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Advanced Concept Technology Demonstration (ACTD)

And transition to the...

Joint Capability Technology Demonstration (JCTD)

business model

Vision: Through oversight and partnerships, accelerate cutting-edge technologies & concepts to sustain and improve warfighting capabilities.



Mark Peterson

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Office of the Secretary of Defense

DDR&E/AS&C

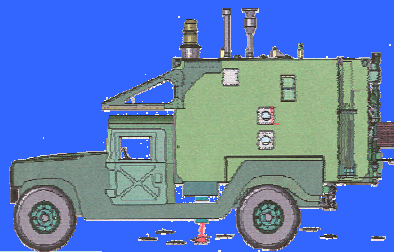
(Advanced Systems & Concepts)

April 18, 2006

www.acq.osd.mil/asc



CUGR ACTD
NDIA Jan 2006



MICRO UAV ACTD
NDIA March 2006



**Deputy Under Secretary of Defense
(Advanced Systems & Concepts)**

Military Assistant

Program Resources & Integration

**Joint & Coalition
Operations Support**

- ▶ **Joint Warfighting Program**
- ▶ **USJFCOM Joint Experimentation and Integration**

ACTD/JCTD Office

**Office of Technology
Transition**

**Comparative Testing
Office**

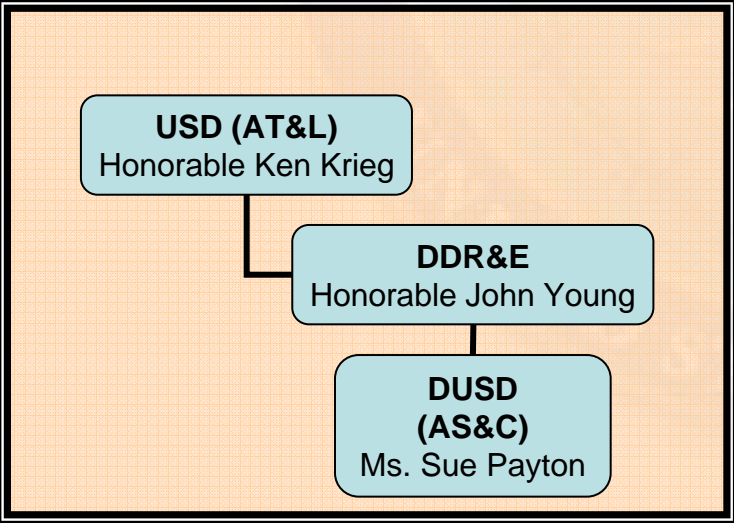
- ▶ **ACTD Program**
- ▶ **JCTD Program**

Special Capabilities Office

- ▶ **Special Capability Projects**

- ▶ **Foreign Comparative Testing (FCT)**
- ▶ **Defense Acquisition Challenge (DAC)**

- ▶ **Tech Transfer, Tech Link, TechMatch**
- ▶ **Independent Research and Development (IR&D)**
- ▶ **Small Business Innovation Research (SBIR)**
- ▶ **North American Technology and Industrial Base Organization (NATIBO)**
- ▶ **Manufacturing Technology (ManTech)**
- ▶ **Defense Production Act Title III**
- ▶ **Technology Transition Initiative (TTI)**





ACTD/JCTD Support to Joint Combatant Commanders



- **ACTDs rapidly field emergent mature technologies to joint warfighters** (TRL level 5-6).
 - Balanced emphasis on tailoring technology with associated Tactics, Techniques, & Procedures (TTPs) to user needs
- **Primary customers for ACTDs are joint Combatant Commanders**
 - Joint, Coalition, & transformational opportunities are priorities
 - ACTDs require a Lead Service/Agency and a CoCom Sponsor
- **ACTDs are not an acquisition/procurement program**
 - Charter is to minimize processes that delay rapid fielding of demonstrations
 - Overcoming resistance to transformational concepts
 - “Rack & Stack” voting process used to select Candidate slate **inside the Planning, Programming, Budgeting & Execution (PPBE) process**
 - Example: FY 2007 selection is in process now

Since 1995, Over hundred and fifty ACTDs have been initiated. 70 Ongoing today!



ACTD/JCTD Objectives



Formal Success Objectives

- ✓ Rapid transition to Defense Program of Record
- ✓ Satisfaction of operational requirement with residuals
- ✓ Confirmation that technology/op concept appropriate for joint military use



- or not !

Informal Success Objectives

- ✓ Develop operational concepts (DOTMLFP) employing proposed technologies
- ✓ Contribute technical elements into existing/new programs

Informal Failure Indicators

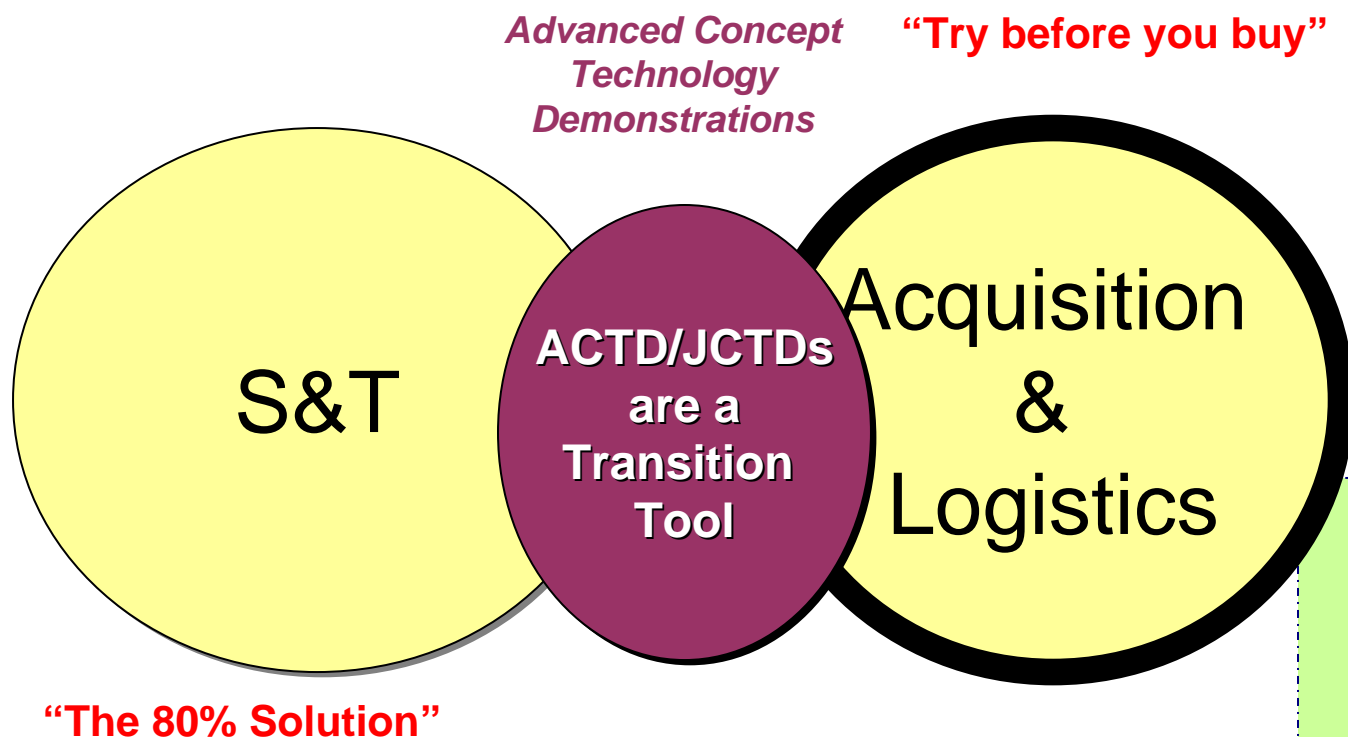
- 💣 Overlook technologies to solve known military problems
- 💣 Allow spiraling technologies/requirements to postpone transitions
- 💣 Pursuing low risk technologies to ensure successful demonstrations
- 💣 Focus on popular single-service ACTDs at expense of tough joint efforts



ACTD/JCTDs Projects Positioned between S&T & Acquisition



Filling the Joint Gap between S&T and Acquisition for the CoCom Customer



Deliverables:

- Concept of Operations
- Military Utility Assessment
- Residual Capability leave behind
- **Business Case**

76% of all ACTDs transition at least one product into a warfighting capability

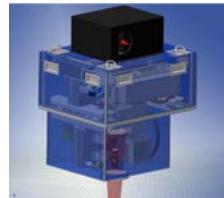
Transition programs are not acquisition programs, and should not be science projects



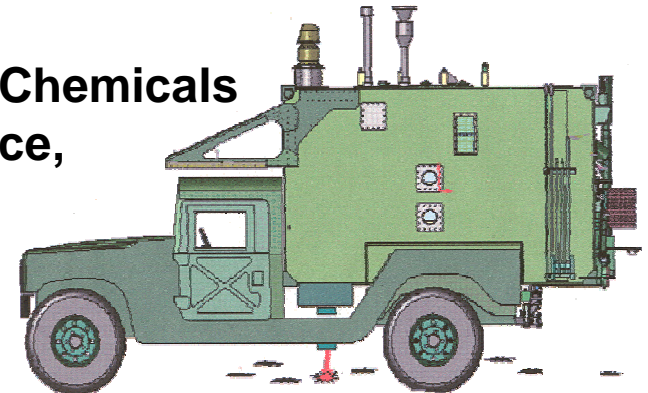
CUGR ACTD Description

Joint Contaminated Surface Detector (JCSD)

- Mounted in a modified Joint Service Light NBC Reconnaissance System
- Detect Traditional and Non-Traditional Chemical Warfare Agents and Toxic Industrial Chemicals
- Recon routes at the speed of the maneuver force, independent of terrain



Joint Contaminated Surface Detector



CUGR ACTD HMMWV Variant System

CBRN Unmanned Ground Vehicle (CUGV)

- Keep crew out of contamination and direct fire
- Keep contamination out of the Recon Vehicle
- Integrate CBRN detection joint mission specific modules



CBRN Unmanned Ground Vehicle

Transition: Two Programs of Record (PoRs) identified to receive CUGR Thrusts

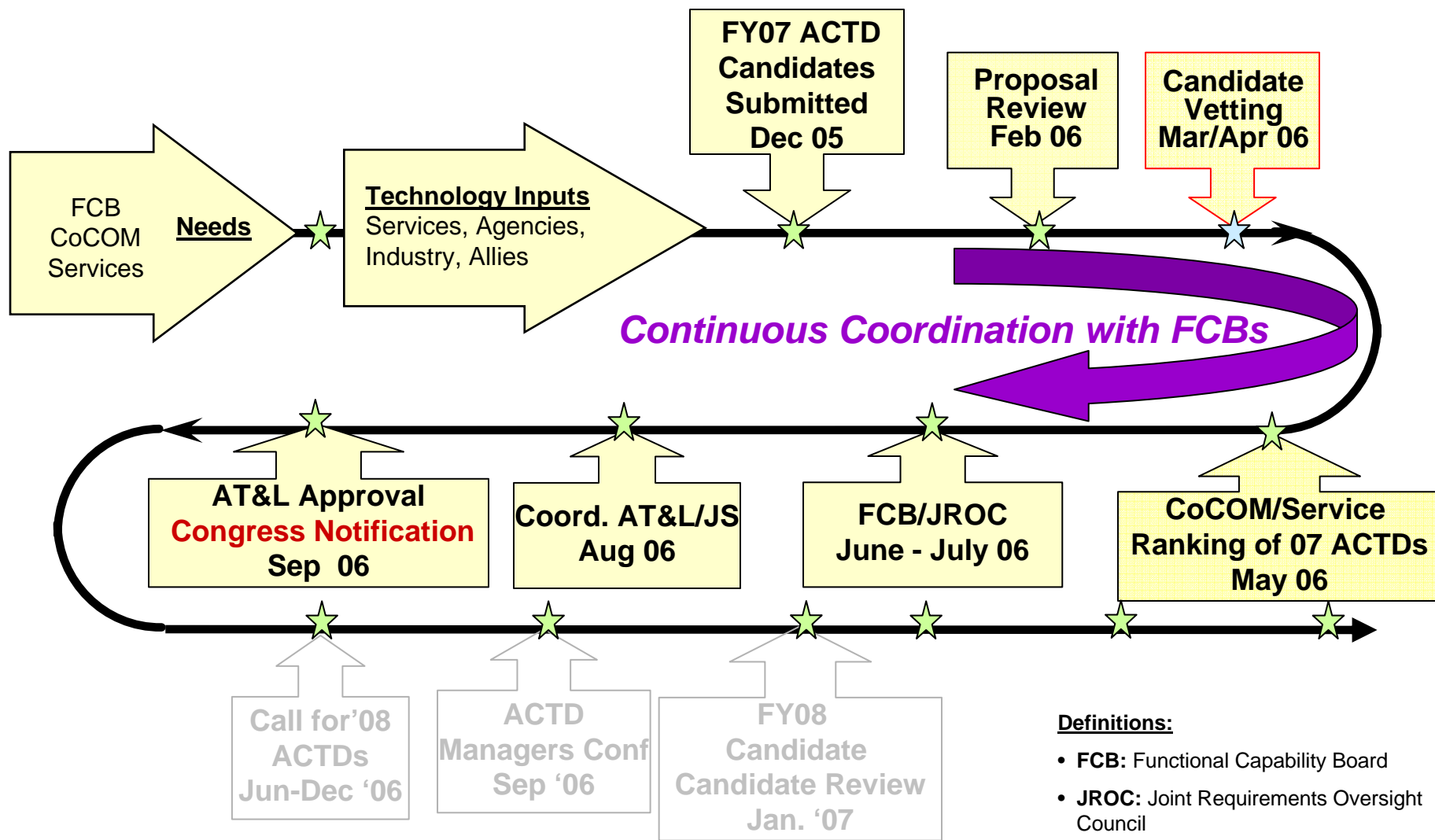
- STYKER Nuclear Biological Chemical Reconnaissance Vehicle (NBCRV)
- Joint Nuclear Biological and Chemical Reconnaissance System (JNBCRS)



ACTD FY-2007 ACTD/JCTD Program Timeline



Selection Process for the FY 2007 ACTD/JCTD Candidates



Definitions:

- **FCB:** Functional Capability Board
- **JROC:** Joint Requirements Oversight Council
- **CoCOM:** Combatant Commander

ACTD to JCTD conversion occurs after JROC validation



Current ACTD Funding Model

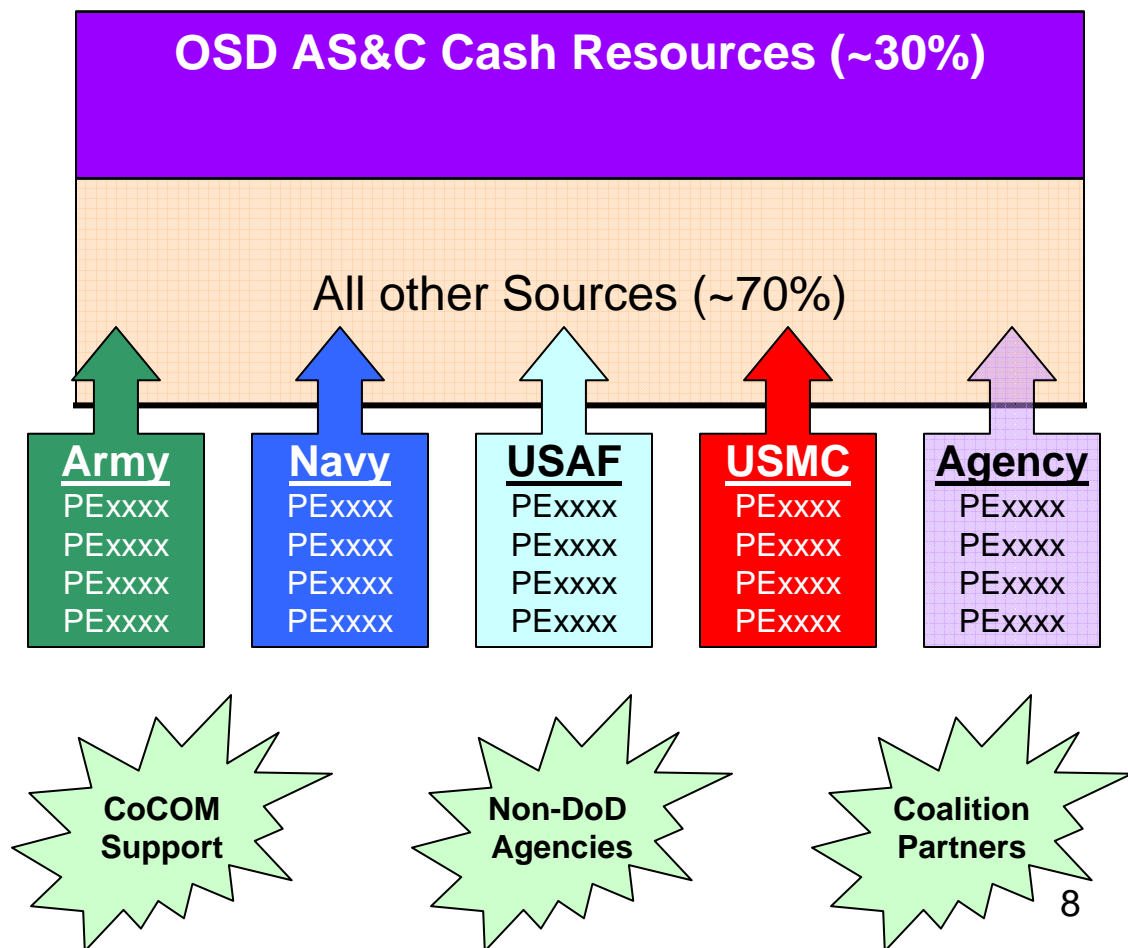
“Lets talk Money”



Goal is to initiate ACTDs within months of a JROC approval. However, two year PPBE process creates Service challenge in funding new ACTDs.

Challenges:

- Front-end (start-up) and tail-end (transition) funding issues create serious PPBE challenges.
- Little incentive for Service participation as New ACTDs create immediate unfundeds.
- Significant start-up and demonstration delays after JROC decision: Average 6 month delay waiting for Implementation Agreements.
- Many different Program Elements fund ACTDs (Little visibility at Service level—accountability challenges)
- Projects require sustained commitment of resources once initiated.
- Unfunded Requirements (UFRs) during execution cause significant risk and disruption as OSD tries to “share” the UFRs with stakeholders.
- Even successful demonstrations risk waiting 2 years (or more) for resources to be programmed via rigid PPBE process.





Joint Capability Technology Demonstration (JCTD) Defense Acquisition Executive Pilot Program (Four parts to the 3-5 year initiative to transform the ACTD program to JCTDs)



- 1. Front-end incentive funds** create fair-share partnership. Significantly more of the Services JCTD resources fenced in OSD Defense Wide Lines. (JCTD budget line will eventually replace ACTD line in the budget)
 - **Incentive to participate without breaking Service core programs. Also provides stability of funding. The Best JCTDs defined by the CoCom sponsor will be initiated.**
- 2. New Defense Wide Program elements and creation of new JCTD specific Component Program Elements (TBD)** (New JCTD PE's RDT&E BA-3/4)
 - **Visibility and Accountability of funds**
 - **Allows time for Services to POM for outyears (OSD assumes more resource "risk")**
- 3. One year of Transition funding** (New OSD JCTD PE in RDT&E BA-4)
 - **Bridge the S&T capability "Valley of Death" – DoD prepared to "catch" successful capabilities without destructive delays. ANTICIPATE JCTD SUCCESS rate ~80%.**
- 4. DAE Pilot program** – Transition "Joint Peculiar" systems into a fielded capability (New OSD PEs: RDT&E BA-5, OSD Procurement).
 - **Tracking joint capability through acquisition into initial sustainment**
 - **A new way of doing business for difficult transitions.**

JCTD First introduced in the FY 2006 President's Budget



JCTDs Offer Significant Benefits



ACTDs

- Innovative & joint efforts
- Partnerships serving CoCom needs beyond core Military capabilities
- Unique perspective on challenges of transitioning proven joint capabilities into acquisition

JCTDs

- Tailors solutions to CoCom needs
- Yields faster starts, faster deliveries
- Structures funding to permit Service participation without “breaking” programs
- Pilots “top-down” DAE process for joint acquisition
- Provides “window on joint investment”

Joint S&T focused on Capabilities from “Cradle-To-Grave”



Performance Metric Comparison ACTD vs. JCTD



Performance Metric	ACTD	JCTD
Project Selection Focus	Threat Based: Shared Military Service and CoCom influence	Capability Based: Greater CoCom influence looking at nearer term joint/coalition needs..
Spiral Technologies	No Metric currently established	Spiral Technology available within one year of JCTD initiation
Final Demonstration Completed (Starting Point: Approved ID)	3 to 4 years after initiation (Implementation Directive (ID) Signed)	50% completed final demo by the end of the 2 nd year. Goal - All JCTDs completed inside 3 years.
Shared Funding and Visibility of resources	OSD provides no more than 30% of the budgeted resources. Funding provided from many different program elements.	OSD provide significantly more funding (often greater than 30%, in some cases a majority of project funding), especially in the first two years.
Military Utility Assessment (MUA) conducted by an independent activity	MUA traditionally tied to a specific planned exercise for evaluation	JCTDs not necessarily tied to an exercise. Greater flexibility to establish military utility via operational “real-world” demonstration or specifically designed test/venue
Transition of technology	70% of ACTDs transition at least one product to sustainment	80% of JCTDs transition at least 50% of their products to sustainment

Source: FY 2007 President’s Budget



– NEW –

Joint Capabilities Technology Demonstration (JCTD)

PE: 0603648D8Z (BA-3) and PE: 0604648D8Z (BA-4)

- **COCOMs** remain the Customer – enhanced customer “capabilities pull”
- Builds on historically successful ACTD process
 - Balance “tech push” with “capabilities pull”, focus on CoCom emerging needs
 - Maintains strong technical focus: work with services/agencies to push technology solutions
- Designed to increase speed of transformational, joint and coalition capabilities
 - Increase number of rolling/mid year project starts
 - Aim to introduce 1st spiral of new capability into field within first 12 months
 - **Goal:** final demo phase starts w/in 2 years, project complete in 3 years
- Increased focus on transition to long term warfighter support
 - **Goal:** 80% of JCTDs transition 50 percent of products (POR, residual support, GSA, etc.)
- Accelerate time to demonstration by increasing OSD funding in the first two years – with Transition funds!

Four JCTDs
Initiated in 2006

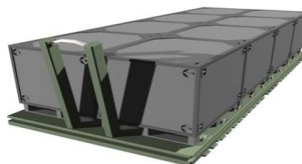
- CHAMPION
- JMIDS
- CMA
- LARGE DATA

Transformational



Counter-intelligence Human-intelligence Advanced Modernization Program/Intelligence Operations Now (CHAMPION) will demonstrate timely CI and HUMIT from the tactical to the strategic level.

Joint



Joint Modular Intermodal Distribution System (JMIDS) will demonstrate a seamless logistics system that will improve true joint Service and commercial interoperability.

Coalition



Comprehensive Maritime Awareness (CMA) will include coalition partners in extensive maritime sharing demonstrations. Includes tracking, tagging, and collaboration technologies. USNORTHCOM is also participating for homeland security application.

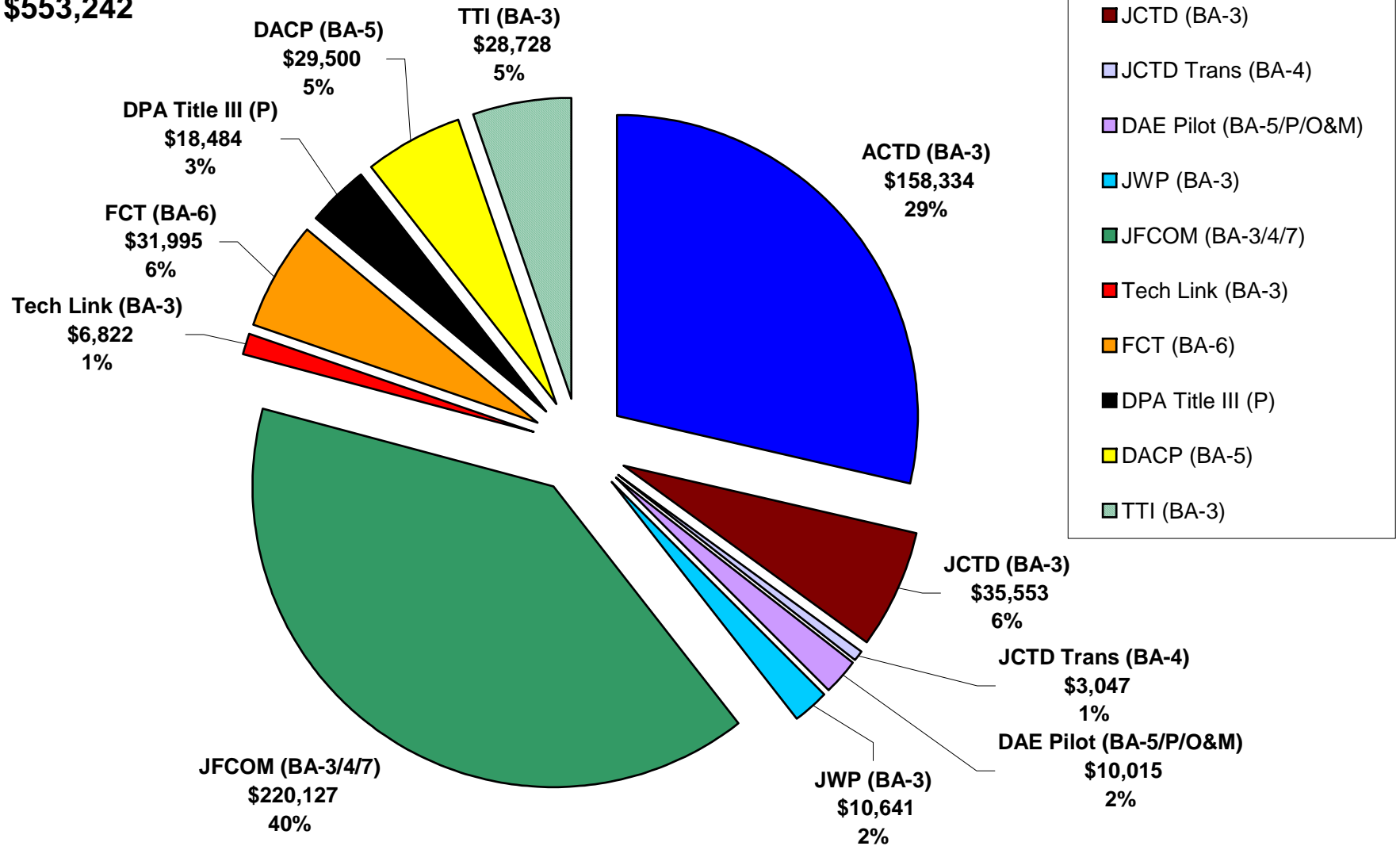
GAO's Michael Sullivan before House Armed Services Tactical Air and Land Forces Subcommittee, March 9, 2005: *“We are encouraged by recent actions taken by DOD to initiate a Joint Capabilities Technology Demonstration {JCTD} business process as it is intended to meet joint and coalition forces needs...”*

FY 2007 DDR&E/AS&C Resource Oversight

FY 2007 PBR (dated Feb 2006)

Total Current Estimate (\$M)

\$553,242



Source: FY 2007 PresBud

In FY 2007, USJFCOM funding is transferred from Navy to Defense-Wide Program Elements

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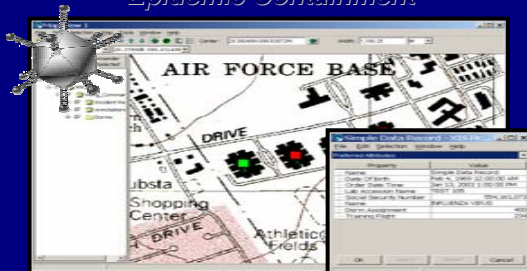
*“The Advanced Concept Technology Demonstration (ACTD) Program is helping to establish an **agile, rapid, and adaptive acquisition process**. This program partners with science and technology producers to rapidly insert technology into the appropriate phase of the deliberative acquisition process, with the goal of providing on-ramps for acceleration. **The new Joint Capability Technology Demonstration Program (JCTD)** furthers this concept by developing and maturing technologies to support the **unique needs of the joint community in an even more adaptive and responsive process.**”*

USD (AT&L) HASC Testimony, November 2, 2005
“Improvements and Excellence in Acquisition”



**BACK-UP
SLIDES**

Epidemic Containment



**Epidemic Outbreak Surveillance (EOS)
FY 2005 ACTD** integrates advanced diagnostics and informatics with surveillance system concept of operations to rapidly detect, identify, and distinguish natural and hostile biological pathogens. **Accelerated with Army/USAF responding to threat of the Avian flu threat.**

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