

PEO/SYSCOM Conference

**WHAT THE WARFIGHTERS
NEED...**

A Different Perspective



Ms. Sue Payton
Deputy Under Secretary of Defense
(Advanced Systems & Concepts)

December 5, 2003

PEO/SYSCOM Conference

nd Concepts



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ACTD

***What the Warfighter Needs:
A Different Perspective
Fielding Joint Capabilities***



***Sue C. Payton
Deputy Under Secretary of Defense
(Advanced Systems & Concepts)***

What the Warfighter Needs... Another Perspective



Advanced Systems and Concepts

- *Who is “the Warfighter”?*
- *Are there valid requirements beyond Service-specific/core Military capabilities?*
- *How do CoComs address Military requirements?*
- *How are solutions generated for joint/tailored requirements?*
- *How are joint/tailored solutions acquired and sustained?*

Joint Force

A general term applied to a force composed of significant elements, assigned or attached, of two or more Military Departments, operating under a single joint force commander.

WHO IS “THE WARFIGHTER”?



Advanced Systems and Concepts

Military Services

- *Core Military/Service-specific capability providers*
- *“...to organize, train and equip...”*

Joint Combatant Commands

- *Military capability end-user – **the warfighters***

ARE THERE VALID REQUIREMENTS BEYOND SERVICE-SPECIFIC/CORE MILITARY CAPABILITIES?



Advanced Systems and Concepts

Characterization of Joint CoCom Requirements:

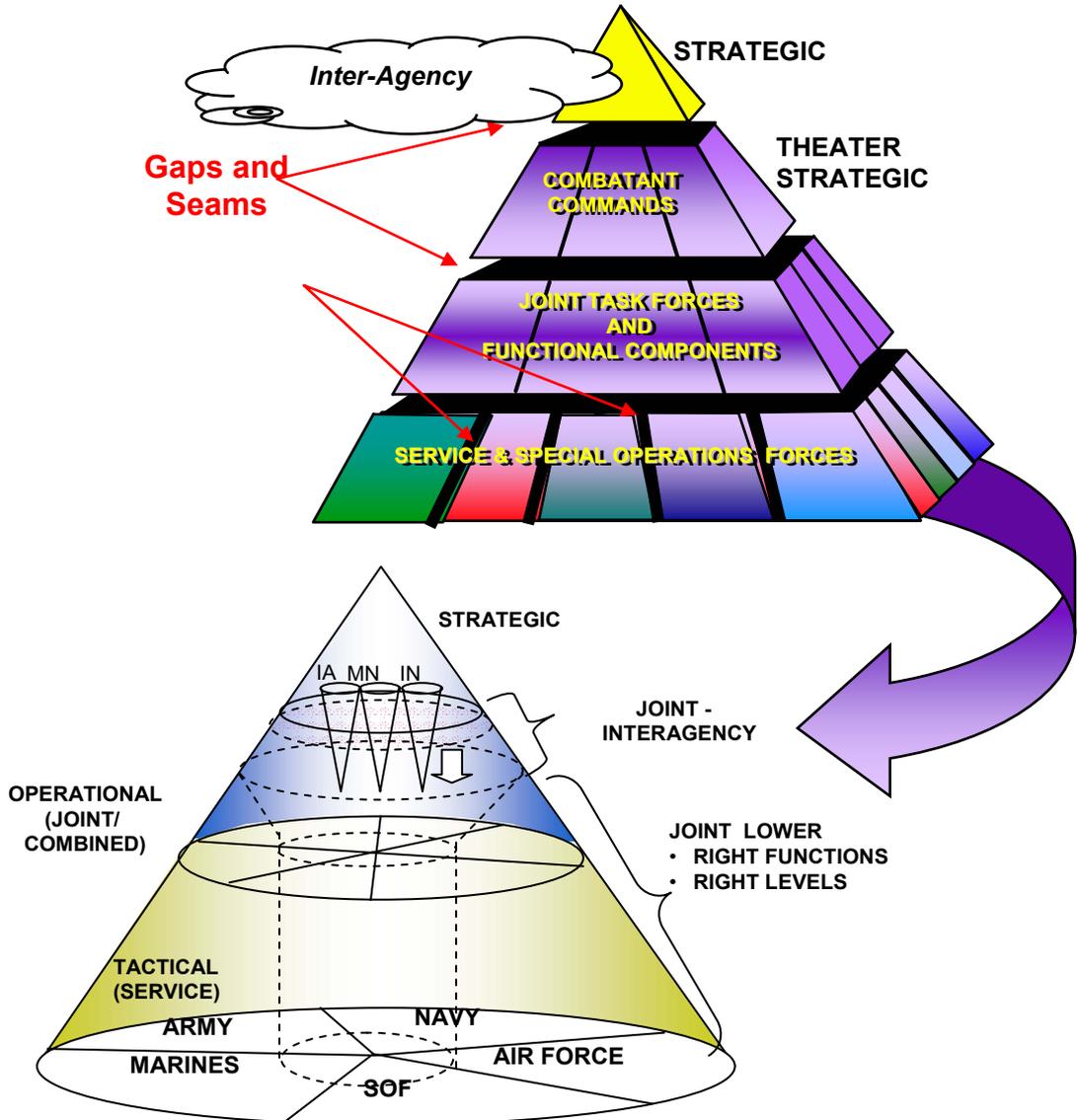
- **Core Service-specific capabilities (~80%?)**
- **Joint military requirements (~20%?)**
 - *Joint capability enablers (~10% - and growing)*
 - *Tailored regional/specified requirements (~10%?)*



OIF Underscored Role Of Joint Capabilities



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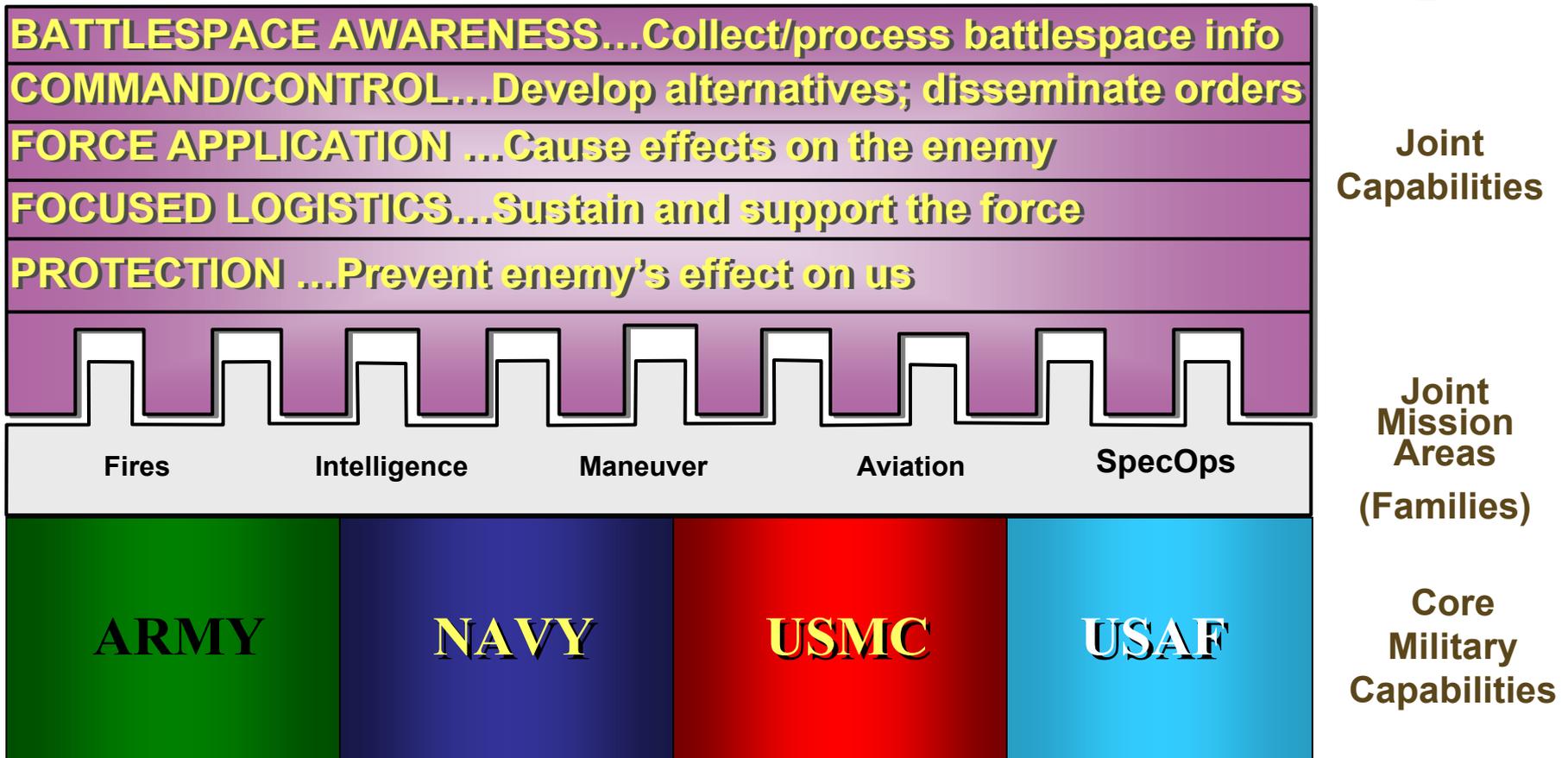


- *OIF lessons learned reinforce role of joint capabilities*
- *Joint capabilities initially limited to strategic level: integration of segregated component commander activities*
- *OIF lessons learned portrayed expanding requirements for core joint capabilities at strategic, operational and tactical levels*

Joint Capabilities Model



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*Limited Funding for Joint Warfighter Capabilities -
No one tasked to "Organize, Train and Equip" the Joint Force*

HOW DO COCOMS ADDRESS MILITARY REQUIREMENTS?



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- **JOPES/Joint Operational Planning & Execution System process**
- **JSCP/Joint Strategic Capabilities Plan process**
- **New Joint Functional Concept/Functional Capabilities Process**
- **Integrated Priorities List (IPL)**
- **Component Commander advocacy with parent Service**
- **Science & Technology Reliance Process**
- **Counter Terrorism Technology Task Force**
- **Technology Support Working Group**
- **Capabilities/technology transition programs**
 - **Advance Concept Technology Demonstrations (ACTDs)**
 - **USJFCOM JRAP (?)**
 - **Office of Force Transformation's TIP (?)**

Diversity of processes tends to mute CoCom voice in requirements process

HOW ARE SOLUTIONS GENERATED FOR JOINT/TAILORED REQUIREMENTS?

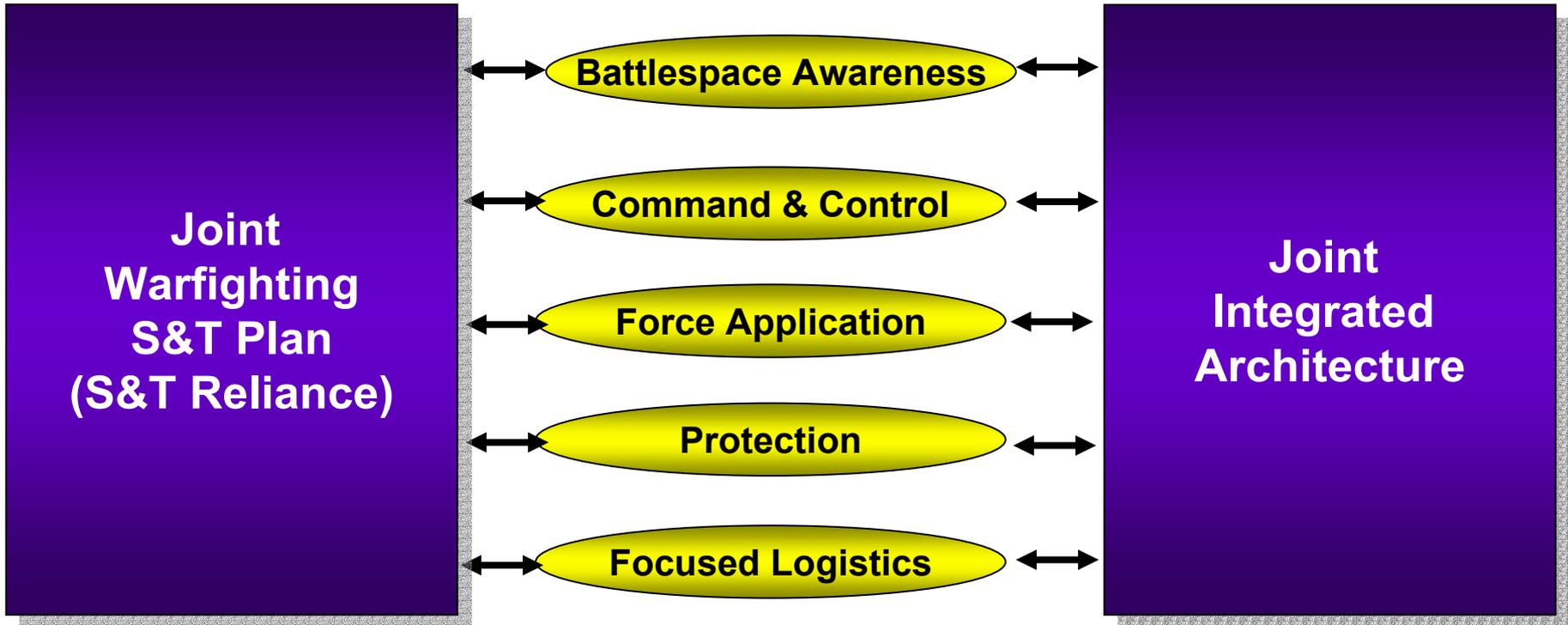


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Technology Push

JCS FCAs

Requirements Pull



*JWSTP Aligned With
Joint Integrated
Architecture*

**AT&L participates
on all panels**

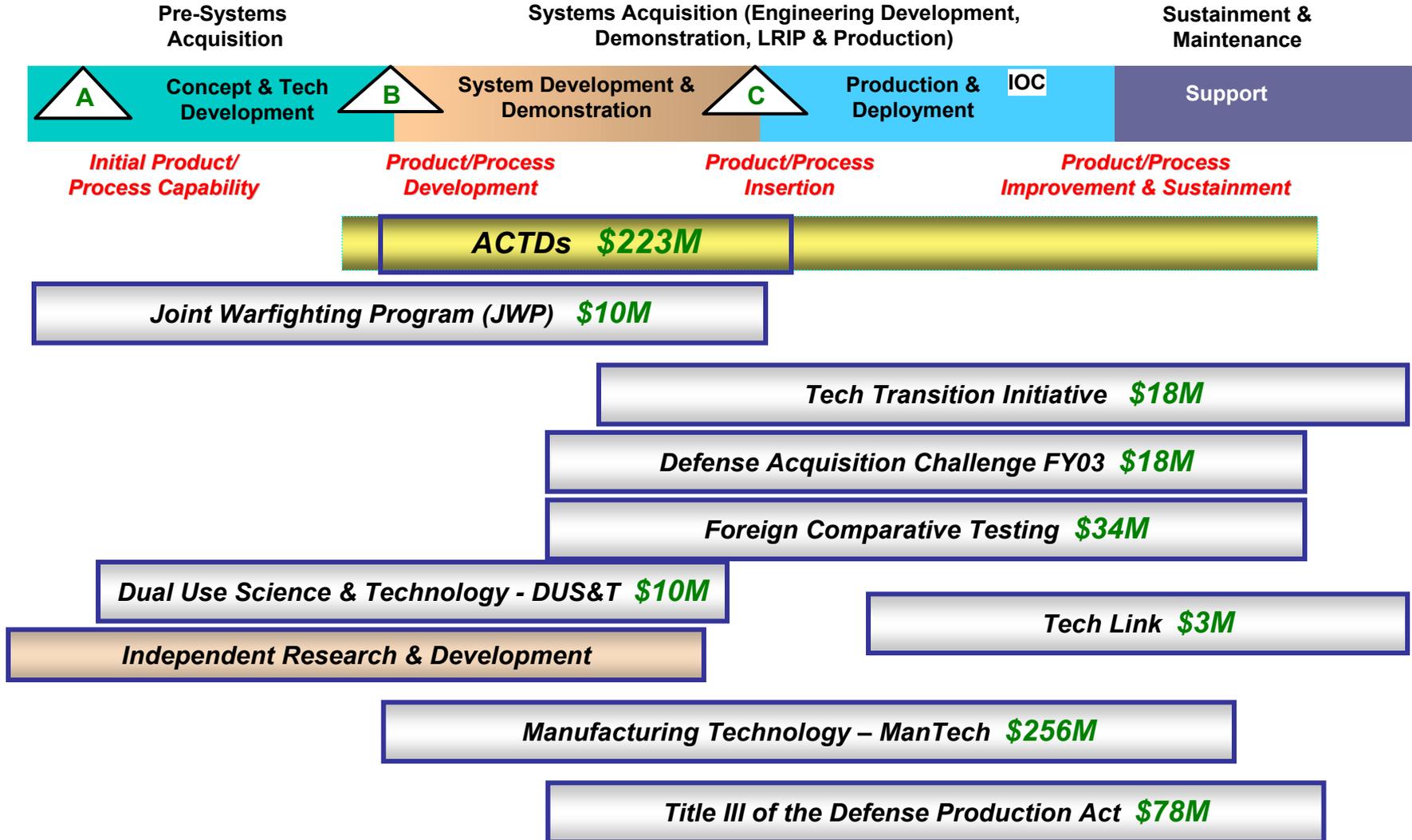
*...5 Functional Areas,
Each Representing Near
and Far Term Needs*

***New Processes to Define Joint Capabilities
Still Dependent on Service-Centric Acquisition & Sustainment***

AS&C Transition Programs - Including Flagship ACTD Program



Advanced Systems and Concepts



ACTD Technology Transition



Role

Advanced Systems and Concepts

- ***Get new, relevant, mature technology to warfighters quickly***
- ***Overcome resistance to transformational concepts***
- ***Assist integration of technology and joint doctrine***
- ***Enhance combatant commander options for integrated employment of core Military Service capabilities***

ACTD Prime Customers: Joint Combatant Commanders

ACTD Anatomy



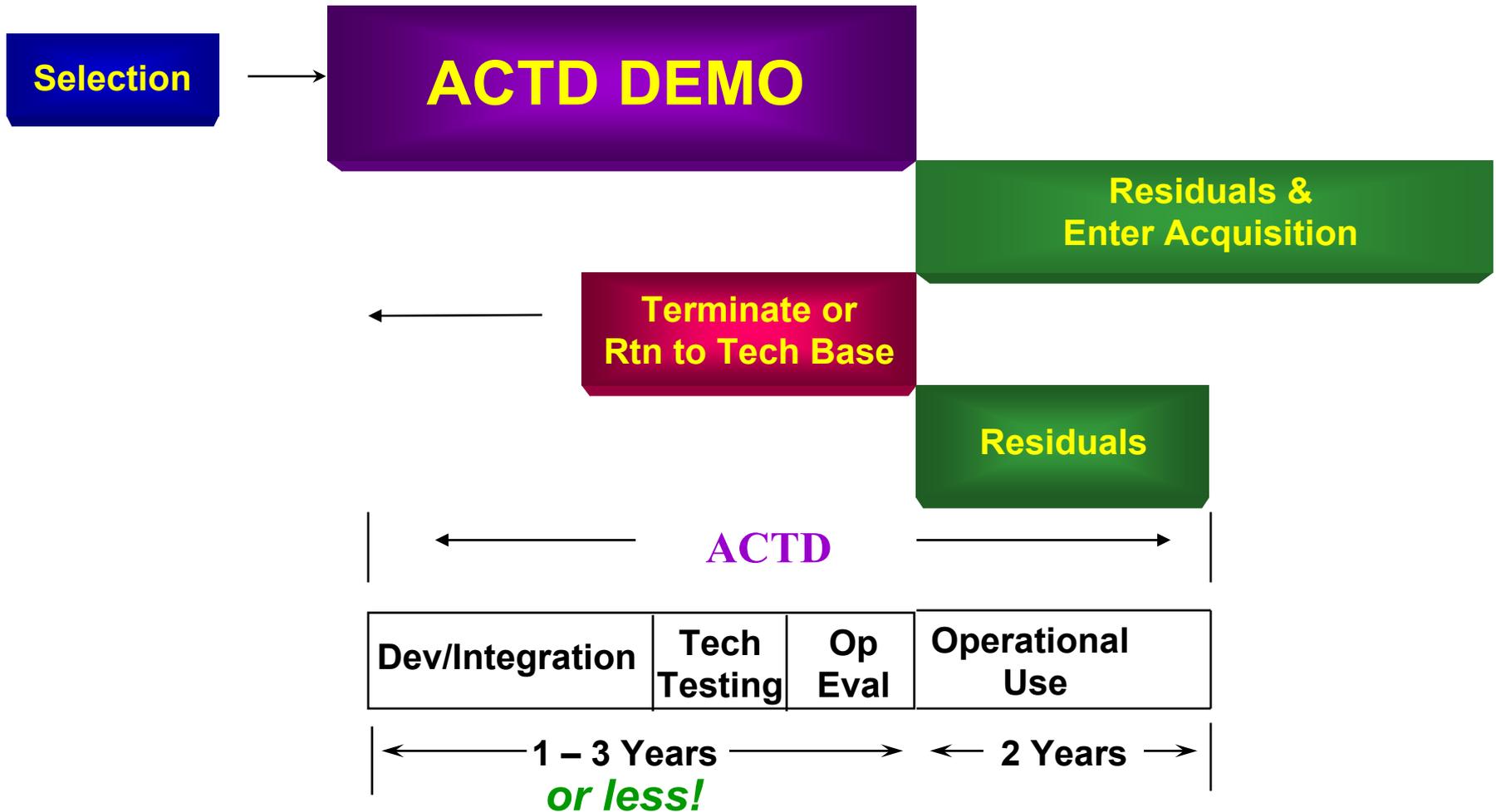
Advanced Systems and Concepts

- Addresses important military need with **MATURE TECHNOLOGY**
- Provides a technical solution with demonstrated ops concepts
- Evaluates solution in field demonstrations by warfighters
- Usually **JOINT**, often multi-service, often combined/coalition
- **Multi-agency**
 - Developer Military Service /Agency: Technical Manager
 - Sponsoring CoCom: Operational Manager
 - Lead Military Service/Agency: Transition Manager
- **RAPID: 1 - 3 Years or less - to Final Demonstration/Prototype**
 - Up to 2 Years of Support for Residuals and Transition

ACTD Timeline



Advanced Systems and Concepts



ACTD Objectives



Advanced Systems and Concepts

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!

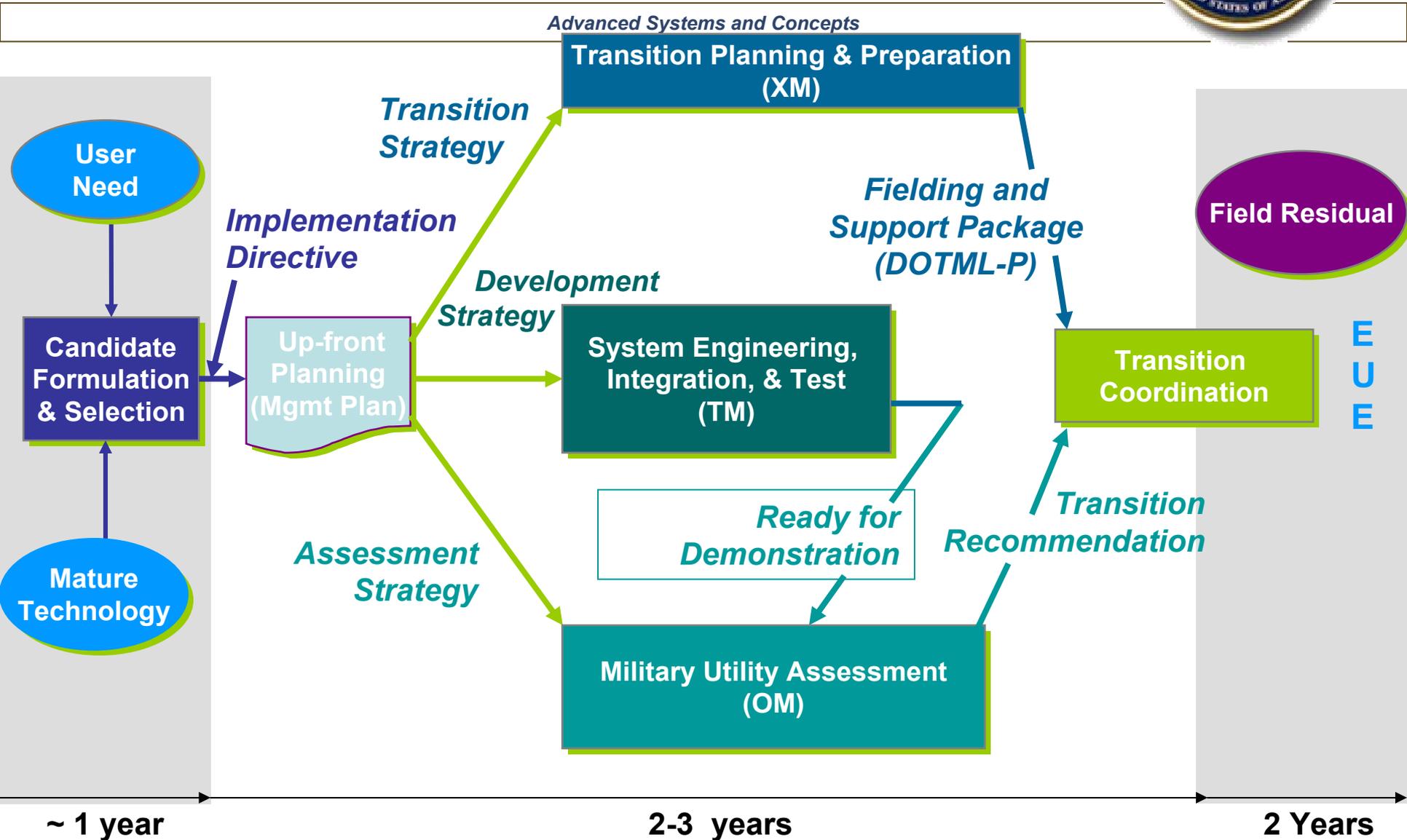
Informal Success Objectives

- ✓ 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

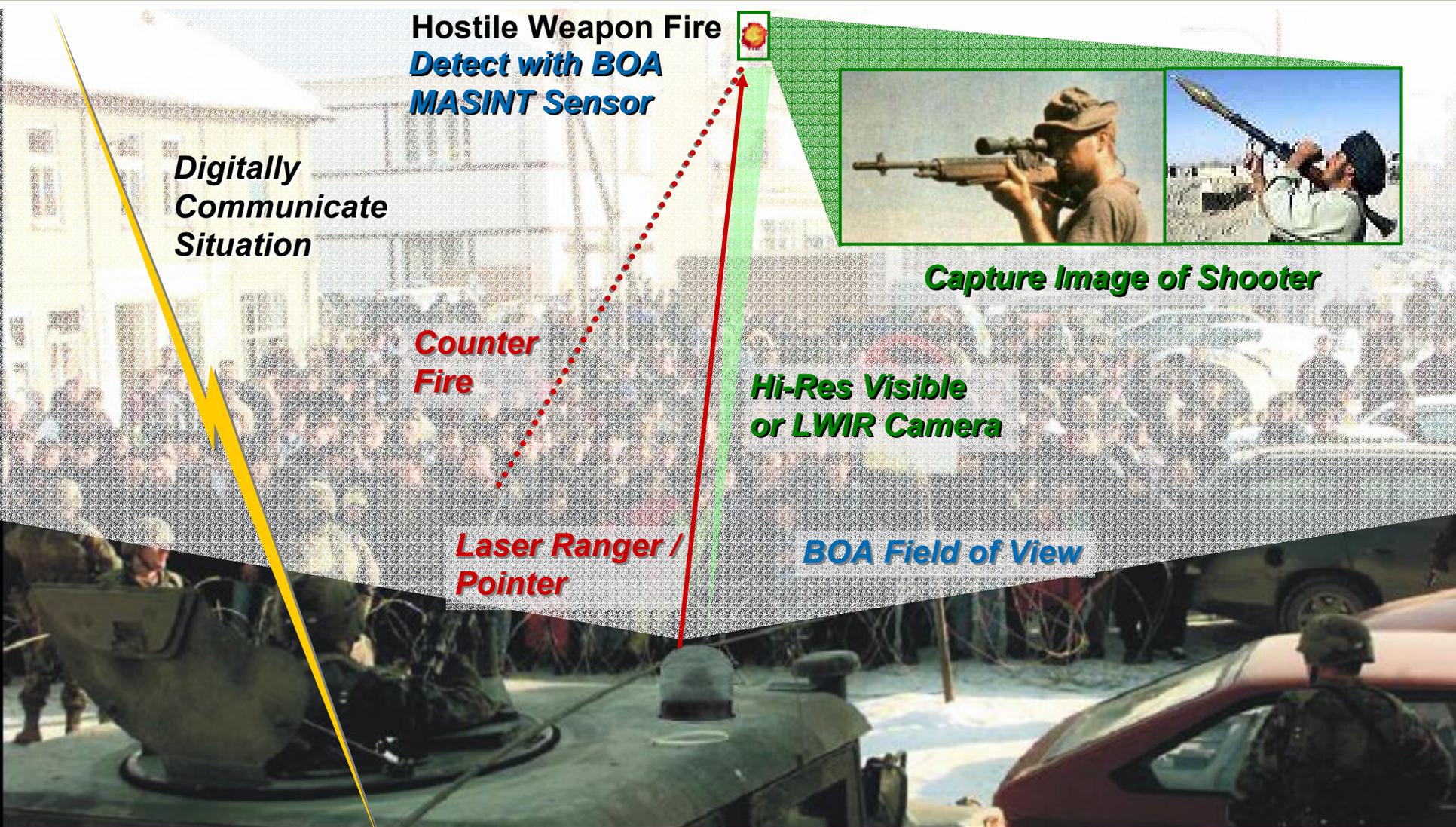
ACTD Programmatic Process: Accelerated Initial Capability



Overwatch ACTD...Spawning Solutions



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Hostile Weapon Fire
*Detect with BOA
MASINT Sensor*

*Digitally
Communicate
Situation*



Capture Image of Shooter

*Counter
Fire*

*Hi-Res Visible
or LWIR Camera*

*Laser Ranger /
Pointer*

BOA Field of View

Real-Time Targeting Information for Ground Forces

Battlespace Awareness & Intel FCA

25 Active ACTDs



Advanced Systems and Concepts

- **Adaptive Battlespace Awareness (▲ CC)**
- **Coalition Aerial Surveillance & Recon**
- **Coalition Combat Identification**
- **Coalition Shared Intelligence Network Environment (▲ CC)**
- **Communications/ Navigation Outage Forecasting System**
- **Computerized Operational MASINT Weather**
- **Foliage Penetration Synthetic Ap Radar**
- **Global Monitoring of ISR Space Systems**
- **Gridlock (▲ FA)**
- **Ground-to-Air Passive Surveillance**
- **High Altitude Airship**
- **Hyperspectral Collect and Analysis**
- **Joint Intelligence, Surveillance & Recon**
- **Language and Speech Exploitation Resources (▲ P)**
- **MANPACK**
- **Multi-Sensor Aero-space/ Ground Joint ISR Coalition**
- **Network-Centric Collaborative Targeting**
- **Night Vision Cave & Urban Assault (▲ FA)**
- **Pathfinder**
- **PI**
- **SIGINT Processing**
- **Space Based MTI**
- **SPARTAN (▲ P)**
- **Tactical IFSAR Mapping**
- **Urban Reconnaissance**

Command & Control FCA

8 Active ACTDs



Advanced Systems and Concepts

- **Advanced Joint C4ISR Node**
- **CINC 21**
- **Coalition Info Assurance Common Op Picture**
- **Joint Blue Force Situational Awareness**
- **Joint Unmanned System Common Control (▲ BI)**
- **Multi-Link Antenna System**
- **Theater Effects-Based Operations**
- **Theater Integrated Planning System**

Focused Logistics FCA

13 Active ACTDs



Advanced Systems and Concepts

- **Advanced Technology Ordnance Surveillance**
- **Agile Rapid Global Combat Support**
- **Agile Transportation**
- **Coalition Reception Staging and Onward Movement**
- **Coalition Theater Logistics**
- **Coherent Analytical Computing Environment**
- **Deployable Cargo Screening (▲P)**

- **Future Tactical Truck System**
- **Joint Distance Support & Response**
- **Joint Health & Usage Monitoring System**
- **Joint Precision Airdrop System**
- **Joint Theater Logistics**
- **Theater Support Vessel**

Force Application FCA

18 Active ACTDs



Advanced Systems and Concepts

- **Active Network intrusion Defense**
- **Advanced Notice**
- **Advanced Tactical Laser**
- **Advanced Tactical Targeting Technology**
- **Agent Defeat Warhead**
- **Content-Based Information System**
- **Counterproliferation II**
- **Expendable Unmanned Aerial Vehicle**
- **Hunter Standoff Killer Team**
- **Line-of-Sight Anti-Tank (▲ BI)**
- **Micro Air Vehicle (▲ BI)**
- **Midnight Stand**
- **Overwatch (▲ P)**
- **Psychological Operations Global Reach**
- **Quickbolt**
- **Tactical Missile System – Penetrator**
- **Thermobarics**
- **Tunnel Target Defeat (▲ CC & BI)**

Protection FCA

10 Active ACTDs



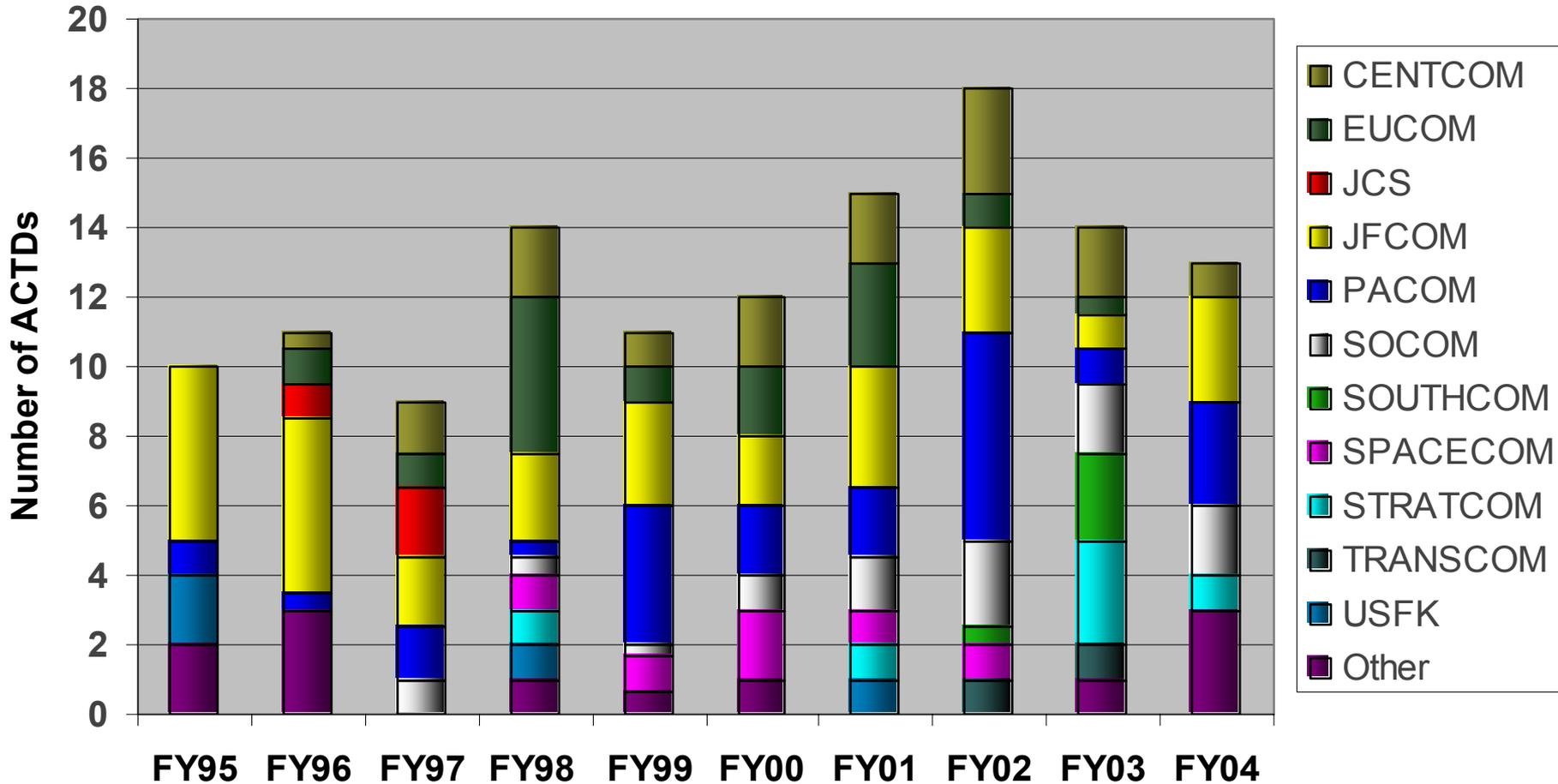
Advanced Systems and Concepts

- **Active Denial System**
- **Area Cruise Missile Defense (ACMD) (▲ CC)**
- **Contamination Avoidance at Seaports of Debarkation (▲ FL)**
- **Counter Bomb/ Counter Bomber II**
- **Homeland Security Command & Control (▲ CC)**
- **Joint Area Clearance**
- **Joint Explosive Ordnance Disposal**
- **Personnel Recovery Extraction Survivability aided by Smart Sensors**
- **Protected Landing and Take-off (PLATO)**
- **Restoration of Operations**

ACTD User Sponsors



Advanced Systems and Concepts

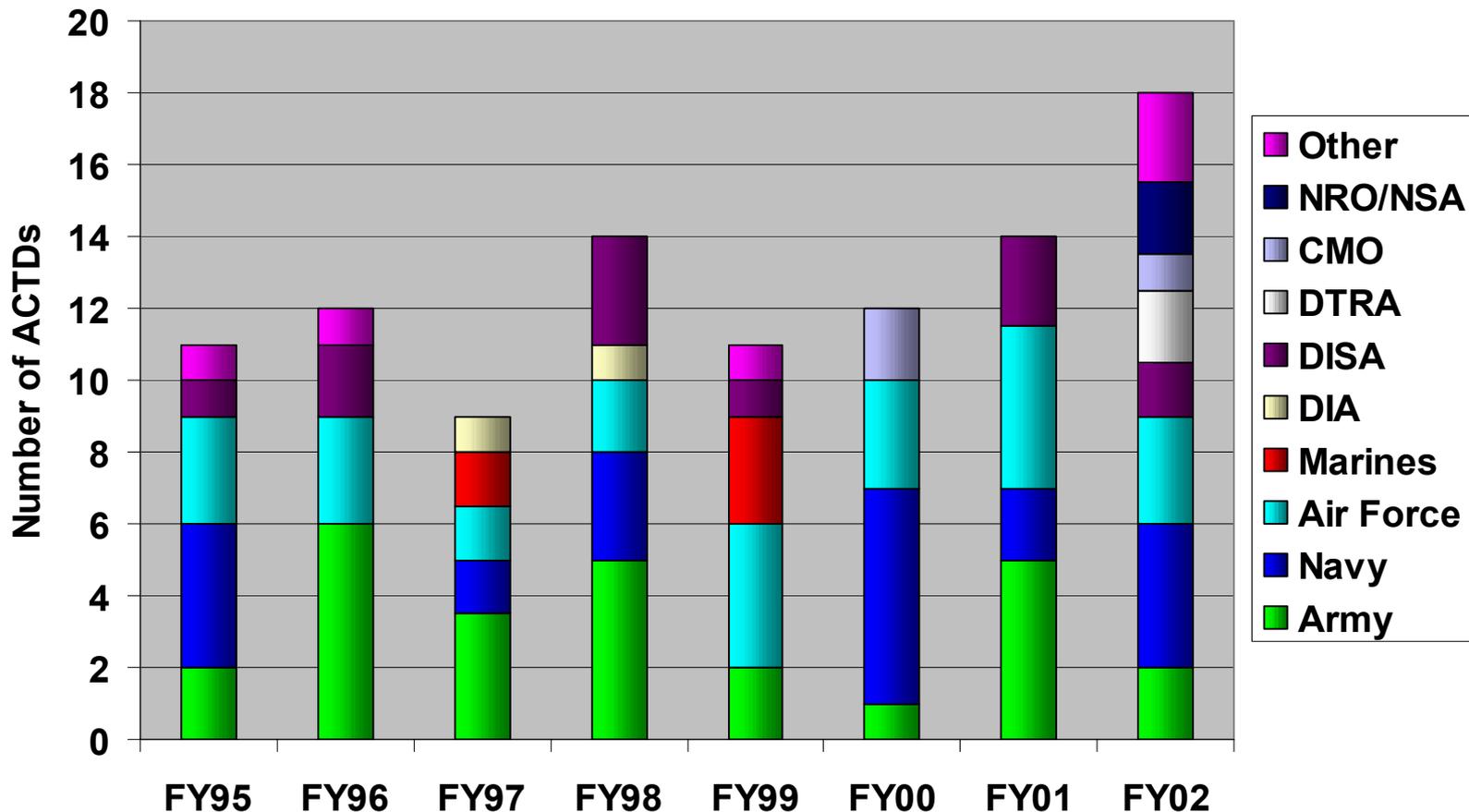


Nothing Like Conflict to Spur Customer Demand for Tailored Products!

ACTD Lead Service/Agency



Advanced Systems and Concepts



Lead Service / Agency is Responsible for Driving the Acquisition Decision

FY-04 ACTD Partnerships - Cash

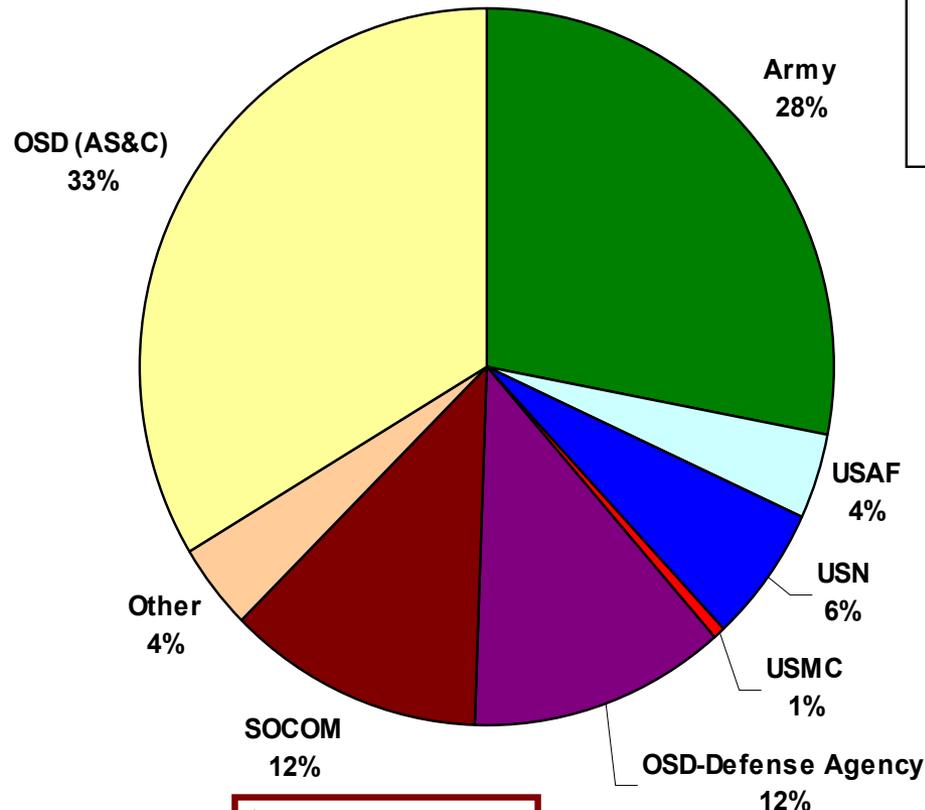


Advanced Systems and Concepts

As of 13 June 03
JROCM

FY-04 ACTD Component Participation Top 13 Recommended JROC Validated Cash Only FYDP Resources (FY04-08)

FYDP Value
\$382M



\$46M
> PSYOPS

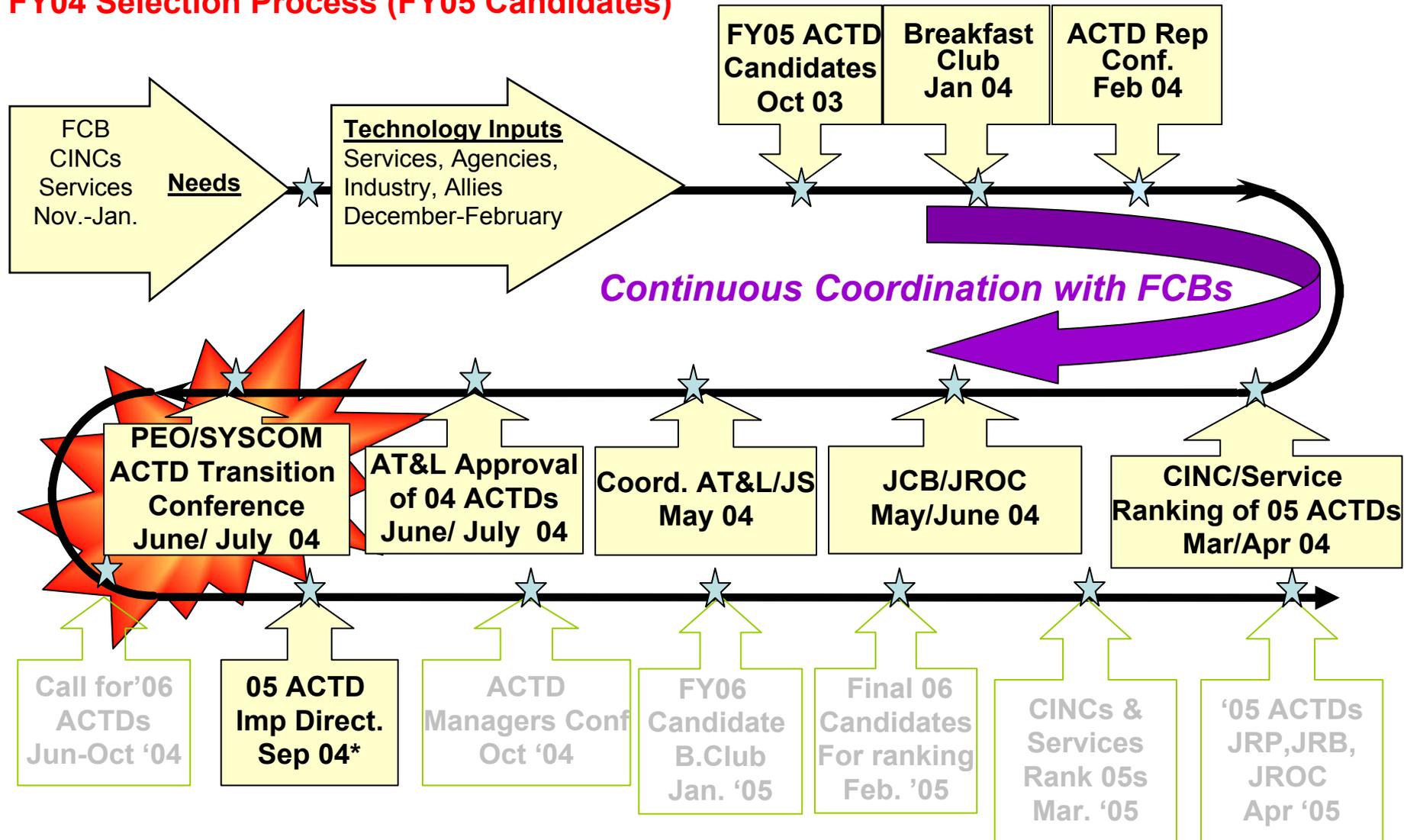
Other Includes NATO, Industry & Classified Resources.

ACTD Program Timeline



Advanced Systems and Concepts

FY04 Selection Process (FY05 Candidates)



HOW ARE JOINT/TAILORED SOLUTIONS ACQUIRED & SUSTAINED?



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Distributed Procurement ...multiple Services and/or agencies agree to acquire system elements with intention of combining in the field to yield a coherent joint operational capability.

Risk...Service-centric solutions migrate away from seamless interoperability.

Trusted Service ...Single Services tasked or volunteered to act as DoD agent for acquisition of joint systems to be used by other Services.

Risk...Joint aspects first sacrificed to emergent budget constraints



Joint Program Office ...JPMO formed to develop, field joint capability

Risk...Services withdraw support from effort. Joint Offices proliferate.



CoCom Direct Procurement ...CoCom refines requirement, then fields and, in some cases, sustains joint capability

Risk...Duplicated efforts if coordination mechanism not emplaced



***Regardless of acquisition strategy,
joint capabilities must still find Service home for sustainment***

AS&C ACTD Outlook



Advanced Systems and Concepts

- ***Maintain focus on primary customers: Combatant Commanders***
 - *Provide sustainable joint warfighter capabilities*
 - *Emphasize transformational technology & operations*
- ***Seek transformational technologies with complementing tactics, techniques and procedures***
- ***Generate, demonstrate and field “80% solutions”***
 - *Aim for fast delivery of hands-on prototypes*
 - *Keep moving - maintain rapid spiral tech insertions*
- ***Pursue coalition partnerships***
- ***Engage Military Services in joint ventures***
 - *Seek equitable new processes to field & sustain joint capabilities*

Get critical joint capabilities based on emergent technology effectively fielded & sustained!



Fielding & Sustaining Joint Capabilities

AS&C Small Business Impact



Advanced Systems and Concepts

- **AS&C technology programs benefit small businesses nationwide**
 - **ACTD, TTI, DAC, FCT, Title III and DTTP programs all encourage small business partners**
 - **50% of active ACTD projects utilize small businesses**
 - **Current small business contract value exceeds \$72 million with potential follow-on contracts exceeding \$36 million**
 - **Expendable Unmanned Aerial Vehicle (XUAV) an excellent example:**
 - » **All ten XUAV contractors are small businesses**
 - » **Current contracts = \$23 mil with \$22 mil add-on potential**
 - » **Work locations in seven states from MD to FL to CA**
 - » **Several products fully employed in Ops OEF and OIF**
 - **Small businesses are key partners in 31 DAC, FCT and Title III projects**
 - **Current contract value exceeds \$63 million**

AS&C Small Business Successes



Advanced Systems and Concepts

Advanced Concept Technology Demonstrations

- **Adaptive Battlespace Awareness**
 - **POLEXIS Inc. (San Diego, CA) – developed key info mgt and visualization software enabling crucial COP capability, central to this ACTD**
- **Area Cruise Missile Defense**
 - **Solypsis Corp. (Laurel, MD) – developed critical connectivity between NORAD and the Services and Defense Agencies for post- 9/11/01 homeland defense**
- **Quick Bolt**
 - **ATK Missile Systems Corp. (Woodland Hills, CA) – developed the seeker upgrade for the AGM-88E Advanced Anti-Radiation Guided Missile (AARGM)**

Foreign Comparative Testing

- **5.56mm Lightweight Machine Gun (LMG)**
 - **Fabrique Nationale Manufacturing, Inc. (Columbia, SC) – manufactures the LMG for USSOCOM. LMG employed in both Ops OEF and OIF**
- **Joint Protective Aircrew Ensemble**
 - **Creative Apparel Associates (Belmont, ME) – manufactures state-of-the-art aircrew chem-bio suits from unique material laminated with carbon beads**
- **Muzzle Velocity System (MVS)**
 - **Technical Systems, Inc. (Grand Rapids, MI) – produces the MVS for the Army,**

AS&C Small Business Successes



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Title III

- **Discontinuous Reinforced Aluminum (DRA)**
 - **DWA Composite Specialties (Chatsworth, CA) – Developed the application process technology for DRA use on F-16s with significant O&M savings**
- **Movement Tracking System (MTS)**
 - **Mobile Datacom (Ft. Lee, VA) – enhanced converted commercial satellite tracking systems allowing Army continuous C2 of OIF transportation assets**

Technology Transfer

- **Life Saving Vein Viewing Technology**
 - **InfraRed Imaging Systems, Inc. (Columbus, OH) – developed breakthrough, life-saving vein viewing technology, usable in broad range of light conditions**
- **Tunable Antennas & Comm Systems**
 - **Paratek Microwave, Inc. (Columbia, MD) – design and produce low-cost, tunable filters and devices, and ultra-fast scanning phase shifters for broadband wireless communications systems**

AS&C Small Business Successes



Advanced Systems and Concepts

Defense Acquisition Challenge

- **Enhanced Optical Systems for Rolling Airframe Missile**
 - **Envisioneering (Alexandria, VA)**
- **Portable Continuity of Ops Communication Appliance**
 - **Circadence Corp. (Boulder, CO)**
- **Dismounted Infantry Virtual Simulation for MOUT**
 - **Advanced Interactive Systems (Orlando, FL)**
- **Fiber Optic GPS Anti-Jam Antenna**
 - **Gould Fiber Optic (Millersville, MD); Optiwork (Freemont, CA); JDS Uniphase Corp. (San Jose, CA); Tempo Research (Camarillo, CA); Fiber-Span LLC (Piscataway, NJ)**
- **Speech Recognition Technology for AWACS**
 - **Sytronics, Inc. (Dayton, OH)**