

# Department of Defense Technology Transfer, Transition, and Manufacturing

**2007 Beyond SBIR Phase II: Bringing Technological  
Edge to the Warfighter**

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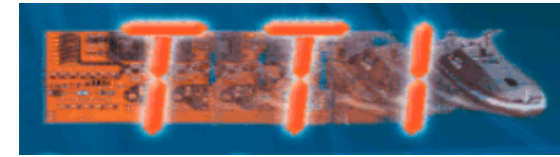
# Beyond Phase II: SBIR Goals

- **Stimulate technological innovation**
- **Increase small business participation in federal R&D**
- **Foster & encourage participation by minority & disadvantaged persons in technological innovation**
- **Increase private sector commercialization of innovations derived from federal R&D**





# Technology Transition Initiative (TTI)



## Congressional Language:

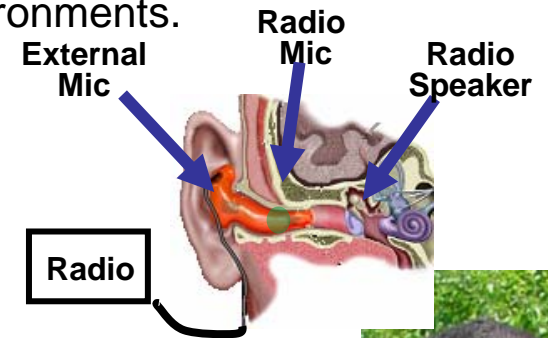
- Facilitate the rapid transition of new technologies from S&T programs of the DoD into acquisition programs of the Department for the production of such technologies.

## Objectives:

- Accelerate the introduction of new technologies into operational capabilities for the armed forces.
- Successfully demonstrate new technologies in relevant environments.

## Criteria:

- TTI Funding Accelerates Product Transition\*
- Project is from DoD S&T Base \*
- Cost Sharing to leverage funding\*
- Less than 4 years TTI Funding\*
- Established exit criteria
- Joint Focus
- Value to the Warfighter
- Technology mature – TRL 6 or 7
- Commitment to Acquisition/Procurement Path



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### Authority

- Authorized by Title 10, USC, Sec 2395b

### Purpose

- Provides ***increased opportunities*** for the introduction of ***innovative and cost-saving technologies*** into DoD acquisition programs
- Provides an “on-ramp” to DoD acquisition system for small and medium vendors
- Funds for the ***Test and Evaluation of technologies that have potential*** to improve current acquisition programs at component, subsystem, or system level
- Uses an established network of Service and USSOCOM liaison offices

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# Defense Acquisition Challenge (DAC)

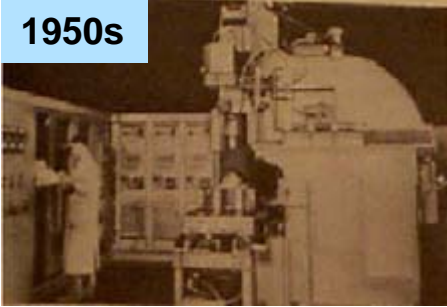
- Started in 2003 – Section 2359b, USC Title X; high HASC interest
- Anyone can propose **innovations** that could **quickly improve**:
  - Affordability, manufacturability, performance, or capabilities ... at a system, subsystem or component level
  - 10:1 program ROI to date!
- Proposals “**challenge**” existing technology or methods
  - Evaluated for merit & feasibility – must meet **warfighter requirements**
    - TRL = minimum high 6, ready to field
  - If testing proves successful, innovations inserted into a **program of record**
    - **Test to procure**
  - Entry into DoD acquisition for non-traditional defense industry
- **Competitive**: Annual Broad Agency Announcement (BAA) in Federal Business Opportunities & unsolicited proposals
- For more details: <https://cto.acqcenter.com/>





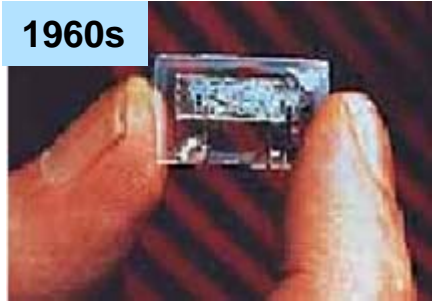
# ManTech Legacy: 50 Years of Success Supporting Military Requirements & the Defense Industrial Base

1950s



- Developed the original NC machine tool and associated programming language
- AF investment at MIT

1960s



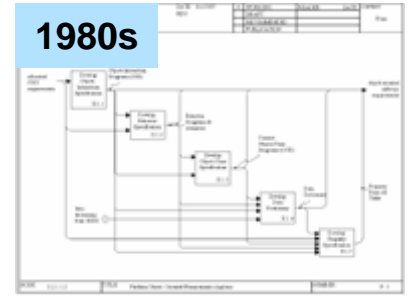
- Components for first integrated circuit calculator
- AF / Army

1970s



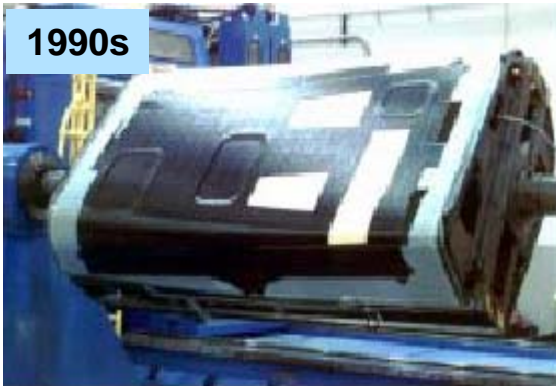
- Paved way for comprehensive night vision development program
- Army investment in image intensifier tubes

1980s



- Standard modeling methodology for mfg.
- AF's Integrated Computer Aided Mfg. (ICAM) program
  - Facilitated industry-wide ICAM Definition Modeling tool (IDEF)

1990s



- Multi-axis NC-machine tool enabled manufacturing of complex composite shapes
- Now an industry-wide standard process
- Navy's Adv. Fiber Placement initiative

2000



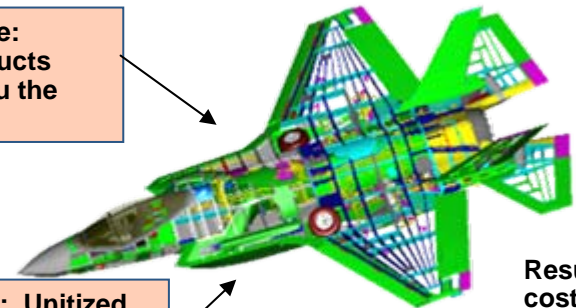
- Enabled fielding of lightweight body armor used in Operation Enduring Freedom
- Army developed affordable mfg. processes

2000 +

## Composites Affordability Initiative (A, N, AF Joint Investment)

Center Fuselage: Unitized Inlet Ducts saves 8,000 thru the duct fasteners

Forward Fuselage: Unitized Side Panels saves 1,000 Fasteners



Result: \$5M cost savings To Lockheed JSF airframe (baseline to EMD design)

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[www.techlinkcenter.org](http://www.techlinkcenter.org)

# TechLink

## KEY ACTIVITIES

1. Licensing DoD-developed technologies to companies
2. Establishing cooperative R&D agreements between DoD labs and companies
3. Helping DoD acquire innovative technologies through the DoD SBIR and IR&D programs

## STATISTICS

1. Over 300 technology transfer partnerships established between companies and DoD labs
2. Brokered 30% of all DoD patent licenses nationwide FY 2003-2006
3. Providing 4:1 return on investment to DoD from technology transfer activities



Partnering with the Department of Defense

The Door Is Open ...

In licensed technology at the Department of Defense, through TechLink, partnering with O&D for faster product development and commercialization of new technologies has never been easier. From technology prospecting to licensing assistance, TechLink can connect you with the right DoD technologies and partnering opportunities. Take the first step. To learn more about TechLink and how it can assist physicians and senior companies, visit <http://techlink.dau.moscowia.edu/photonics.htm>.

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Moving Technology from Minds to Markets





# Dept. of Commerce/NIST/MEP

## Manufacturing Extension Partnership

*Supporting U.S. industry, Federal Laboratories,  
and DoD suppliers with technology transfer, transition  
and commercialization.*

**Goal: to help manufacturers transition  
new technology more quickly, efficiently,  
and cost-effectively to the U.S. warfighter.**

**The MEP National System strengthens the global  
competitiveness of U.S. manufacturing by providing  
business and technical assistance to companies using DoD  
technology, or to companies that are developing new  
technologies that enhance the value of products and  
services supplied to Defense.**

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DOC (NIST) MEP: [dan.pitkin@nist.gov](mailto:dan.pitkin@nist.gov) 301-975-4734***







# MILTECH



- A partnership between TechLink and the Montana Manufacturing Center
- Goal: To help manufacturers *transition* new technology more quickly, efficiently, and cost-effectively to the U.S. warfighter
- Currently implementing a pilot program in Montana and Northwest
- This partnership is adding significant value to DoD technology transition

## Key Objectives:

- Accelerating the transition of new technology to the U.S. warfighter
- Lowering the cost and cycle time of technology acquisition
- Enabling DoD to more fully benefit from its R&D funding to US small business

*You're Looking at a STORM!*

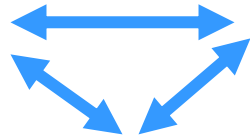


*Light-weight laser rangefinder transitioned with MilTech assistance*





TechLink

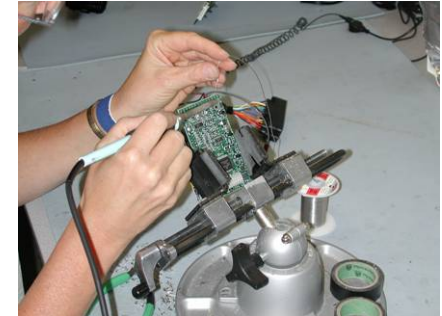


MONTANA  
MANUFACTURING  
EXTENSION CENTER  
An affiliate of the NIST Manufacturing Extension Partnership

MILTECH

## Targeted companies include:

- TechLink clients that have licensed DoD technology or entered into DoD CRADAs
- TechLink clients that have developed DoD-related technology with SBIR funding
- MEP clients that are undertaking manufacture of new technology for DoD



## Key activities include helping companies:

- Contact DoD PMs and determine DoD technical needs and requirements
- Scale-up and manufacture new technology for DoD use (issues of equipment, tooling, materials, costs, etc.)
- Get new technology into DoD operational use – *faster, better, and cheaper!*





## Improved Laser Rangefinder

**Objective:** Transfer, commercialize, and rapidly transition the Army monoblock laser technology for use in weapon systems

**Challenge:** “Ruggedize” the monoblock laser for field deployment and overcome manufacturing scale-up hurdles to meet accelerated DoD demand

**Technology:** A novel, solid-state “monoblock” laser resonator developed by the Army CECOM RDEC Night Vision Lab that reduces the number of components and improves alignment, reducing the size, cost, and power requirements of laser rangefinders

**Status:** Licensed from the Army by Scientific Materials Corp., Bozeman, MT, with **TechLink** assistance. **MilTech** helped the company ruggedize the laser and overcome manufacturing challenges. Now integrated into the Army’s STORM (Small Tactical Optical Rifle Mounted) laser rangefinder/ target designators. Also being integrated into weapon systems on Stryker vehicles and attack helicopters. Being procured by the Army and deployed in Iraq and Afghanistan.





# HemCon Bandage

**Objective:** Commercialize and rapidly transition the HemCon bandage to warfighter use in Iraq and Afghanistan

**Challenge:** Overcome manufacturing problems to improve product design, increase production, reduce cost, and ensure timely delivery to meet high DoD demand

**Status:** Developed by HemCon, Inc. with funding from the US Army Combat Casualty Care Research Program. **MilTech** helped HemCon to overcome manufacturing challenges to meet high DoD demand. By DoD directive on 9/20/05, every US soldier deployed to Iraq and Afghanistan is required to carry at least one HemCon bandage. Approximately 100,000 HemCon bandages have been delivered to DoD following **MilTech** assistance.

**Technology:** A novel wound dressing that rapidly stops severe bleeding, bonds firmly, sterilizes wounds, and releases readily when desired. Recognized as one of the Army's "Top 10 Greatest Inventions of 2004"





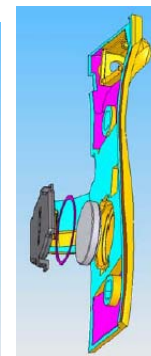
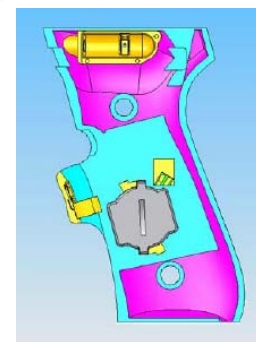
## Grip-Activated Laser Aiming System

**Objective:** Ruggedize and waterproof the internal laser circuitry to improve reliability for DoD use in wet environments

**Challenge:** The manufacturer, Crimson Trace, lacked the internal R&D staff to develop a ruggedized, waterproofed version of the Lasergrips to meet DoD needs

**Technology:** Compact, grip-activated laser aiming system. “Lasergrips” replace standard grips on a wide range of military pistols. Gentle pressure on the grip activates a laser that projects a red laser beam where the pistol will shoot. “Lasergrips” improve pistol marksmanship training and warfighter lethality.

**Status:** MilTech successfully bridged the gap between company capabilities and DoD needs by developing a ruggedized, waterproof design of the “Lasergrips” that can be easily manufactured. This improved version is now being procured by SOCOM.





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