



PEO STRI

Army Tactical Engagement Simulation System (A-TESS) Industry Day



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Mr. Dave Brunat, APM I-MILES
Mr. Kyle Platt, Project Director

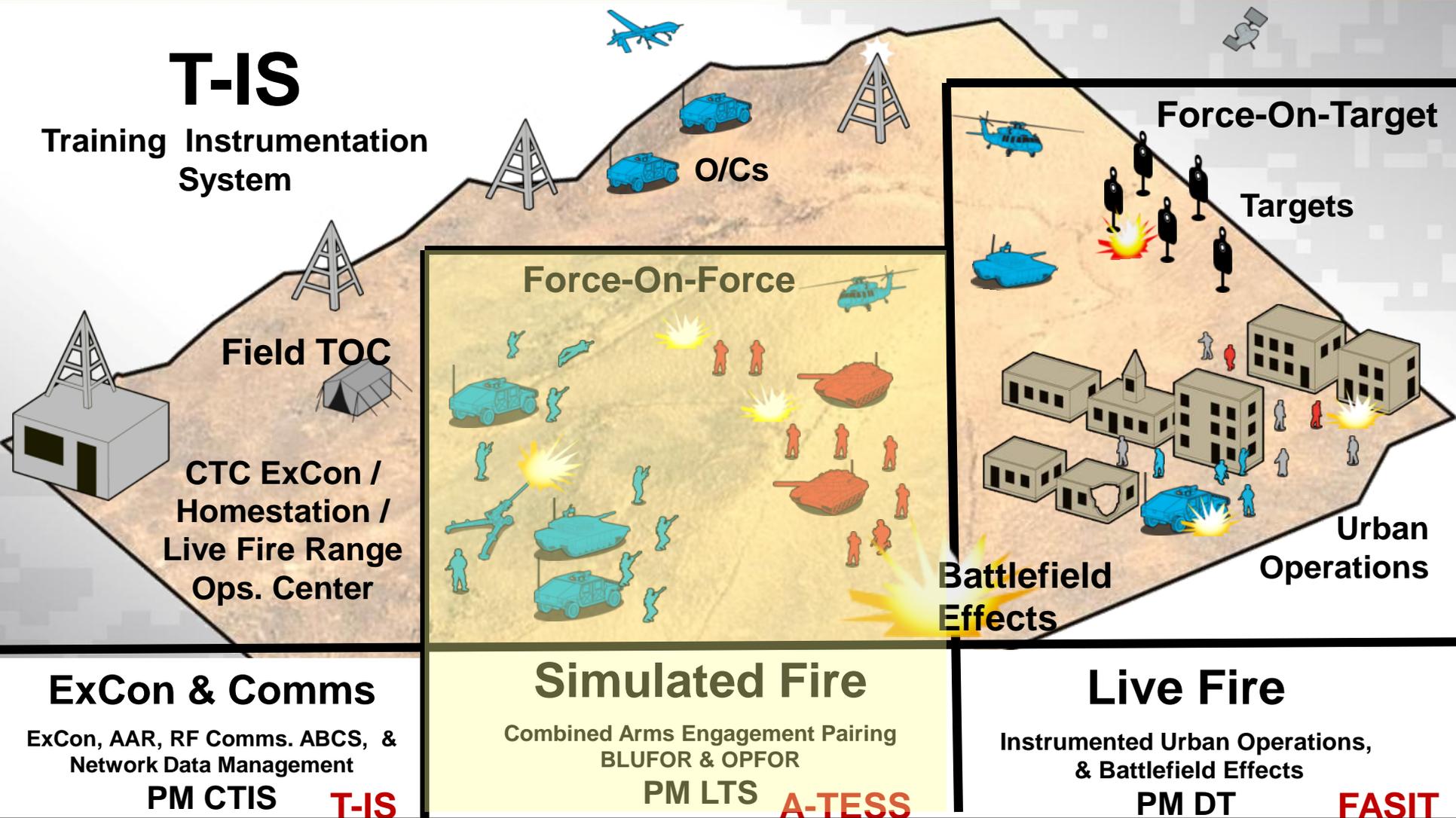
Summer 2013

Topics

- Who we are.
 - Live Test & Training Operational Environment.
 - A-TESS Operational View (OV-1)
- A-TESS.
 - Acquisition Approach.
 - Capability Document Update.
 - Technology Challenges.
- Supporting Initiatives.
 - Consolidated Product Line Management.
 - Architecture.
 - Live Training Engagement Composition (LTEC).
 - Governance.
 - Test & Training.
 - MILES / TESS Test Bed.
- Collaboration Opportunity
- Way Ahead

Live Test & Training

Operational Environment



A-TESS

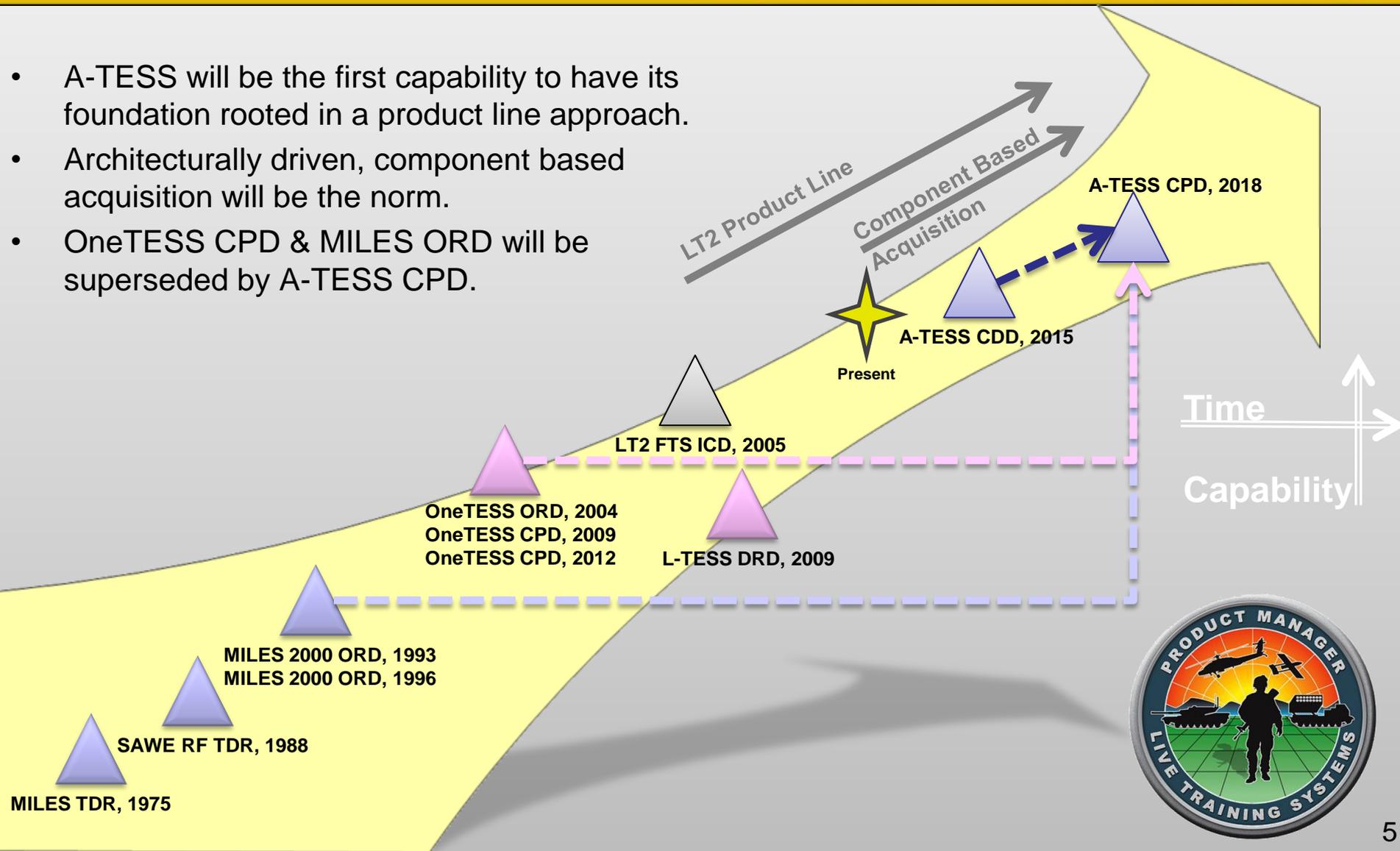
Operational View



Acquisition Approach

A Capability Document History Lesson

- A-TESS will be the first capability to have its foundation rooted in a product line approach.
- Architecturally driven, component based acquisition will be the norm.
- OneTESS CPD & MILES ORD will be superseded by A-TESS CPD.



Acquisition Approach

Draft Program Structure

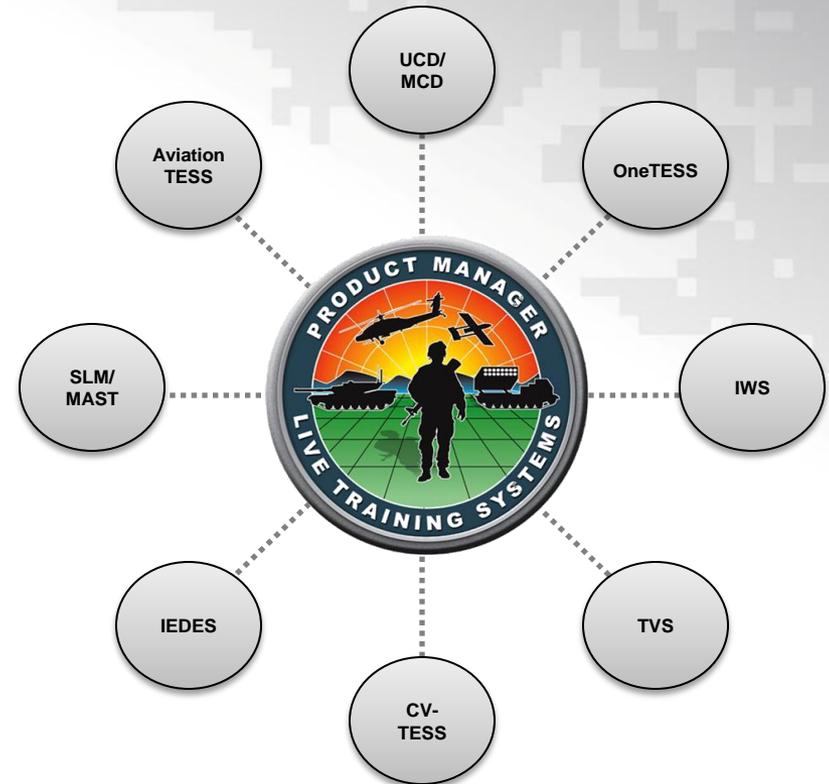


	Increment #1					Increment #2						Increment #3					Sustainment																		
	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43							
Milestones	★ MS-B Development Contract Award		★ MS-C/B Development Contract Award			★ MS-C/B Development Contract Award					★ MS-C																								
Development	Architecture Development & Maintenance																																		
	Artillery Simulation		Increment 1 PDSS Concurrency/Technology Insertion <i>Focus: Backfilling capability into previous increments</i>						Increment 1 & 2 PDSS Concurrency/Technology Insertion <i>Focus: Backfilling capability into previous increments</i>																										
	Mortar Simulation (Mounted/Direct Lay/Hip Shoot)		IED/C-IED		Unmanned Ground Systems (UGS)		Counter Battery		Artillery CM			Non Lethal Weapon Systems			Directed Energy Weapons																				
	Rotary Wing Aviation Integration		CBRNE		Air Defense Systems		Precision Guided Munitions		Improved Audio & Visual Cueing			Mine/CM		Naval Gunfire/Close Air Support (CAS)																					
	Direct Fire Augmentation		MLRS		Active Protection Systems (APS)		Laser Guided Munitions																												
	Counter Defilade Simulation (M-25/M6-19/M203/M320)		Unmanned Air Systems (UAS)		Counter Sniper																														
	Automated Casualty Assessment (ACA) & Automated Maintenance Assessment (AMA)		Improved Posture/Collateral Effects				OPFOR Anti-Tank																												
Production	A-TESS Artillery Simulation																				A-TESS Artillery Simulation					A-TESS Artillery Simulation					A-TESS Artillery Simulation				
	A-TESS Mortar Simulation																				A-TESS Mortar Simulation					A-TESS Mortar Simulation					A-TESS Mortar Simulation				
	A-TESS Rotary Wing																				A-TESS Rotary Wing					A-TESS Rotary Wing					A-TESS Rotary Wing				
											IED/CIED					IED/CIED					IED/CIED														
											UGS/UAS					UGS/UAS					UGS/UAS														
											CBRNE					CBRNE					CBRNE														
											MLRS/Precision & Laser Guided Munitions					MLRS/Precision & Laser Guided Munitions					MLRS/Precision & Laser Guided Munitions														
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											Collateral Effects					Collateral Effects					Collateral Effects														
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											Air Defense/Counter Battery					Air Defense/Counter Battery					Air Defense/Counter Battery														
											Artillery Countermeasures					Artillery Countermeasures					Artillery Countermeasures														
											Non-Lethal Weapon Systems					Non-Lethal Weapon Systems					Non-Lethal Weapon Systems														
											Mines					Mines					Mines														
											Directed Energy					Directed Energy					Directed Energy														
										Naval Gunfire / Close Air Support					Naval Gunfire / Close Air Support					Naval Gunfire / Close Air Support															
A-TESS Dismount Recompete (Legacy IMLES IWS)					A-TESS Dismount Recompete (Legacy IMLES IWS)					A-TESS Dismount Recompete (Legacy IMLES IWS)					A-TESS Dismount Recompete (Legacy IMLES IWS)																				
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Architecture Maintenance																																			
Increment 1, 2 and 3 PDSS																																			

Acquisition Approach

Legacy - Limited Interoperability

- Systems currently acquired using the MILES Communication Code (MCC) as the primary mechanism for interoperability.
- Independent PAN for capability.
- Backwards compatibility required with Legacy Systems.
- Limited RDT&E.
- Capability has been injected via obsolescence and PDSS.



Architecturally divergent solutions have yielded a significant sustainment challenge.

Acquisition Approach

The Vision - Component Based

- Architecturally driven products and solutions.
- Live Training Engagement Composition (LTEC) driven solutions.
- Fully interoperable and replaceable components.
 - Small Arm Transmitters.
 - Detectors.
 - Halo's.
 - CVKI.
 - Dismount/CoB Vests.
 - Human Machine Interfaces.
 - Etc...



Interface management is key to the realization of component based acquisition.

Capability Document Update

Capability Development Document (CDD)

- A-TESS Capability Development Document (CDD) is near complete.
 - All paragraphs have been written.
- DoDAF system oriented architecture is complete.
 - Near term objective: Documenting DoDAF in the Army's Architecture Integration and Management Division (AIMD) required format.
- Cost Benefit Analysis (C-BA).
 - Joint TCM-L/PM TRADE IPTs occurring regularly.
 - 3 Courses of Action.
 - DASA-CE validated.
- Stakeholder staffing 15 April 2013 – 7 June 2013.
- ARCIC (Gatekeeper) staffing to begin Q1FY14.
- Anticipated approval - Q4FY14.

Paragraph 6 (Requirements) is currently available on the LT2 Portal.

Capability Document Update

Course of Action Analysis (COAA) / Cost Benefit Analysis (C-BA)

- Course of Action 1 (COA 1) - Status Quo.
 - What happens if A-TESS does not get funded.
 - I-MILES continues.
 - OneTESS continues.
- Course of Action 2 (COA 2) - Appended TESS.
 - Develop future TESS with a focus on appending only.
- Course of Action 3 (COA 3) - Embedded TESS.
 - Pure embed where practical.
 - Support pure embedment.
 - Appended devices where required.





Supporting Initiatives

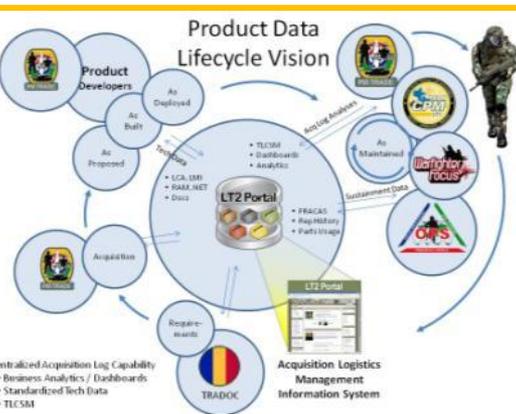
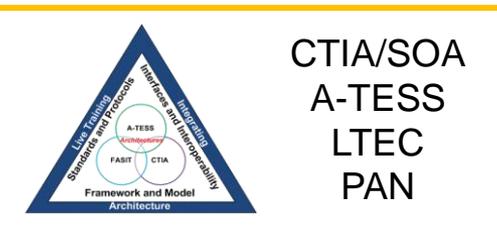
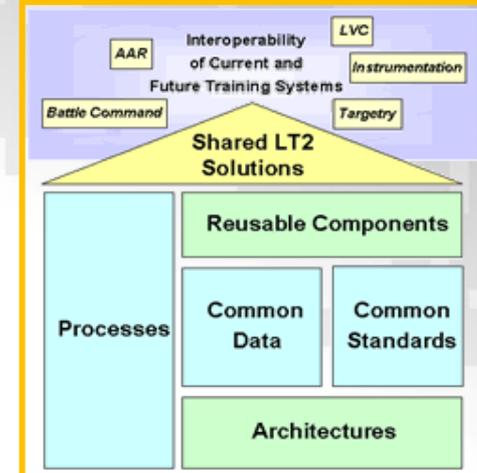
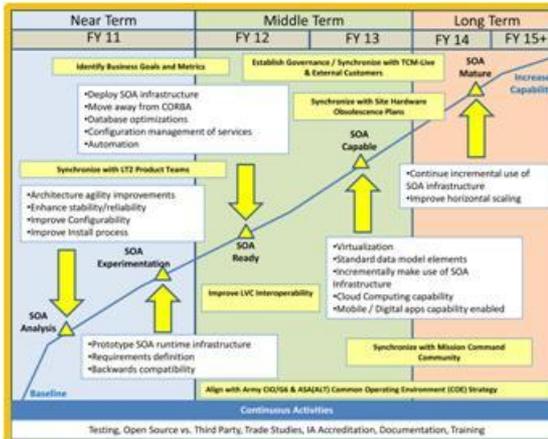
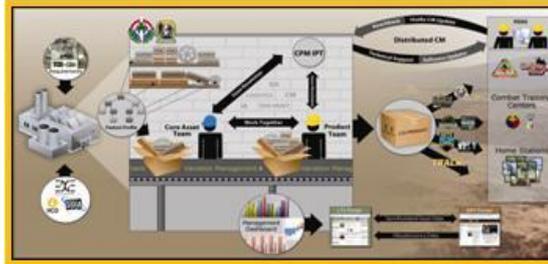


Architecturally driven, operationally proven.

Distribution A: Approved for public release; distribution is unlimited.

Consolidated Product Line Management

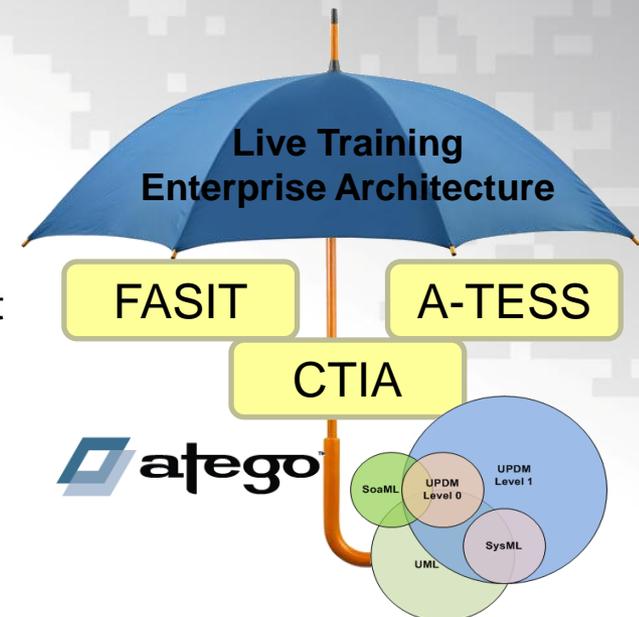
- CPM IDIQ.
- Software Factory.
- 2nd Generation Product Line Management (2GPLM).
- Consolidated CM.
- Integration & Development Environment (IDE).
- Core Asset Evolution.
- CTIA 4.0, Architectural Framework & Standards.
- System of Systems.
- LT2 Portal.



Architecture

Current Efforts

- Completed Tasks.
 - Completed a data driven market research to solidify an architectural tool to help manage our system-of-systems challenges.
 - Decomposed the NTC, JRTC and a Homestation product baseline into the tool.
 - Generation of a Live Training Enterprise Architecture.
 - Evolvement of CTIA, A-TESS and FASIT Reference Architectures.
- On Going.
 - Joint Government / Industry evolvement of reference architectures.
 - System of Systems Governance schema.
 - How to keep model up to date.
 - Impact Analysis.



Effective collaboration between Government and industry is key to evolving the LT2 product line.

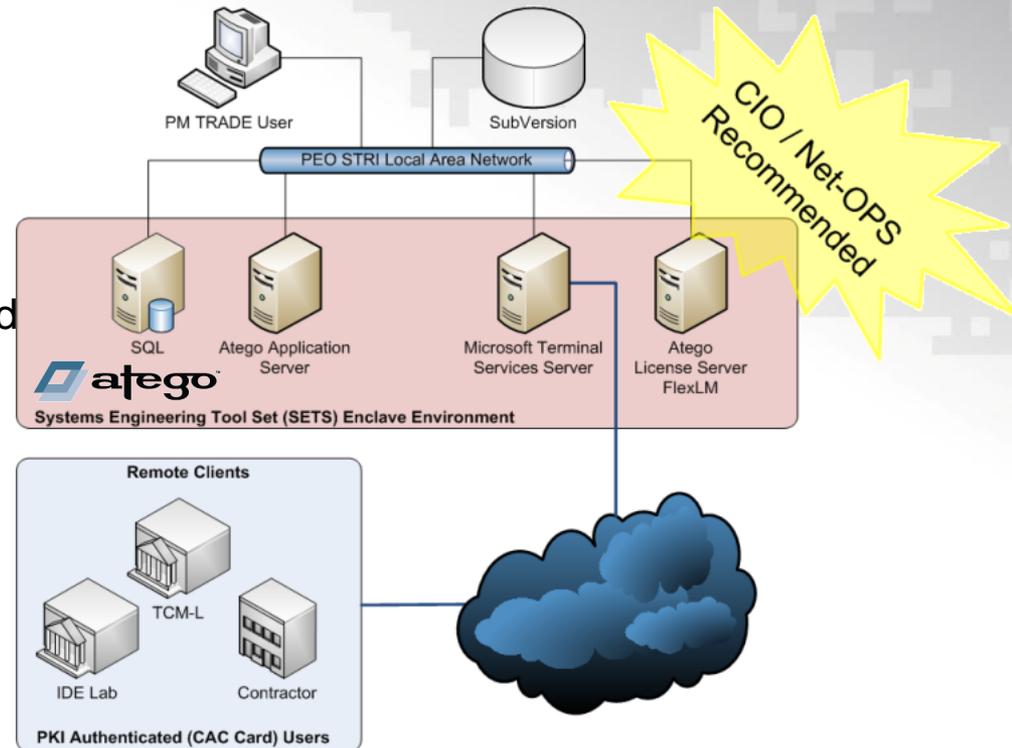
Architecture

Decision Analysis Report / Tool Evaluation

Why should you care?

- Remote access planned to be made available with use of a CAC.
- Growth potential for remote model development possible.
- PM TRADE is working to develop SOW and CDRL language to allow for UPDM/SysML deliveries on acquisition programs.
 - Needed to prevent stale data.
- Draft governance methodology is being developed.

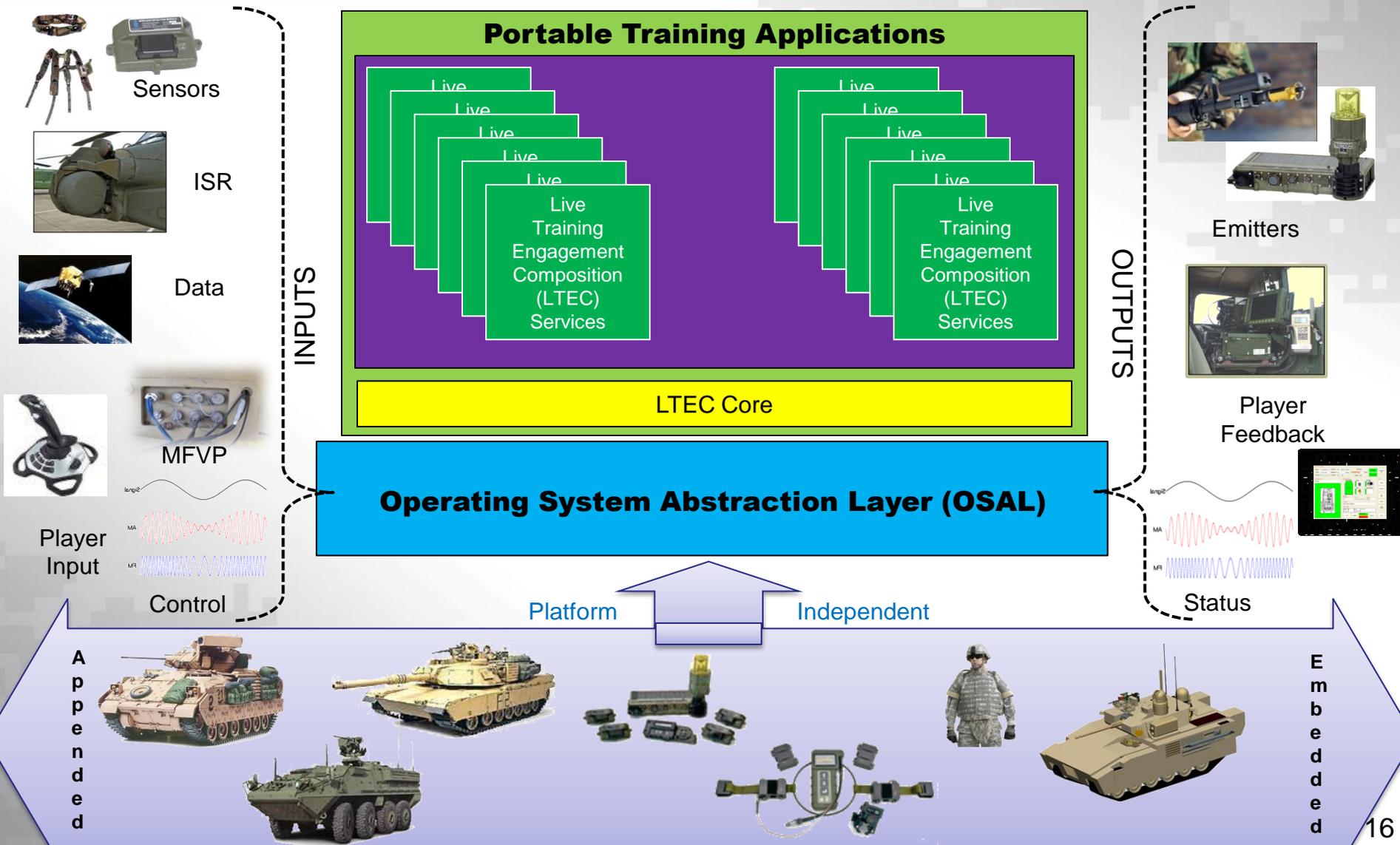
Industry suggestions on Governance, contract verbiage and architectural content is critically needed.



Live access to the model can be found at www.lt2portal.org

Live Training Engagement Composition (LTEC)

Software Product Line Vision



Live Training Engagement Composition (LTEC)



Example Compositions

Appended Dismount



Appended Platform



Appended/ Embedded Hybrid



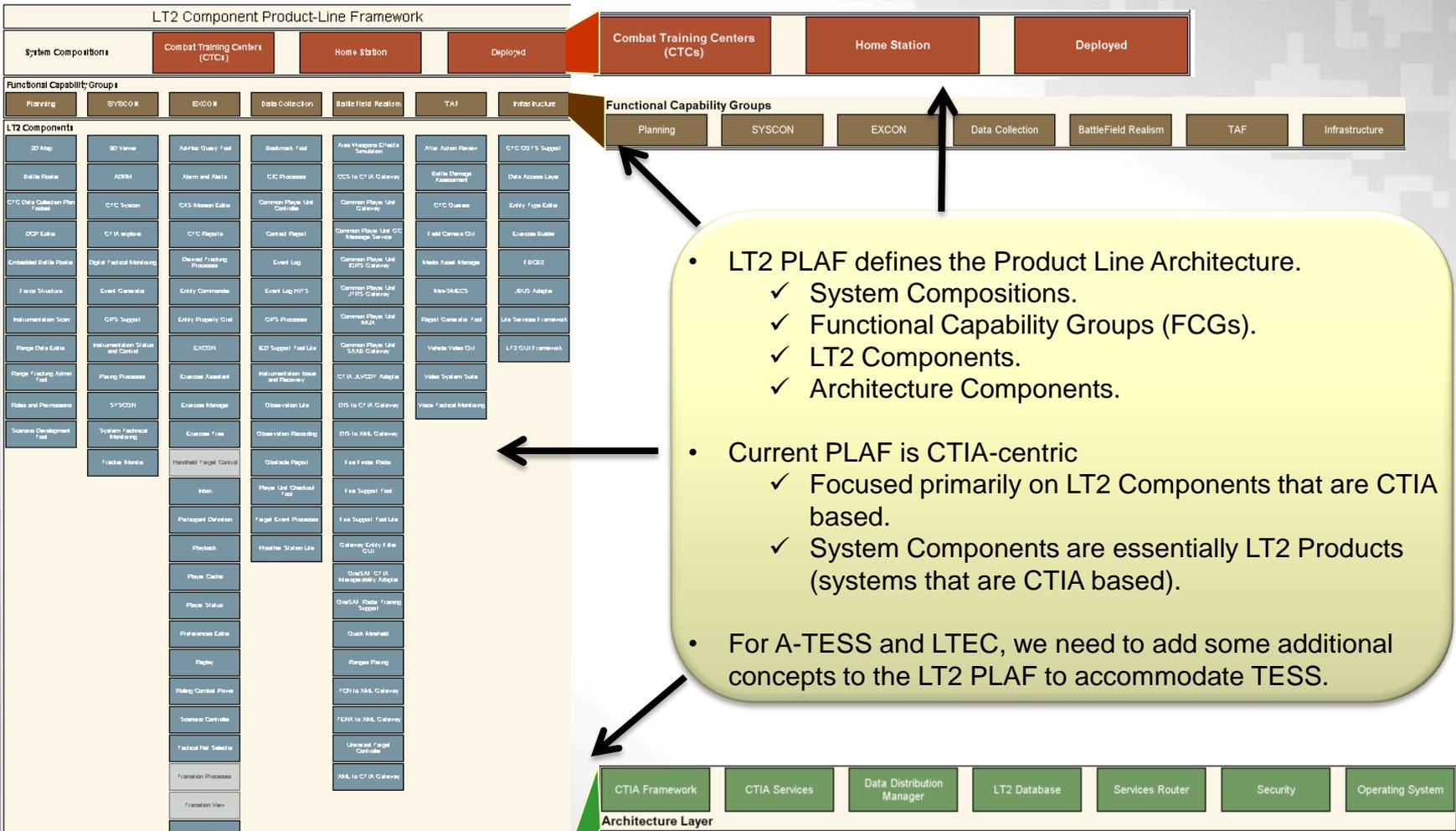
Embedded Platform & Dismount



	Appended Dismount	Appended Platform	Appended/ Embedded Hybrid	Embedded Platform & Dismount
LTEC Services	<ul style="list-style-type: none"> MILES Sensor PAN I/F GPS Indoor Tracking 	<ul style="list-style-type: none"> MILES Sensor MGT GPS 1553 Bus 	<ul style="list-style-type: none"> MILES Sensor MGT GPS Platform Bus 	<ul style="list-style-type: none"> Dual Use Laser ABCS I/F VKI Victory Bus
LTEC Core	LTEC Core	LTEC Core	LTEC Core	LTEC Core
Operating System	OSAL-Lite	Linux	Windows	VxWorks
Hardware Platform	IWS HCU	TVS VKC	VDET	Vehicle

Live Training Engagement Composition (LTEC)

Current Product Line Architecture Framework



Governance

**CORE ASSET
CHANGE PROPOSAL
(CACP)**



ASSESSMENT



APPROVAL



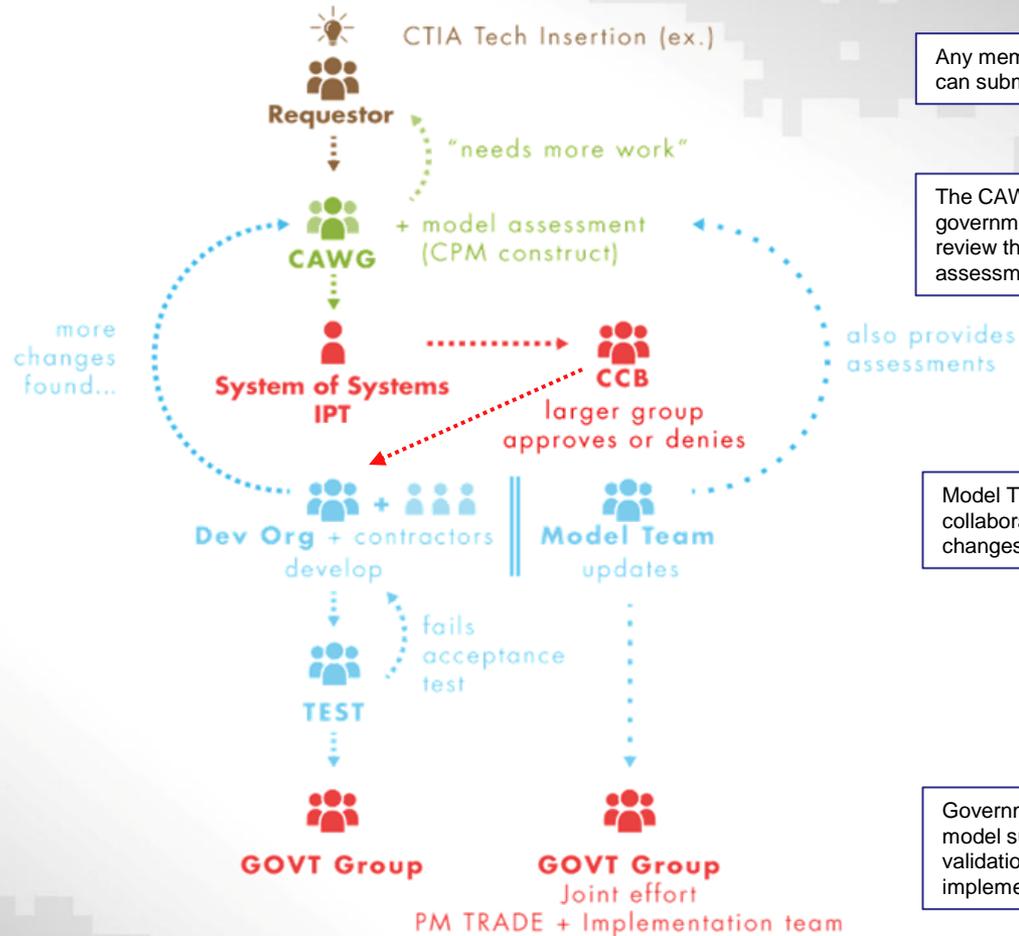
**DEVELOPMENT
/ MODEL UPDATE**



VALIDATION



DEPLOYMENT



Any member of the LT2 Product Line can submit a CACP

The CAWG consists of industry and government representatives that review the CACP and conducts impact assessments.

Model Team and Development Team collaborate to make sure model changes match implementation

Government teams for developer and model sustainer collaborate during validation, to ensure model matches implementation

Draft Governance document is available on the LT2 Portal.

Test & Training Initiatives

Growing the LTEC Product Line

- Automated Casualty Assessment (ACA).
 - Elimination of “MILES Casualty Cards”.
 - Leverage existing OneTESS Engagement Methodology.
 - Focus on providing an **initial and usable** set of software.
 - Medic/Buddy/Self Aid growth area.
- Dismount.
 - Design to work with a wide range of processing environments.
 - Current IWS HCU – Smart Phone.
- Ground Combat Vehicle.
 - Embedded TESS.
- Physics Based Engagements.
 - Integrate RPEL into the LTEC Product Line.
 - JFCOM / Northrop Grumman Physics Based Model Alignment.
- Direct Fire Augmentation
 - Support Test & Evaluation of emerging I-MILES/A-TESS acquisitions.
 - Evaluation of alternative laser technologies.
 - Augment MILES / TESS laboratory.



MILES/TESS Test Bed

Purpose

- Purpose / Plan.
 - Provide the capability to analyze, test and evaluate MILES laser equipment in a “standard” environment.
 - Begin with stand alone lab.
 - Evolve to an end-end TESS Test & Evaluation laboratory with a LT2 Core IS.
- Possibilities & Planned Uses.
 - Analysis of system functionality and new technologies.
 - Trade studies and Technology Readiness Evaluations (TREs).
 - Acceptance testing.
 - Trouble shoot issues identified in the field.
 - Independent, contractor integration and test.

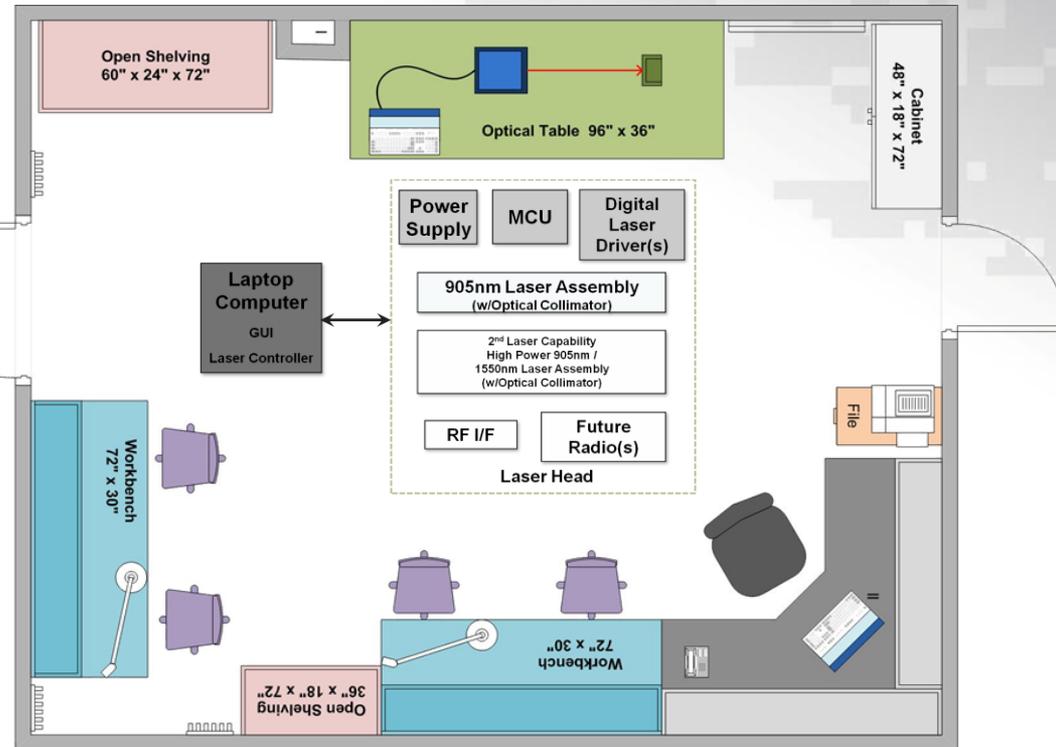


Located in the heart of Research Parkway, RDECOM-STTC.

MILES/TESS Test Bed

Evolutionary Growth

- Phase I, Completed Q2FY13.
 - Lab Facility.
 - MILES Laser Test Set.
- Phase II, Completed Q2FY13.
 - Laser Characterization.
 - Laser Detector Test Set.
- Phase III, ETC Q2FY14.
 - Message processing updates.
 - Test automation.
 - Interface to IS-TESS test set.
 - Laser message customization tools.
- Phase IV - VI, ETC TBD.
 - Detector sensitivity test set.
 - RF communications test sets.
 - Geo-Paring test set.
 - 7m RF anechoic and shield room.



The “Gold Standard” for TESS Test & Evaluation.

Collaboration Opportunity

Where we need your help



- Stand up 4 working Integrated Product Teams (IPT), with a focus on providing a white paper response to the following major decision points.
 - Commoditization approach to acquiring and lifecycle managing A-TESS.
 - Validating assumptions and current approach to the LTEC software product line.
 - Viability of improving the MILES Communication Code Update IPT.
 - Re-evaluating the organizational structure of PM LTS.
- Each IPT is encouraged to set up their own OPTEMPO to meet the following objectives:
 - Suspense // 120 days after industry day.
 - CDRL // Whitepaper, less than 10 pages (contractor format is allowable).

*The Government claims **unlimited rights** to the data delivered as part of these IPTs.*

Collaboration Opportunity

Commoditization IPT

- At minimum, the following questions and/or focus areas should be addressed:
 - Will the Government ever realize a cost avoidance and/or Reduction in Total Ownership Cost (RTOC)?
 - What are the secondary effects of commoditizing TESS?
 - How would the Government insure interoperability?
 - Documentation.
 - Testing.
 - What are the risks, how could they be mitigated?
 - What are industry's concerns?
 - What are your recommendations on how/if to proceed, and why?
- Set up your own OPTEMPO to meet the following objectives:
 - Suspense // 120 days after industry day.
 - CDRL // Whitepaper, less than 10 pages (contractor format is allowable).

Collaboration Opportunity

LTEC SOA IPT



- At minimum, the following questions and/or focus areas should be addressed:
 - Has the Government taken the right approach with LTEC, why or why not?
 - What do you believe the potential cost avoidance and operational benefit to using LTEC is (or is not)?
 - Does the current LTEC approach support commoditization and embedded FoF training, why or why not?
 - How should the Government approach LTEC Governance?
 - Current LT2 Governance methodology.
 - Future A-TESS may or may not be an IDIQ like CPM – how does this effect or not effect the Governance challenge?
 - What are the risks, how could they be mitigated?
 - What are industry's concerns?
 - What are your recommendations on how/if to proceed, and why?
- Set up your own OPTEMPO to meet the following objectives:
 - Suspense // 120 days after industry day.
 - CDRL // Whitepaper, less then 10 pages (contractor format is allowable).

PM TRADE Co-Chair: Mr. Jim Grosse.

Collaboration Opportunity

MCC Update IPT

- At minimum, the following questions and/or focus areas should be addressed:
 - What is needed to be done to the current MCC to support the following capabilities:
 - Simulate proper roll-off.
 - Range Dependent P_h/P_k .
 - Brigade-on-Brigade quantity unique Player Identification (PID) numbers.
 - More efficient communications.
 - Please consider UCATT specification.
 - Though not considered a driver, what would be the impact of your recommendations on backwards compatibility?
 - What are the risks, how could they be mitigated?
 - What are industry's concerns?
 - What are your recommendations on how/if to proceed, and why?
- Set up your own OPTEMPO to meet the following objectives:
 - Suspense // 120 days after industry day.
 - CDRL // Whitepaper, less than 10 pages (contractor format is allowable).

PM TRADE Co-Chair: Mr. Jesse Campos.

Collaboration Opportunity

Organizational IPT

- At minimum, the following questions and/or focus areas should be addressed:
 - Considering the following acquisition phases, how should PM LTS organize itself to meet the high OPTEMPO of A-TESS & the simultaneous sustainment of Legacy TESS:
 - Engineering and Manufacturing Development (EMD).
 - Production.
 - Technology Insertion.
 - Sustainment / PDSS.
 - Leverage the draft A-TESS program structure (slide 7).
 - If recommended, how should IPTs be structured?
 - What are the risks, how could they be mitigated?
 - What are industry's concerns?
 - What are your recommendations on how/if to proceed with a restructuring, and why?
- Set up your own OPTEMPO to meet the following objectives:
 - Suspense // 120 days after industry day.
 - CDRL // Whitepaper, less than 10 pages (contractor format is allowable).

Way Ahead

Communicating with Industry

- Communicating with you is important to us.
 - We intend to keep industry informed and involved.
 - Government wants feedback and participation.
- LT2 Portal Community Collaboration Area.
 - From LT2 Portal (<https://www.lt2portal.org/>).
 - Select “Collaborate” (must register for an account, but no security clearance required).
- How to provide feedback.
 - Use Portal Collaboration Area.
 - Create Issues/Topics, Forum Posts, Email Community.

PM Combined Training Devices (TRADE)

Address: PEO STRI/ATTN: SFAE-STRI-PM TRADE

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Orlando, Florida 32826-3276

Telephone/FAX

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TRADE@peostri.army.mil

Questions?

PEO STRI



Visit the Live Training
Community Portal at:
LT2Portal.org

