective and efficient training today is found in achieving the proper balance of the live, virtual and constructive domains.

— LTG Burnette, Jr., 1997

Training Instrumentation Concept



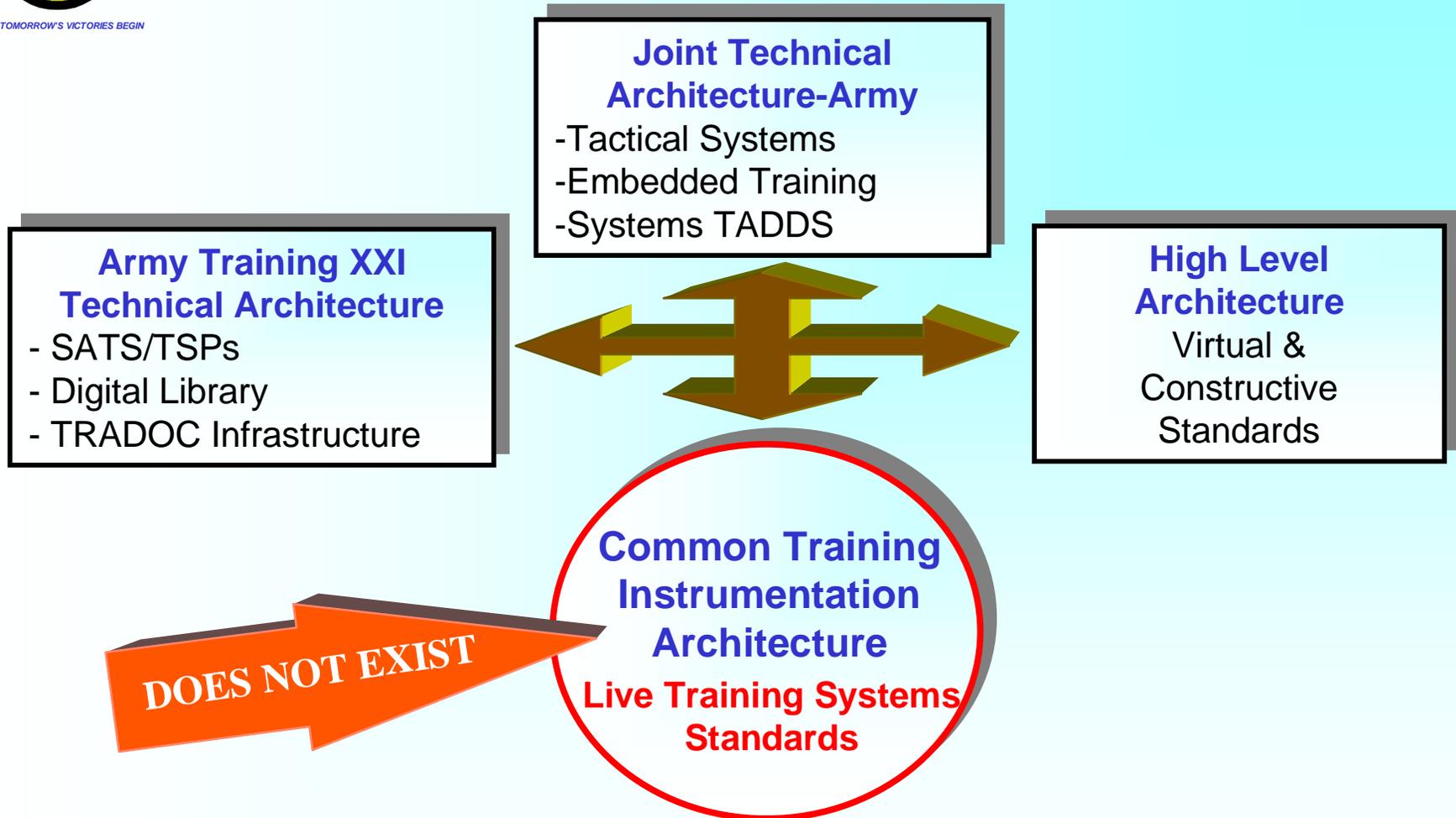
Training Instrumentation

- Instrumentation Sites
 - ***Combat Training Centers (3 MCTC/BCTP)***
 - Homestation (Selected AC/RC Sites)
 - MOUT (CTC and Homestation)
 - Ranges (DMPRC)
- Instrumented Training Enablers
 - ***Common Training Instrumentation Architecture***
 - Live Environment Training Strategy (LETS)
 - Common Tactical Engagement Simulation (One-TESS)
 - HW/SW Components (System TADSS/
Non-system TADSS)



WHERE TOMORROW'S VICTORIES BEGIN

Integrated Training Support Architectures



GOAL:

- Provide Technical Linkages Across Architectures
- Create Conditions for Seamless Installation, CTC, & Deployed Unit Training

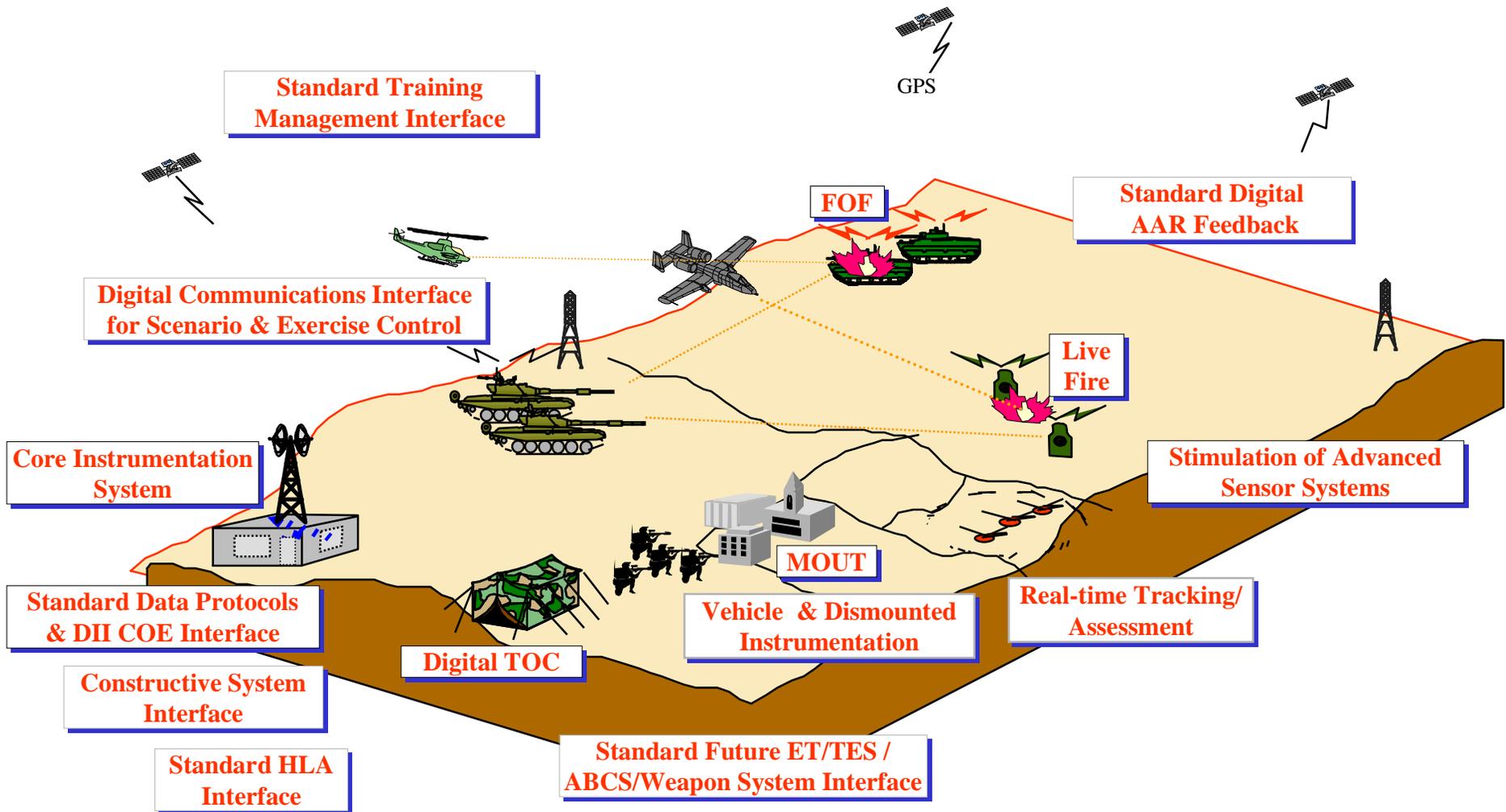
Combat Training Center and Homestation Capabilities & Requirements...



Functional Requirements

- Wrap-around Constructive Simulation linked to ABCS systems and exercise drivers
- Instrumented Weapon Systems
- Live Fire qualification and sustainment - Scenario Drive
- Maneuver - Live & Virtual FOF
- Linked Live, Virtual, Constructive Simulation (STOW)
- Semi-Automated Forces (SAF) - Constructive & Virtual
- Credible OPFOR (CTCs)
- Standard After Action Review - Links between Homestation, CTCs, & Learning Institutions
- Infrastructure
 - Digital Ranges & Tgts
 - Instrumentation

National Training Center OIS

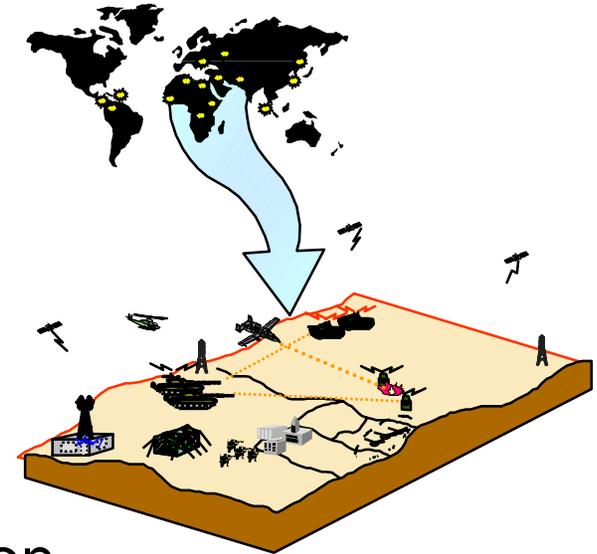


One-TESS (One-Tactical Engagement Simulation System)

- Follow-on to MILES 2000
- Current TES will not realistically portray emerging and future weapons systems
- One-TESS must:
 - Provide fully embedded TES modules in most weapon systems and small and reliable appended modules to other tactical systems which:
 - Simulate the full range of effects for all weapons systems/munitions
 - Stimulate weapon system sensors
 - Be seamlessly integrated among live, virtual, and constructive simulations
 - Support precision gunnery in FOF and tactical range environments
 - Be fully compliant with the Common Training Instrumentation Architecture
- One-TESS is part of the Live Environment Training Strategy (LETS)

Realities

- Budget declining
- Manpower reductions
- Information operations overload
- Pace and scope of force modernization
- Flexible system designs mandatory
 - High level of Live, Virtual, and Constructive integration
 - Advanced services and technologies
 - Lower cost of acquisition and ownership
 - Modular upgrades/replacement



The Bottom Line

- Training support paradigm shift must happen
- Industry support is paramount
- CTIA is “linchpin” for future instrumented training
- NTC-OIS must represent a “leap-ahead” in instrumented training technology

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