Vehicle Tactical Engagement Simulation System (VTESS)

Overview

- **Ron Logan**
- Project Director
- PM LTS
- 16 Oct 2014

VTESS RFI Brief

1. Introductions
2. Request For Information
3. Why VTESS
4. Statement of Need
5. Program description/Requirements/Capabilities
6. VTESS overview/approach
7. Documentation/Standards/Product line
8. Program Structure
9. Testing
10. Logistics
11. Acquisition Strategy / Near Term Schedule
12. Questions

NOTE: This brief and its contents are subject to change as the VTESS program matures in the acquisition cycle.

Introductions

Government VTESS Team

LTC Hemingway – PM LTS
Gloria Bailey – Contracting Officer
Ron Logan – Project Director
Marnita Harris – Contract Specialist
Glen Wynn – Logistics Manager
Mario Rodriguez – Lead Engineer
Phong Pham – Engineer
Dale Greenawalt – Engineer
Randy Goddard – Engineer (S)
Raymond Kidd – Project Coordinator (S)
Dave Koch – Military Analyst (S)
Will Freeman – Product Coordinator (S)

Doug Geis – Capability Developer, TCM-L

Industry Partners

Introduction

Did we miss anyone?

Request For Information

- A Request For Information (RFI) is a technique of conducting market research.

- RFI is market research to determine what capabilities are resident in the market place for planning purposes.

- The RFI is a tool to help both the project team and industry; exchanging information to improve the understanding of Government requirements and industry capabilities.

- The project team can benefit from the RFI to refine the acquisition strategy and technical framework to reduce the Requirements Package development timeline and help ensure the draft technical documents are matured early in the development cycle.

- RFI can help industry business managers determine if the program is one they wish to pursue.

Disclaimer:

This RFI does not constitute an invitation for bids or a RFP and is not a commitment by the U.S. Government to procure subject products or services.

Why VTESS?

2016 2017 2018 2019 2020 2021 2022 2023

New contract needed to complete BOI

VTESS

BOI Complete

Contract action required in FY16 timeframe

- One configuration that works on both Tactical and Combat Vehicles
  - ✓ Reduces number of configurations in the field
  - ✓ Reduces installation times
- Leverage single configuration to complete all BOI requirements and any replacements (MXXI, WITS)
- Componentized Solution (LTEC)
  - ✓ Procurement Advantage
  - ✓ Promotes Embedded Training
  - ✓ Lowers Sustainment Costs
  - ✓ Leverages LT2 S/W
  - ✓ Government owned interfaces
- PM TRADE business development decision:
  - ✓ Pave the path for a LT2 Core Asset Management Process for Hardware
  - ✓ Capitalize off the lessons learned and success of LT2 Software process/architecture (CTIA, etc)
  - ✓ Use LT2 PAN Standard and the LTEC Software architecture
  - ✓ Use Component Agreements (Gov Doc) for both Hardware and Software
    - Key Agreements identified
    - Maturity level high/medium at RFP
    - Contractor to deliver final CDRL (Revision to Existing Gov Doc)
- Allow for Technology Insertion (VICTORY, OSAG optical code…)

Reduces Development Time - Significant Leap Towards ATESS

Statement of Need / Requirements

- MILES 2000 ORD, CARDS# 0291, date 11 July 1996
- LT2-Family of Training Systems (FTS) Initial Capabilities Document (ICD), CARDS# 2522, date: 11 August 2005

- Pending Basis Of Issue (BOI) 6.15

	BOI	Procured	Remaining
Tactical Vehicle	25994	15489 (WITS/TVS)	10505
Combat Vehicle	2691	3127 (MXXI/CVTESS)	

Projected BOI 6.15 depicts one BCT consists of 1,135 Tactical Vehicle Kits
Anticipated minimum procurement of 2 BCTs, **2,270** kits, per year

- Potential
  - WITS replacement ~ 9,500
  - Tank/Brad MXXI replacement ~ 936
  - Stryker MXXI replacement ~ 2,100

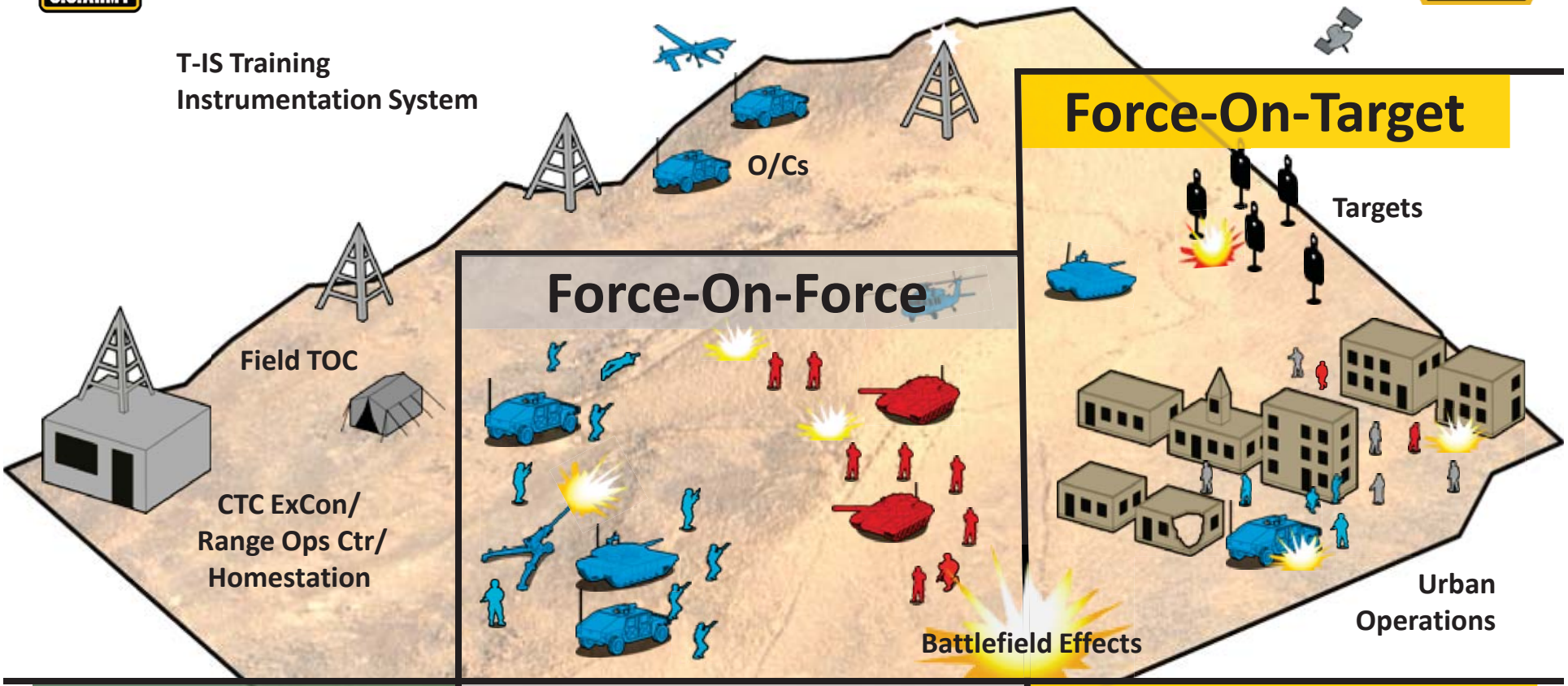
VTESS Program Description

- VTESS is the combination of Tactical and Combat vehicle (fire control systems) requirements into a single TESS product line
- VTESS will use the Live Training Engagement Composition (LTEC) software to define the communication framework of the I-MILES components so that Industry uses a common communication structure and methodology thus allowing weapon system platforms to embed TESS functionality.
- VTESS will be architected to allow leveraging the future Vehicular Integration for C4ISR/EW Interoperability (VICTORY) network/interfaces and current Multi-Functional Vehicle Port (MFVP) which will result in reduced program costs. (Technology Insertion)
- VTESS will serve as the product line architecture to support the entire inventory of vehicles for direct fire engagements.
- VTESS will be the first hardware instantiation of the LT2 Product Line approach
  - Reuse existing Core Asset Management Process (CTIA, etc)
  - Leverage successes and lessons learned to realize long term cost avoidance

VTESS Requirements/Capabilities

- Compatible and interoperable with legacy MILES devices
- Modular, wireless design to minimize system installation times
- Support both tactical and combat vehicles (Fire Control Systems) and system weapon interface
- Provide normal engagement techniques without negative training or degradation of fire control functionality
- Accurately models effective ranges of actual weapon systems (120mm, 25mm, TOW, M2 MG, M240 MG)
- Target detectors configured to replicate the hit profile of all vehicles
- Interface with training instrumentation systems providing casualty assessments, battle damage assessments and critical data for AARs
- VTESS will use an open architecture approach
  - Defining stand alone hardware components that are interoperable with other components to allow composition of capabilities

Live Training Lines of Operation



ExCon & Comms	Simulated Fire	Live Fire
ExCon, AAR, RF Comms. ABCS, & Network Data Management	Combined Arms Engagement Pairing BLUFOR & OPFOR	Instrumented Urban Operations, & Battlefield
PM CTIS T-IS	MILES PM LTS A-TESS	PM DT FASIT

Standards Management (CTIA, ATESS, FASIT) - APM TRADE

VTESS Approach

VTESS is the combination of Tactical and Combat vehicle Tactical Engagement Simulation System requirements into a single TESS product line.

Approach

- Use of the LT2 PAN standard
- Utilize the Live Training Engagement Composition (LTEC) software
- Build off of the LT2 Componentized Architecture concept;
  - Common Base Kit (makes it a target)
  - 'Delta' Kits for vehicle variants
    - Each variant has a specific kit
    - Weapon/platform dependent

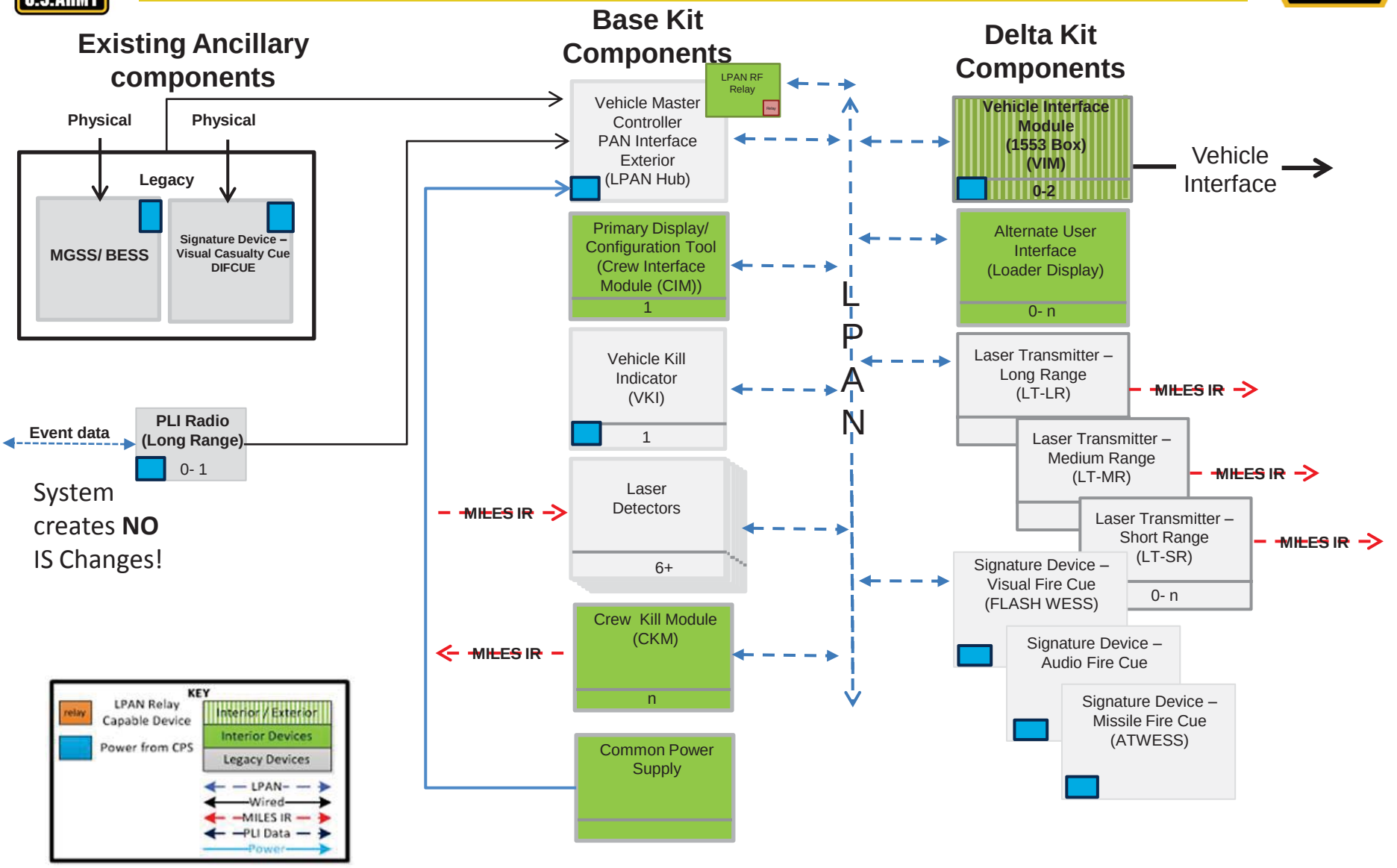
Base Kit = common components

- Master Controller
- Crew Interface
- Detectors
- Kill Indicator
- IS Radio interface
- Power supply

'Delta' Kit = vehicle specific (M1, M2, MGS, ATGM,…

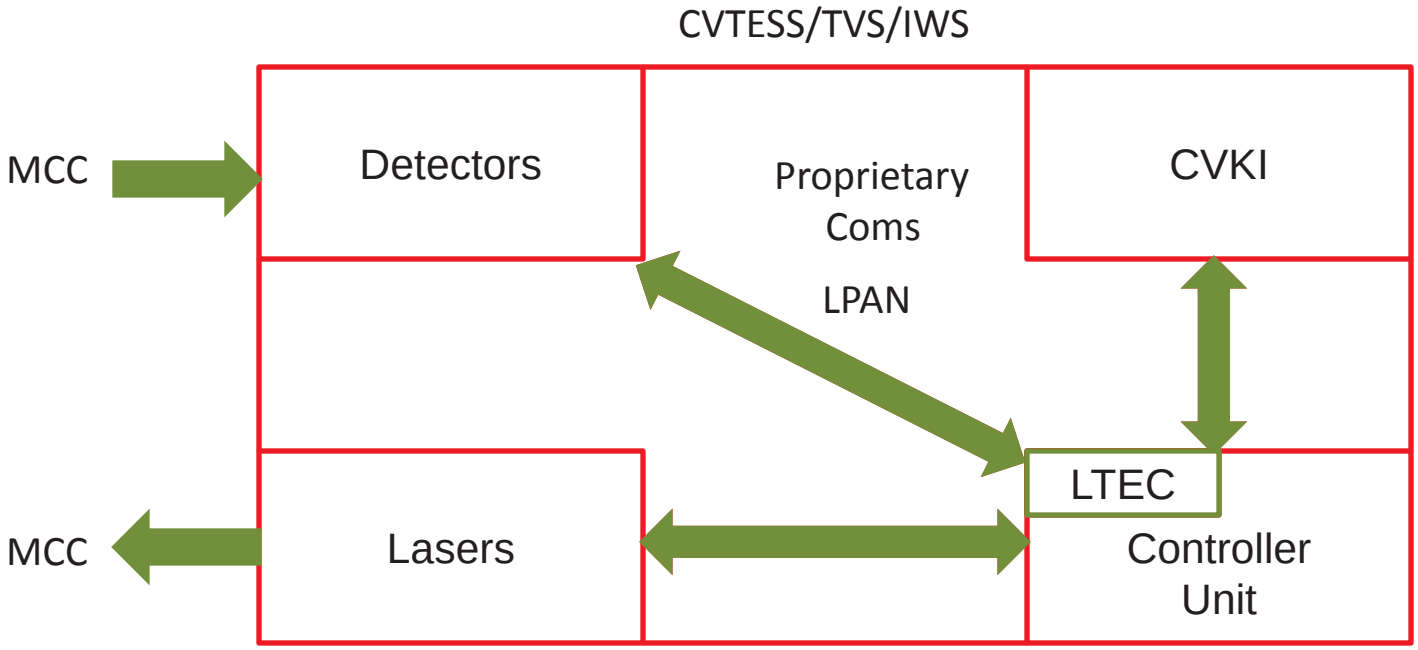
- SATs
- Main Gun Transmitter
- Vehicle Interface
- Weapon Interface
- Audio unit
- ATWESS
- Crew Kill Module

Kit Concept (Base and Delta)



VTESS Architecture Ownership

Proprietary vs. Open



RED = Proprietary
GREEN = Govt owned

VTESS Product Line Documentation

- The VTESS performance specification will form the basis of the VTESS product
- During VTESS effort, the winning team will provide:
  - System Composition Agreement (SCA) based on the VTESS performance specification
  - Hardware Component Agreements (HCAs) based on updates to the LT2 Component Architecture, LTEC ICD, and LPAN Standard
- To facilitate this approach, Government Furnished Information (GFI) SCA and HCAs will be provided at High/Medium levels of completion with the solicitation documentation
- If there is a conflict, the VTESS System Specification overrides the GFI SCA and HCAs provided

Technical Documents

Document	Priority / Maturity	Document	Priority / Maturity
VTESS System Performance Specification	1	Software Support Environment	2
LT2 Architecture	1	Long Range Laser Transmitter	2
LT2 Common Power Supply	1	Canister Round Laser Transmitter	2
Family Of Consumable Batteries	1	Crew Kill Module	2
System Composition Agreement	2	Vehicle Interface Module	2
Medium Range Laser Transmitter	2	Alternate Display	2/3
Laser Detector	2	Signature Device – Audio Firing Cue	2/3
Kill Indicator	2	Signature Device – Visual Firing Cue	2/3
Master Controller	2	Signature Device – Missile Firing Cue	2/3
LPAN Relay/Hub Device	2	LT2 Environmental/EMI/Safety Standard	3
Crew Interface Module	2	Mounting Brackets and Cables	3

Not req at this time

1 = High, 2 = Medium, 3 = Low

Product Line Approach

- VTESS will be part of the new LT2 Functional Component Architecture and follow a Product Line Architecture (PLA) approach
- VTESS will conform to the LT2 Architecture document
- The VTESS system will be defined through an LT2 System Composition Agreement (SCA) developed through the VTESS acquisition
- All VTESS HW components will be defined through an LT2 Hardware Component Agreement (HCA) developed through the VTESS acquisition

LT2 Portal Link: https://www.lt2portal.org/
LT2 Interface Standards WG Collaborative Site:
https://www.lt2portal.org/Collaboration/Collaborate/CollaborationAreas/CollaborationFiles/tabid/177/Default.aspx?PageId=ViewFiles&CollabId=9d5c595f-2b58-4f68-87d6-1f75b90d50e0&CurrFoldId=2a084961-318c-4e83-a29a-e2f3baaa14d3

LT2 Portal (www.lt2portal.org)

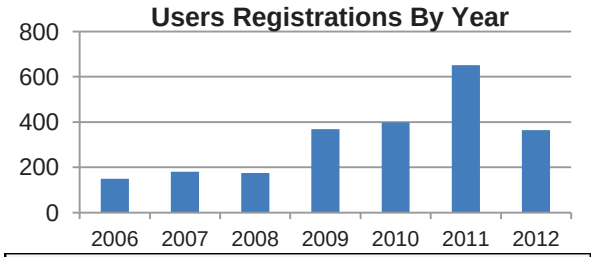
Features

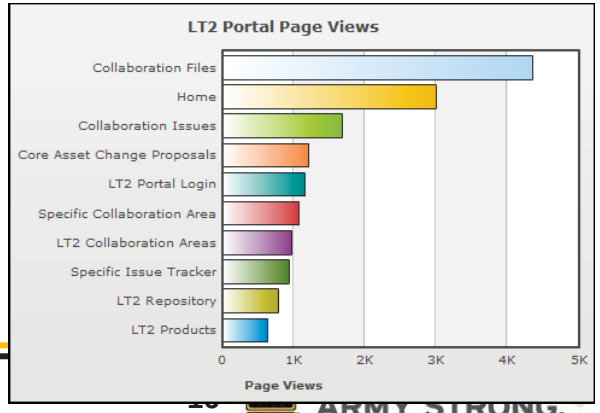
- LT2 community news, events, and briefings
- Information & software repository
- LT2 products, architectures, & components
- Standards, ICDs, & dB schemas
- Document library & collaboration areas
- CAWG product line management
- Dashboards & help desks
- Integration with WFF Portal
- User subscription to changes (proactive)

Benefits

- The “go to” site for live training
- LT2 product line marketing
- Increased Government & industry communication
- Standards availability
- Acquisition support
- GFI access
- Program metrics
- WFF integration
- Field suppor
- 24x7 availab

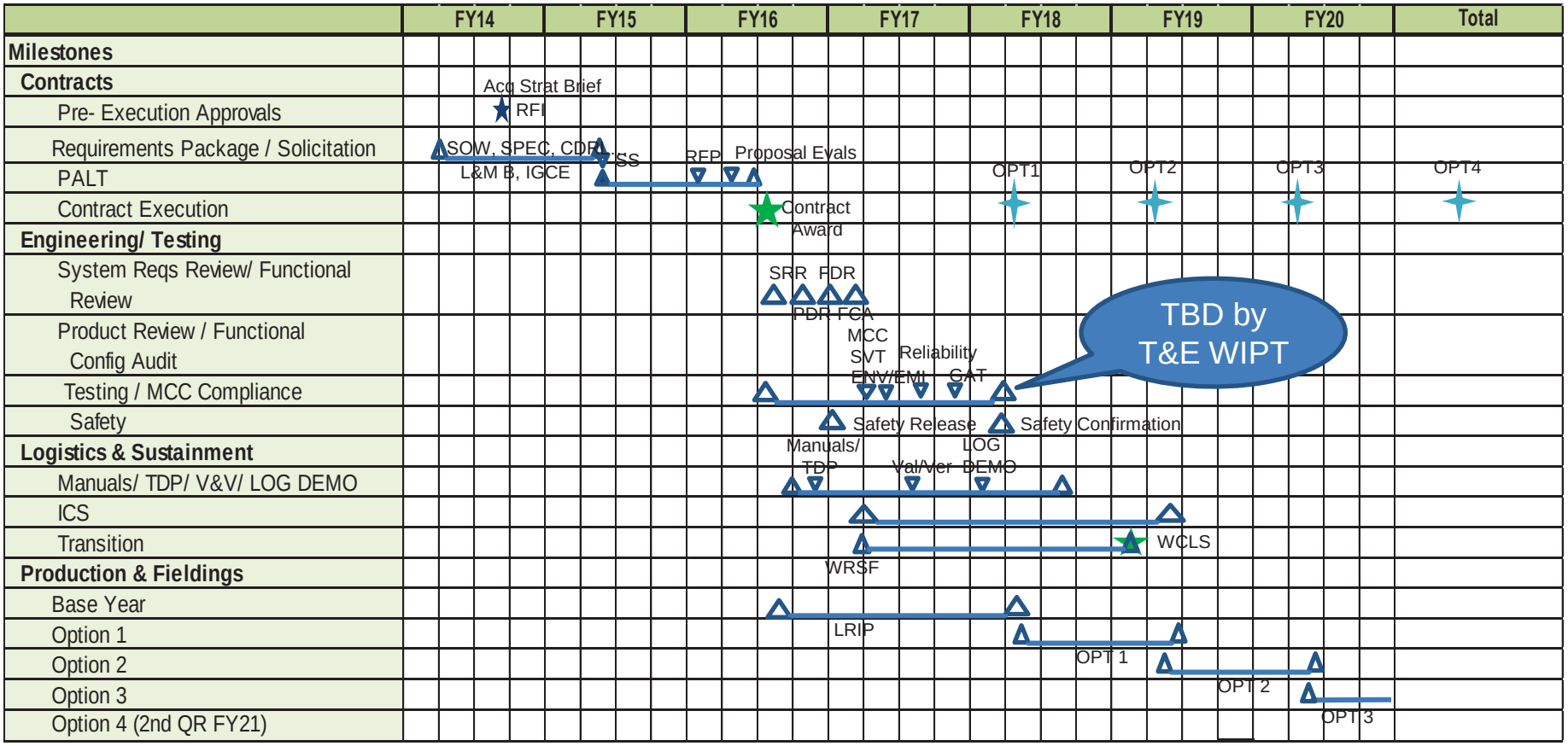
- v3.7 (30th release)
- 1,893 Users
  - 33% Government
  - 67% Industry
- 113 Collaboration Areas
- 58,734 DL Files
- 9 Events
- 43 News Items
- 26 Briefings





In the Interface Standards – Industry Working Group Collaboration Area there are 117 total users, 82 from Industry, 35 from Government, 41 different companies represented.

PROPOSED
VTESS PROGRAM STRUCTURE



Testing

- **T&E WIPT**
- **18 month test cycle (previous efforts were approximately 12 months)**
  - Requires new component based validation and verification
  - Evaluate and define impact to test strategies
- **Identify required resources**
  - Use the ASARC process – FORSCOM owned process to schedule resources 6-12 months in advance
  - of testing.
  - Need TRADOC, FORSCOM, Capability Developer assistance.
  - Identify required Training Areas and timeframes: Ranges, Training Lanes, CTC Rotations,
  - Active/Reserve/National Guard.
  - Identify troop units (Combat Arms, Combat Support, Combat Service Support/Active/Reserve/National
  - Guard.
  - Identify size/strength of units required – Based on system capabilities
  - Identify Vehicle Platforms.
- **Identify AEC Independent Testing Organizations.**
  - AEC - EPG, ATEC, OTC/DTC

Logistics

- Logistics Engineering
  - Safe
  - Supportable
  - Reliable
- Supportability Analyses
- Technical Data
  - Logistics Analysis (LMI)
  - Publication
  - Drawings
  - Rights to Data
  - Training Materials
- MANPRINT
- RAM
  - Operational Availability (Ao) 90%
  - Predictive Failure Analysis
    - Operation hours - incorporate a timer /counter
    - Frequency of operation
    - Prognostics, Impeding CCA Failure
    - Time for servicing/checks
  - Deployability (30 min), Mobility
  - Maintainability, MTTR 30 min/60min
    - OUM/SMM Loaded on Crew Interface Module
    - Reduce install times
    - Reduce footprint
    - Reduced Battery consumption
- Interim Contractor Support
- Transition Planning

Draft Acquisition Strategy

Contract Vehicle: To Be Determined (TBD)
Proposed Contract Type: Firm Fixed Price (FFP)) (incentivized possible), w/ T&M CLINs
POP : 1 base yr (18 mo), 4 options yrs
Approximate Quantities: 22,500 Base kits and 3,500 Delta Kits (BOI + room for replacement)
Approximate Funding : $250M
Draft Acq Schedule

- RFI 19 Sep 2014 w/initial responses due 6 Oct, Final due 24 Oct after 1 on 1 meetings
- Industry Meetings will be held in conjunction with the ongoing LT2 Working Group meetings
- One-on-one sessions will be held Oct 16/17 2014. (in conjunction with LT2 Working Group)
- Sources Sought Notice Release (draft technical documentation) – Nov/Dec 2014
- Sources Sought Notice responses due two weeks after posting (Dec 2014)
- Industry Day – three weeks after Sources Sough Notice (Jan 2015)
- PALT starts Feb 2015;
- Final RFP Release – Jun 2015
- Proposals Due – Jul 2015
- Evals – Jul 2015 – Nov 2015 Extended (week demos per vendor with one week report)
- Contract Award – May 2016
- Initial Operational Capability (IOC) – Q3FY18
- Full Operational Capability (FOC) – Q4FY18

Questions

One on One sessions after lunch