Commercialization Readiness Program

James A. Sweeney III
Air Force CRP Manager
Deputy Air Force SBIR PM

DISTRIBUTION A. Approved for public release: distribution unlimited.
“The flying machine which will really fly might be evolved by the combined and continuous efforts of mathematicians and mechanicians in from one million to ten million years”

-- The New York Times, 9 October 1903

“We started assembly today”

-- Orville Wright’s Diary, 9 October 1903
Increase the use of small businesses as a valued source of skills for innovative, cost effective, customer-focused solutions to warfighter requirements and AF missions, both now and in the future.
Execution of the Vision

• Enable small businesses to develop innovative technologies

• Guide the transition/transfer the technology to the warfighter
  o Transition
  o Transfer via prime and subcontractor networks
  o Commercialization
AF Small Business View
What You Can Do

• **Understand the Mission!!**

• Be a technology problem-solver and innovator, not just a manufacturer

• Search technology areas and identify opportunities where your firm is a good fit

• Submit proposals aligned with your core business strategy or area of expertise
  
  o Take advantage of all available assistance

• Build a network of contacts in the Air Force and programs of record
Air Force Focus Areas

- Sensors: 15%
- Weapons: 9%
- Information: 13%
- Space Platforms: 14%
- Air Platforms: 18%
- Materials: 14%
- Nuclear: 1%
- Electronics/EW: 6%
- Battlespace Environment: 2%
- Human Systems: 7%
What We Are Looking For

**Revolutionary**
Technology to make and keep the fight unfair

*Game Changing Technologies*

**Relevant**
To near and mid-term AF needs

*Providing technical solutions for critical capability gaps*

**Responsive**
To the “right-now”

*Rapid Innovation*

“The World’s Greatest Air Force – Powered by Airmen, Fueled by Innovation”
Air Force Vision 2013
Air Force R&D Organizations

- Air Force Research Laboratory
- Air Force Life Cycle Management Center
- Air Force Test Center
- Air Force Sustainment Center
- Air Force Civil Engineer Center
- Air Force Surgeon General
- Space and Missile Systems Center

Locations:
- ROME, NY
- WRIGHT-PATTERSON AFB, OH
- ARLINGTON, VA
- ROBINS AFB, GA
- HANSCOM AFB, MA
- EGLIN AFB, FL
- EDMOND AFB, TN
- EDWARDS AFB, CA
- LOS ANGELES AFB, CA
- MAUI, HI
- SAN ANTONIO, TX
- HURLBURT FIELD, FL

DISTRIBUTION A. Approved for public release: distribution unlimited.
SBIR/STTR Participants

- Small hi-tech firms from across the country
- Third of applicants are new to the program
- 25 percent of awardees are first-time winners

Searching for Innovation from small companies and startups
The Small Business Innovation Research (SBIR) Program

<table>
<thead>
<tr>
<th>Phase 0</th>
<th>Phase I</th>
<th>Phase II</th>
<th>Phase II Extensions / Enhancements</th>
<th>Sequential Phase II</th>
<th>Phase III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topic Generation</td>
<td>Year 1</td>
<td>Year 2</td>
<td>Year 3</td>
<td>Year 4-5</td>
<td>Year 5-8</td>
</tr>
</tbody>
</table>

- **Phase I:**
  - Contract: Up to $150K 9-month award
  - Activity: Feasibility Study
  - Number of Proposals: ~2400
  - Number of Awards: ~500

- **Phase II:**
  - Contract: Up to $750K 2-year award
  - Activity: Technology Development Prototype / Demonstration
  - Number of Proposals: ~500
  - Number of Awards: ~190

- **Phase II Extensions / Enhancements:**
  - Contract: Up to $750K Varies
  - Activity: Prototype / Demonstration
  - Number of Proposals: Varies
  - Number of Awards: Varies

- **Sequential Phase II:**
  - Contract: Up to $1.5M Varies
  - Activity: Technology Testing & Evaluation
  - Number of Proposals: Varies
  - Number of Awards: Varies

- **Phase III:**
  - Contract: Non-SBIR/STTR Funding
  - Activity: Transition / Commercialization
  - Number of Proposals: Varies
  - Number of Awards: Varies
PHASE III
Transfer to the Defense Community

- PURPOSE: Transition a company’s SBIR/STTR effort into hardware or software products, processes or services that benefit the Air Force acquisition community.

- SBIR/STTR Phase III refers to work that derives from, extends, or completes an effort made under prior SBIR funding agreements.

- It is funded with “Non-SBIR” sources.

- Funding can come from:
  - Either Government and/or the private sector!

- NOTE: Once a company has successfully been awarded a SBIR Phase I or Phase II, Phase III awards can be made using a “Non-Competitive” process since competition requirements were satisfied using the previous Phase(s).

Commercialization

• Commercialization Readiness Program (CRP) authorized by amendment in Sec 5122 of the FY12 National Defense Authorization Act
  o Identify and accelerate transition of SBIR developed technology
  o Allow for 1% of SBIR budget to administer CRP

• Integral to the success of accelerating SBIR transition
  o Air Force provides valuable assistance in transitioning technology to military and commercial sectors
  o Successful Air Force SBIR/STTR contracts may help small businesses get additional non-SBIR funding to transition technology to commercial sector

DID YOU KNOW?
Approximately 58% of AF Phase II contracts resulted in sales of new products and services based on the innovations developed
Approach to CRP

“Boots on the ground”

Technology Analysts (TAs) located at Air Force Centers and Technology Directorates

• TAs Identify and Verify Customer, Need, & Technology
  o Support Technology Interchange Meetings
    ▪ Focused Industry and PEO meetings
    ▪ Targeted DoD SBIR/STTR data mining and due diligence
  o Continuous Phase II portfolio transitioning
    ▪ Participation in various technology requirements discussions
    ▪ Liaison for adhoc PEO and industry technology needs
  o Facilitate topic alignment with PEOs
  o Collaborate with other agencies

• Assist in development of Transition Plans (STTP)
STTP: The Basics

Transition planning requires relationship building and collaboration!

The STTP is a roadmap to transition, where stakeholders work together to plan and identify:
- All critical stakeholder roles and responsibilities
- Current and required transition TRL/MRL of SBIR Phase II technology
- Financial strategy - unfunded requirements
- Intellectual Property (IP) protection
- Risk mitigation

STTP is NOT a contractual document or an application for funds
SBIR CRP Transition Benefits

SBIR/STTR transitions bring benefit to the warfighter in cost savings, new capability, greater reliability, or improved performance.

STTP Transition Benefits
(STTPs designed to provide benefits in multiple areas)

- Cost Savings 26%
- Improved Performance 30%
- New Capability 26%
- Greater Reliability 18%

*Data as of 14 May 2015

DID YOU KNOW?
Many AF CRP successes are currently in use by the Warfighter
Get Involved

AF Small Business Industry Days (SBID) focus on small business capabilities and opportunities, matching stakeholders from PEOs, large business, and small business communities.

- Air Force Keynote Speakers
- Sessions focusing on AF business opportunities and programs, SBIR/STTR technologies, and SB products/capabilities
- Networking Opportunities
- Exhibition Hall

2017 AF Test Center SBID, Location TBD, September 2017

https://conference.brtrc.com/AFSBID/
AF CRP PEO Technology Analysts

Joint Strike Fighter (JSF)
Don Williams
donald.williams.28.ctr@us.af.mil

AF Nuclear Weapons Center (AFNWC) & AF Test Center (AFTC)
Anthony Androsky
anthony.androsky.ctr@us.af.mil

Air Force Sustainment Center (AFSC) & AF Life Cycle Management Center (AFLCMC)
Lance Chenault (Robins AFB)
lance.chenault@abdainc.com
Seth Turnipseed (Tinker AFB)
seth.turnipseed.ctr@us.af.mil
Mario Rios (Hill AFB)
mario.rios.7.ctr@us.af.mil

AF Life Cycle Management Center (AFLCMC)
Walt Fenstermacher (Wright-Patterson)
a.fenstermacher.1.ctr@us.af.mil
Gavin Tovrea (Eglin)
gavin.tovrea.1.ctr@us.af.mil
Joe Minior (Hanscom)
joseph.minior.1.ctr@us.af.mil

Space & Missile Systems Center (SMC)
Ray Wells
raymond.wells.1.ctr@us.af.mil
Natalya Turner
nturner@brtrc.com
AF CRP TD Technology Analysts

AFRL – RD & RV
Michael Williams
michael.williams.241.ctr@us.af.mil

AFRL – RH & RX
Donna McBroom
donna.mcbroom.ctr@us.af.mil

AFRL – RI & AFOSR
Michael Bilinski
Michael.bilinski.s.ctr@us.af.mil

AFRL – RQ & RY
Vacant, TBD

AFRL – RW
Shelly Leugers
shelly.leugers.ctr@us.af.mil

Force SBIR Program Office:
1-800-222-0336
Email: info@afsbirsttr.com
Contact Us

• Contact the Air Force SBIR/STTR Program Office at 1-800-222-0336 - info@afsbirsttr.com

• Visit our website for SBIR POCs, topic info, newsletter, etc.:

  www.afsbirsttr.com

  https://www.youtube.com/channel/UCb3EQQFQN K0pw5EFv0rAkTBg
Summary

• AF is extremely small business friendly
  • SBIR/STTR program strives for innovation

• AFLCMC is a partner with AFRL on the transfer and transition of Technology
  • CRP program assists in the transfer/transition of technology
  • Phase III SBIR is a commercialization pathway
Questions

In Dayton, Ohio, two brothers taught us how to fly.

What will your small business do?
Additional Air Force

SBIR CRP Reference Materials

*Others includes: DoT, EPA, DHS, DoC, USDA, DoED
SBIR Funding

• The DoD budget for SBIR efforts is currently determined by a statutory assessment (percentage) of the extramural Research, Development, Test and Evaluation (RDT&E) budgets of each participating component.

| Year | FY14 | FY15 | FY16 | FY17+
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>2.8%</td>
<td>2.9%</td>
<td>3.0%</td>
<td>3.2%</td>
</tr>
</tbody>
</table>

• Federal agencies with an extramural R&D budget in excess of $100 million are required to have an SBIR Program.

*Others includes: DoT, EPA, DHS, DoC, USDA, DoED*
### Competitive – Three Phased Process

<table>
<thead>
<tr>
<th>Phase</th>
<th>SBIR</th>
<th>STTR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Phase I:</strong> Project Feasibility</td>
<td>6-10 months*&lt;br&gt;Up to $150,000</td>
<td>6-12 months*&lt;br&gt;Up to $150,000</td>
</tr>
<tr>
<td><strong>Phase II:</strong> Project Development to Prototype</td>
<td>2 years&lt;br&gt;Up to $1M</td>
<td>2 years&lt;br&gt;Up to $1M</td>
</tr>
<tr>
<td><strong>Phase III:</strong> Commercialization</td>
<td>Commercial application in Defense or private sector of SBIR/STTR technologies funded by non-SBIR/non-STTR sources for products, services, testing or further R/R&amp;D</td>
<td></td>
</tr>
</tbody>
</table>

* Duration may consist of a base plus an option period for some Components

Air Force SBIR and STTR Phase I awards are typically $150,000 over 9 months; Phase II awards are $750,000 over 2 years
Collaboration at Work

AF SBIR/STTR Transition Team

Transition Team Support

Industry Needs

STTP/STMP

Center Needs

SBIR Technology Solutions

AFRL Managers & SBIR/STTR Phase II Firms

AirForce

SBIR/STTR

www.afsbirstrr.com
Commercialization

• Commercialization Readiness Program (CRP) authorized by amendment in Sec 5122 of the FY12 National Defense Authorization Act
  • Identify and accelerate transition of SBIR developed technology
  • Allow for 1% of SBIR budget to administer CRP

• Integral to the success of accelerating SBIR transition
  • Air Force provides valuable assistance in transitioning technology to military and commercial sectors
  • Successful Air Force SBIR/STTR contracts may help small businesses get additional non-SBIR funding to transition technology to commercial sector
Air Force Focus, Cont’d

Materials
- Affordability 15%
- Service Extension
- Survivability
- Manufacturing
- Composites
- Inspection
- Environmental Quality

Air Platforms 18%

Information 11%
- Knowledge Management
- Information Security
- Information Assurance
- Communications
- Networking
- Modeling & Simulation
- Computing & Software
Air Force Focus, Cont’d

- Sensors 17%
- Space Platforms 14%
  - Space & Launch Vehicles
  - Space Propulsion
- Electronics/EW 7%
- Integrated Platforms
- RF Components
- Microelectronics
- Electronic Materials
- Electronic Warfare RF & EO/IR
Air Force Focus, Cont’d

- Test & Simulation
- Lethality Effects
- Threat Reduction/Detection
- Warfighter Consequences
- System Effects/Survivability

Human Systems
- Cognitive Processing
- Personnel Recovery
- Training & Development
- Military Medicine
- Combat Care

Nuclear
- 1%

Weapons
- 8%
- Guidance & Control
- Guns, Missiles, Ordnance
- Fuzes
- Lethality/Vulnerability
- Lasers
- High-Power Microwave

Battlespace Environment
- Terrestrial and Ocean
- Lower Atmosphere and Space
Government and Small Business Roles

- The Small Business Administration (SBA) is responsible for oversight of the Federal SBIR and STTR Programs.
- The Office of Small Business Programs (OSD/OSBP) is responsible for oversight of the DoD Component SBIR and STTR Programs.
- DoD Components and industry have *symbiotic roles* in executing the SBIR and STTR processes indicated below:

<table>
<thead>
<tr>
<th>Government</th>
<th>Small Business</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify Need</td>
<td>Define Corporate Competencies</td>
</tr>
<tr>
<td>Generate Topics</td>
<td>Survey Topics &amp; Define Solution</td>
</tr>
<tr>
<td>Solicit/Evaluate Proposals</td>
<td>Submit Proposals</td>
</tr>
<tr>
<td>Award/Monitor Contracts</td>
<td>Perform Contracts</td>
</tr>
</tbody>
</table>
DoD Component Role

Identify

• The concept for a SBIR or STTR project originates when a *technology or capability need* is identified by the warfighter or a member of the science and technology or acquisition communities at a participating DoD Component.

Generate & Review

• The stakeholder authors a Phase I SBIR or STTR topic for inclusion in a solicitation to address that need.

• The topic would then be reviewed by the Component and OSD and, if determined appropriate for SBIR or STTR funding, included in a solicitation.

Evaluate & Award

• Evaluate submitted SBIR or STTR proposals and competitively award Phase I contracts.
Small Business Role

Identify

• Small businesses identify topics in SBIR or STTR solicitations and determine their ability to meet the described needs

Register

• Small businesses must register in government systems:
  • www.sbir.gov SBA SBIR website
  • www.dodsbir.net/submission DoD SBIR website
  • www.sam.gov Federal Award Mgmt website

Propose

• Small businesses submit proposals describing an approach to meet the topic requirements and commercialization strategy for resulting technology via the DoD SBIR/STTR Submission System
Collaboration: Contract Execution & Beyond

- Upon contract award, the successful small business offeror executes its Phase I proposal to *prove the feasibility* of the proposed solution
- If the Phase I effort is successful, the small business may submit a Phase II proposal to continue the effort
- During Phase II, the small business further develops the technology and *defines a path* to Phase III transition
- Government Technical Point of Contact (TPOCs) and other stakeholders monitor execution of SBIR and STTR contracts
- Small businesses must properly mark all SBIR Data Rights protected material delivered to the Government; the Government cannot disclose SBIR data or software outside the government except as expressly permitted by the small business, for evaluation purposes, or for emergency repair or overhaul of items operated by the Government
Planning for Transition

• The SBIR Program supports project funding through Phase II, however, at the completion of this phase, the small business must identify non-SBIR funding for technology maturity and validation efforts.

• DoD SBIR Community should collaborate with acquisition stakeholders to incorporate SBIR projects into overall program planning to enable timely transition into acquisition programs.

• As such, acquisition program managers should plan for the transition of SBIR technologies from set aside funding in Phases I and II to non-SBIR funding in Phase III.
Transition Tools

- Some approaches for accomplishing the important task of transitioning SBIR technologies include:

  - Establishing a *Technology Transition Plan (STTP)*, which documents the commitment and responsibilities of key stakeholders in the technology transition process -- such as the acquisition program sponsor, major defense contractors, component SBIR manager, and SBIR firm -- to develop, deliver and integrate a technology into an acquisition program.

  - Addressing SBIR projects in program documentation including the *Technology Development and Acquisition Strategies*.
SBIR Data Rights

• Technical data and software generated under a SBIR/STTR award are covered under SBIR Data Rights (DFARS 252.227-7018):
  • Limited Rights in SBIR/STTR technical data, and
  • Restricted Rights in SBIR/STTR computer software

• SBIR Data Rights apply to all SBIR funding agreements (Phase I, II & III)

• For DoD, SBIR Data Rights period is 5 years after receipt of the last contract deliverable, BUT follow-on SBIR/STTR projects could extend SBIR Data Rights

• The Government is granted a royalty-free, world-wide, nonexclusive, irrevocable license