



Live-Virtual-Constructive Training Network

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AFLCMC/WNS

The information provided herein represents the Government's best understanding of the procurement as of the presentation date. This information should be considered preliminary and subject to change.



Mission Statement

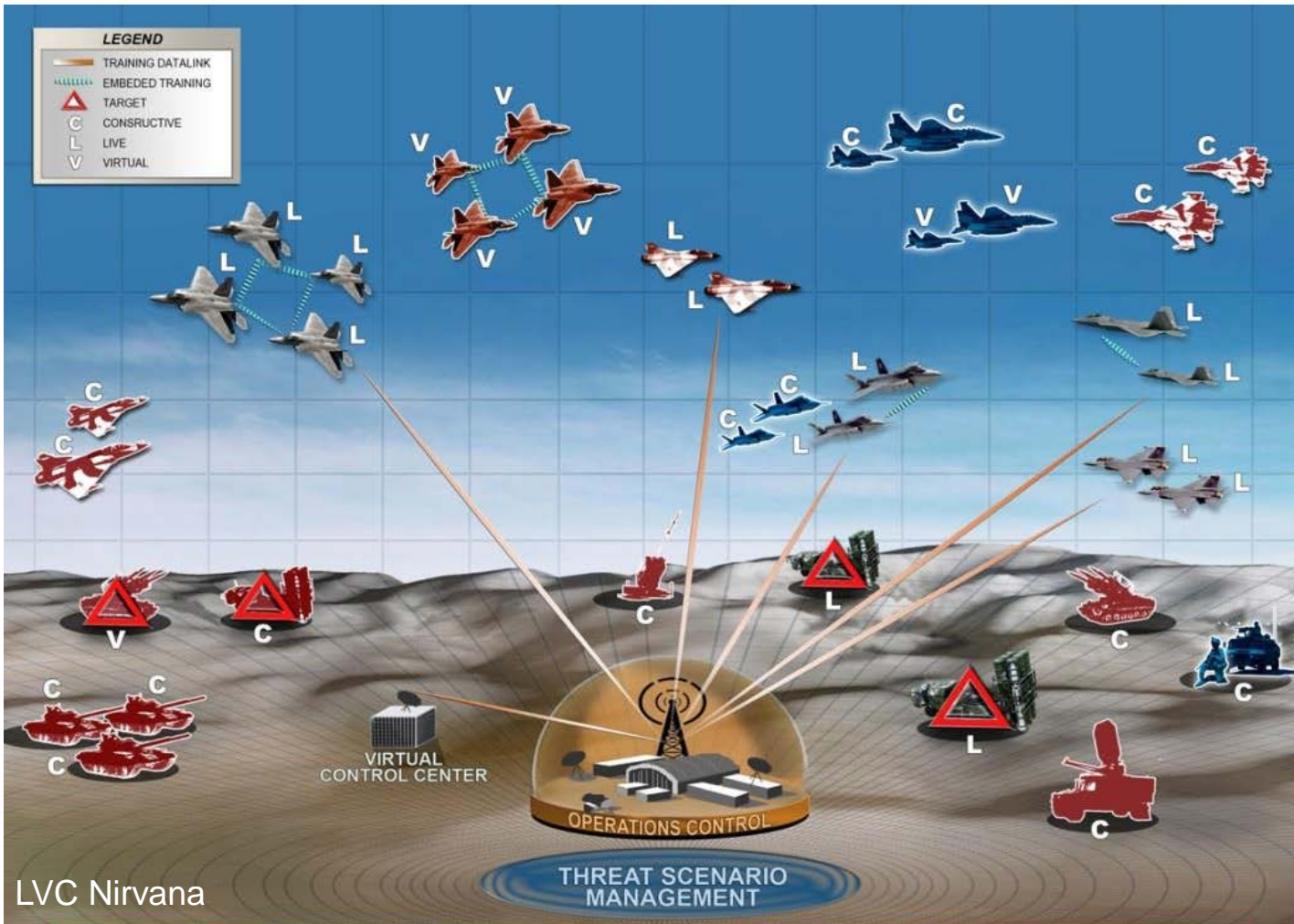
**Develop, integrate, and sustain
USAF Live-Virtual-Constructive training capability
to support the full range of operational training
resulting in combat mission ready operators.**



Program Goals

- 1. Develop unique systems necessary to implement the LVC training capability.**
- 2. Establish and maintain interoperability standards for live, virtual, and constructive systems to interact in a common domain.**
- 3. Integrate combat systems with simulators, ranges, and models to support training objectives.**
- 4. Coordinate acquisition planning and sustainment for new and participating programs to meet warfighter LVC training requirements.**
- 5. Advocate for necessary funding.**
- 6. Protect LVC training participants from compromise through the LVC TN interface.**
- 7. Require client systems' security classification guides to include guidance for sharing training data across dissimilar, joint, and coalition partners.**

High-level Operational Concept



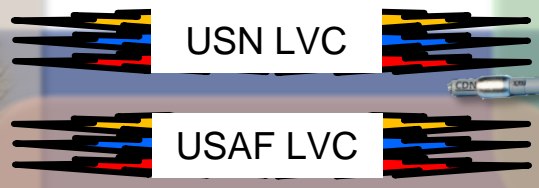
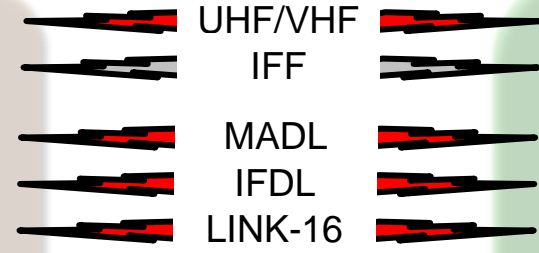
LVC Enterprise Training Network

LCMC/WNS

Weapons PEO

Aircraft PEO

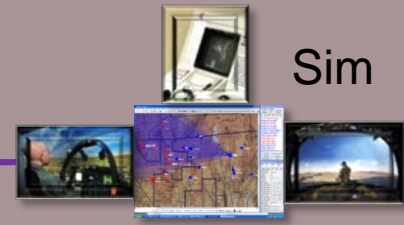
Radar
Debrief
Scoring
Threats



Aircraft OFP



Distributed Tng Ctr



Distributed Msn Ops Network

Next-Gen Threat Sys

ACS PEO



USAFWC

PEO ACS designated acquisition lead for LVC; integrator across multiple PEOs



Enterprise Approach

- **LVC Enterprise Requirements**
 - Led by ACC; HAF/A3T oversight
 - Focused on F-35 mission
 - 4th-gen capability reduces risk, provides value
- **Executed by PEO ACS, integrate with participating SPOs**
- **Integrate w/ VTTC, Navy, Test Enterprise**
- **Leverage SCARS**
 - Common architecture
 - Resilient cybersecurity
 - Affordable simulators

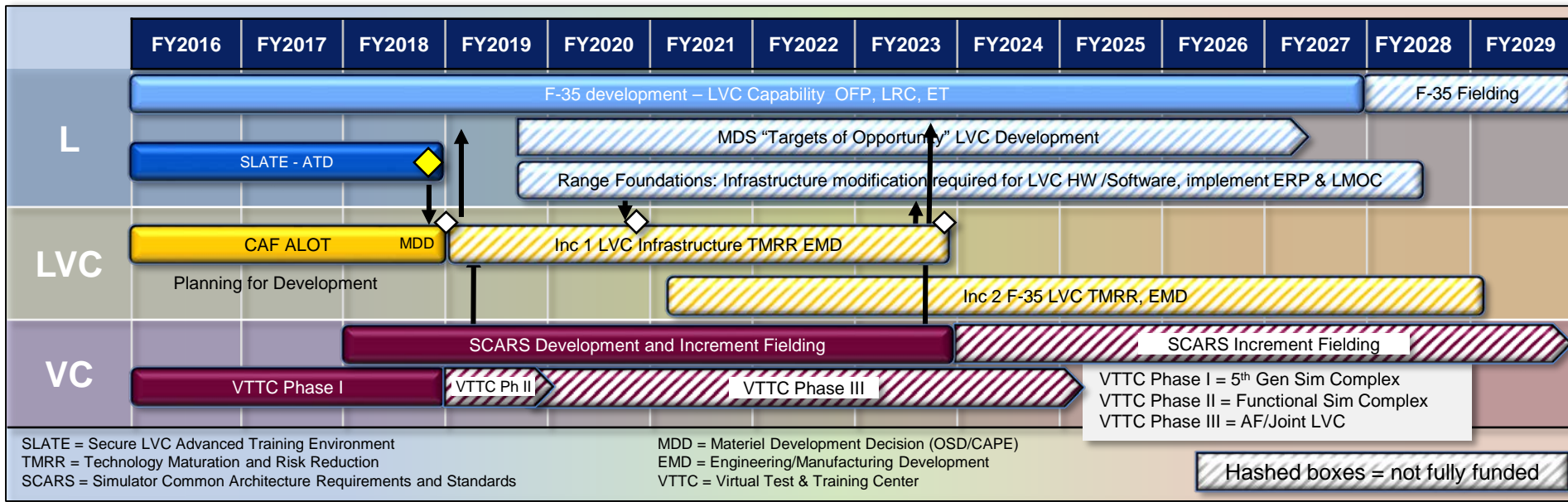


Management

- **AF/A3T: Strategy, Policy and Oversight**
 - Authority for systems operations (security/standards compliance)
 - AFAMS bridges OTI policy/requirements interface
- **ACC, AFMC: Requirements**
 - Establish L, VC, LVC training balance
- **PEO ACS: Acquisition Lead**
 - Consolidate multiple lines of effort into program(s) of record
 - Acquisition planning and execution for LVC infrastructure
 - Inform requirements
 - Integrate participating systems
- **Benefits to other platforms/MAJCOMs**
 - ACC, AFGSC, AMC, AFSPACE, AFSOC, AETC



Proposed LVC Program



- Supports Air Superiority, Agile Combat Support CFSPs
- Inc 1 LVC Infrastructure
 - **Waveform design***
 - P5 freq relocation
 - V C standards (SCARS)
 - **Classification rule sets***
 - Multiple Security Levels
 - Next-gen Threat System
 - **F-16 integration***
 - **LMOC***
 - Brief/Debrief
- Inc 2 F-35 **Fusion OFP***
- Inc 3+ F-22, B-21, JTAC integration, etc.

* Critical path



Tech Development LOEs

- **5G-ATW**
 - Data volume/latency requirements
 - On-board processing requirements
 - Frequency spectrum conflicts [EBY]
- **Multiple, Independent Levels of Security (MILS)**
 - Cross domain solution requirements
 - Classification rule sets [HBZ]
 - Security clearance guide (SCG) training annexes
- **F-35 OFP**
 - LVC architecture [XZA]
 - Blk 3F Embedded Training (ET)-based LVC
 - Blk 4.x/5 LVC inject to fusion engine
- **LVC Systems Integration**
- **Augmented Reality Aggressors (3d/4th-gen fighters/trainers)**
- **RMF-based LVC architecture**
- **LVC designed for ease of use (ezLVC)**
- **Learning theory for synthetic/LVC training [AFRL/RHA]**
- **SCARS [WNS]**
- **Leverage test systems for application to training**

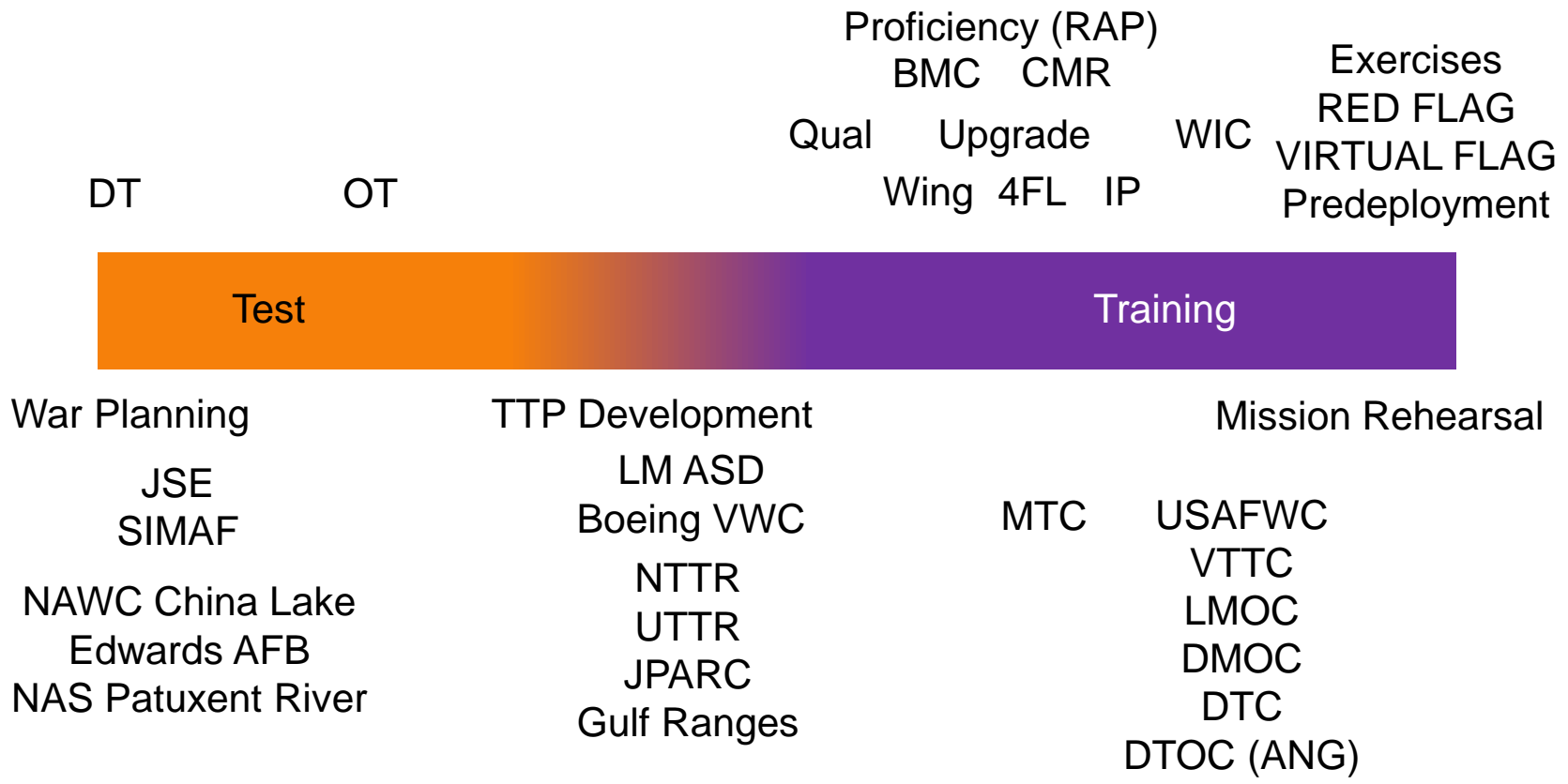


TReX

- **Training and Readiness Accelerator**
 - Other Transaction Authority (10 U.S.C. 2371b)
 - Prototype demonstrations
 - Non-traditional contractors
 - trainingaccelerator.org
- **Distributed LVC (dLVC)**
 - S&M processing architecture given a limited datalink
 - SLATE-like datalink specified
- **Fresh, Adaptive Scenarios for Training (FAST)**
 - Adjust training scripts to match student experience
 - Algorithm for implementation in sim courseware



Test-Training Continuum



DT – verification of system design
 OT – validation of system suitability/effectiveness
 Training – acquire/reinforce skills to employ system effects
 modeled to run in real time (validated with test data)
 appropriate security (lower level to share w/ training partners)
 meet training objectives

