

Headquarters U. S. Air Force

Integrity - Service - Excellence

AF T&E Update Transformation Status and Future Programs



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Lt Col Bo Tye

Phone: 703-697-4774 or DSN 227-4774

E-mail: David.Hamilton2@pentagon.af.mil

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Transformation Status

- **Objective: Provide updates about**
 - **Major Test and Evaluation (T&E) policy changes**
 - **T&E Organization**
 - **T&E Transformation Strategy**



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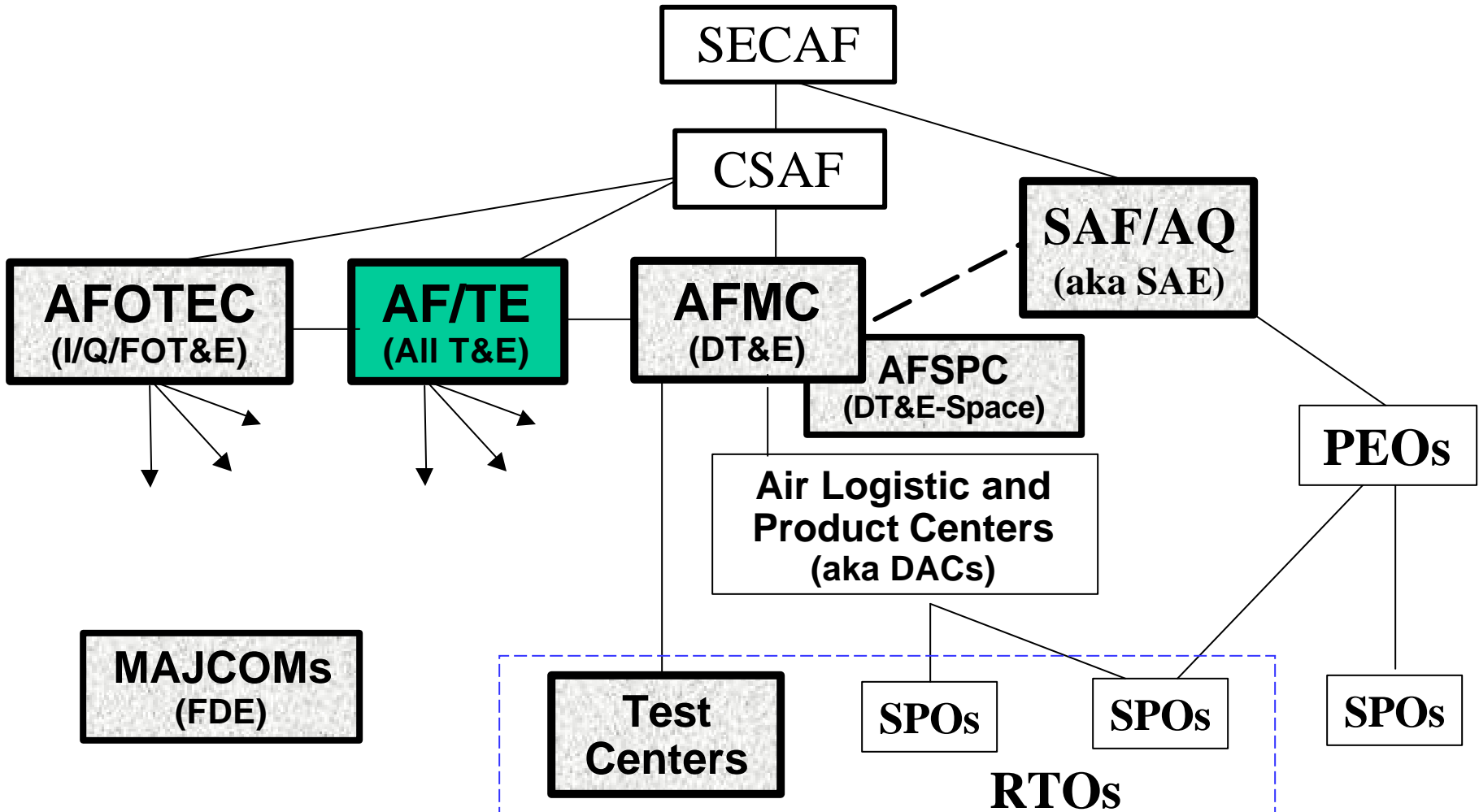
HQ USAF/TE Duties

- **Air Force's Executive Agent for T&E**
 - Establishes AF-wide policy for all T&E
 - Ensures credible T&E results for senior leaders - early
 - Helps develop meaningful and testable operational requirements
 - Advocates resources for modernizing T&E infrastructure
 - Does not own AFOTEC, infrastructure, or any test agency
 - Adjudicates T&E issues between HQ functionals, MAJCOMs, Services, OSD, and Congress

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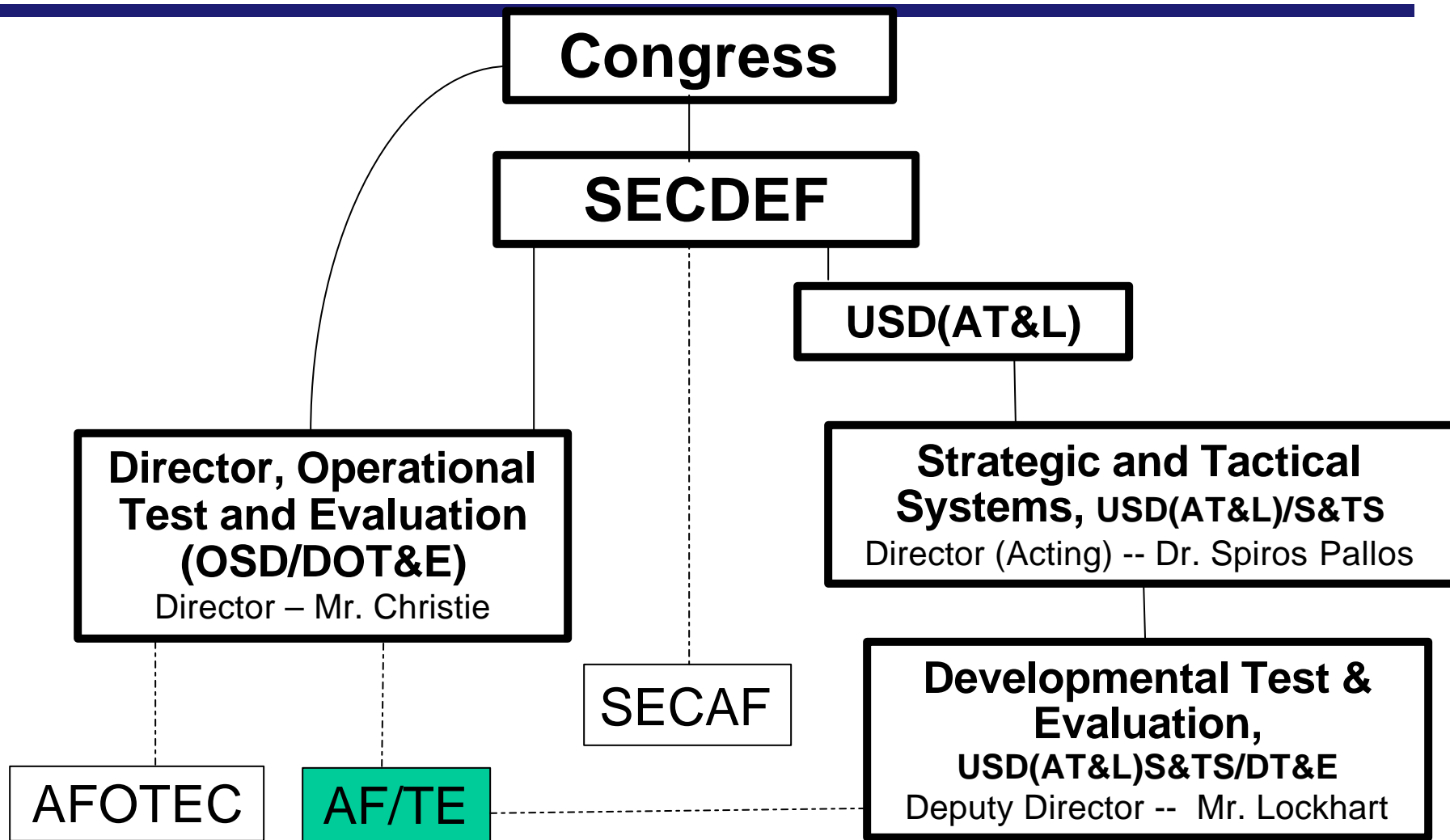
T&E – Acquisition Relationships





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OSD T&E Structure



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Major T&E Policy Update

- **New! AFI 99-103, Air Force Test and Evaluation (Draft)**
 - Replacing three AFIs:
 - AFI 99-101, Developmental Test and Evaluation
 - AFI 99-102, Operational Test and Evaluation
 - AFI 99-105, Live Fire Test and Evaluation
 - Implements new policies in DoD 5000-series, OSD policy memos, CJCS Instructions, other AFIs
 - All T&E structured as an efficient continuum, a “seamless verification”
 - Evolutionary acquisition
 - Time-phased requirements
 - Interoperability testing and certifications
 - Supports accelerated acquisition strategies
 - Responds to CSAF’s & SAF/AQ’s initiative to improve acquisition
- **Expect publication in Dec 02**

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Test Structure: Past vs. Present

Sequential Testing

(Notional)

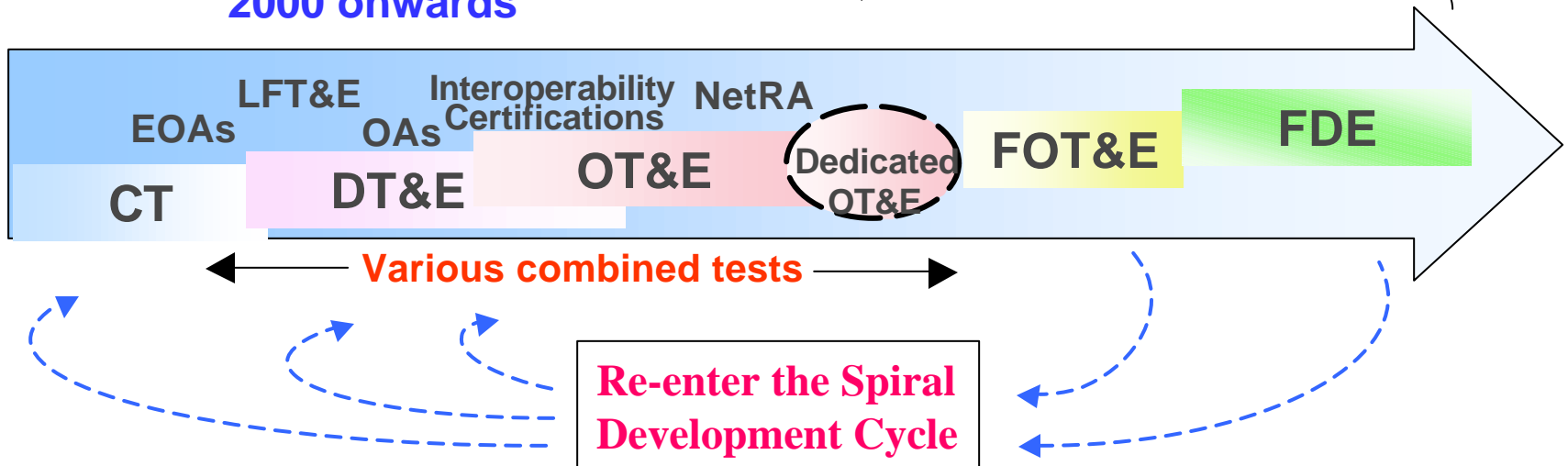
1950's – early 1990's



Continuum of Testing

2000 onwards

Series of FRP and/or fielding decisions



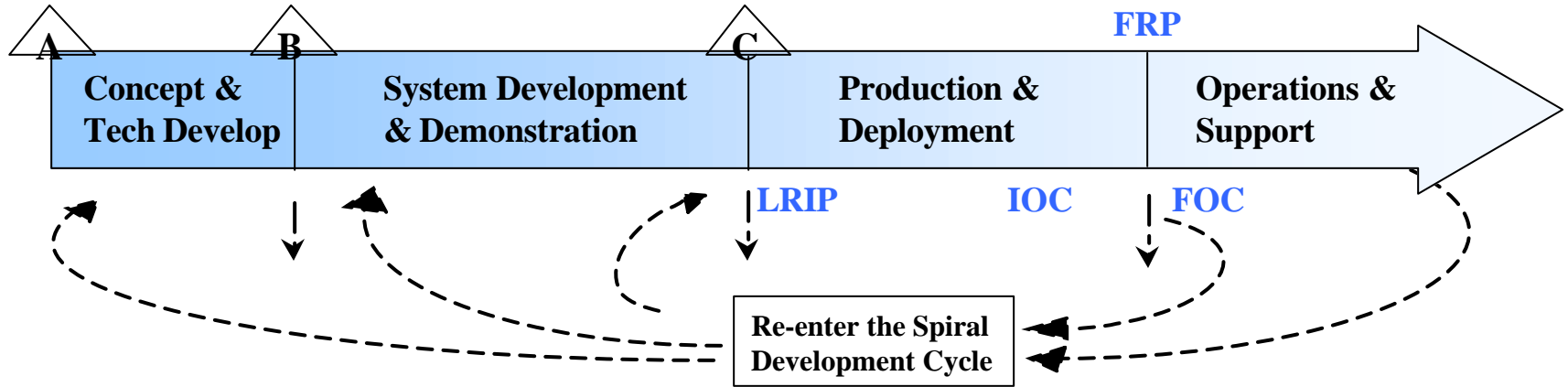
Various “loops” emerge as follow-on blocks of capability are developed

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“Seamless Verification Process”

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Enhanced Early Tester Involvement

Make “Investments”

- Better requirements
- All T&E planned as an “efficient continuum”
- Quality designed in early
- **More user– tester– developer interaction**
- **Seamless verification plan**

Combined Testing

Monitor Growth

- Common data bases
- Common goals
- Continued user-tester-developer interaction
- More test realism - earlier
- Earlier system maturity
- Spiral development & time-phased req'ments
- **Reduce scope of OT&E**

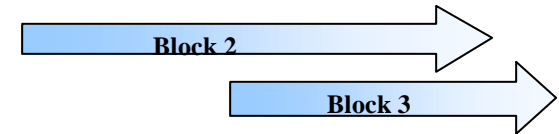
Flexible, tailored OT&E

Reap Dividends

- Range of OT&E options: OT&E, OA, OUE, demo, none
- Fewer areas left untested
- Focus on mission impacts

Better systems fielded earlier

Evolutionary Acquisition





Pathfinder Programs

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- Correlate technology, technology transition and concept development to “task-force effects”
 - Requirements pull – technology push
- Create collaborative spiral requirements and program management
 - Upfront continuous collaboration and planning by the warfighter, Milestone Decision Agency, technologists, developers/acquires, sustainers, budgeters and testers
- Perform testing as one integrated DT/OT verification process

AF Pathfinder Programs

Small diameter bomb; UCAV (Unmanned Combat Aerial Vehicle); Global Hawk; B-2 Radar; Space Based Radar; NCCT (Network-Centric Collaborative Targeting); DCGS (Distributed Common Ground System)

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AF Range Investments - Future Workload

Aircraft

F-22

JSF

UCAV

Global Hawk

Predator

F-16

B-1

Munitions

JSOW

JASSM

JDAM

JSW

AIM-9X

ABL

Small Diameter
Bomb

Support

WGS

SBIRS

NPOESS

CMWS

DCAPES

GBS

NBC

Future Workload

F-22

- **Testing location**
 - AFFTC; Gulf Range
- **Kind of testing planned**
 - Flight test, sensor test, weapons testing
- **Range equipment/assets required for test**
 - Altitude, airspeed & sensor capabilities drive a large range requirement – 4 F-22s consume entire gulf range complex
- **Anticipated Cost**
 - FY 03 – 07 \$240M/year
 - FY 08-10 \$200M/year





Future Workload Joint Strike Fighter

- **Testing start/end dates and planned location**
 - DT: First flight Aug 06: AFFTC, NAWC
 - IOT&E: Approximately 2011
- **Kind of testing planned**
 - Fully integrated DT/OT
- **Range equipment/assets required for test**
 - 14 aircraft for DT flight-test
 - Fort Worth TX, AFFTC, NAVAIR, AEDC
- **Anticipated cost**
 - Unknown





Future Workload Global Hawk

- **Testing start/end dates and planned location**
 - Combined DT/OT - Aug 02/Jun 06 – Edwards AFB
 - Planned quarterly exercises
 - TEMP – in coordination Oct 02
 - IOT&E – Oct 06
- **Range equipment/assets required for test**
 - Range equipment/assets are still in the planning stage
- **Anticipated cost**
 - FY03 – FY08 approx 8M



Future Workload

UCAV

- **Testing start/end dates and planned location**
 - Seamless verification testing / Edwards AFB
- **Kind of testing planned**
 - System Demonstration Program
 - First flight 22 May 02
- **Range equipment/assets required for test**
 - Chase aircraft, Enhanced Flight Termination System
- **Anticipated Cost**
 - Unknown
 - Transition to ACAT program FY03





Future Workload

JASSM

- **Testing start/end dates and planned location**
 - DT Phase I Flight testing Sep 00 – Apr 02
 - IOT&E Phase II Flight testing Jun 02 – Feb 03
- **Location & range time:**
 - Eglin AFB; Edwards AFB, China Lake NAS, White Sands Missile Range (WSMR); National Test and Training Range, Nevada.
 - Range time varies with type of mission
 - Jettison mission – small range space, 1 hour range time
 - All-up-round mission – the entire range at WSMR and some extensions; up to 4 hour blocks of time



Future Workload

JASSM

- **Kind of testing -**
 - Aircraft integration; SEEK EAGLE, live fire, lethality, and missile, etc
- **Range equipment/assets required for test**
 - WSMR – main control room & target area control rooms, telemetry sites, data recording devices, GPS jammers, chase aircraft, tanker support, etc
- **Anticipated Cost**
 - FY01 – FY06: ~\$63M
 - DT&E, LFT&E, OT&E



Future Workload Airborne Laser (ABL)

- **Testing start/end dates and planned location**
 - DT: Aug 02 – FY06 AFFTC; WSMR
 - IOT&E: FY06 – FY08 WSMR; WTR
- **Kind of testing planned**
 - AFFTC: Ground testing of Laser; flight certification
 - WSMR: Plume detecting; low/high power shots against balloons & missiles
 - WTR: Terrier Black Brant missiles
- **Range equipment/assets required for test**
 - Tankers, chase aircraft, targets
 - 366 flight-test hours planned
- **Anticipated Cost (MDA)**
 - DT: \$85M
 - IOT&E \$50M(Range costs)





Full & Sub-scale Aerial Targets

- **40 QF-4s required to maintain test capability**
 - 2 locations -- Eglin AFB and WSMR
- **HQ USAF/TEP controls kill authorization**
 - Full scale kills ~ 18 per year
 - Sub-scale kills ~ 32 per year
- **Currently funding 12/yr (losing 6/yr of inventory)**
 - Restricted QF-4 ~ \$1.2M, Unrestricted QF-4 ~ \$1.6M
- **Navy wants AF to support all Navy QF-4 tests**
 - AF unable to comply due to full-scale target shortages
 - Will cause a quicker depletion of QF-4s
- **QF-4 replacement - Air Superiority Target (AST)**
- **Air Force Sub-scale Aerial Target - (AFSAT)**
 - Required Assets Available (RAA) in FY06



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Future Workload Aerial Targets/Drones

- **QF-4 Full Scale Replacement Study to develop the Air Superiority Target (AST)**
- **AST will replace QF-4 AND is a more current, threat representative, and capable target**
 - Two studies awarded to Lockheed Martin
 - New Vehicle concept
 - Droned F-16
 - One study awarded to Boeing
 - New vehicle concept
 - IOC planned for FY10
 - EMD not funded in FY04 POM!
- **DT/OT requirements, timeline, funding etc. TBD**



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Challenges

- **Range space – encroachment**
 - F-22/JSF require more air space for test and training
 - Urban encroachment
- **Data collection – constantly increasing volume**
 - Advanced Range Telemetry (ARTM) – advanced modulation, antennas, data compression
- **Spiral Development**
 - Smaller incremental tests
 - Starting T&E earlier, continuing T&E throughout programs
- **Manpower - Aging workforce**



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What it's all about!



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