Technology Transition and Acquisition Excellence: Taking it to the Next Level

The Honorable Ms Sue Payton
Assistant Secretary of the Air Force (Acquisition)
Technology transition: the use of technology in military systems to create effective weapons and weapon support systems*

New Goal: S&T community with MAJCOMs & Programs of Record focus on transitioning technology to affordable products to address Warfighter needs

Several programs and processes transition technology to address Warfighter needs
- Advanced Technology Demonstrations (ATD)
- Advanced / Joint Concept Technology Demonstrations (A/JCTD)
- Independent Research and Development (IRAD)
- Small Business Innovation Research program (SBIR)

* Definition from Manager's Guide to Technology Transition in an Evolutionary Acquisition Environment, 31 Jan 03, Defense Procurement and Acquisition Policy Office of the Under Secretary of Defense
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<tr>
<th><strong>AF SBIR Transition/Success Stories</strong></th>
<th>... commercialization spin-offs</th>
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<td><strong>Objective:</strong> Develop an on-line oxygen sensor to determine the oxygen content of the air above the fuel in aircraft fuel tanks (C-17)</td>
<td><strong>Objective:</strong> Develop more effective C2 of strategic airlift and refueling aircraft in remote areas</td>
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<td><strong>Commercial Use:</strong> To be adapted by large airliner manufacturers</td>
<td><strong>Commercial Use:</strong> Company has become a fast growing innovator in supply chain management of hardware and software systems.</td>
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**Oxygen Sensor**

TauTheta Instruments, InterSpace, Physical Sciences

**Heat Pipe Wick Structure**

Thermacore International, Inc.

**Objective:** Develop compact and innovative cooling system for electronic components
**Commercial Use:** Thermacore’s technology is found in almost all laptop computers sold today and has been used successfully to cool many other types of electronics.

**Piezoelectric Vibration Dampening Material**

Active Control Experts

**Objective:** Develop material that would dampen the vibration in turbine engines
**Commercial Use:** Licensed the technology to K2, a snow ski manufacturer that now sells the Merlin IV, made out of that exact material, for about $750 a pair.

**Command and Control (C2) of Airlift Assets**

ConnectedWireless Corporation

**Infrared (IR) Focal Plane Array**

Fermionics Corporation

**Objective:** Improve semi-conductor quality to in-turn improve performance of IR Focal Plane Arrays for numerous AF applications such as Space Based IR System (SBIRS)

**Commercial Use:** Considering transfer of technology to other aircraft that present less demanding flight environments.
Why is the AF SBIR Program Important?

- AF SBIR program is the largest of the DoD agencies (approximately $340 million)
  - SBIR provides a rich source of technological innovation in a wide array of technology areas
  - Serves as potential feeders for follow-on Critical Experiments and Advanced Technology Demonstration Programs and to tech efforts focused on solving near and mid-term Product Center technology challenges

- Small Businesses
  - Hold 41% of US Patents
  - Obtain 13 times more patents per employee than large business concerns

AF SBIR Program: Facilitates Technological Innovation for the AF Science & Technology Base
Air Force has sought to improve the effectiveness of the SBIR Program

- 2004 & 2005 legislative initiatives requested a percentage of SBIR budget for administrative functions

- Congress approved a Commercialization Pilot Program (CPP) in 2006
  - Focused on accelerating the transition of SBIR developed technologies and products to Phase III and into the acquisition process
  - Permits 1% of each services SBIR budget to accelerate the transition of technologies and products
Air Force Product Center / AFRL Hunter/Gatherer Process

• Senior leader engagement
• Joint AFRL/Product center process
• Multi-directorate AFRL engagement
• PEO/TEO approval
• SPO Primes participation

Strategy Driven Process
AF SBIR CPP Focus
(Transition Support)

- AF hired SBIR contractor support personnel to facilitate transition
  - Embedded at Product Centers, JSF and F-22 SPOs
  - Used to gather PEO's technology based needs
    - Facilitate “match.com” SBIR workshops with primes and small businesses
    - Work with local AF SBIR Program Managers
    - Assists in identifying SBIR Phase II programs with high probability of transitioning
  - Creating a “tool box” of small business assistance instruments
    - Mentor-Protégé and Manufacturing Technical Production Programs, etc
AF SBIR CPP Focus (Transition Support)

- Supporting Product Center/AFRL technology needs gathering process
  - More strategic SBIR topic generation process with closer ties to acquisition community and prime contractors
  - Future SBIR topics solving stated Product Center tech needs facilitates technology transition

- Supporting SBIR technology interchange workshops with each Product Center
  - Provides “match.com” service between Product Center, Primes, and SBIR small businesses
  - Identification of SBIR Phase II efforts directly associated with Product Center’s technology based needs
  - Assisting in identifying SBIR Phase II programs with high probability of transitioning
  - Tracking and recording all SBIR product transitions, compiling a list of the projects commercialized and publishing success stories
  - Air Force acts as “Honest Broker”
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Conclusion

- Air Force has a record of successes
- Working better communication between product centers, warfighters, prime contractors, program offices and small businesses
- More focused direction of the entire SBIR program toward CPP model
- SBIR program is a valuable tool in meeting warfighter needs

AF SBIR Program: Focused on Technology Transition