

Air Force Test Center



THE AIR FORCE TEST CENTER VALUE TO THE ACQUISITION PROCESS

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Integrity ★ Service ★ Excellence



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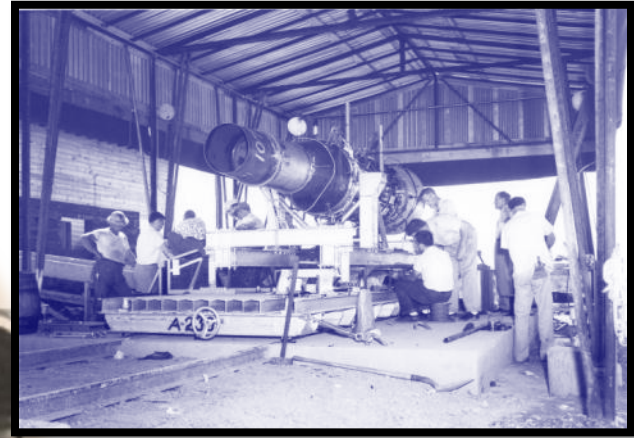
Outline

- **AFTC: who we are**
- **How DT&E fits and adds value to the acquisition process through systems engineering.**
- **Ongoing efforts**
- **Success stories**
- **Why we need to do better**
- **Conclusions**

Our Heritage



Eglin AFB



Arnold AFB

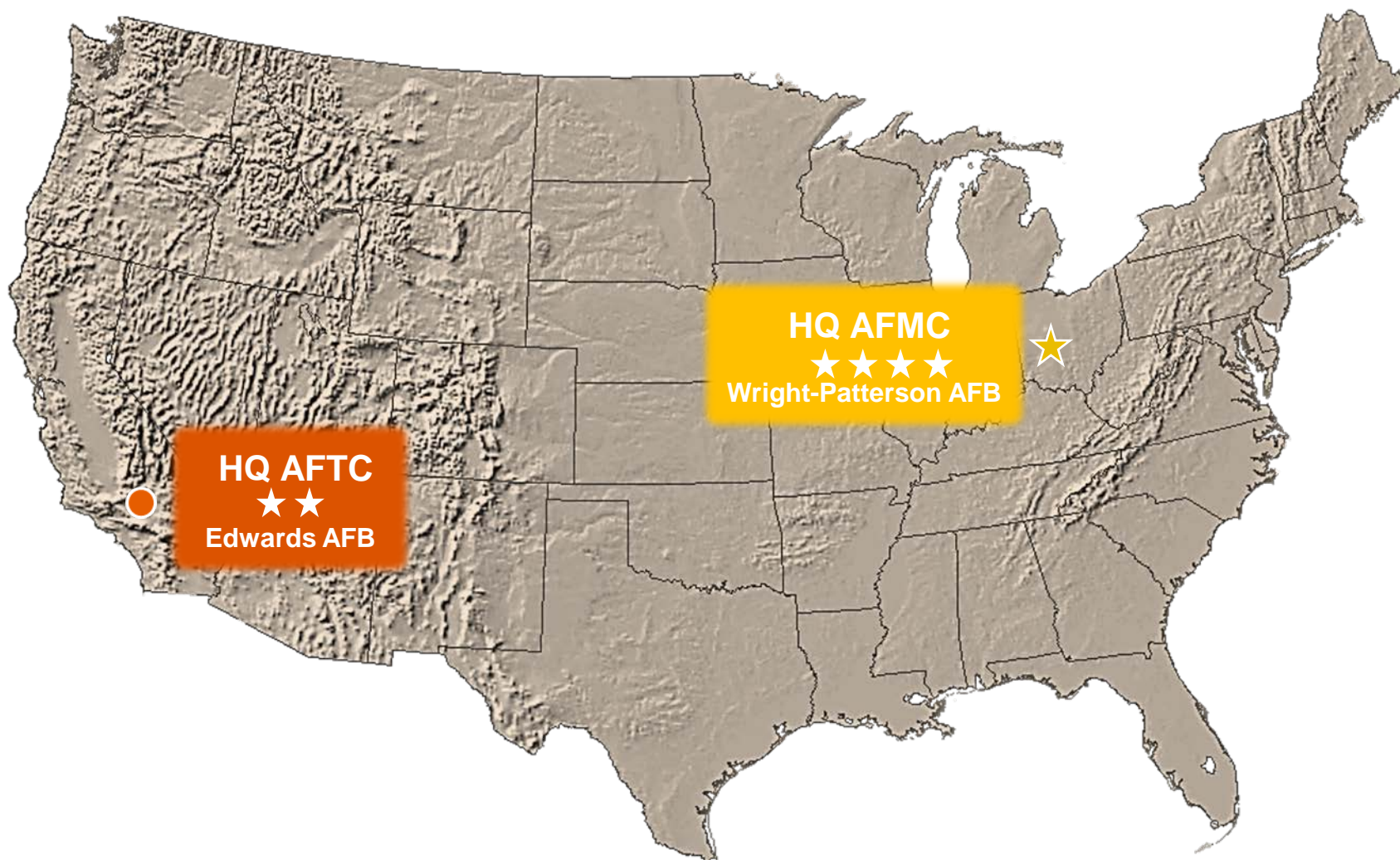


Edwards AFB



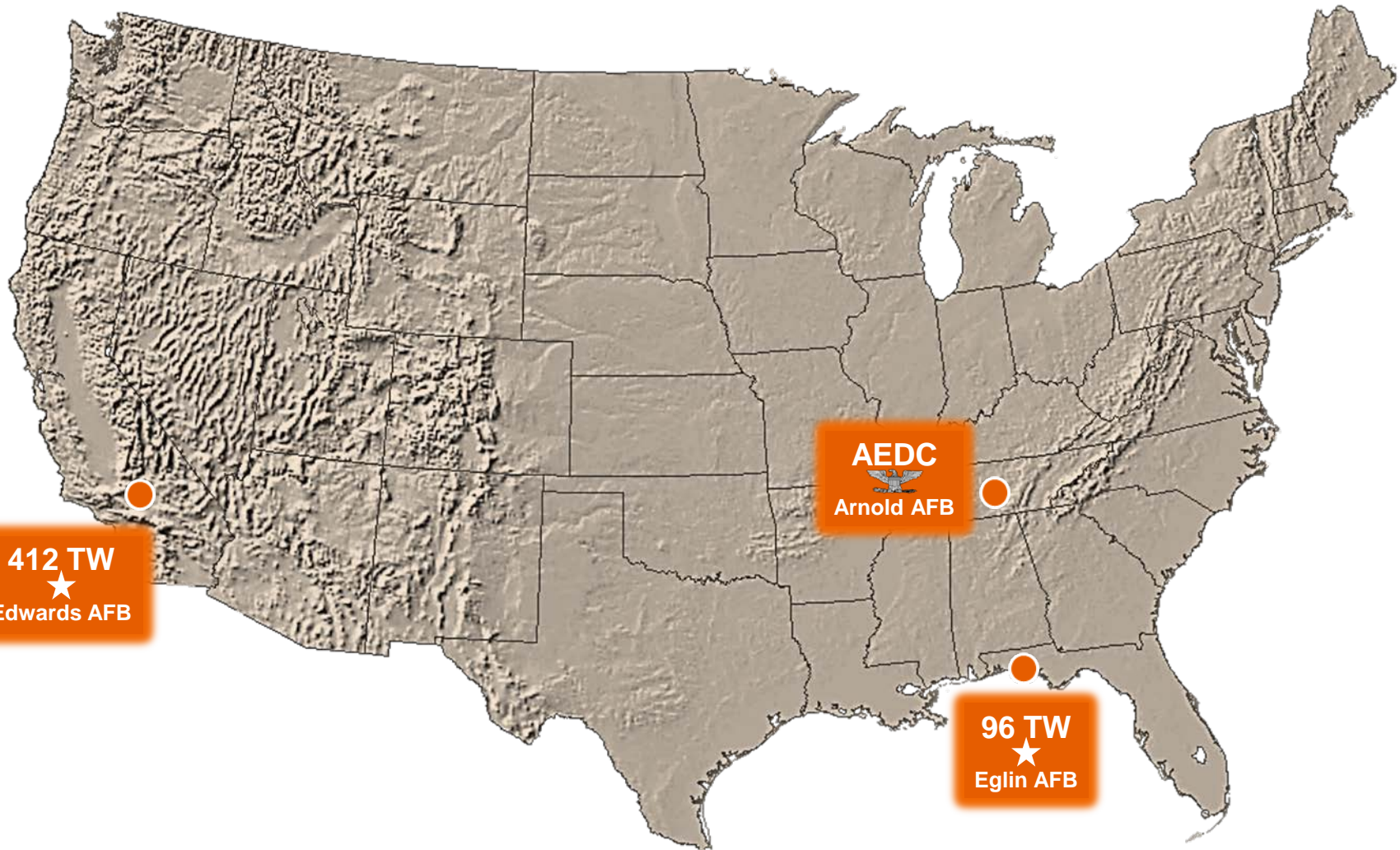


Span of Operations





Span of Operations



412 TW
★
Edwards AFB

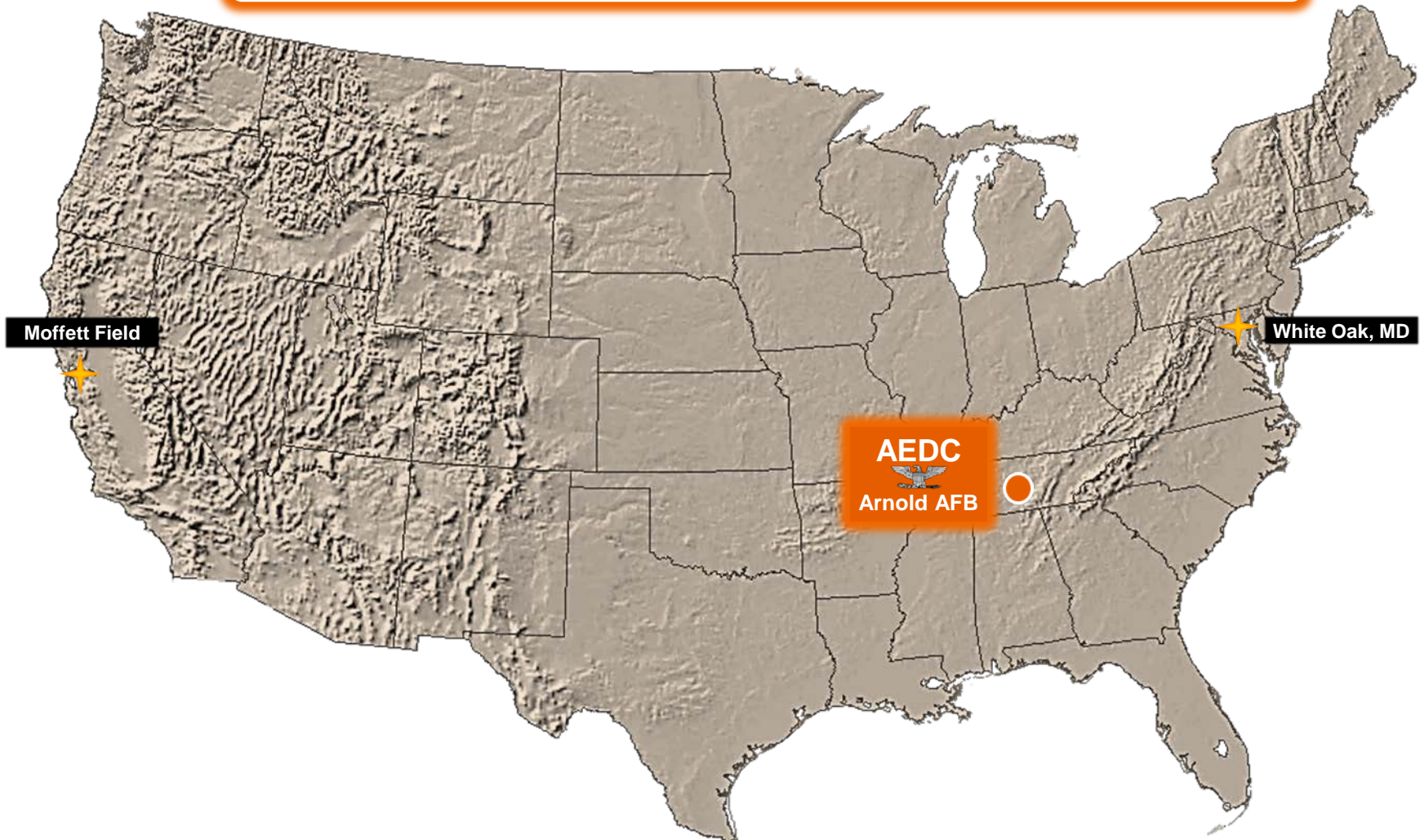
AEDC
★
Arnold AFB

96 TW
★
Eglin AFB



Span of Operations

Arnold Engineering Development Complex (AEDC)

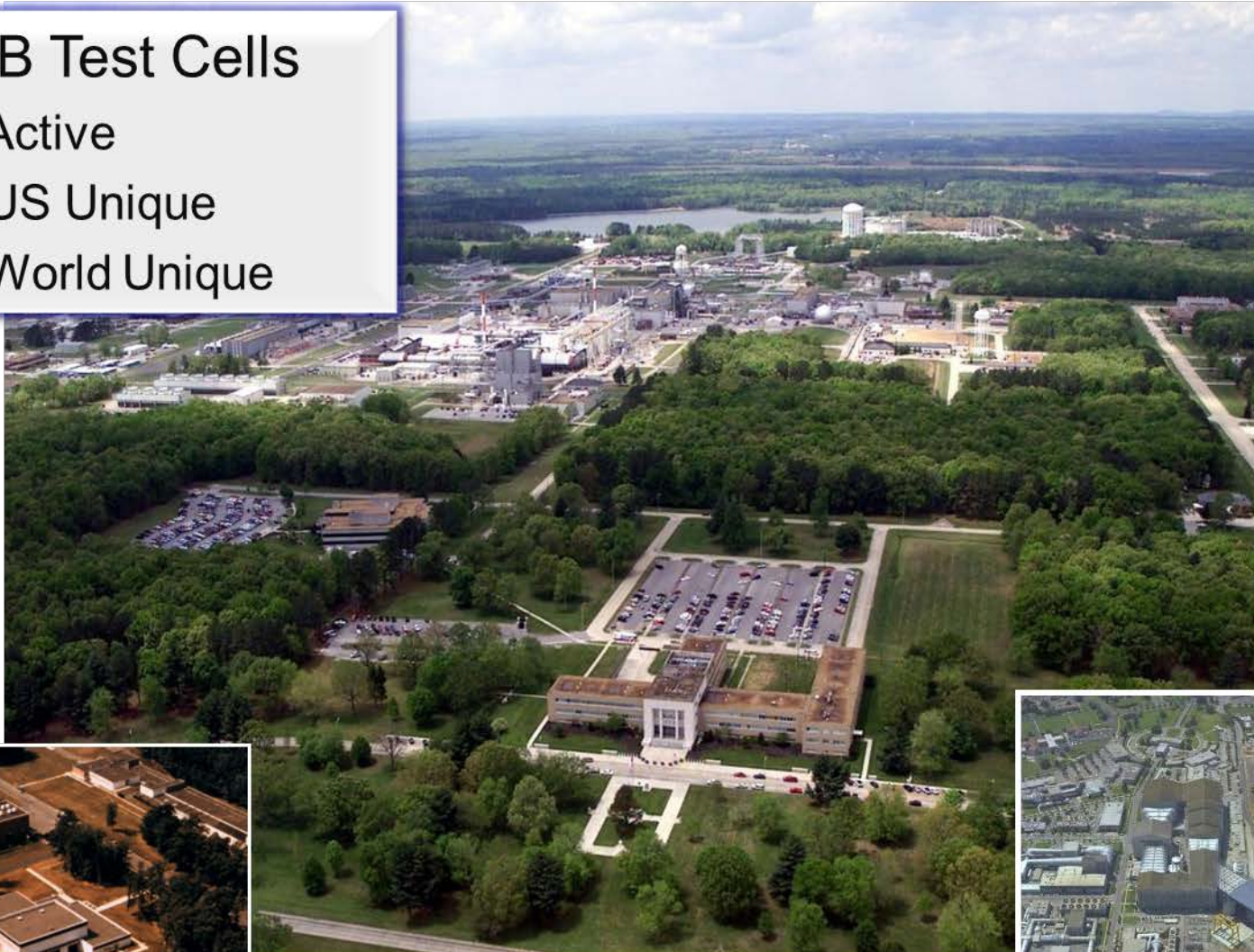




Arnold Engineering Development Complex

43 MRTFB Test Cells

- 28 cells Active
- 20 cells US Unique
- 14 cells World Unique



NFAC
Mountain View, CA



Span of Operations

96th Test Wing (96 TW)





96th Test Wing

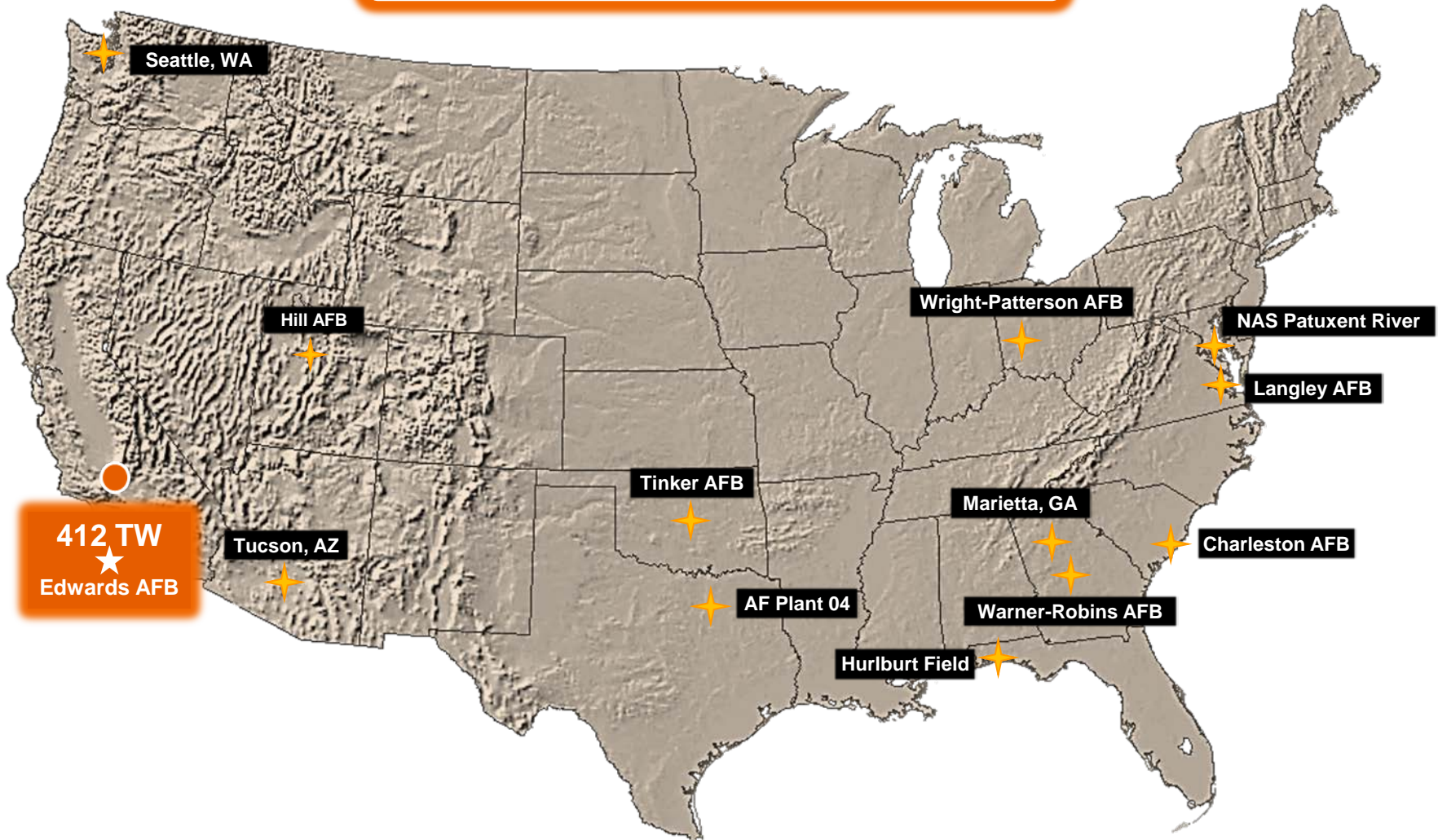
- **Test & evaluate state-of-the-art weapons and provide superior installation support.**
 - **Air-to-Air/Air-to-Ground**
 - **Aircraft-Store Compatibility**
 - **Weapon Effects**
 - **Legacy Weapon Systems**
 - **Strategic Test Capabilities**
 - **Special Ops**
 - **Command and Control/Cyber**
 - **Range Management**
 - **Installation Support**





Span of Operations

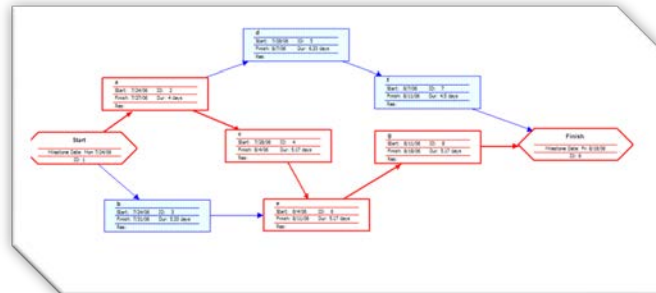
412th Test Wing (412 TW)





412th Test Wing

- Leverage our location, weather, partnerships, and personnel to conduct independent, objective assessments on behalf of the USAF
 - Flight Operations
 - Engineering
 - Test Management
 - Maintenance
 - Installation Support





AFTC Benefits

- **Aligns AFMC Test Enterprise Resources and responsibilities/authority, beginning to end, to single Center CC**
- **Provides opportunity to standardize Enterprise processes & become more efficient & effective**
- **Single, simplified interface to customers**
- **Confident we have many other opportunities we have not yet realized**



Tester of Choice

- State of the art test facilities
- Technical and test experts to support each test
- Trained engineers to help with statistically relevant testing
- Superior support with data reduction, reporting and scheduling



Our Mission and Our Vision

Conduct Developmental Test and Evaluation of air, space, & cyber systems to provide timely, objective, and accurate information to decision makers



Tester of Choice... Today and Tomorrow





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What Systems Engineering means to me

- **There is a comprehensive plan on how and when to do things.**
- **Multiple people and organizations are involved in every process and decision. From the very beginning.**
- **There is a specific order things are done in**
- **Working together you can be more efficient and have a far better outcome**

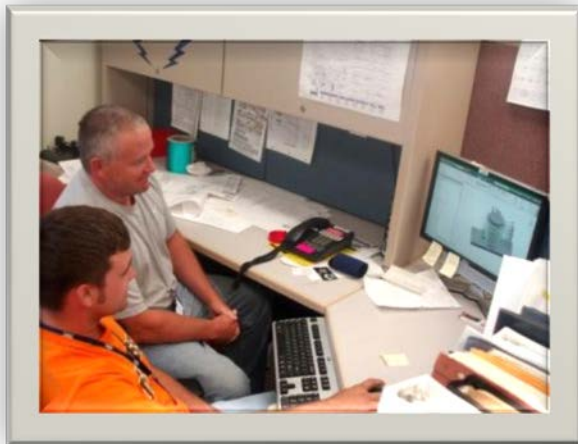


“...we need to balance the desire for thorough testing against the resources in time and money required to conduct the testing. This can only be accomplished through a cooperative effort that fully involves DT&E professionals in the program planning process.”

Frank Kendall

**Under Secretary of Defense for Acquisition,
Technology, and Logistics**

ITEA Journal 2013





BLUF



- **DT&E: from big “T”, little “e” to big “T” and big “E”**
- **Testers not just involved through systems engineering practices but a valued member of every acquisition team**



Testing and the Acquisition Process

- **Early involvement**
- **Testers as integral part of the team/program office**
- **Testers provide added value – not just testing. True DT&E**
 - **Test design**
 - **Data analyses**
 - **Failure analyses**



Early Involvement

- **Why is early tester involvement important?**
 - Testable/measurable Requirements
 - Realistic Requirements
 - Facilities/Instrumentation Available?
 - Capabilities/Manpower
 - Data Rights
 - Long-Term Strategy

AFTC's Desire is Early & Continuous Involvement



Ongoing Efforts

- **Working with AFMC/A3F and AFLCMC/AQT on implementation of AFI and AFMCI direction for early involvement of testers**
 - Formalize AFTC as OPR for AFI 99-103, para 4.3 Pre-MS A Tester Involvement in the Acquisition Process
- **Develop coordinated plan to maximize use of AFTC test reps, CTAs, testers in SPOs**
 - AFTC Test Reps working with every customer to understand program requirements and identify impacts of AFTC capabilities, to ensure program requirements are realistic and testable and to develop program test strategies
- **Elevate modeling / statistical engineering to resourced AFTC enterprise capability**
 - Use statistical tools to meet desired acquisition outcomes
 - Use analysis tools to extract results from all available data
- **Apply value added analysis to all test programs and document results, lessons learned, and impact on acquisition**
 - Key value added by DT is the maturation of the system
 - A partial measurement of this is the DRs and Watch Items that are identified and corrected and WHEN. Early correction of DRs saves huge \$
 - AFTC can enhance value to acquisition by evaluating DR/WIs for systemic root causes
 - Improve test processes
 - Communicate risks across acquisition programs



Examples – Success Stories

- **In-house statistics/design of experiment experts**
- **HTVSF soil characterization issues – AFTC part of the team – suggested three tests as path forward – fundamental critical results to the Program Office**
- **Sled tests design and predictions**
- **SDB II, AMRAAM, LRSO – embedded tester with the program. Liaison, facilitator**
- **MOP – AFTC ready for tests of this very large warhead**



Past issues and why we need to do better

- **PL MK-82 requirements and realities**
 - Must be lethal to X feet
 - No collateral damage past Y feet
 - Arena tests results and analysis
- **JASSM requirements and realities**
 - Millions of extra dollars spent because of a single target in the “ORD”



Conclusions / Way Forward

- **The AFTC wants to have early and continuous involvement in the acquisition process**
- **We promise to recapture true DT&E. Emphasis on the E.**
- **We need the acquisition community's help in keeping us in the loop**
- **To offer the best value we must be prepared. To be prepared we must know what is coming.**
- **Our business is testing, let us help you from the beginning to the end to insure what you want is testable and measurable and what you get is exactly what you want.**

