

DEPARTMENT OF DEFENSE



Small Business Innovation Research (SBIR): Tools & Strategies for Program Technology Development

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Program Manager

Agenda

- Program Background & Description
- Success Stories
- How to Leverage the SBIR Program
- Question and Answer

Webcast Goals

- Increase SBIR awareness
- Provide strategies for inclusion of SBIR technology
- Increase transition of value to the warfighter

SBIR – A Management Tool

- SBIR offers Program Managers a unique technology development resource to:
 - Address capability gaps and meet challenging performance requirements
 - Generate cost savings to achieve both acquisition and life cycle cost goals
 - Enhance existing capabilities through the insertion of technology enablers for deployed systems

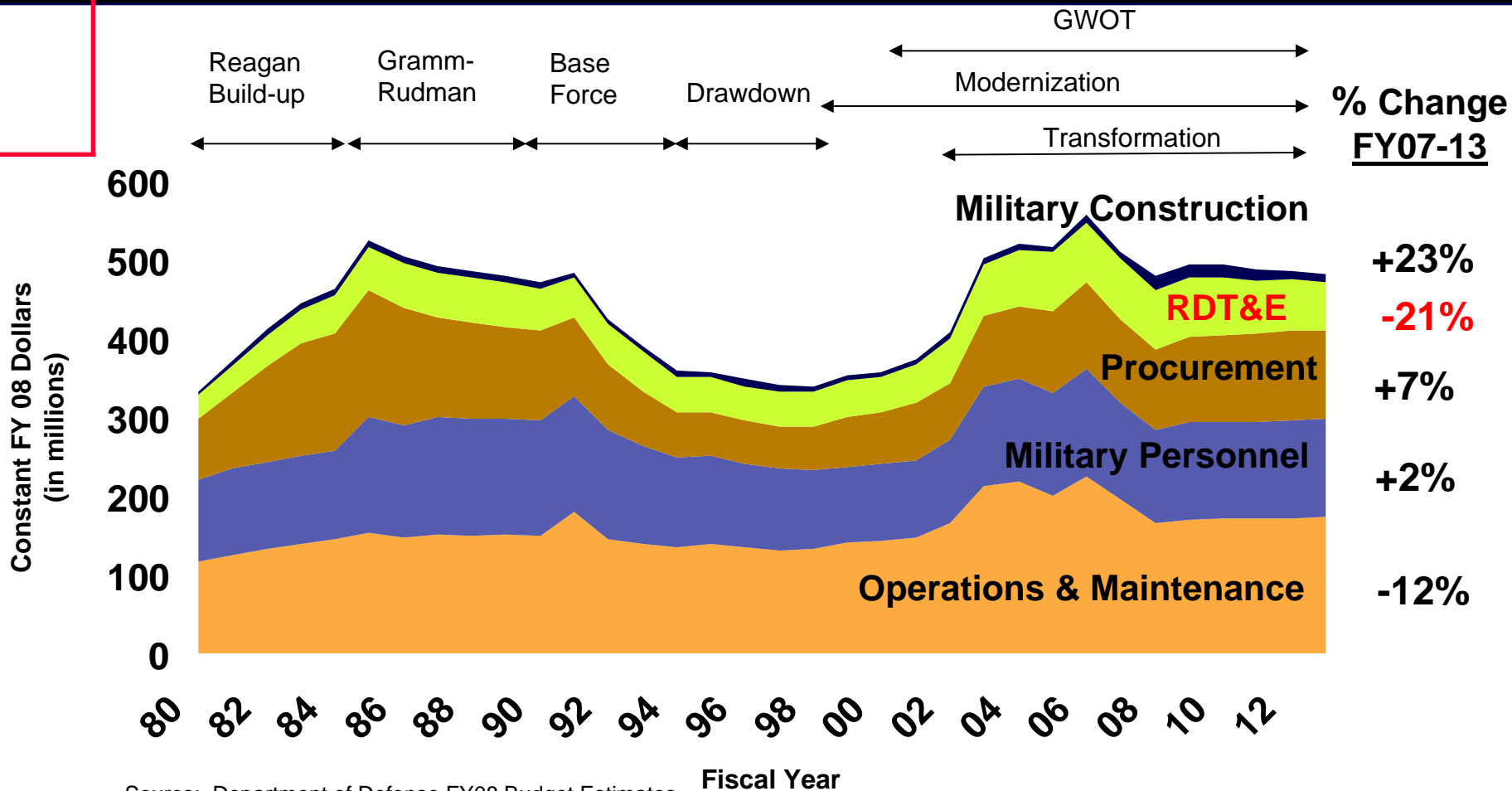
Expanding Technology Needs vs. Constricting Business Trends

- Need for speed & flexibility to address emerging and evolving threats
- Consolidating industrial base
- Budget pressures
- Less R&D investment in industry
- Increasing emphasis on/need for joint capability acquisition

The Central Challenge: Where will innovation come from and how will we get it?

Defense Budget Trends

DoD Budget Authority

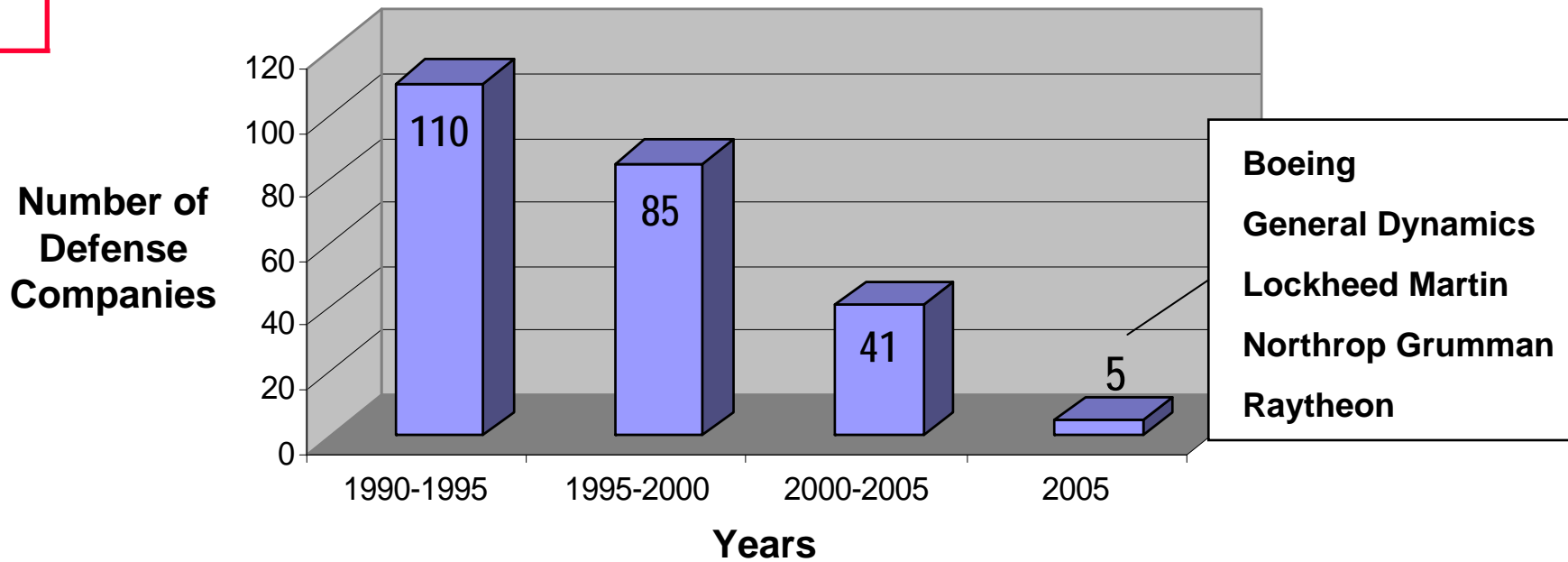


Source: Department of Defense FY08 Budget Estimates



RDT&E gets increasingly crowded out through the FYDP

Defense Industry Consolidation



What were over 100 “name plate” primes in the 1980s are now five firms...

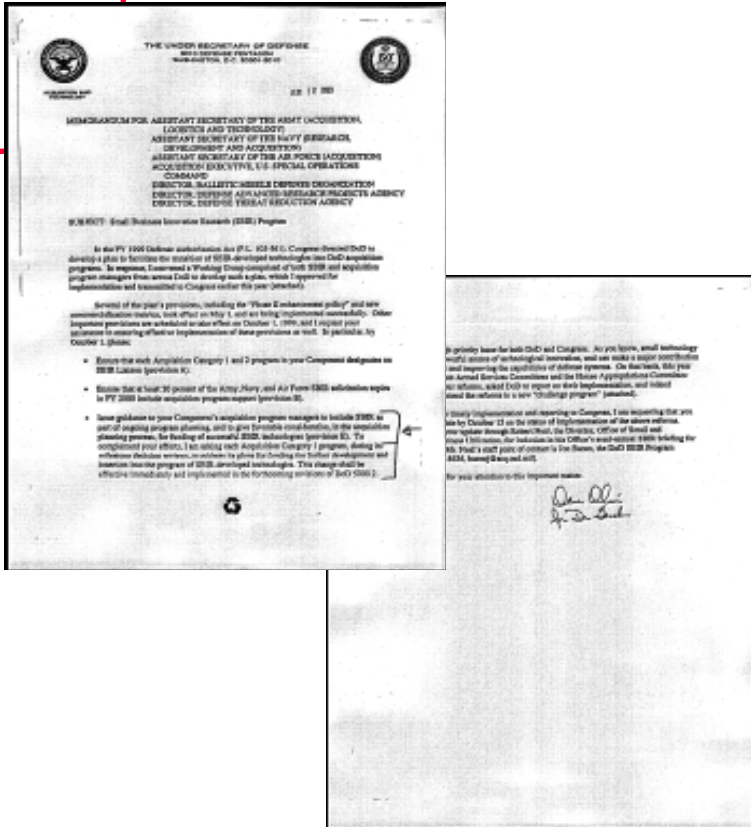
SBIR Authorization & Goals

- Congress established the SBIR program in the Small Business Innovation Development Act of 1982 (P.L. 97-219)
- SBIR objectives:
 - Stimulate technological innovation
 - Increase private sector commercialization of federal R&D
 - Increase small business participation in federally funded R&D
 - Foster participation by minority and disadvantaged firms in technological innovation

DOD Policy & Guidance

- Pending DOD 5000.2 Update
 - *“PMs shall consider the use of technologies developed under SBIR and give favorable consideration to successful SBIR technologies.”*
- Defense Acquisition Guidebook (December 2007 Revision in Process)
 - Practical instruction for incorporating SBIR in program planning & execution

USD(AT&L) Policy Enhancement



- Establishes acquisition liaisons for SBIR efforts
- Requires acquisition endorsement of SBIR topics
- Requires inclusion of SBIR in program planning
- Establishes Phase II Enhancement funding for SBIR companies that acquire non-SBIR funds

Recent Key Policy

- Requires all programs requiring USD (AT&L) approval to incorporate competitive prototyping through Milestone B — USD (AT&L) Memo on Prototyping and Competition, 19 September 2007
- Establishes Commercialization Pilot Program for accelerating SBIR technology transition to the warfighter—USD (AT&L) Memo on CPP, 27 June 2006

SBIR provides venue to develop prototype capabilities with non-program resources

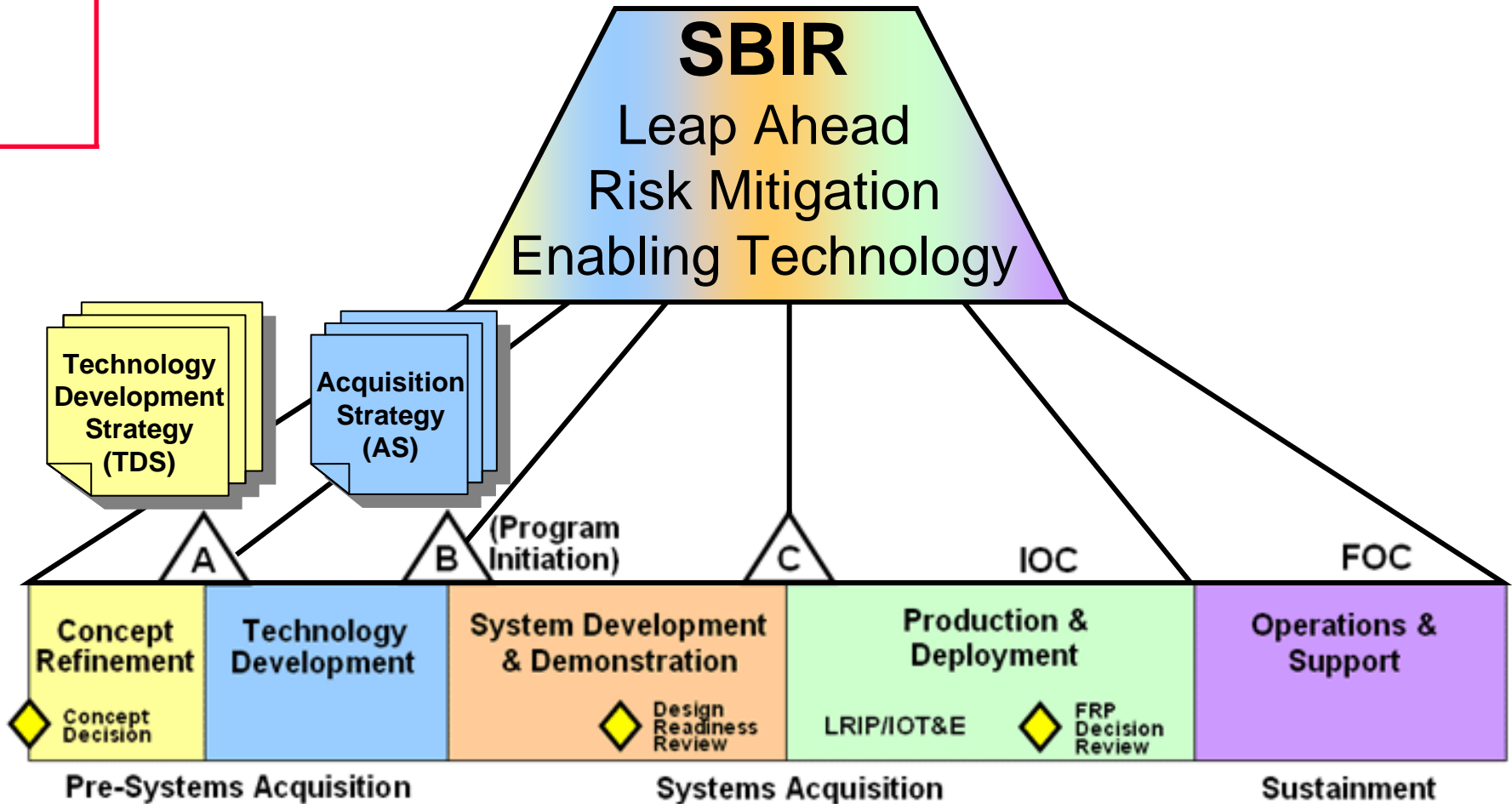
DoD Mission



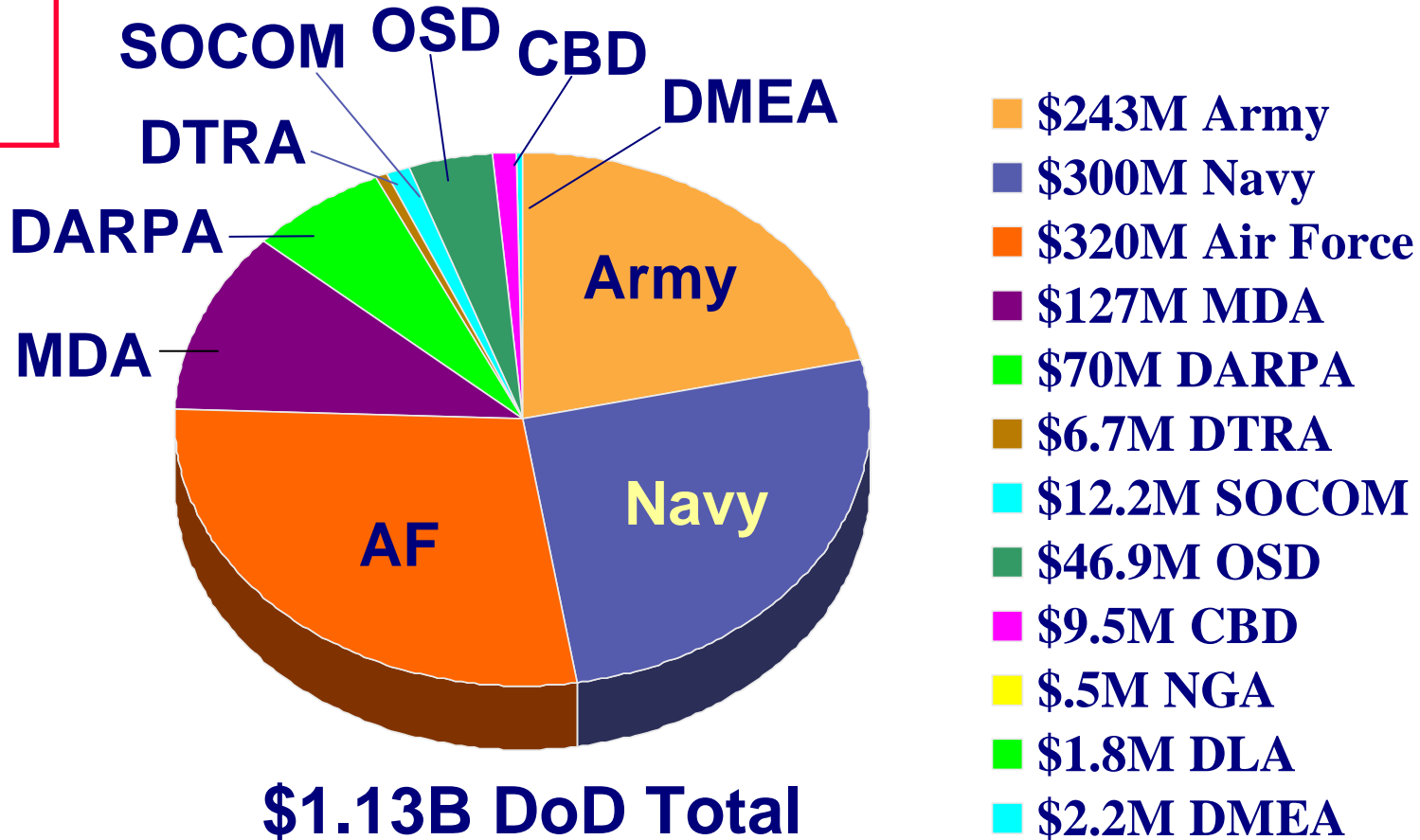
- Mission: To maintain and employ Armed Forces to support and defend the Constitution of the United States against all enemies, foreign and domestic.
- Key objective: To ensure that the right capabilities, resources, and materiel are rapidly delivered to our Warfighters.

Key Challenge: Address high cost of acquiring new weapon and support systems and maintaining legacy systems

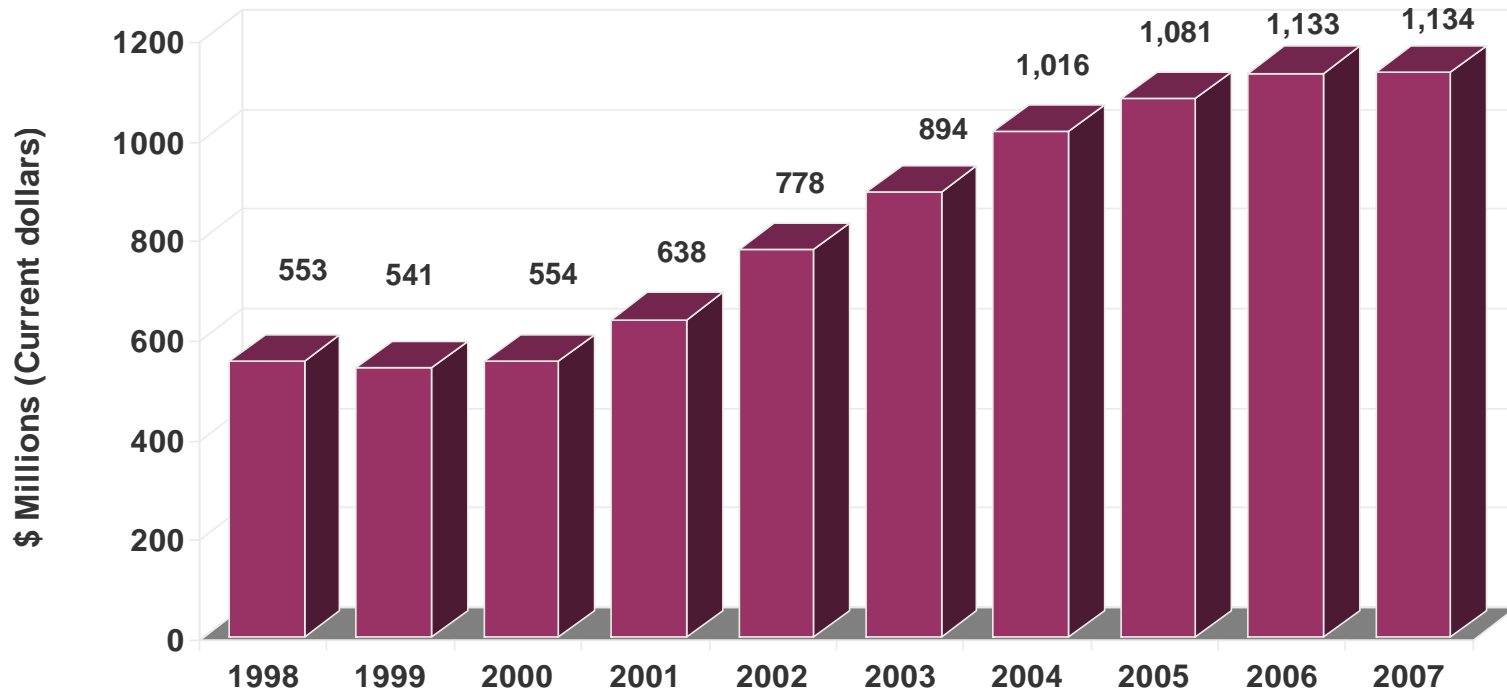
SBIR Impacting Life Cycle



DoD SBIR FY07 Budget

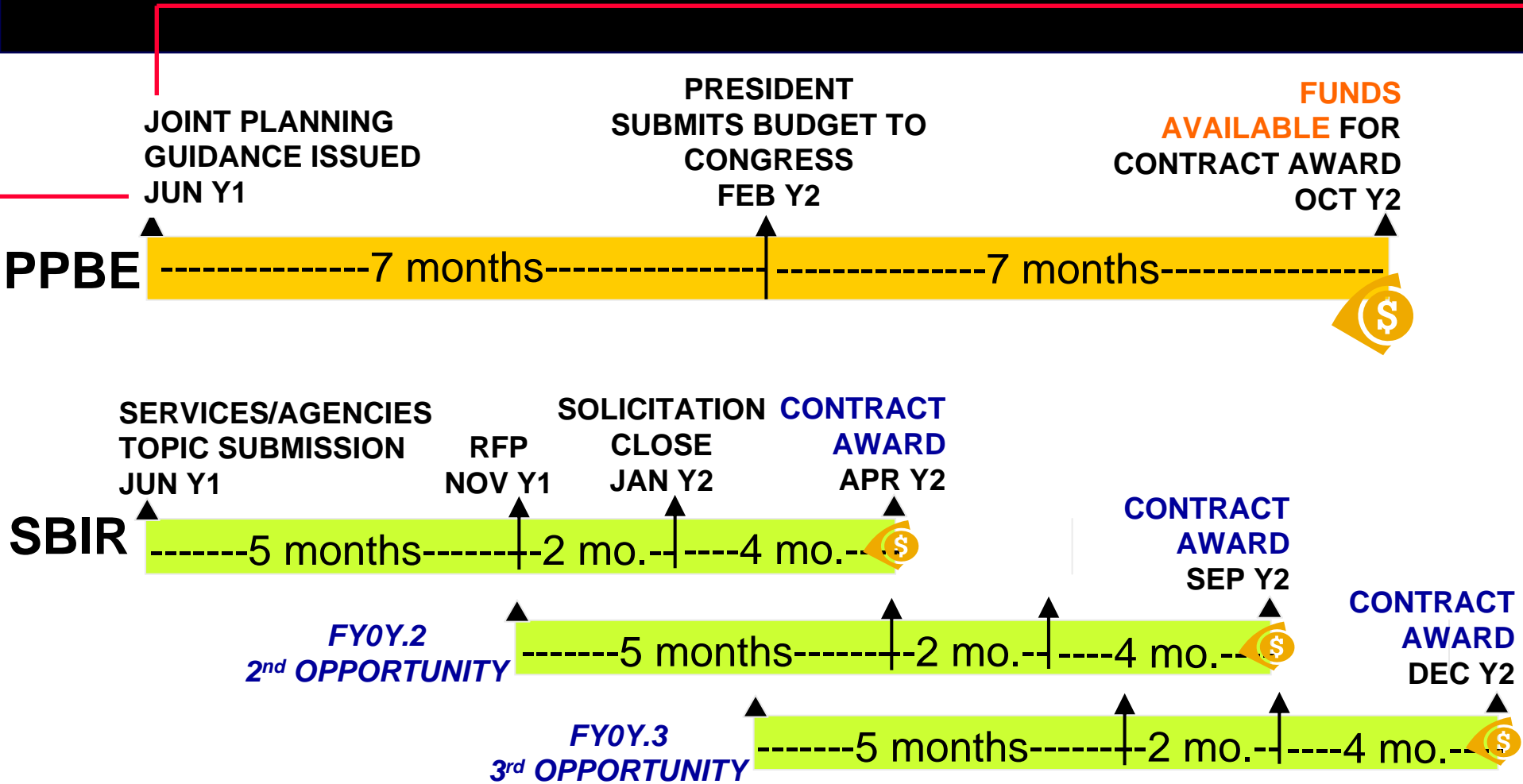


DoD SBIR Budget Growth



Increasing RDT&E appropriations have driven strong SBIR budget growth

PPBE vs. SBIR Funding Timeline



SBIR vs. PPBE

SBIR

- Frequent entry points to engage funding
- Alternate source of non-program funding
- Already appropriated \$

PPBE

- One entry point every two years
- Reflected in program budget baseline
- Requires Congressional review

SBIR Phases & Funding


- Phase I: Project Feasibility
 - 6 months
 - Up to \$100K
- Phase II: Project Development or Prototype
 - 2 years
 - Up to \$750K
- Phase III: Commercialization
 - Commercialize technology for military or private markets with non-SBIR government or private sector funds

Commercialization Pilot Program

June 27, 2006 USD(AT&L)

Memo

- Requests 3 MILDEP Secretaries develop and implement CPPs for SBIR
- Make institutional and process changes required to improve SBIR program effectiveness
- Requests MILDEPs make firm link between S&T and acquisition communities to address high priority military needs using SBIR.


THE UNDER SECRETARY OF DEFENSE
3510 DEFENSE PENTAGON
WASHINGTON, DC 20301-3010
JUN 27 2006


MEMORANDUM FOR SECRETARY OF THE ARMY
SECRETARY OF THE NAVY
SECRETARY OF THE AIR FORCE

SUBJECT: Small Business Innovation Research (SBIR) Program

Section 232 of the National Defense Authorization Act for Fiscal Year 2006, Public Law No. 109-163 (NDAA), contains several provisions regarding the Small Business Innovation Research (SBIR) program. Among other things, section 232 modifies section 9 of the Small Business Act (15 U.S.C. 638), to add a new subsection 9(y) that authorizes a Commercialization Pilot Program (CPP) under the Secretary of Defense and the Secretary of each Military Department. To fund the administrative cost of such a pilot program, but not fund Phase III awards, section 9(y) authorizes use of up to an amount equal to 1% of the SBIR set-aside budget.

The purpose of the CPP is to accelerate the transition of SBIR-funded technologies to Phase III—specifically into systems being developed, acquired and maintained for the warfighter. This can be done through activities that enhance the connectivity among SBIR-firms, prime contractors, and DoD science & technology and acquisition communities. It can also be accomplished by improving a SBIR-firm's capability to provide the identified technology to the Department, directly or as a subcontractor. Since leveraging the SBIR program to meet identified technology needs is a goal of the Department, I request that you develop a CPP utilizing this new authority.

Section 9(y) requires the identification of SBIR research projects with the potential for rapid transition to Phase III, and the Secretary of the Military Department concerned certify in writing that the successful transition of the research program into Phase III and the acquisition process is expected to meet high priority military needs of the Department. To accomplish this effectively, I request that you conduct a portfolio review of recent SBIR Phase II projects to identify technologies with the greatest potential to meet known technology needs of programs of record. Current SBIR policy requires that at least 50% of SBIR topics have acquisition community endorsement or sponsorship. Since this endorsement or sponsorship should be derived from an identified need, awards resulting from these topics should be a good place to start. Please provide this list of projects, the programs to which you expect them to transition, and a description of the portfolio review process you use to identify high potential SBIR Phase II projects to the Office of Small Business Programs by September 15, 2006. Additionally, please provide at that time the details of your CPP plans, including the



amount of funds employed to support the CPP, how you intend to use the funding authority, to include activities and incentives you plan to employ to facilitate the transition, and what results you expect to achieve.

To aid identification of SBIR technologies with the highest transition potential, the Department will sponsor an annual "Beyond Phase II" conference in early 2007 to bring together recent SBIR Phase II award winners with major prime contractors and DoD system developers and acquirers. This will allow you and system contractors to survey directly SBIR Phase II award technologies from across the Department as well as from within your Component to identify those that meet a need. We will explore the development of activities adjunct to the annual conference to expand it as a tool to enable successful technology transition. I request your full support of this event.

The SBIR Program has long been a source of innovation—we must make it serve the warfighter better. Beyond the above actions in response to the new section 9(y) of the Small Business Act, it is important to improve how the SBIR program is implemented and used within our institutions. We must identify and proliferate best practices to ensure we are developing the right technologies and effectively transitioning them. This means ensuring we are generating and funding the right projects, employing the right incentives, and leveraging all available technology transition tools. I request your personal support and attention to accomplish this. My office has recently been asked by the Senate and House Small Business Committees to report on our progress. Mr. Frank Ramos, Director of Small Business Programs on my staff, will be contacting you for support in developing a status report.


Keith J. Jones

cc: DIRECTOR, DEFENSE RESEARCH AND ENGINEERING
ASSISTANT SECRETARY OF THE ARMY (ACQUISITION, LOGISTICS AND TECHNOLOGY)
ASSISTANT SECRETARY OF THE NAVY (RESEARCH, DEVELOPMENT AND ACQUISITION)
ASSISTANT SECRETARY OF THE AIR FORCE (ACQUISITION)

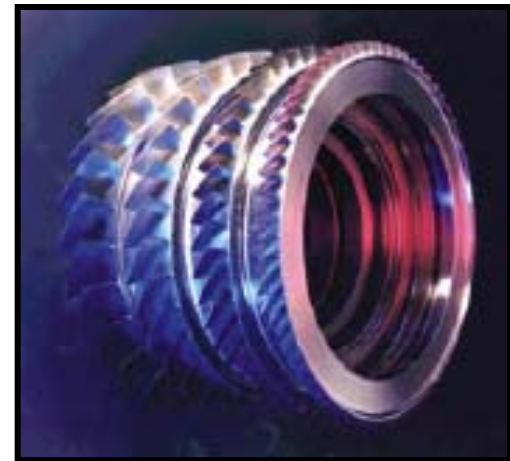
CPP GOAL: "Accelerate Transition of SBIR Technology"

Success: Cost Savings



- Hydrodynamic Seals for V-22 Osprey & Other Gas Turbine Engines
 - 50% Increase in turbine life
- SBIR Investment: \$ 973K
- Est. Cost Savings: \$ 924K/V-22/year

- Turbine Fan Blade Hardening
 - Laser shock peening increases durability of F101/B1B engines while decreasing sensitivity to FOD
- SBIR Investment: \$ 3.6M
- Est. Cost Savings: \$ 1B



Success: Solid Supplier Base

- High performance, low-cost composite armor
 - Vehicles, Aircraft, & Personnel
- SBIR Investment: \$ 699K
- Project Revenue: \$ 62.8M



- Cockpit Airbag System (CABS)
 - Inflatable restraint system for UH-60A/L & OH-58D helicopters
- SBIR Investment: \$ 478K
- Project Revenue: \$ 42M

Success: Joint Collaborations

- Video Early Warning (VEW)
 - Wide-Area Perimeter Protection/Border Coverage
- SBIR Investment: \$ 1.9M
- Sales/Non-SBIR \$: \$60.0M

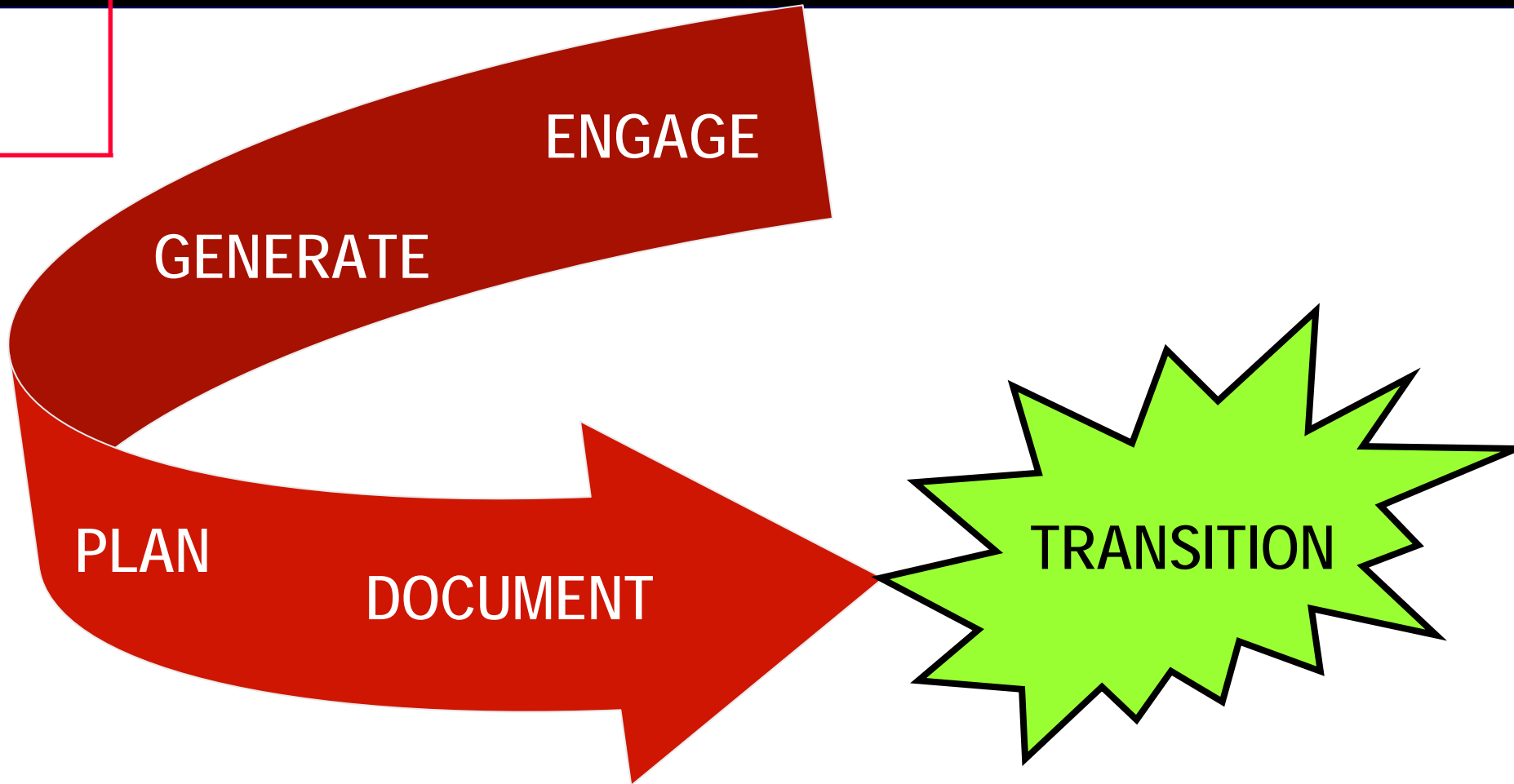


- TOUGHBOT, XRSV & NGCM1 Robotic Vehicles
 - Military hardened audio/video reconnaissance & CIED tools
- SBIR Investment: \$ 4.2M
- Sales/Non-SBIR \$: \$18.8M

Prescription for Success

- Integrating SBIR technologies into Acquisition Planning enables Program Managers to achieve capability requirements affordably
 - Capitalize on the innovation and agility of small business
 - Mitigate risk in developmental or existing systems
 - Utilize financial resources outside of the core program budget

Keys to Maximize SBIR



ENGAGE - SBIR POCs



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DMEA
Jim Dininger
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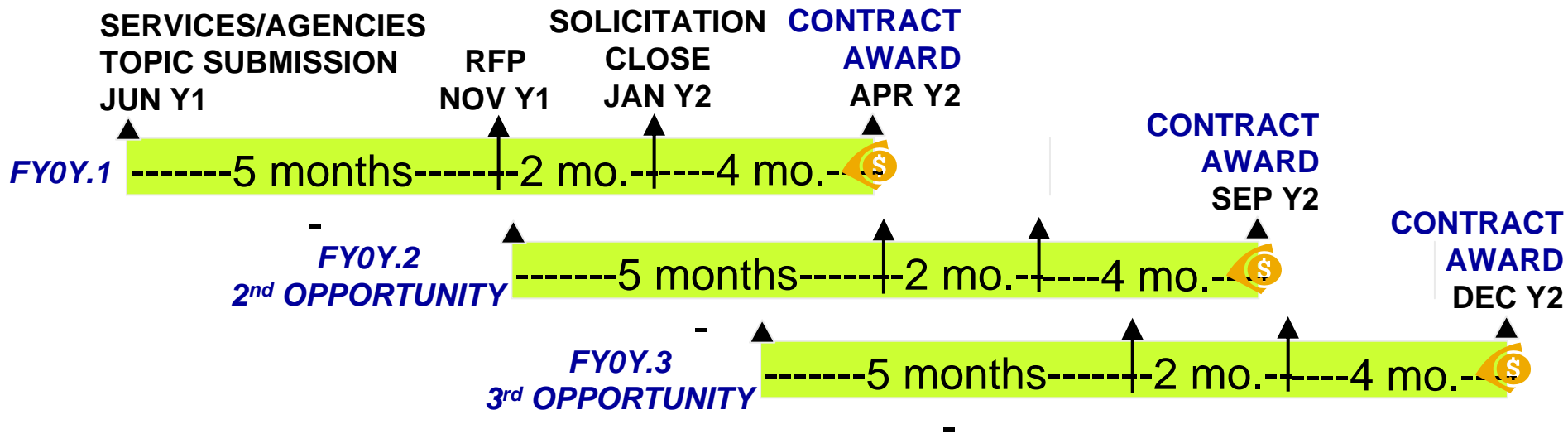
CBD
Larry Pollack
703-767-3307



DLA
Dan Gearing
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GENERATE TOPICS

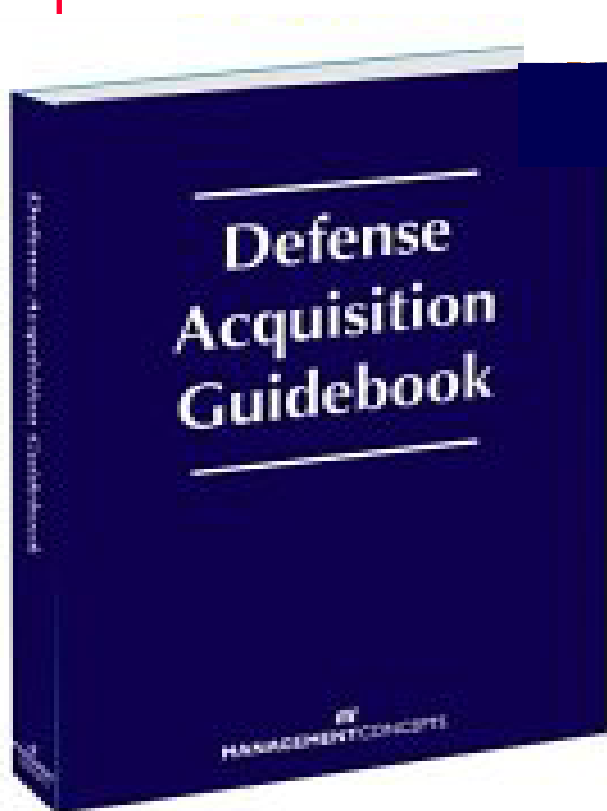
- Topic submissions 3 times/year
- Phase I Contract awards 3 times/year
- Rolling Phase II Contract awards



FY08 Solicitation Schedule

- 2008.1
 - Release 13 November 2007
 - Close 9 January 2008
- 2008.2
 - Release 21 April 2008
 - Close 18 June 2008
- 2008.3
 - Release 28 July 2008
 - Close 24 September 2008

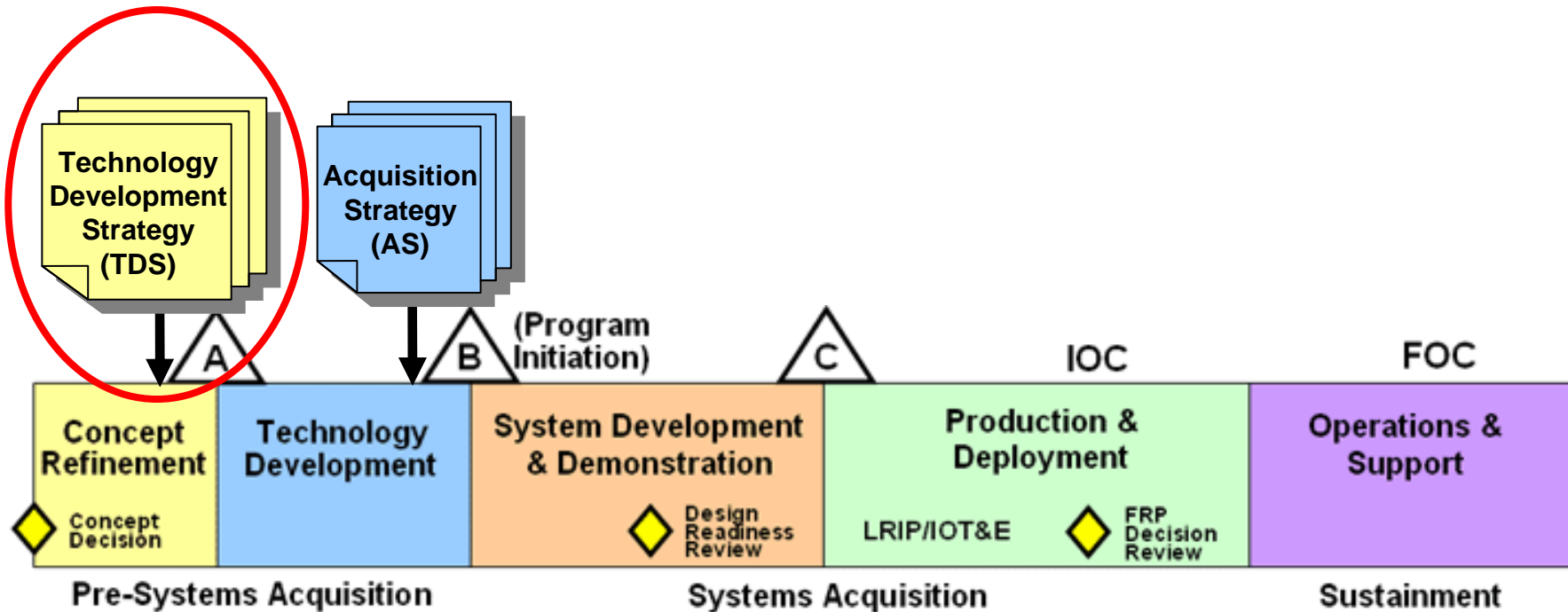
PLAN & DOCUMENT



- Plan for development of SBIR technologies in TDS
- Incorporate SBIR in Acquisition Strategy
 - Competition
 - Acquisition Approach
 - Risk Management

SBIR – Capability Development

LEAP AHEAD CAPABILITY...BY INCORPORATING SBIR IN THE TDS



Why SBIR in the TDS?

- The TDS documents the ***plan for managing R&D for the life of the program***
 - TDS focuses on the activities of the Technology Development Phase
 - Precedes the formal Acquisition Strategy and is required for Milestone A
- Overall program technology and design is immature and thus receptive/open to SBIR technology

Documenting SBIR in the TDS

- R&D Planning—Discuss strategy for incorporating SBIR in the context of overall cost, schedule and performance goals for the total R&D program
- Test Planning—Use SBIR for spiral demonstration or technology maturation during the Technology Development phase

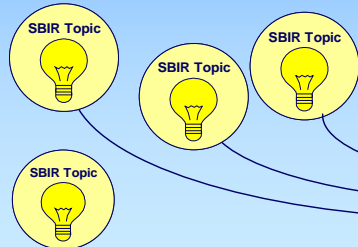
Transition Management Challenge

“Digging to the Future”

*Today's
Technology Ideas &
Investments*

*Future
Combat Capability
Needs*

*Will The “Tunnels”
Meet?*



SBIR “Pipeline”

**Technology Investment
Focus**

**Transition
Success**

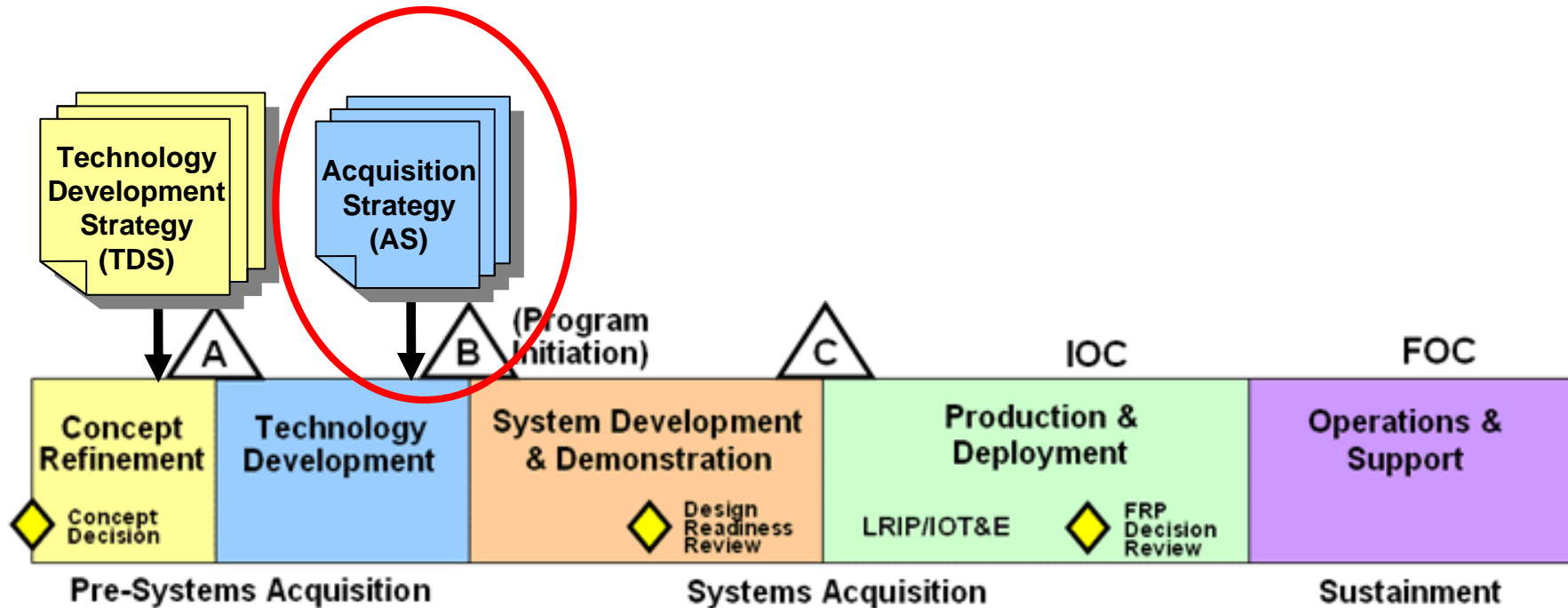
**Approaching
Future Needs**

Facilitating Transition Success

- Use Technology Transition Agreements
 - Customer or end-user identification
 - Funding sources for continued development
 - Test and integration strategy
- Establish transition agents/relationship managers
 - Serve as interface between program office, small business and other stakeholders
 - Shepherd technology through transition process

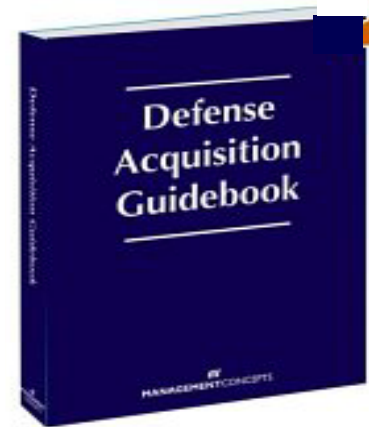
SBIR – Risk Management

MITIGATE RISK & IMPROVE COMPETITION...
INCORPORATE SBIR IN THE AS

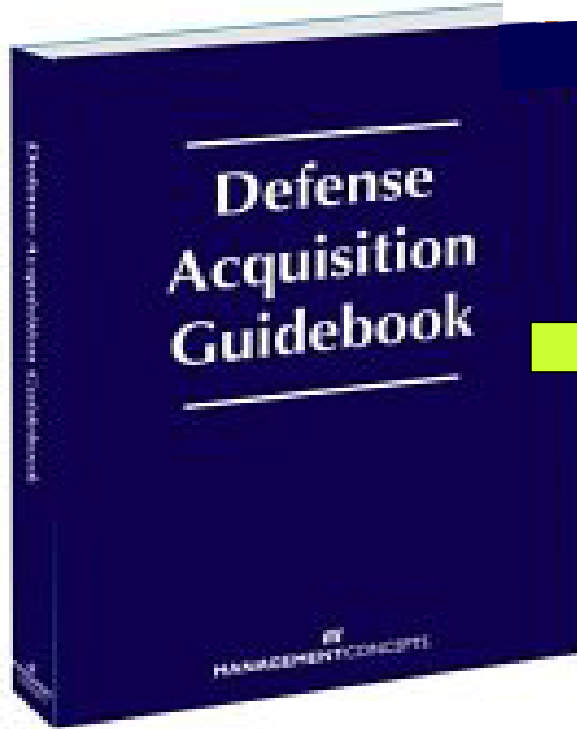


Why SBIR in the AS?

- SBIR currently cited in Defense Acquisition Guidebook as a “tool for Competition” under ***Business Considerations***
- Additional acquisition cost reduction could be achieved by incentivizing the use of SBIR technologies under the ***Acquisition Approach***
- Leveraging SBIR resources to support ***Risk Management*** could potentially reduce cost and achieve more capability



Tool for Competition



Section 2.3.16 Business Considerations

2.3.16.1.5. Small Business Innovation Research (SBIR) Technologies

The program manager should develop an acquisition strategy that includes the use of technologies developed under the SBIR program, and gives favorable consideration for funding of successful SBIR technologies. The Department of Defense maintains an on-line, searchable database of SBIR-funded technologies

“SBIR is a viable source of technology...” Source: *(DoD 5000.2 Update)*

Other Relevant AS Sections

- Acquisition Approach (Section 2.3.2)
 - Contracting Strategies & Incentives
 - Small Business Goals
 - Prime
 - Subcontracting
- Risk Management (Section 2.3.5)
 - Use SBIR in Technology Development Strategies

Contracting Incentives

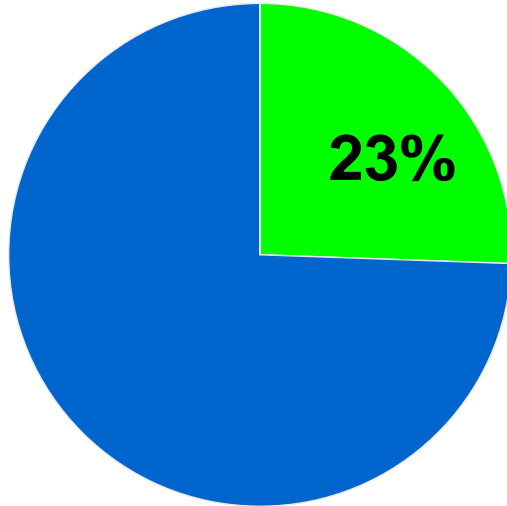
- Clauses for SBIR in contract language to target and reward use of SBIRs in technology developments



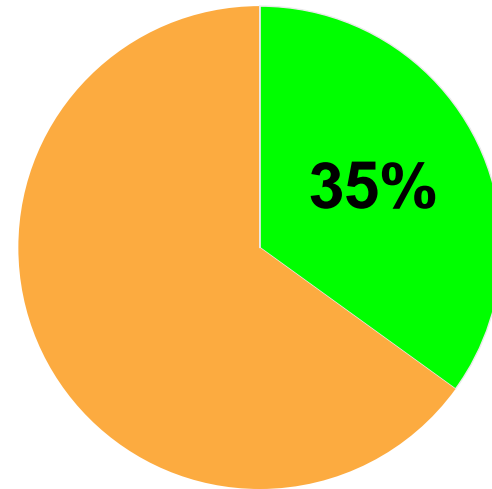
“Two percent of the total award fee pool shall be dedicated to an evaluation of success in applying technology from SBIR projects.”

Small Business Goals

DoD Acquisition Prime Contract Awards to Small Business



Prime Contractor Subcontract Awards to Small Business



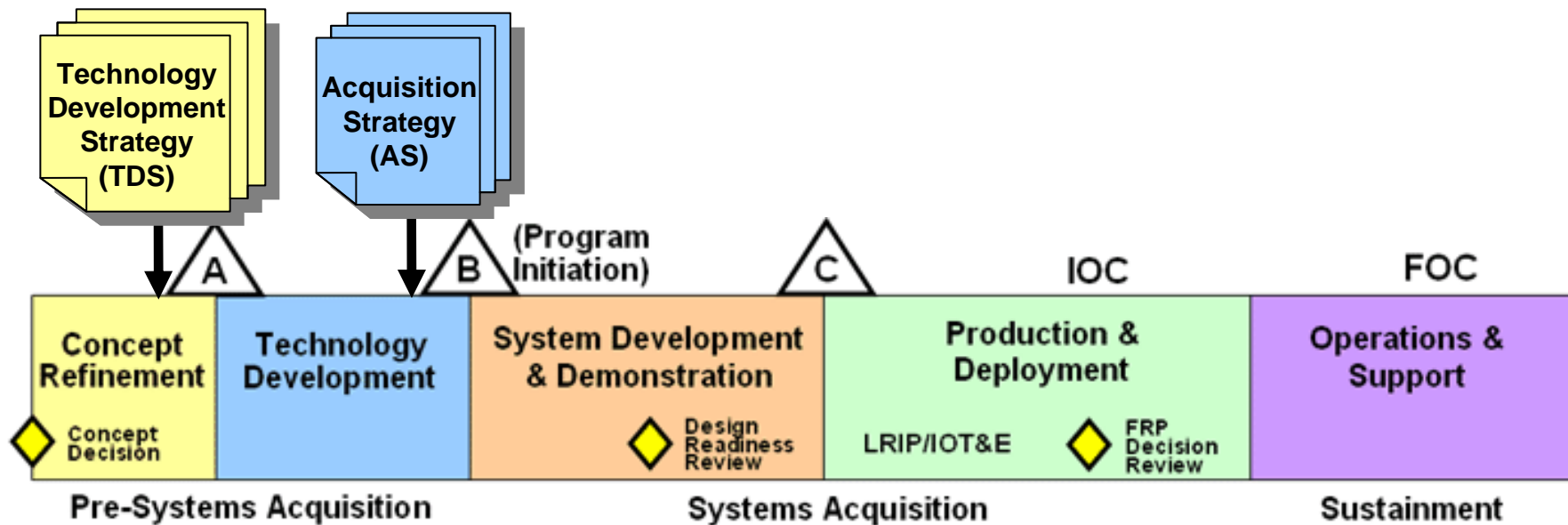
Utilizing SBIR firms helps meet DoD and Prime Contractor Small Business Goals

Risk Management

- Acquisition Strategy includes discussion of PM approach to Risk Management
- Risk Management section summarizes processes put in place by PM to manage technology development
- PM's should acknowledge the intent to use SBIR as a tool to retire risks and increase the technology readiness levels (TRLs) of candidate systems

Beyond Milestone B

**IMPROVE & UPGRADE EXISTING CAPABILITIES...
USE SBIR ENABLING TECHNOLOGY**



Program Manager Checklist

- Get to know your local SBIR representative
- Participate in the SBIR topic generation process
- Plan for SBIR technologies in your TDS
- Ensure development of SBIR Technology Transition Agreements
- Address SBIR in your AS
- Stay involved in the SBIR process post milestone B to achieve continuous improvement goals

Website: www.dodsbir.net



SEARCH

-  **AWARDS**
DoD SBIR & STTR Awards
-  **TOPICS**
Current DoD SBIR & STTR Topics
-  **SITIS**
Interactive Topic Info System

INTEREST

- [● ABOUT SBIR/STTR](#)
- [● CURRENT SOLICITATION](#)
- [● SELECTION LISTINGS](#)
- [● CONFERENCES](#)
- [● DESK REFERENCE](#)
- [● MAJOR ACQUISITION LIAISONS](#)
- [● SUCCESS STORIES](#)
- [● FIRMS IN THE NEWS](#)
- [● SBIR ANNUAL REPORT](#)
- [● STTR ANNUAL REPORT](#)
- [● FAST TRACK/PHASE II ENHANCEMENT](#)
- [● COMMERCIALIZATION PILOT PROGRAM](#)

HELP

-  **HELPDESK**
Answers Questions About DoD SBIR & STTR
-  **WEBSITE**
Main Website for More Information
-  **LISTSERV**
Subscribe to Receive Program Notices and Updates
-  **SUBMISSION TUTORIAL**
Tutorial on how to use the DoD SBIR/STTR Submission Site

SUBMISSION

-  **SUBMISSION**
DoD SBIR/STTR Proposal Submission