Distributed Mission Operations
Air National Guard Update

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Leading the Air National Guard into the Future
Operationalizing “VANGUARD”
Briefing Overview

• ANG DMO Vision
• Mission Requirements
• Future Programs
• CCU Technical Approach
• Distributed Training Operations Center
  • Phase 1 Plan
  • Phase 2 Plan
• Questions

The DTOC – A DMO Force Enabler!
DMO Vision

- The Guard is by nature a distributed force
  - 88 flying wings plus many GSUs
- DMO is key to the Guard’s Training Transformation
- VANGUARD vision for the future Total Force
Mission Requirements

- Provide persistent DMO to Guard units
  - Infrastructure for Training Transformation
- Centralized to reduce costs
  - Limited infrastructure at ANG units
  - Cost of DMON connectivity x 66 sites
  - Conduit for remote maintenance
  - Network management
  - Scenario development
- Operational support (Drill weekends & nights)
- Schedule team (flying & C²) DMO events
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**DTOC Functions**

- **ANG DTOC**
  - Des Moines, IA

- **Mission Training Engineering Center**
  - Mesa AZ

- **Program Security**

**Plans and Integration**
- Systems upgrade
- Site Integration

**Operations**
- Mission Planning
- Event Control

**Communications**
- Threat Systems
- Networks

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Functional Divisions

- Network Control Division (NCD)
  - ARCNET Manager
  - Centralized Long Haul Network Scheduling
  - Software Upgrade Downloads
  - Hardware Diagnostics
  - Troubleshooting Aid
  - Device Status Monitoring
  - System Integration
    - JTEN (Planned)
• Event Control Division (ECD)
  • Dual Control Centers (System High & Low)
  • Training Event Scheduling
  • Aircrew / Controller Scheduling
    - Web Based Tools
  • DCID 6/9 Facility
  • Threat Insertion (NGTS)
  • Added Wing Man
  • ASCD (Air Surveillance & Control Display)
  • Enhanced SME Training Device
  • Boom Operator Simulator System (FY06)
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- Technology Division (TD)
  - Scenario Development
    - Urban CAS, SOF CAS, CSAR CAS, EC Valley of Death, Standard CAS, CAS behind the FLOT
  - Technology Insertion
  - Constructive Simulations
  - NGTS Development
  - Terrain Database Management
  - Debriefing/Record and Playback
  - CRADAs

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• Plans and Programs Office (PPO)
  • Mission and Site Integration Planning
  • Contract Management
  • Program Management
  • Security Management
  • Strategic Planning
  • Represents ANG on IPTs, Teams, etc.
Future Programs

- **KC-135 Boom Operator Simulation System (BOSS)**
  - Prototype concept developed by SwRI
  - Fully immersive, DMO capable
  - Squadron level device
  - Leverages AETC development at Altus AFB

- **F-16 Block 30 Full Combat Mission Trainer (FCMT)**
  - Two 4-ship Regional Mission Training Centers
  - Upgraded devices at each squadron
Future Programs

- **MQ-1 Predator Simulator**
  - New Guard mission
  - Under development
  - Deployment in 1 to 2 years
  - Spiral 1 *not* DMO capable

- **HH-60G Simulator**
  - Concept definition only
  - Squadron level, immersive, DMO capable
  - Non-motion
  - Full cabin with gunner / observer

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CCU Technical Approach

Common Computational Unit

(CCU)

Enabling TECHNOLOGY

Mission Training Engineering Center

(MTEC)

Enabling ORGANIZATION

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MTEC and CCU

• Implementation Approach
  • MTEC Specifies Hardware for Trainer Vendor Purchase and Sustainment
  • MTEC Develops, Configures, Tests, and Obtains User Acceptance of Software Load
  • MTEC Delivers Updated Executable Software to All Qualified Trainer Vendors (Legacy and New) with Custom I/O (if required)

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MTEC and CCU

- **Common Computational Unit Software**
  - All Aircraft System Simulations (Engine, Flight, Hydraulics, Electrical, Navigation, etc.)
  - All Aircraft OFPs and Supporting Systems (Core +)
  - Weapons and Sensors (Targeting Pods)
  - High Fidelity (VV&A) Threat System
  - Electronic Warfare Equipment (RWR/ECM)
  - Network Interfaces (DIS/HLA)
  - Video Tracking (Sensors and Weapons)
  - Instructor Operator Station Interfaces

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MTEC and CCU

• CCU Advantages

  • Supports Multiple Levels of Cockpit Fidelity
    • PC graphics, High Fidelity Single, Full 360 FFOV
  
  • Supports Multiple Aircraft Blocks
    • Block 30/40GAC/40-50 CCIP
  
  • Supports Legacy and New Trainers
    • MTEC and CCU: Contractor Neutral
    • GFE with MANDATORY Engineering Support
    • MTEC Specs Hardware, Delivers Executables and provides Engineering Support for HSI

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MTEC and CCU

• CCU Advantages (Continued)

  • Minimizes Risk to Government and Contractors
    • Government: Single Point Test and Acceptance
    • Contractors: Limits Risk to Hardware Performance
    • Key: GFE w/MANDATORY Engineering Support

  • Shared Cross-Block Development and Sustainment
    • Common: 85%-90%
    • Block Unique: Core OFPs

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MTEC and CCU

- CCU Advantages (Continued)
  - Dramatically Reduces Cost
    - Commonality, Proven Technology, Proven Approach
    - Implement ONCE, Use MANY, UNLIMITED RIGHTS
  - Cost Effective and Timely CONCURRENCY
    - Block 30: MTEC and OO-ALC/MASH for “F-16 RPS”
    - “Front Loaded” OFP Development with CCU software
  - Block 40: Tape Drops, Convert/Emulate, Test
    - Block 40 GAC(T-6 & T-7) for Luke NTC:
      - 14 Months, $ 150K, 99%+ Reliability
  - Over 12 Years of OFP Concurrency with Block 30

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Funding Requirements

• FY06 and beyond:
  • A-10 FMT - $6.4M in procurement
  • F-15 FMT - $8.0M for next Regional 4-ship MTC
  • F-16 FCMT – $21.0M in procurement and R&D for first 4-ship Regional MTC
  • HH-60G - $7.0M in R&D

• Programmatical Limitations
  • The Guard can only POM for O&M
  • NGREA and Congressional adds are unknown quantities
  • Fallout funding is inconsistent

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• **Mission Training Engineering Center (MTEC)**
  - ANG & AFRC Funded
  - Technology Transitions
  - Systems Integration
  - Technology Innovations and Insertions
  - Co-located With AFRL/HEA
    - MTEC / AFRL MOA

*Focus On GOTS/COTS Low Cost Development*

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Contract Opportunities

• **Headquarters, Air National Guard**

  Requirements Division, ANG/XOR
  1411 Jefferson Davis Highway
  Arlington VA 22202-3231

  Col Dan Bader, Chief
  703-607-1309

• **Modernization Book**
  • Published each December with all Guard modernization / acquisition programs.

• **Annual Industry Days** hosted by the National Guard Association of the U.S. in D.C.

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# MQ-1 Predator Simulator

## Program Description
- New Guard Mission
- ANG is not lead on this project

## Issues
- Spiral 1 is not DMO capable
- Spiral 2 follows 1 year later with DMO capability

## Financial Status
- Funded by lead command
- Guard funds DMO connectivity

## Schedule
- Deployment expected in 1 to 2 years

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KC-135 Boom Operator Sim

Program Description
- Prototype concept developed by Southwest Research Institute
- DMO capable, high fidelity, immersive simulator
- Squadron Level Device

Issues
- Employment plan for DMO events still in development
- Beddown TBD

Financial Status
- $1.4M in NGREA funded
- $225K in O&M for DMO integration
- Follow-on procurement, if approved, begins in FY07

Schedule
- FY05 contract award for development
- FY06 prototype delivery to DTOC
- FY07 Follow-on procurement decision

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<tr>
<th>Program Description</th>
<th>Issues</th>
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<tr>
<td>• Concept definition only</td>
<td>• Non-motion device</td>
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<tr>
<td>• Sim will combine flight crew, plus rear end crew with side door views for crew coordination DMO training</td>
<td>• Squadron level immersive</td>
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<table>
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<tr>
<th>Financial Status</th>
<th>Schedule</th>
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<tr>
<td>• No funding at this time. Soliciting funding sources in collaboration with other users</td>
<td>• Funding dependent</td>
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F-16 FCMT Sim

Program Description
- Weapon System (CONOPS)
- Lead Contractor/SPO
- Integration (CFT/Field/Depot)
- Congressionally directed

Issues
- ANG needs high fidelity DMO capable devices for F-16 Block 30s
- TSA II contract vehicle?

Financial Status
- $4.9M in developmental funding
- $21M needed in FY06 and $18.0M in FY08 to purchase 2 Regional Mission Training Centers (4-ship)

Schedule
- Prototype development expected to be complete by end of FY 06
- Production decision in FY06

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Questions?

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