

Focus on Phase III

(Defense Technology Transition & Commercialization)

Partnering with the Department of Defense for
Developing Medical & BioDefense Technologies

*Technology Licensing, CRADAs, SBIR/STTR
& Transition Assistance programs*



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*SBIR & Technology Transition Manager
2007 Heartland Security Conference*



TechLink is an Authorized
U.S. Department of Defense
Partnership Intermediary per
Authority 15 U.S.C. 3715



TechLink

- **Established 1996 to support NASA regional Technology Transfer**
- **Defense TechLink began FY99 to support national DoD Technology Transfer requirements**
- **Currently the primary DoD-wide “Partnership Intermediary” for Technology Transfer**
- **Under OSD: DUSD (AS&C) OTT**
- **Recognized as one of 9 “exemplary models” nationwide of federal technology transfer (U.S. Dept. of Commerce, 2003)**



Defense TechLink Mission:

Link DoD labs with companies for development and commercialization of new technology

Purpose:

- Help DoD transfer and acquire new technology
- Increase the competitiveness of U.S. industry

Key Activities:

National:

- Licensing of DoD Technologies for commercial and Dual Use applications

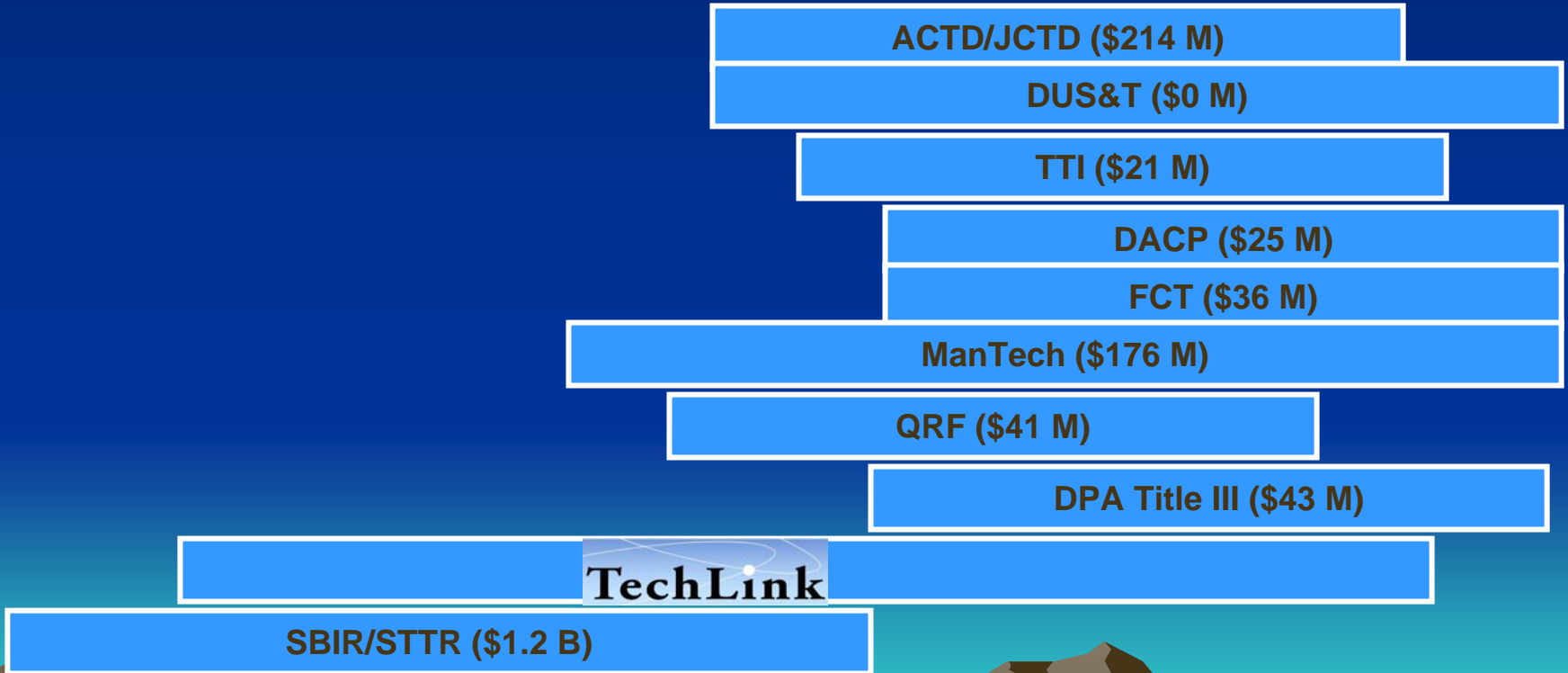
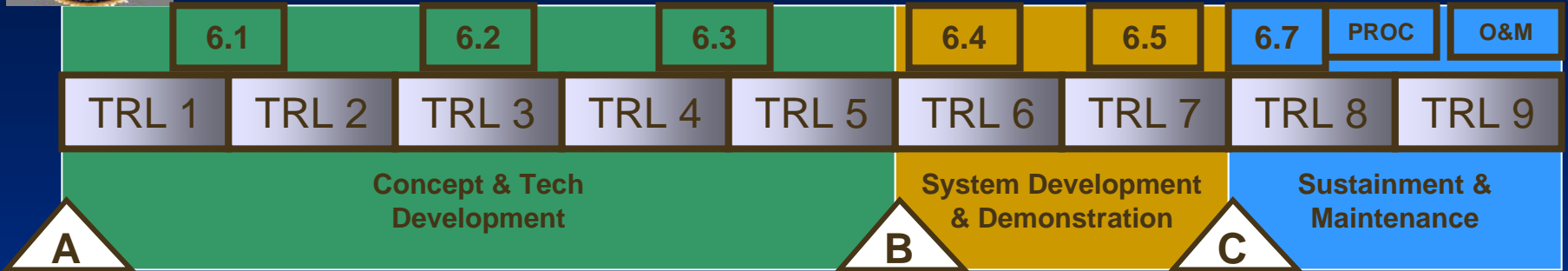
Regional:

- Establish Joint R&D projects between DoD and companies for new technology development (CRADAs)
- Help DoD in acquisition of new technologies via SBIR, other agreements focused on Technology Transition

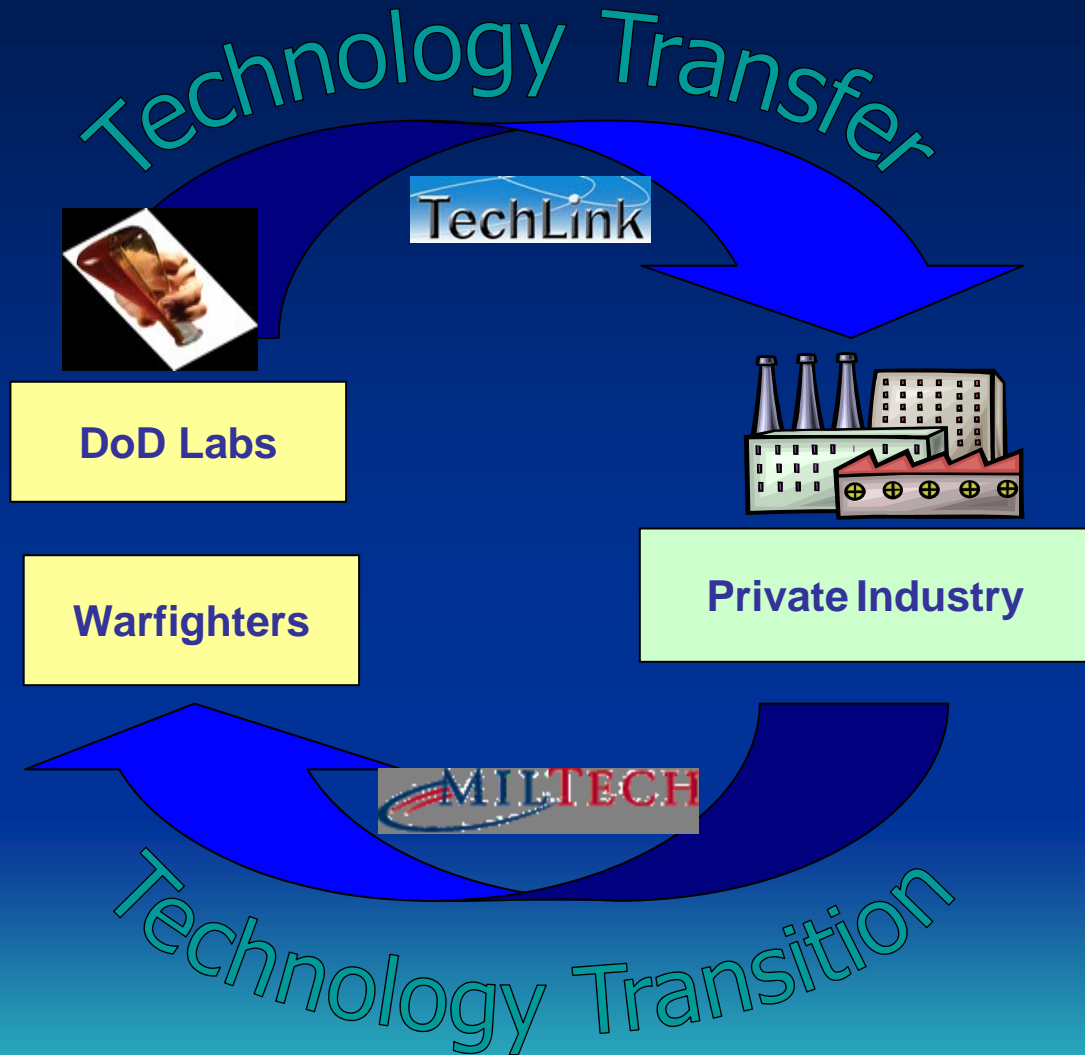




Key DUSD (AS&C) Transition Programs:



TechLink's Roles for DoD:



Finding & Acquiring New Technology

DoD Technology Licensing Opportunities:

- Technology already developed for DoD needs, dual-use
 - Available for small fraction of development cost
- Can significantly enhance your own technology
- Can increase your perceived credibility
- Can build your connections with funding agencies
- May even serve as basis for other funding opportunities

TechLink can help!

Authorized U.S. Department of Defense Partnership
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Leveraging Your Resources

Advantages of a CRADA (Cooperative R&D Agreement):

- Tie into significant R&D capability at little or no cost
- Utilize specific R&D capability available nowhere else
- Increase your perceived credibility based on partnership
- Become familiar with DoD customer's needs, culture
- Agency personnel become familiar with your capabilities for potential advantage
- Often opens doors for other funding opportunities

TechLink can help!

Authorized U.S. Department of Defense Partnership
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Licensing Example: Portable Medical Sterilizer

- **Developed by Army Natick Soldier Center & Army Institute of Surgical Research**
 - **Uses small qty of chemical powder and water to produce chlorine dioxide**
 - **Gas scrubber allows indoor use**
 - **No external power required**
- **Licensed to Primus Sterilizer (Omaha, NE) and ICA TriNova (Newman, GA)**
- **Companies jointly developing and testing for regulatory approval**
- **Systems to be used for military surgeons and international disaster relief efforts**



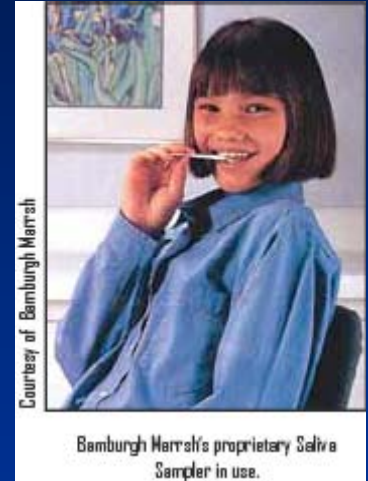
Licensing Example: Medical Info Management

- **Battlefield Medical Information System-Tactical (BMIS-T) developed by Army Telemedicine and Advanced Technology and Research Center (TATRC) - over 5,000 units in military use**
- **Software on palm computer, scans Personal Information Carrier (electronic dogtag) for medical history**
- **Rapid entry of injury info, receives diagnosis and recommendations for initial treatment, transmittal for follow-up care**
- **Licensees include Doctor's Business Services (DBS); GlobeCom 21, Inc.; LogicaCMG; Vista Partners; and CHI Systems**



Licensing Example: TB, Anthrax Tests

- Naval Institute of Dental and Biomedical Research (NIDBR) developed two separate saliva-based tests:
 - Rapid (<20 min.) saliva-based tuberculosis diagnosis
 - Anthrax immunization status test strip - color change indicates status in minutes
- Both licensed by Bamburgh Marrsh LLC (Vancouver, WA)
- Company also participating in CRADA with Naval Medical Research Center to optimize the test with the Bamburgh Marrsh sampler and to gather additional data for rapid 510(k) FDA clearance.





Part of TechLink's Mission for DoD:

Help DoD in finding and acquiring critical new technologies to support the needs of the Warfighter

- ❑ May be “Dual Use” applications of DoD-developed technologies
- ❑ Important role of DoD SBIR Program to acquire specified new technologies or capabilities from innovative small technology firms.
- ❑ SBIR assistance focused on capable companies demonstrating intent to follow through to Transition (as qualified DoD contractors/subcontractors)
- ❑ Help in expanding the U.S. small business technology base

Overview: SBIR/STTR

- Small Business Innovation Research
Small Business Technology Transfer
- Federally mandated programs (since 1982/1992) for agency funding of small business (<500 empl.) R&D to develop new commercial products/services
- FY07 Budgets:
 - SBIR: >\$2 Billion
 - 2.5% of extramural R/R&D for agencies >\$100 M
 - STTR: ~\$200 Million
 - 0.3% of extramural R/R&D for agencies >\$1 B
 - Doubled in FY04 from 0.15%



SBIR/STTR Overview (cont.):

3-Phase Program:

- **Phase I: Feasibility Study**
 - “Typically” 6-month, \$70K - \$100K
- **Phase II: Proof of Principal/Prototype**
 - “Typically” 2-year, up to \$750K (or more)
- **Phase III: Commercialization** (or “Transition” to DoD procurement programs)
 - No SBIR/STTR funding
 - May be government procurement
 - Possible Phase II “Enhancement” to get there



SBIR/STTR Summary Info:

	SBIR	STTR
Total Ann. Amt.	~\$2 Billion	~\$200 Million
Agencies	11	5 (DoD, DOE, NIH, NASA, NSF)
Phase I (~15% win, higher for STTR)	Typically \$75K 6 months	Typically \$100K 12 months
Phase II (~40% win)	Typically \$750K 24 months	Now \$750K 24 months
(University) Phase I: Subcontracts Phase II:	Allows up to 1/3 Allows up to 1/2	<u>Requires</u> 30 – 60% <u>Requires</u> 30 – 60%



Key Requirements for SBIR Success:

○ Innovation

- New Product or Technology
- New Application of Existing Technology

○ Research

- Research of the Feasibility of the Project
- Not Market Research
- Not Strictly Product Development

○ Commercial Applications

- Societal Need and Commercial Potential
- Specific Agency Need and “Dual Use”



TechLink's DoD SBIR Assistance:

(For Qualified Companies in Greater NW Region)

- **Specific SBIR Assistance:**
 - Facilitate discussions with TPOCs, other DoD contacts
 - Guidance through process, technical relevancy
 - Travel support to visit DoD labs, Primes
 - Expert outside proposal review, graphics, commercialization planning
 - Incentives for timely drafts, submission
 - Additional partnering for improved project development
- **Technology Partnerships with DoD Labs**
 - Add major value to company's R&D efforts
 - Improve understanding of DoD needs
 - Often lead to contracts, other opportunities



Transition: *Critical Focus for DoD SBIR*

Goal is to convince the customer (DoD reviewers) that you have a clearly defined pathway to their end-product:

- Credible R&D Capability
- Strategic Partnerships
- Alliances with appropriate Primes
- Thorough familiarity with customer's need and product use



Federal law permits sole source contracts for technology developed under SBIR

Transition: Bridging the Gap from R&D to Systems Applications

TechLink



Primes



Partnerships



LABORATORY



Keys to DoD SBIR Success:

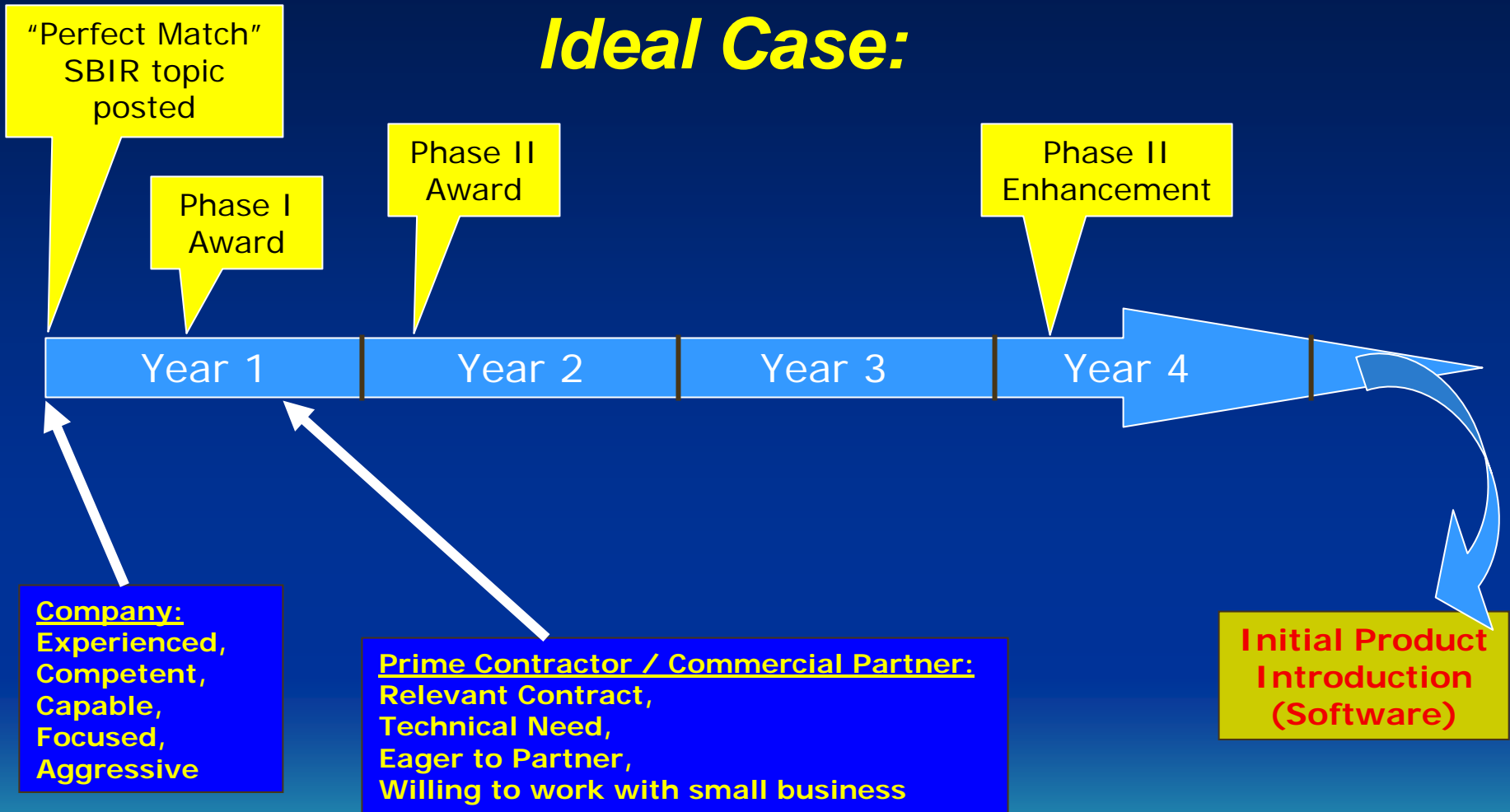
Build long-term relationships with appropriate DoD labs and organizations

- *Plan to be in for the long haul*
- *Seek, build mutually beneficial relationships*
 - *CRADAs, Licenses, other Partnerships*
- *Emphasize Service, Value to DoD and the Warfighter*
 - *Other funding opportunities may arise*
 - *Potential “slice of the pie,” vs. SBIR “seed money”*
- *Plan for “Dual-Use” Success!*



Timeline: SBIR to Commercialization

Ideal Case:

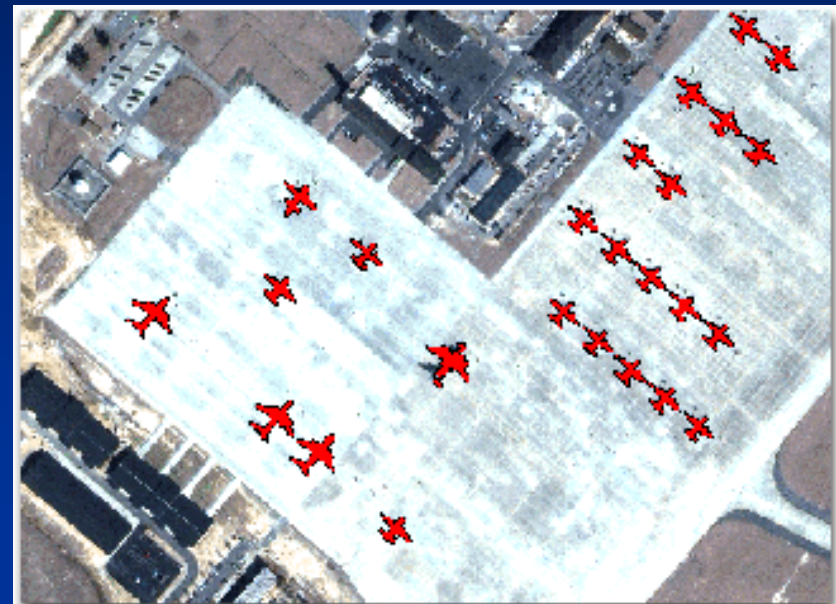


Client Example: Visual Learning Systems, Inc.

Transition Success: Feature Analyst™ Software

Technology: Software for automated feature extraction in hyperspectral or panchromatic images. Learning algorithms are orders of magnitude faster than manual digitizing, also easy to train.

- Developed under multiple SBIRs:
 - 3 NASA SBIR awards, 3 NSF
 - Army TEC Ph. I & II, NAVAIR Ph. I & II
- CRADAs & Partnerships with Gov't:
 - Army TEC & NUWC CRADAs
 - NASA TCA
 - NIMA & NRO partnerships
- Partnered with Primes:
 - ESRI, Leica, BAE, Intergraph

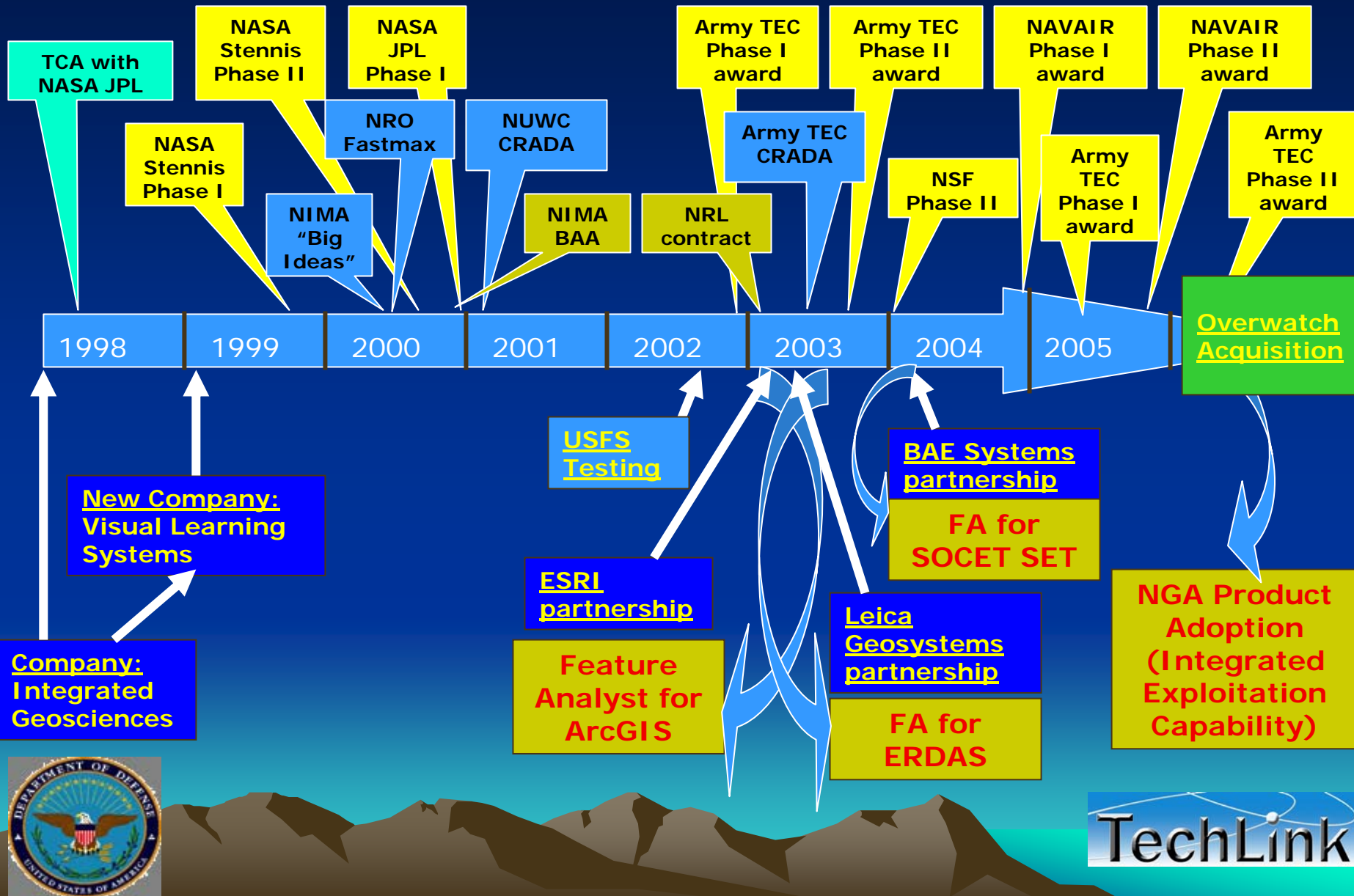


One Click Feature Extraction using Feature Analyst

Chosen by NGA for deployment across all NGA's Integrated Exploitation Capability (IEC) workstations – Now Dual-Use (Commercial & Military) Success!



Timeline: Feature Analyst Transition



Client Example: TenXsys, Inc. (Eagle, ID)

Medical Physiological Monitoring

SMART (Sensor Monitoring and Relay Transmission), designed to improve amputee monitoring during rehabilitation, provide health and motion monitoring sensor and analysis system for military personnel with prosthetic devices.

- Funding under OSD SBIR from U.S. Army Research Institute of Environmental Medicine (USARIEM) in Medical Research and Materiel Command.
- Previous NASA and USDA SBIR awards helped co. develop advanced wireless networking capability, methods for powering sensors and data transmitters using motion of animals being tracked and monitored.

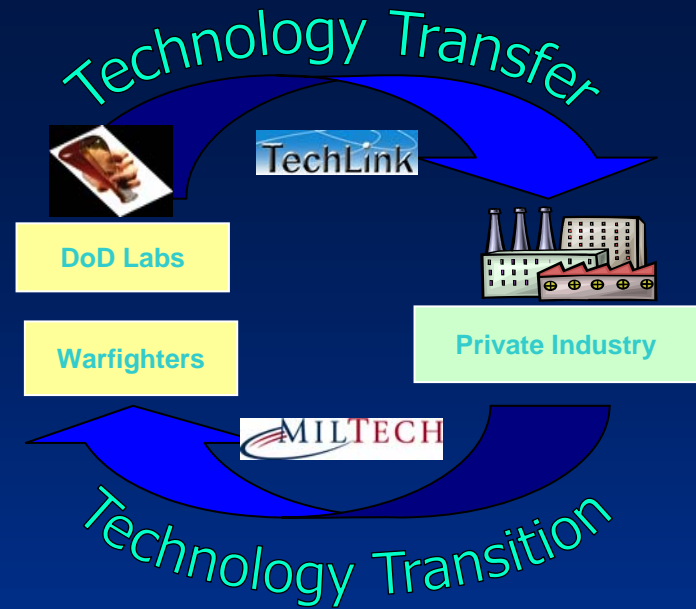


TechLink assistance for travel, networking led to In-Q-Tel priority investment (\$ multi-million) for applications to Defense HUMINT (Human Intelligence)





- MilTech is a partnership between TechLink and MMEC
- Mission: Transition innovative technology to the US warfighter faster, better, and more cost effectively
- Activities
 - Product design, manufacturing and management assistance
 - Sustainability/Commercialization for licensees
- Benefits
 - Improve DoD's return on R&D investment
 - Critical technology into soldier use quickly and reliably



HemCon Bandage



MilTech Assistance

- Customized equipment operations manual and quality system
- Major yield improvement
- Financial sustainability

Instantly stops bleeding, saves lives, reduces post-trauma injuries/amputations



Field Portable Medical Sterilization



MilTech Assistance

- Component integration
- Product ruggedization, design for life-cycle-cost reduction
- Product testing

Improved sterilization of deployed medical equipment



Air Force First Responder Medical Bedding



MilTech Assistance

- Develop sustainable supply chain
- Implement quality and lean production
- Achieve over 1000% growth

Reduced hypothermia, Increased survivability

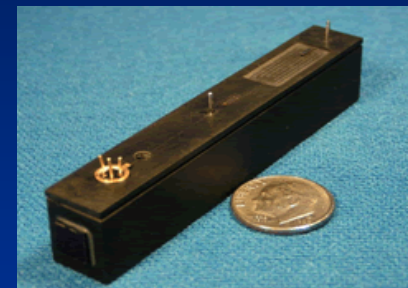
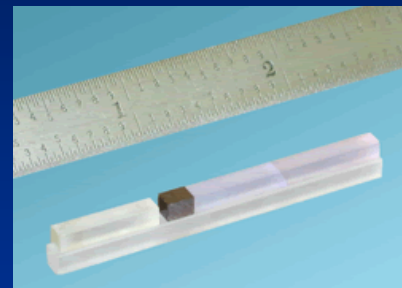


Client Example: Scientific Materials Corp.

Transition Success: Monoblock Laser (STORM)

Technology: Manufacturing method for eye-safe rugged solid-state microlaser developed at Army CECOM under ManTech (2000 – 2001)

- Company participant in ManTech project
- Enabling materials developed under SBIRs
- License to SMC completed 2003
 - World-class laser/optoelectronic crystal production capabilities via multiple SBIRs
- TechLink/MilTech assisted with monoblock production improvement
- Used in Small Tactical Optical Rifle Mounted (STORM) Micro-Laser Rangefinder (MLRF)
 - Thousands now deployed
- SMC bought by FLIR for \$13 M





TechLink Results

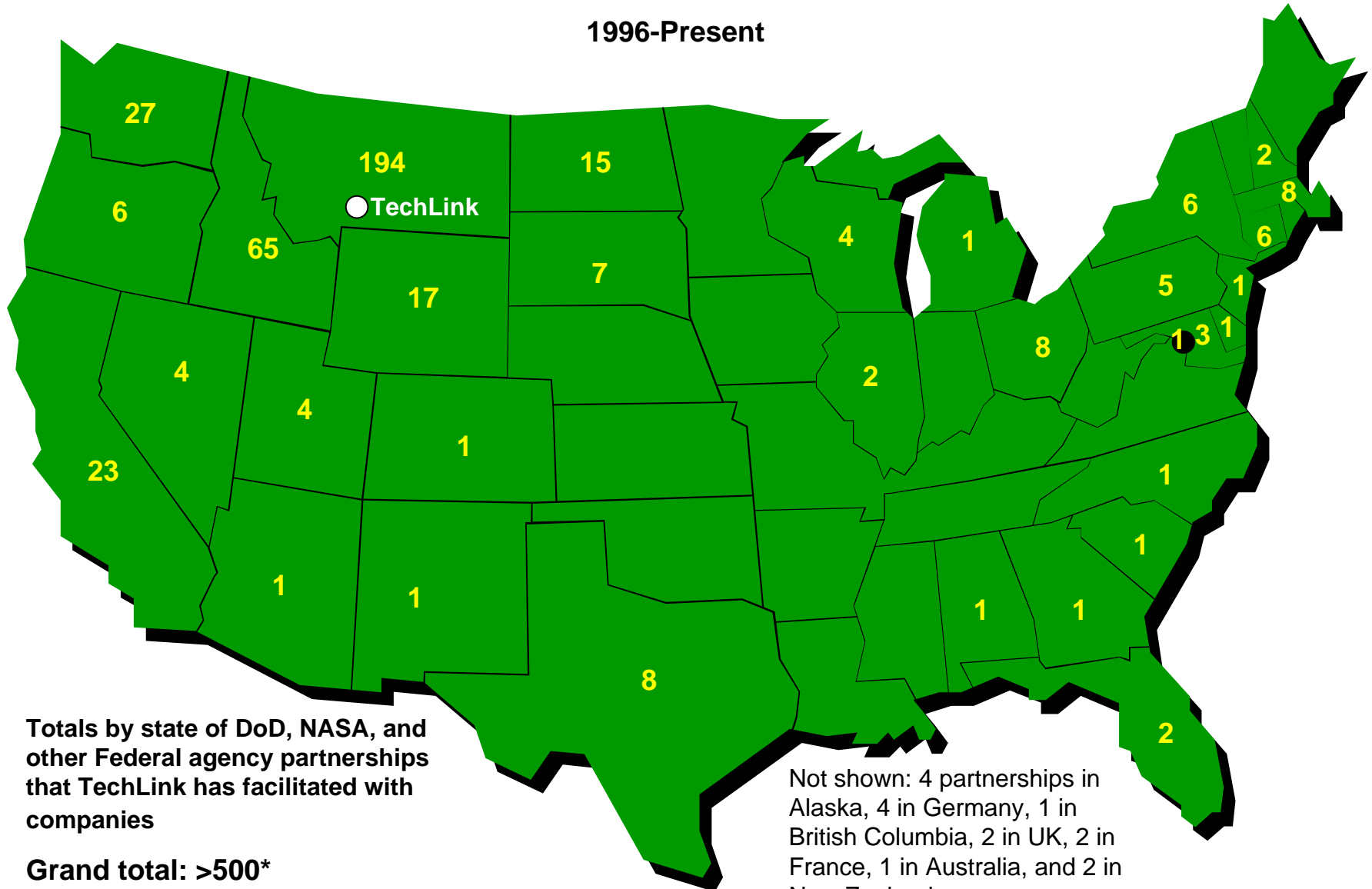
- **Over 500 partnerships between companies and DoD, NASA, and other federal agencies**
- **Assisted regional companies in securing over \$85 Million in new R&D funding**
- **Includes 170 SBIR/STTR Phase I, II, III awards worth > \$66 million**
- **Over 30% of all DoD technology licensing nationwide in FY03, FY04, FY05, FY06**



Recognized by the US Department of Commerce, Office of Technology Policy,
as one of nine exemplary models nationwide of federal technology transfer

Distribution of TechLink Partnerships

1996-Present



Totals by state of DoD, NASA, and other Federal agency partnerships that TechLink has facilitated with companies

Grand total: >500*

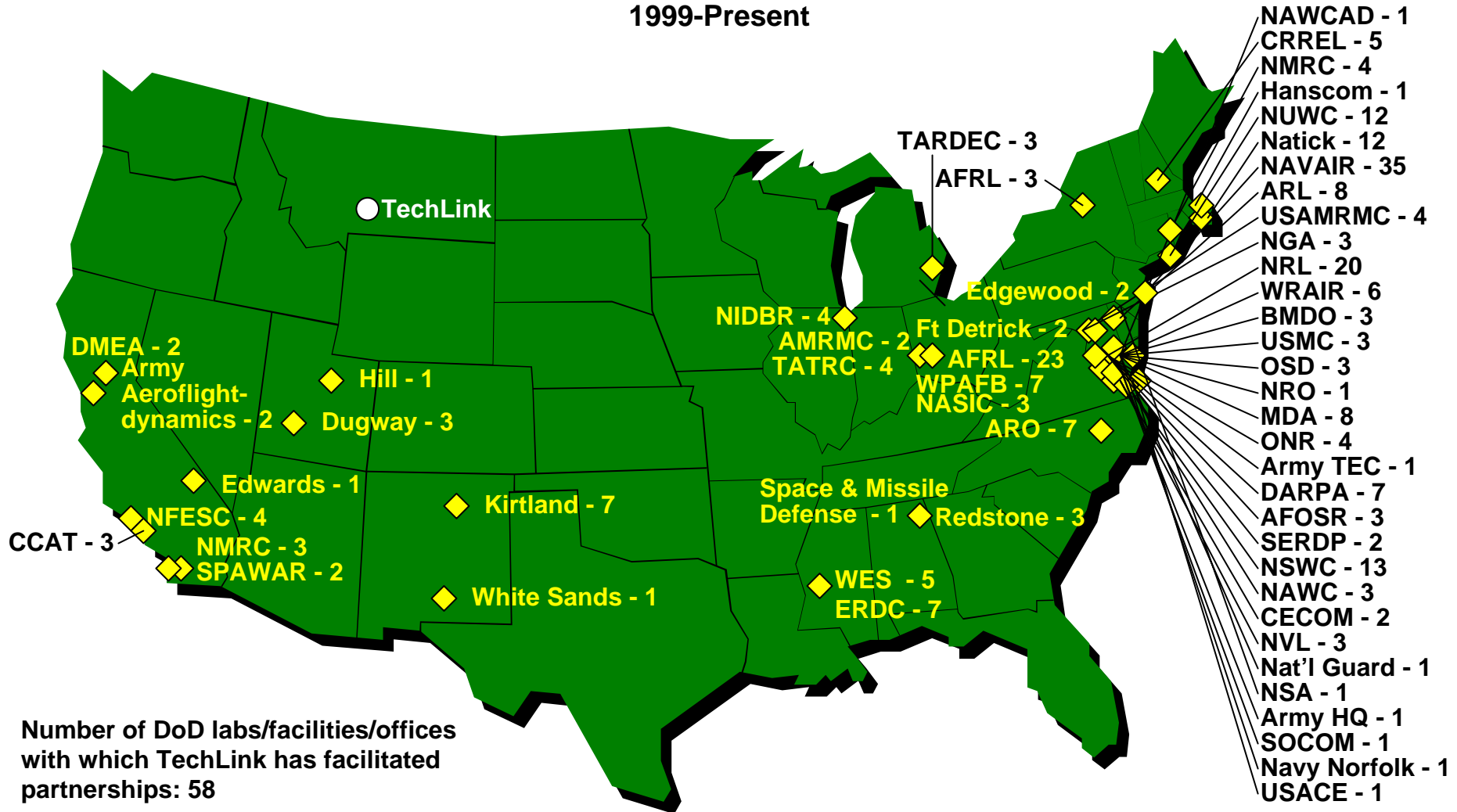
*Some partnerships involve multiple companies

Not shown: 4 partnerships in Alaska, 4 in Germany, 1 in British Columbia, 2 in UK, 2 in France, 1 in Australia, and 2 in New Zealand

Updated Nov. 30, 2005

DoD Lab Partnerships

Totals represent completed TechLink-facilitated partnerships with DoD labs
1999-Present



For Further Information:

For MN SBIR/STTR: Ms. Betsy Lulfs, MN DEED:

www.deed.state.mn.us/sbir

SBIR news, information and topic search engine:

www.zyn.com/sbir

Information on TechLink's DoD SBIR assistance:

www.techlinkcenter.org/sbir

TechLink's DoD licensing assistance, MilTech:

www.techlinkcenter.org

