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PSG

TRAINING & SIMULATION INDUSTRY SYMPOSIUM 2008

SBIR Initiatives

Phase I

- FY 07 – 3 Awards
  - High Speed Wireless 3-D Video Transmission to Support Virtual Dismounted Training
    - 2 Phase I contract awards
  - Battlefield Effects for Live Embedded Training
    - 1 Phase I contract award
- FY 08 – 2 Topic Allocations
  - 4 Topics submitted for consideration
    - Software Defined Mobile Wireless Networks
    - Dynamic Terrain System Process Development
    - Game Interface for OneSAF CGF
    - Producability of High Fidelity Immersive Location Based Trainer

Phase II

- FY 07 – 1 Award
  - Liquid Crystal on Silicon IR Screen Projector

Phase III

- No Active Phase IIIs

Technology Challenges Process

- Evaluate systems requirements (current, P3I, new requirements, etc.) 3-6 years out
- Identify technology gaps that need to be filled to support system development and fielding
- Manage/Track gaps
  - Technical challenge or “enhancement”
  - PEO STRI priorities
  - Across PEO need or multiple PM need
  - Complexity
  - Prioritize
  - Actively solicit for support
- Provide data to
  - RDECOM - to influence ATOs, SBIR, etc. investments
  - Industry - Canvas technology work across services, influence IRAD investments
  - Other Government Agencies and Academia

FY08 Technology Challenges/Gaps

PEO STRI's Top 7

- Terrain Changes and Correlation On-The-Fly
  - Allow terrain/feature changes to be rapidly distributed among networked simulators and simulations.
  - Overcome challenges associated with providing correlated terrain databases, visual tuning, and control of damageable features.
  - Consider extensibility to allow for data coming from live entities and constructive SAFs.

- Testing, Training and Tactical Comms on one network infrastructure
  - Technologies and algorithms to increase throughput and more efficiently use the limited available bandwidth.
  - A highly scalable and robust mobile "wireless" network to support live testing and training applications.

Challenges/Gaps (cont.)

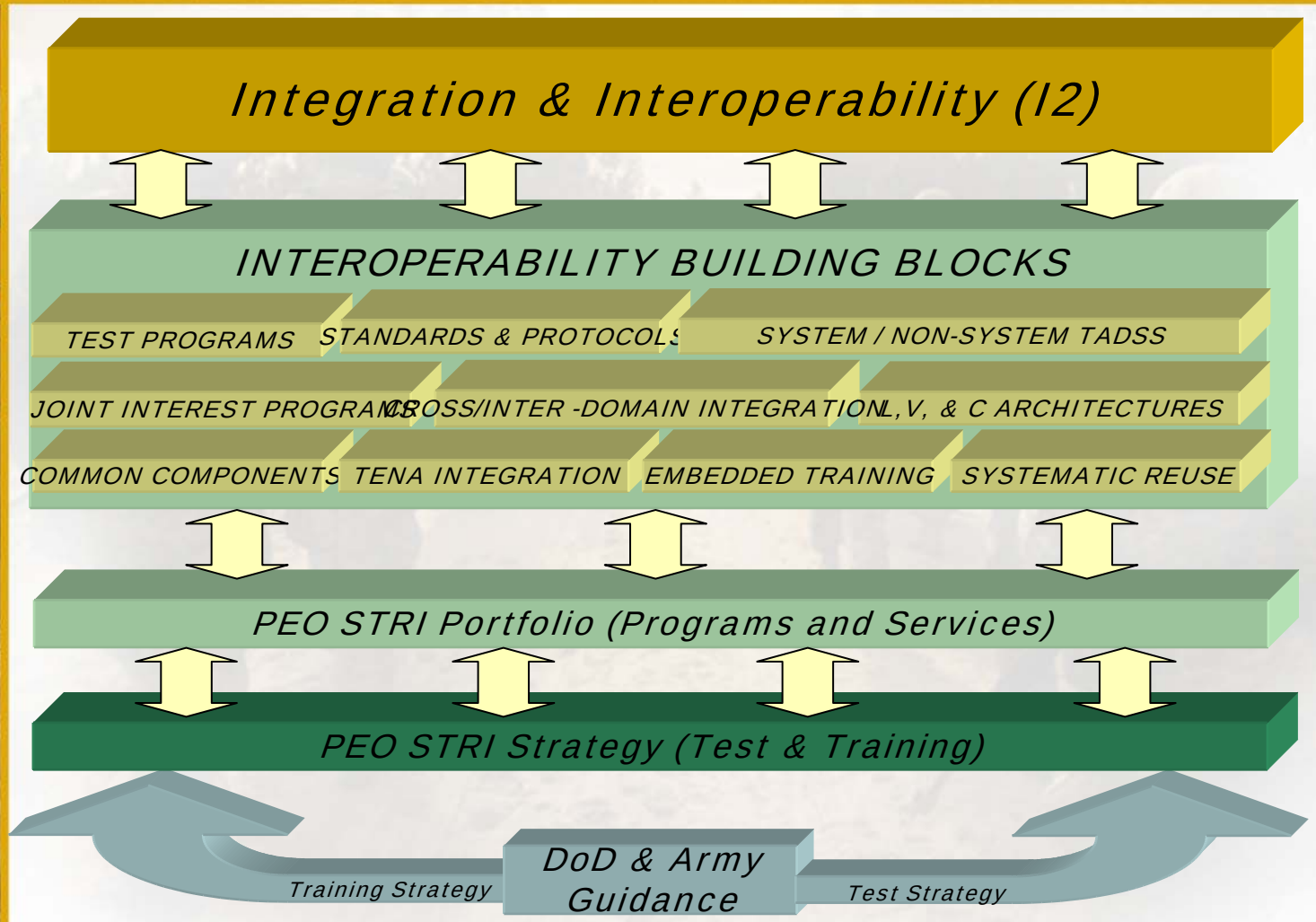
- Software Defined Radios (SDR)
  - A low cost approach to support test and training applications.
  - Mobile and interoperable with other legacy and tactical RF systems.
  - Small form/fit footprint which makes extensive use of COTS.

- Leverage advancements in automation techniques for constructive simulations
  - Leverage intelligent role player assistant technologies/techniques to reduce role player overhead required for large exercises.
  - Leverage Coalition Battle Management Language (CBML) and similar efforts for automating the decomposition of battalion and brigade-level behaviors for execution by lower echelons modeled within the simulations.

Challenges/Gaps (cont.)

- Common Radar Sensor Models (Algorithms)
  - Sensor models vary across DoD virtual simulators creating interaction anomalies that reduce the realism of collective training exercises.
- Use of Artificial Intelligence in Virtual environments
  - Improve accuracy and realism of interactions of entities in virtual environments with humans.
- Accurate Geo-location/Situational Awareness capabilities
  - A high fidelity position/location system for tracking soldiers in an indoor/urban or GPS-denied environment.
  - High fidelity pointing vectors for weapons within these environments.

Integration and Interoperability (I2) Overview



I2 End State

I2 End State

Improved Execution of PEO STRI's Mission Across the Entire Portfolio of Programs

Enablers

- Oversight Function - PEO-Chartered Senior Management Board

- Standards
- Infrastructure Services
- Configuration Management
- Heterogeneous Sims
- Homogeneous Sims

Focus Areas

Program Synchronization – Better Decision Making

- Identification of Program Dependencies
- 2nd & 3rd Order Effects of Alternatives

Interoperability – Enhanced User Training and Test Capabilities

- Expansion of Training & Test Capabilities
- Enhanced Realism
- Functional Expansion
- Complex Environments
- More Detailed Modeling

Common Products - Reduced Total Ownership Costs

- Increased Return on M&S Investments
- Systematic Reuse
- Faster Development
- Reduced Testing
- Reduced Support Cost