

412th Test Wing Task Order 412th Electronic Warfare Group Task Element



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Industry Day

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412th Electronic Warfare Group Task Element

- **412th Electronic Warfare Group (EWG) Mission Overview**
- **Overall Electronic Warfare (EW) Task Element Requirements**
 - **All Organizations and Geographic Locations**
- **Major Task Element Requirements**
- **Questions**



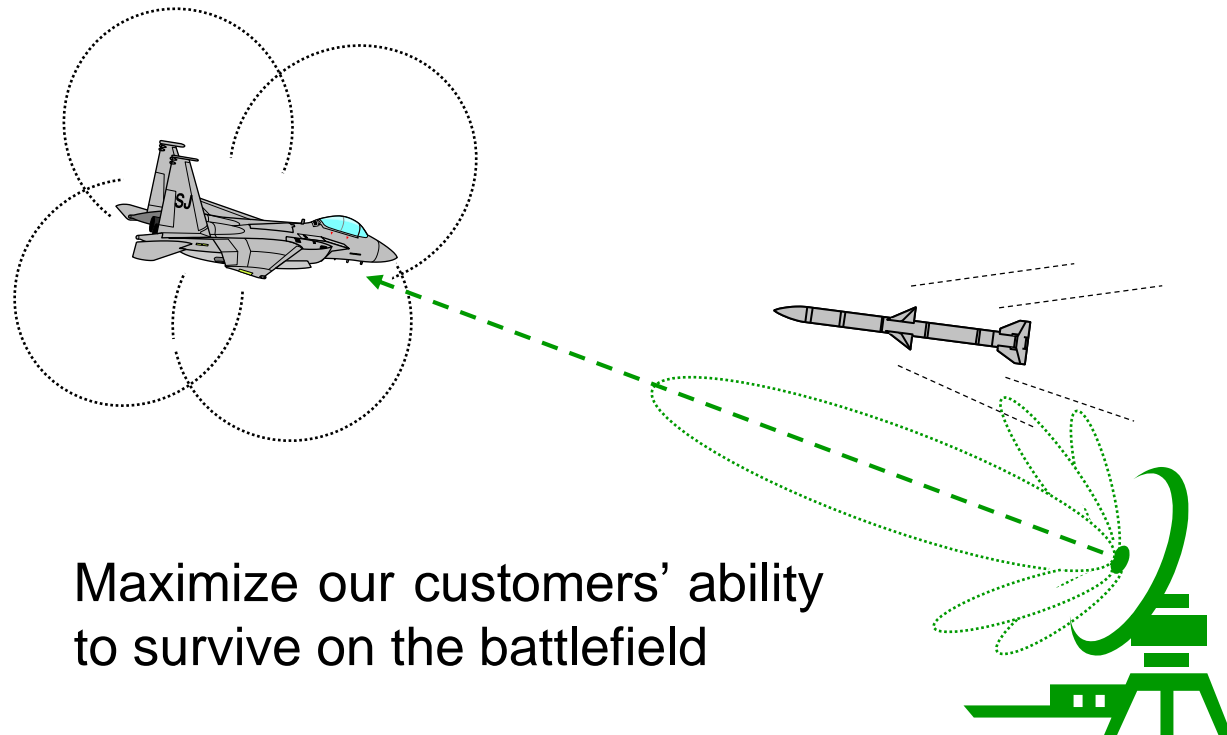
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412 EWG Mission

Provide our nation and its allies expertise and credible capabilities to perform survivability Test and Evaluation (T&E) ensuring our continued world-wide air dominance



The testing of Electronic Warfare systems



War Winning Capabilities... On Time, On Cost

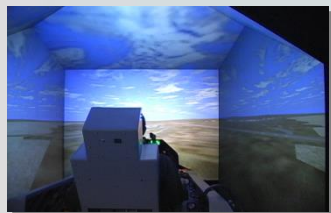


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412 EWG T&E

Multi-Spectral Virtual EW Battlespace...

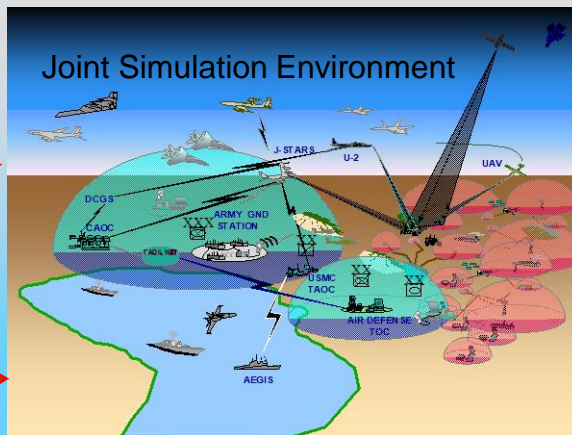
Manned Flight Simulators



DIADS -C²



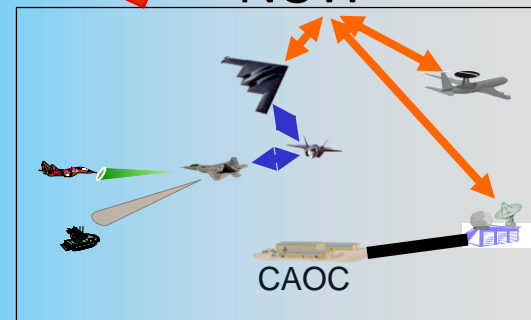
ADTRA



Radar Targets-ARES



NCW



BAF



EW Threat
Simulators



Open-Air Range



Real World Tests Prior to Combat

War Winning Capabilities... On Time, On Cost



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Overall 412 EWG Task Element Requirements

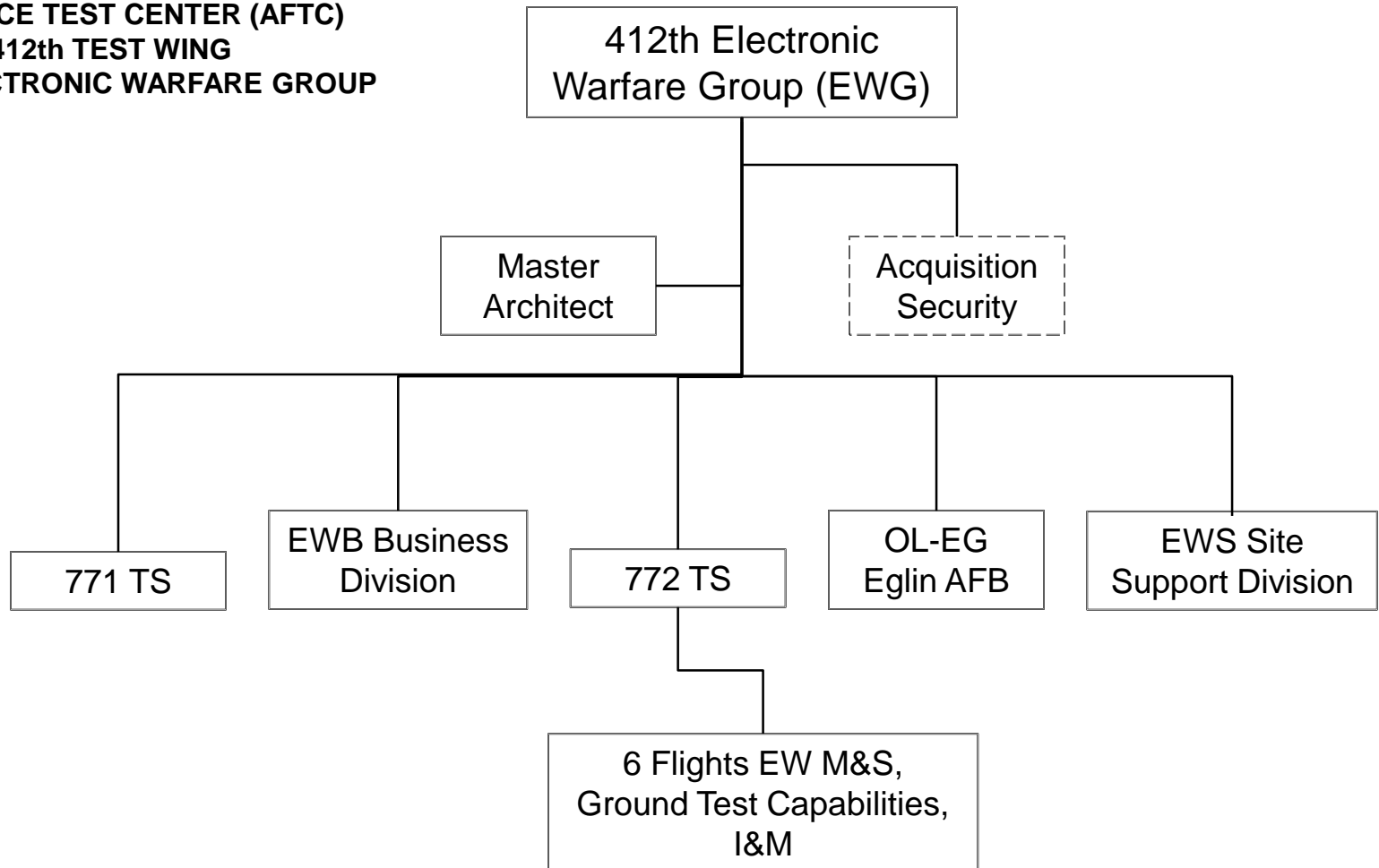
- **Systems Engineering and Technical Assistance (SE/TA)**
 - Expert advice and assistance required to support ground and flight test and related activities
 - Security-cleared personnel are available to provide continuous, uninterrupted support to the mission
 - T&E experienced workforce familiar with AFTC processes and procedures
- **Systems Engineering/Test Capability Planning / Investment / Development at the AFTC units and supported organizations**
 - AFTC EW range and infrastructure modernization program support
 - Support the integration of new or modified equipment and systems with existing capabilities
- **Test Mission Support at the AFTC and supported organizations**
- **Information Technology, Information Assurance, and Financial Management Support at the AFTC and supported organizations**



412 EWG Organization

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AIR FORCE MATERIEL COMMAND (AFMC)
AIR FORCE TEST CENTER (AFTC)
412th TEST WING
412th ELECTRONIC WARFARE GROUP

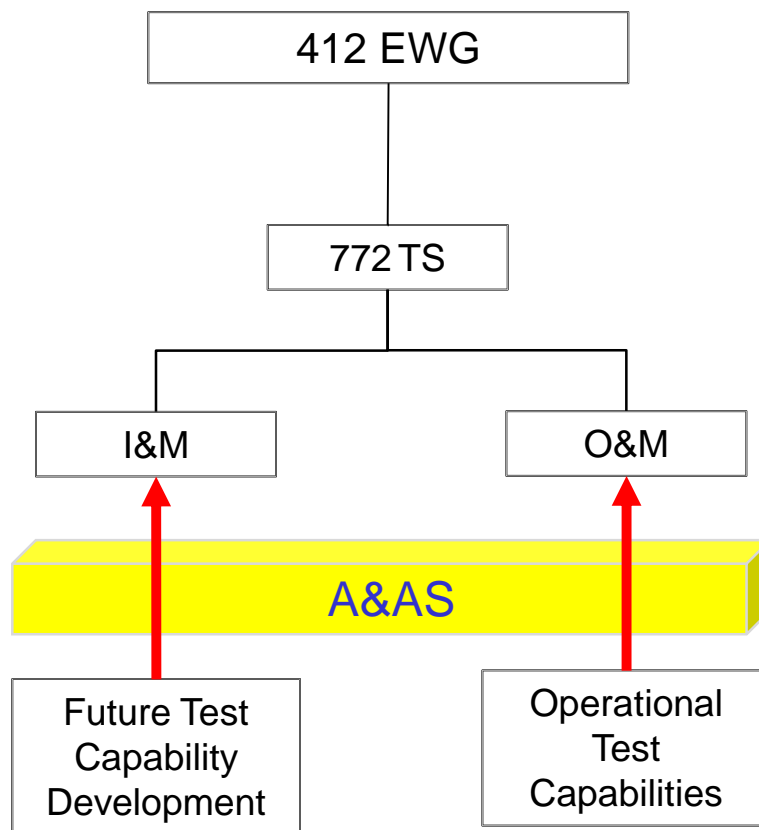


War Winning Capabilities... On Time, On Cost



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412 EWG Organization--Mission Execution

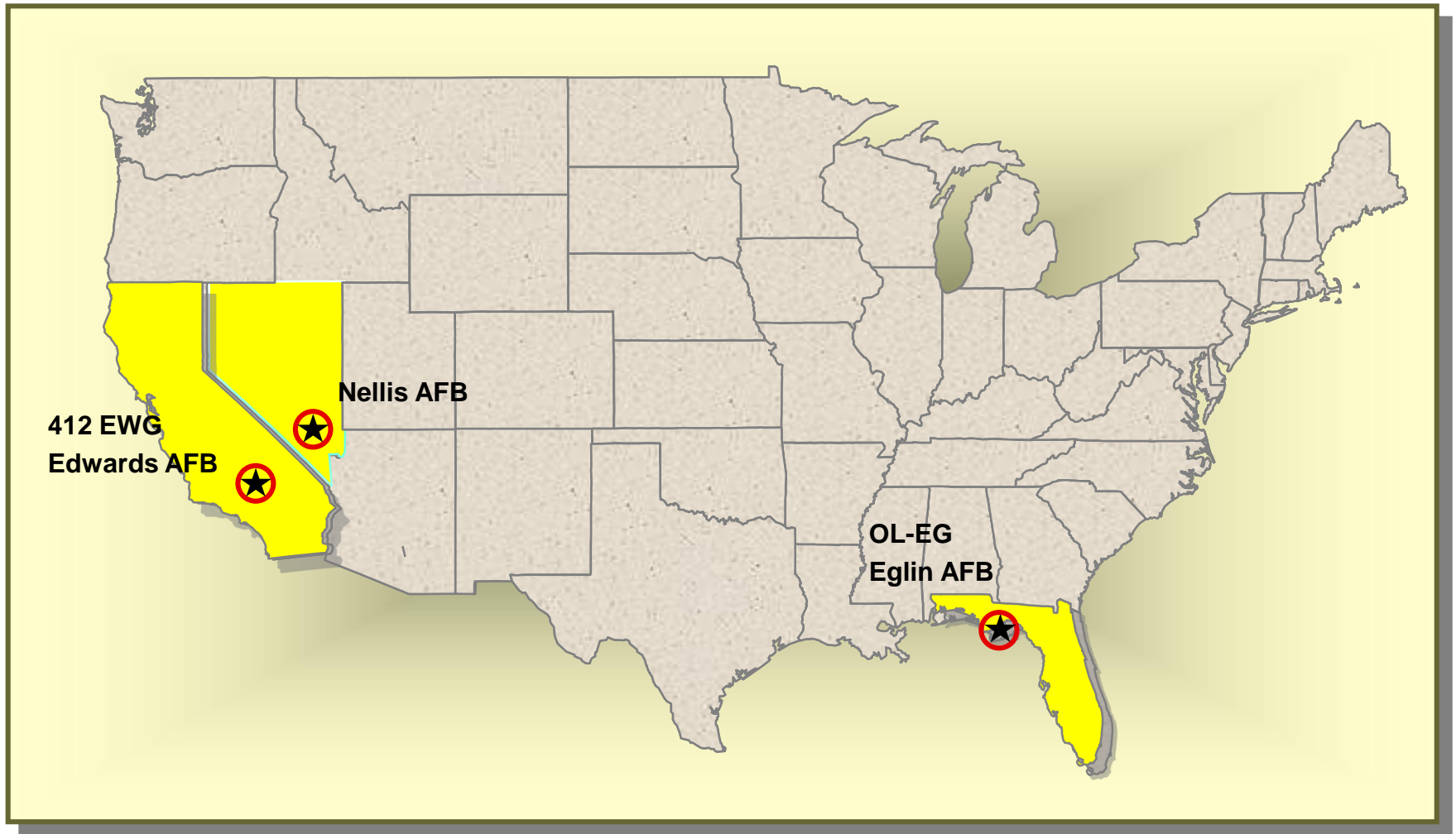


War Winning Capabilities... On Time, On Cost



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412 EWG Locations



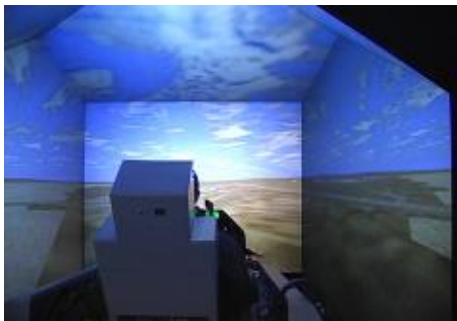
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EW Test & Evaluation (T&E) Facilities



TEMs

Test & Evaluation,
Modeling and Simulation
Digital Simulation



EW Threat Simulators

Hardware-In-The-Loop



IFAST

Integrated Facility for
Avionic Systems Test
Systems Integration Lab



BAF

Benfield Anechoic Facility
Installed Systems Test Facility

War Winning Capabilities... On Time, On Cost



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412 EWG Facilities

Benefield Anechoic Chamber

- GPS (pass through or simulation)
- EW Threat Simulation
- Comm, Nav, IFF (CNI)
- Antenna Patterns
- EMI/EMC
- Secure test environment for sensitive signals (SAP, SCI, war reserve modes)
- Credible “pedigree”
- Instrumentation



War Winning Capabilities... On Time, On Cost



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412 EWG Major Task Element Requirements

- **Systems engineering (SE)**
 - Strategic planning and program management support
 - Support Master Architect and Projects Development Division to plan, manage and execute T&E investment programs to develop test infrastructure via the Center's SE process; support EWG SEB process
 - Participate in Systems Engineering Team (SET) to provide assessments and recommendations on several programs
- **Requirements definition on existing/new capability developments**
 - Interfaces with users, customers and other developers
 - Develop specs, acquisition & management documentation
- **Developmental engineering**
 - Translate requirements into design solutions
 - Perform risk reduction & technical analysis activities
 - Provide technical insight to developmental activities
- **Verification, validation and correlation support**
- **Information Technology, Information Assurance, & Financial Management Support**
- **Facility integration and upgrades (in support of new capabilities and test)**



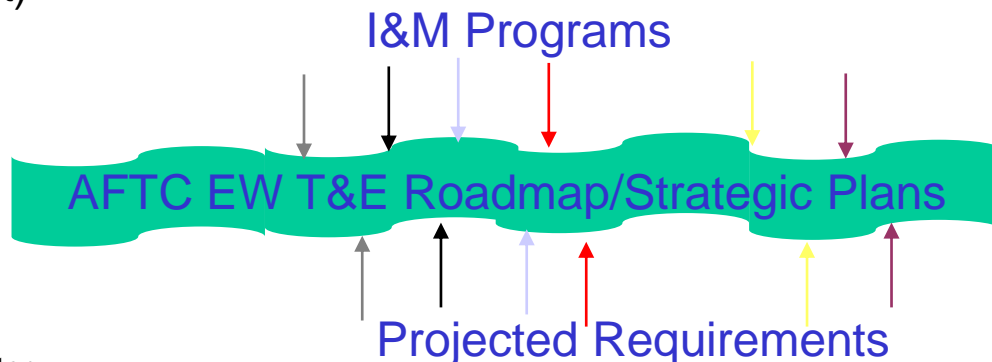
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412 EWG Major Task Element Requirements (cont.)

Improvement & Modernization (I&M) Current Support on Infrastructure Programs

■ Sample Test Infrastructure Programs

- **ADTRA** (Advanced Dynamic Transmit Array)
- **AWTEC** (Advanced Warfare Test and Evaluation Capability)
- **CIMPLEX** (CEESIM* Improvement & Modernization Program Lifecycle Extension)
- **DIADS** (Digital Integrated Air Defense System)
- **NEWEG** (Next Generation Electronic Warfare Environment Generator)
- **RAGE** (Radar Air to Ground Environment)
- **MSTC** (Mission System Test Capability)
- **JSE** (Joint Simulation Environment)

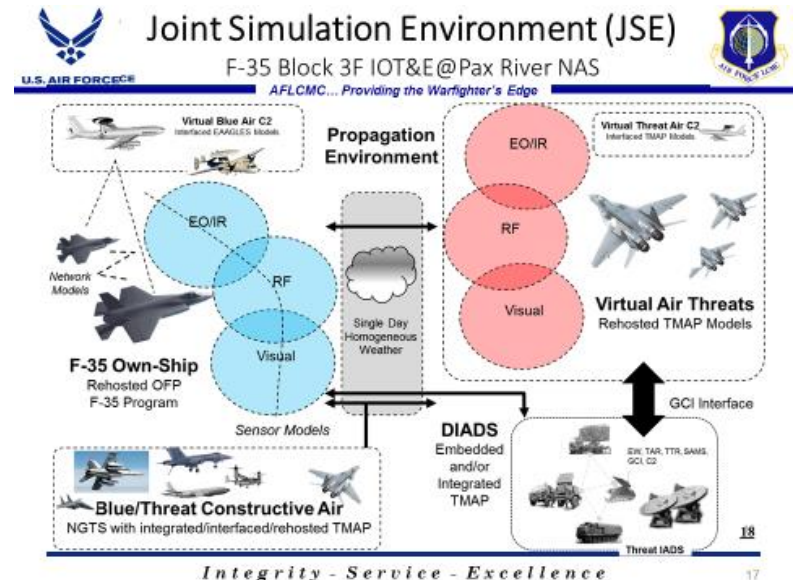


*CEESIM--Combat Electromagnetic Environment Simulator

War Winning Capabilities... On Time, On Cost



- Establish / Development of JSE at Edwards and Nellis
 - 2xMILCON, acq/dev H/M/L fidelity sim, JSE architecture dev
- Provide day-to-day support for DT/OT in sim environment
 - Computer Scientist (i.e. re-host OFP, EBS dev,)
 - Engineers (i.e. sim operators, test scenario set up, ...)
 - PM, BFM, Facilities, and Security support





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412 EWG T&E

End-States

- **“One Stop Shop” – but we don’t necessarily own it all!**
 - Systems Engineering Council (cross-functional issues like NCW/NCO)
 - Integrated ground/flight test to increase OAR efficiency
 - Requirements validation w/customer base
- **Affordable – cost effective risk management**
 - Rapid Improvement Events (efficiency upgrades)
 - System Integration
 - Leverage Combined Test Force’s (CTF’s) to vet requirements/gain funding support (e.g. quick look tool set)
 - Leverage CTFs to drive BAF OAR-like data products to leverage a common 771st tool set



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412 EWG Summary

- EW is a dynamic and diverse organization with unique interfaces to other organizations

“Survivability is our responsibility”

- Strong emphasis on systems engineering in all developmental programs
- Responsible for development of a broad range of complex I&M programs
- Many current and future challenges to improve and develop advanced infrastructure to test tomorrow's weapon systems



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Questions?