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**Good practice Identification –
Advice for transferability
United States –
Public Procurement
SBIR and STTR**

February 2008



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CHAPTER I: Good practice identification

1 General description of the good practice

Brief Background on the SBIR and STTR Programmes

The U.S. Small Business Innovation Development Act of 1982 created the Small Business Innovation Research (SBIR) Program by mandating that all federal research and development (R&D) agencies that award more than \$100 million in R&D contracts annually create a SBIR program and set aside 1.25 percent of their extramural budget for funding SBIRs; the percentage later was increased to 2.5 percent. The Act outlined four basic goals:

- To stimulate technological innovation.
- To create a pathway to use innovative small businesses to address federal agency R&D needs.
- Encourage participation in R&D and contracting in innovation-related areas by minority and disadvantaged businesses.
- Increase the private-sector commercialization of innovations based on federal R&D.

SBIR operates in 10 federal agencies and provides funding to SMEs (under 500 employees) in three phases. Phase I awards of up to \$100,000 are used to test the feasibility of a particular concept. If phase I proves successful, the company can apply for a two-year Phase II award of up to \$750,000 to further develop the concept, usually to the prototype stage. Proposals are judged competitively on the basis of scientific, technical, and commercial merit. Following completion of Phase II, SMEs are expected to obtain funding from the private sector and/or non-SBIR government sources in "Phase III" to commercialize products, processes and services for sale back to the government or the private sector. The Small Business Technology Transfer (STTR) Program is similar in structure to SBIR but funds cooperative R&D projects involving a small business and a research institution, most often a university.

In recent years, the SBIR program has increased its emphasis on commercialization and "transitioning" SBIR products, processes and services back to the federal government for acquisition (procurement) purposes. One program aimed at doing this is the U.S. Department of Defense's Commercialization Pilot Program (CPP), started in 2006, in which each major sub-agency is developing a plan to help transition products and processes for immediate procurement and application to government agency needs. Other agencies such as the National Institutes of Health and National Science Foundation have started smaller programs that provide mentors and/or enterprise forums designed to introduce SBIR firms to potential investors.

Navy SBIR Commercialization Pilot Program and Transition Assistance Programme

The U.S. Department of Defence (DOD) represents 51 percent of all SBIR funding and within DOD, the Navy represents over one-fourth of total DOD SBIR funding. The Navy has two programs to enhance commercialization and procurement by SBIR firms: the new Commercialization Pilot Program (CPP) and the more established Transition Assistance Program, which is the main focus of this "good practice."

The Commercialization Pilot Programme

Beginning in 2006 the Navy started to develop a strategy for CPP among its units that would provide assistance and incentives to SBIR participants in the "technology transition stream" (that is, moving products, processes and services from SBIR Phase II to a commercialization stage that would facilitate SBIR firms' sales to the private sector or to the government, either directly or as a subcontractor through a prime contractor to the government.) The Navy (as well as other Defence

Commercialization Pilot Programs') objectives closely mirrored the Congressional intent of the 2006 National Defence Authorization Act:

- Accelerate and/or improve transition of SBIR-funded technologies to Phase III using incentives and other forms of assistance.
- Enhance connectivity among SBIR firms, large defence contractors and agency R&D and acquisition communities.
- Improve SBIR firms' capability to provide technology to DoD military services.
- Establish success metrics, track and report CPP process actions and results.

The Navy (and other DOD agencies) set aside one percent of their SBIR budget to fund the CPP; in FY 2007 this represented about \$3.6 million of the Navy SBIR funding. Through the CPP, SBIR Phase II firms submit proposals that are selected by Navy reviewers based on those firms that have the best chance to rapidly develop and commercialize products/processes that can be used by the Navy and DOD. Navy reviewers also judge firms based on their ability to meet time lines, maturity of the technologies, and input from the agency program officers in terms of the usefulness and efficacy of the technology for DOD purposes. Selected firms are funded between \$500,000 - \$2,000,000 over about a two year period. In FY 2007, 20 firms were funded.

The Navy Transition Assistance Programme

The Navy Transition Assistance Program (NTAP), started in 2000, is one of the SBIR's most comprehensive programs designed to advance and apply technologies for government acquisition and commercialization generally. The reader should note that most SBIR commercialization programs make little distinction between selling to the private sector and selling to the government. It is generally believed that by advancing technologies, government agencies such as DOD that rely heavily on technological advancements will ultimately benefit whether the SBIR result is procured immediately and directly by the government or whether it is sold in the private sector. This has changed somewhat in recent years as DOD needs have changed and increasingly require more immediate application of SBIR products, processes and services.

NTAP has two primary objectives:

- Facilitate DoD use of Navy-funded SBIR technology, and
- Assist SBIR-funded firms to speed up the rate of technology transition (with an end result of agency procurement) through development of relationships with prime contractors and various activities aimed at preparing the SBIR firm to deliver products.

NTAP is a competitive 10-month program offered exclusively to SBIR and STTR Phase II award recipients. The program is designed to help SBIR Phase II recipients:

- Identify and respond to the Navy customer's needs,
- Enhance the strategies for transitioning to Phase III,
- Develop a technical briefing for inclusion in the Virtual Acquisition Showcase®,
- Develop a business plan or other appropriate tool(s), and
- Present the SBIR firm's opportunities at the Navy Opportunity Forum®

The Navy contracted with a private contractor to develop and operate NTAP. The Program works with selected SBIR Phase II firms that are at the end of their first or in their second year of Phase II and have developed some technology "maturity." SBIR firms participate in NTAP voluntarily. The contractor works with SBIR firms in the following way:

- 1) Beginning in July of each year, the contractor helps the SBIR firm develop a commercialization plan that usually includes conducting market research and identifying a Navy technology platform. The company may suggest at this point that the SBIR firm tailor its

research and development (R&D) to a specific technology platform. They also identify corresponding government agency points of contact, budgets, etc. associated with the technology platform. The contractor's project managers often additionally assist by serving as liaisons between the SBIR company and the Navy point of contact and to learn more about the government agency's needs in specific technology areas. The managers help the SBIR firms develop "quad charts" that match the SBIR firms' technologies with the government agency's technology platform needs and work with them to develop a marketing scheme.

- 2) In January, the program moves from a planning to an "execution stage" starting with the SBIR firms attending an Advanced Transition Workshop. In this phase, the contractor helps the SBIR firms write descriptions of their technologies in language that potential customers and investors can understand. They also help the SBIR firms develop presentations that will be given at the Navy Opportunity Forum®.
- 3) In June, the Navy Opportunity Forum® is held, and is sponsored by the Navy Small Business Innovation Research (SBIR) Program Office. The Forum provides a way for government acquisition (procurement) officers, R&D managers, prime contractors, 1st and 2nd tier suppliers, and defence personnel to preview Navy-funded SBIR technologies. By the time the SBIR firm makes a presentation at the Forum, each firm will have developed a Phase III Transition Plan (commercialization plan) that charts a course to the successful transition of Navy-funded technologies to the appropriate defence applications.

SBIR firms make 20-minute presentations. The Forum is split into multiple tracks by technology area and is held over a three-day period. Six Forums have been held since 2000, and in 2007 over 1,600 people attended the Forum and almost 200 SBIR firms made presentations.

The Forum is the culmination of the year's work in preparing SBIR firms to showcase technologies for potential acquisition and investment. Government agency personnel are encouraged to attend the Forum in order to:

- Identify technologies that can directly address their current and future technology platform requirements.
- Review the status of funded R&D that meets their current technology requirements.
- Initiate relationships with small businesses (SBIR awardees) that have capabilities and technologies that supplement the use of their research and development funds and provide opportunities for partnering on future work.
- Identify new defence and commercial sector investment opportunities in small businesses that understand investor risk parameters.
- Preview numerous opportunities in relevant technology clusters in one location at one time.
- Network with well prepared businesses that have capabilities brochures, quad charts, briefings, and plans to transition.
- Take advantage of space provided for one-on-one, higher level conversations with company representatives.

Abstracts are prepared on each of the SBIR firms. The abstracts contain brief descriptions of the Navy needs and technology solutions that will be presented at the Navy Opportunity Forum®. (For an example see Addendum 1.) The abstracts are readily searchable on-line and enable the government acquisition officer, other potential customers and potential investors to easily locate opportunities of interest. In addition to the SBIR firms' abstracts, "Quad Charts" are available that show the agency's technology needs and the corresponding technology platforms of the SBIR firm. The abstracts and "Quad Charts" are available on-line through the Virtual Acquisition Showcase®. (For an example see Addendum 2.) The Forum participants are encouraged to search abstracts on the SBIR firms and access additional information available in the Virtual Acquisition Showcase®.

SBIR representatives that make formal presentations at the Forum are available throughout the three-day event at the exhibition area in which each SBIR firm has an individual exhibition “booth.” Private meetings between SBIR firms and government acquisition officers, potential customers, prime contractors and investors are encouraged and can be scheduled in advance on-line.

The contractor conducts follow-up with SBIR Firms at four “check points”: one-month after the Forum to inquire if the SBIR firm has had follow-on discussions with investors, prime contractors, and government acquisition officers, and to get feedback about the Forum; and at six months, 12 months, and 20 months after the Forum. The contractor surveys the SBIR firms on commercialization results such as: (a) dollars invested from private investors; (b) government “plus ups” (additional follow-on Phase II funding that is given to especially promising SBIR firms); (c) subcontracts with prime contractors; (d) sales to government agencies and others; and other results that are reported to the Navy SBIR Program Office.

In addition to these activities, each major acquisition program within the Department of Defence including the Navy has designated individuals that serve as SBIR Liaisons. The Liaison is knowledgeable about the technology needs of the government’s acquisition program and responsible for technology infusion into government programs. These Liaisons interface with the SBIR program managers within DoD and with the SBIR contractor community for the purpose of identifying and integrating appropriate SBIR technologies into their acquisition programs.

2 Please describe the selected good practice¹ in terms of:

2.1 Uniqueness:

Measure Name:		SBIR CPP & NTAP	
General description/rationale:			
CPP and NTAP are designed to advance and apply SBIR firms’ technologies for government acquisition and commercialization generally.			
Innovative characteristics as regards:			
Methodology	Organization	Function	Results
The NTAP primary objectives are to facilitate DoD use of Navy-funded SBIR technology, and to assist SBIR-funded firms to speed up the rate of technology transition (with an end result of agency procurement) through development of relationships with prime contractors and various activities aimed at preparing the SBIR firm to deliver products.	NTAP was developed and is operated by a private contractor. The SBIR CPP and NTAP are funded and administered by the SBIR Office of the U.S. Department of the Navy.	NTAP involves multiple levels of assistance to SBIR Phase II firms including helping them with commercialization planning, identifying and matching government technology platforms, preparing and presenting technology products and processes, and meeting with potential investors, government prime contractors, and private and government customers.	CPP is too new to produce results; and there are no publicly released results for NTAP. In general, commercialization rates for the Navy have been increasing and a little less than one in ten Navy-sponsored SBIR firms commercialize their technologies. This includes sales to government, subcontractors with prime contractors, sales to private sector, acquisitions by larger firms, etc.

¹A technique or methodology that has proven to reliably lead to the result that has been aimed for; An activity or procedure that has produced outstanding results in another situation and could be adapted to improve effectiveness, efficiency, ecology, and/or innovativeness in another situation.

2.2 *Relevance:*

Problem	Solution that was provided
Small technology businesses find it difficult to sell products to major government agencies.	NTAP helps SBIR firms respond to government needs by identifying government technology platforms and matching those platforms with the SBIR firms' innovations. In addition, The Navy Opportunity Forum provides an opportunity for the SBIR firms to make presentations to government acquisition officers and other potential customers and to personally meet with them.
In order to participate in government contracts, small technology businesses often must work through prime contractors and find it difficult to connect with prime contractors.	The Virtual Showcase and the Navy Opportunity Forum provide opportunities for prime contractors to learn more about SBIR firms' technologies both on-line and in person.
Small businesses often have excellent innovations but are weak in terms of business management including identifying markets, development commercialization plans, and knowing how to present their plans to potential investors and customers, including government customers.	NTAP works with SBIR firms to help them conduct market research, develop commercialization plans, etc.

2.3 *Effectiveness:*

There have not been good data regarding the direct procurement of SBIR products, processes and services to meet agency needs and this is a complex area of assessment. The National Academies of Science in a recent report outlined some factors that were important in achieving success in expanding Phase III funding and shortening the time horizon needed to move technologies more quickly into (agency) acquisition:

- Flexibility – “SBIR offers an unusual degree of flexibility” (compared to other types of funding for research, testing, development and evaluation).
- Shorter Planning Horizons – SBIR allows for shorter planning horizons for R&D allowing a more quickly respond to agency needs. (This is because it has steady funding that does not have to be approved in a strategic budget process.)
- Prime contractors are increasingly incorporating SBIR Phase III collaborations into their corporate strategies for major government acquisitions.

The NTAP addresses some of the weaknesses in the current SBIR system in terms of commercializing and selling back SBIR products to the government. The program is generally considered effective in increasing the commercialization rates of SBIR firms and in transitioning more SBIR products to government acquisition either directly or through prime contractors. However, most experts would agree that more needs to be done to transition SBIR products and processes to government agencies for acquisition purposes.

2.4 *User satisfaction:*

User group	Primary target group (yes/no)	Feedback provided	Explanation for feedback
SBIR firms	Yes	The NTAP contractor reports that 90% or more of SBIR firms that participate in NTAP activities believe that the activities have been effective in helping them commercialize or move closer to commercializing SBIR-related technologies.	SBIR firms are particularly appreciative of the opportunity to present to potential customers and investors.

2.5 *Recognition:*

There are no appropriate awards for this type of activity. The fact that the contractor has had renewed contracts for six years indicates that the Navy believes that NTAP has value.

2.6 *Context dependency:*

This type of program can be done on a smaller or larger scale and is not context dependent. The NTAP is funded at about \$4 million per year by the Navy SBIR Program Office.

2.7 *Replication:*

The basic concepts can be applied to other regions and other situations. Those concepts include: assisting small technology firms to identify technology needs within government agencies, match the government's technology needs with the small firms' technologies, and help the firms develop commercialization plans. In addition, the NTAP does what many enterprise forums do throughout the U.S.; that is, they help small technology firms understand their customers' and investors' needs; develop appropriate presentations that showcase their technologies and businesses, make presentations and meet one-on-one with potential customers, partners and investors. The NTAP also provides an opportunity for potential customers including government acquisition officers to learn more about the small technology firms on-line and facilitates searching for technologies that might meet government needs.

3 Additional information sources

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CHAPTER II: Advice for transferability

4 Introduction to the proposed action

4.1 What are the main actions to be promoted to meet the objective?

The main objective of the Small Business Innovation Research (SBIR) Commercialisation Pilot Program and the Transition Assistance Program operated by the Navy branch of the U.S. Department of Defence (DOD) is to commercialise SBIR products, processes and services funded through the SBIR program and to transition back to the government funding agency (DOD) market-ready results, either through direct sales to the agency or through subcontracts with agency prime contractors. Other objectives are:

- Accelerate technology transition of SBIR-funded technologies to commercialisation.
- Enhance connectivity among SBIR firms, large defence contractors and agency research and development (R&D) and acquisition communities.
- Improve SBIR firms' capability to match their technologies with the needs of agency technology platforms.

The Commercialisation Pilot Program (CPP) is intended to meet these objectives by selecting and providing additional funding to later-stage SBIR Phase II projects that are especially promising in terms of applying technologies to government agency technology platforms. The Navy Transition Assistance Program (NTAP) employs a broader approach that helps SBIR Phase II firms (a) identify and match agency technology platforms, (b) prepare business and commercialisation plans, (c) prepare and make presentations to potential customers including the private sector, government prime contractors, government agency acquisition officers, etc. and potential investors.

4.2 What is the general status of the recognition in the market of the necessity to invest in the proposed policy theme?

Public procurement accounts for 16% of the EU's GDP; this provides a tremendous opportunity to use public procurement as means to achieve social and economic goals. The EU has recognized this opportunity and, to that end, the Lisbon Strategy called for using public procurement to foster research and innovation. An EU Communication "Implementing the Community Lisbon Programme" (COM 2005, 488, Section 1.5) states that fostering research and innovation through procurement "could be done by specifying functional requirements in a way that leaves firms that widest scope to propose innovative solutions. This would give firms strong incentives to maximize efficiency and performance of the products and services they offer, particularly where public authorities act as launching customers providing lead markets for new technologies." It continues to specify markets where public authorities have a strong potential to stimulate demand for new technologies: transport, energy, environment, health, education and information and communications.

4.3 How is the main policy theme communicated in the market/which guidance material is already available?

In the U.S., the SBIR program is intended in part to address the needs and opportunities articulated by the EU Communication. The Communication suggests that a program similar to the SBIR program – one that specifies functional requirements (to meet government needs) and at the same time allows a wide scope to foster innovative solutions – could be used to promote innovation through public procurement means. The SBIR program mandates that federal agencies with large R&D (extramural)

budgets identify agency technological needs and fund SMEs to research and develop innovative products, processes and services to address these technological needs. The agencies encompass R&D areas such as health, energy, environment and defence (which cover various technology areas including information and communications).

In more recent years, the SBIR program has increased its emphasis on commercialisation and “transitioning” of SBIR results to meet government agency needs (particularly defence-related needs). To that end, DOD’s CCP program and the Navy’s NTAP aim at meeting the needs of DOD technology platforms by transitioning SBIR products/processes/services with the end result of sales back to DOD.

4.4 What is the expected outcome of the proposed actions?

We would suggest some revisions of the SBIR program and related CPP and NTAP programs for adaptation to the EU situation. The revisions would closely link the programs to existing EU SME initiatives designed to increase SME’s business and management capacity and link to start-up investment capital efforts. It would also more directly tie efforts, from the beginning, to agency procurement needs and provide greater incentives for major contractors to use SBIR firms as subcontractors.

It is difficult to predict the outcome of adapted SBIR CPP and NTAP programs to the EU environment. One of the keys to success of such programs is to find a balance between providing a wide enough scope to foster innovative solutions and yet a directed enough approach to insure that technologies meet the government’s technological needs. If the program is properly structured and SBIR firms are provided adequate incentives to transition products back to the funding agencies, the outcomes might include:

- Greater procurement of SME technology-related goods and services by the EU and member states.
- More innovative products, processes and services introduced to government markets.
- Increased number of start-ups in technological areas targeted by the EU (such as health, environment, energy, telecommunications and information, etc.)

5 The innovation policy measure and its context

5.1 National and regional governance: please provide a description of the modalities of implementation of the proposed actions. Examples of elements to be taken into account are the role of the institute, the nature and characteristics of that institute that are important for a successful implementation of the good practice.

The U.S. Department of Defence’s Navy Office of SBIR funds and administers the new (2006) Navy Commercialisation Pilot Program (CPP) and the related but more established Navy Transition Assistance Program (NTAP). NTAP was developed in 2000 and has been operated by a private contractor.

For the CPP, the most important institutional elements involve experienced staff (agency points of contact for SBIR firms) that has an understanding of agency technology platforms and a good knowledge of the SBIR firms’ technologies in order to determine which SBIR firms have the best potential to meet the agency’s technology platform needs. For NTAP, the contractor must have staff who is experienced entrepreneurs or business people who can help SBIR firms develop business and commercialization plans. They also must be familiar and regularly communicate with not only SBIR

agency officials but also the agency's technology program staff and acquisition staff in order to understand agency technology requirements and acquisition requirements. Contractor staff also must have good knowledge of and personal connections with prime contractors in order to effectively encourage meetings between prime contractors and SBIR firms and they should have some knowledge of the investment community.

In addition, while the institution (in this case DOD) must address legislatively mandated requirements, CPP and related technical assistance programs such as NTAP also must have the flexibility to develop and test approaches that encourage and accelerate SBIR commercialization that best meets the funding agency's needs.

5.2 National and regional economic structure of the region where the practice has been developed. We are looking for the main factors for success for implementing the suggested measure.

The size of the Navy SBIR program is substantial, about \$360 million per year and the program operates nationwide. The main factors involved in the program's success are related to the SBIR program structure and incentives and corresponding mandates associated with the CPP and other organizational factors mentioned in 2.1.

5.3 The policy measure itself: what was it all about? Who were the actors involved, what actions have been undertaken and which result and impact has been achieved?

The CPP involves the Navy Office of SBIR selecting and funding SBIR Phase II firms that are most likely to have technologies that can be transitioned to meet the needs of specific defence technology platforms. Through NTAP, the contractor annually works with about 175-200 SBIR Phase II firms to (a) Identify and respond to the Navy's technology needs; (b) Enhance the SBIR firms' strategies for transitioning their technologies to commercialization and selling back to the agency, (c) Develop technical briefings and "quad charts" that match the SBIR firms' technologies with the government agency's technology platform needs for inclusion in an (online) Virtual Acquisition Showcase®, (d) Develop a business plan or other appropriate tool(s) and (e) Present the SBIR firm's opportunities at the Navy Opportunity Forum.® The Opportunity Forum provides a way for government acquisition (procurement) officers, R&D managers, prime contractors, suppliers, defence personnel and potential investors to preview Navy-funded SBIR technologies and personally meet and network with the SBIR firms.

CPP is too new to produce results; and there are no publicly released results for NTAP. In general, a little less than one in 10 Navy-sponsored SBIR Phase II firms commercialise their SBIR-related technologies. The Navy's SBIR commercialisation rates are higher than those of other DOD branches. However, there are many factors that affect SBIR commercialisation rates including the types of technologies being developed for specific agency branch needs and therefore we cannot attribute greater commercialisation success to the Navy's NTAP or other Navy SBIR-related factors.

6 The adaptability and transferability of the proposal

6.1 Why is it worthwhile to invest in the proposed action/tool? Did the feasibility study and good practice identification demonstrate substantial added value?

As we discussed in 5.3 above, it is difficult to assess the value-added from the NTAP (and too early to access the value of CPP) activities. However, in general we believe that the SBIR program itself and

SBIR-related commercialisation activities are worth the investment. The SBIR program is an innovative way to stimulate R&D in SMEs generally and if properly structured, to provide government agencies with more innovative products, processes and services.

6.2 If there is to be decided to invest in the proposed action/tool, what are the main factors to pay specific attention to?

Some of the factors are (but are not limited to):

- Effective identification of agency technology platform needs in order to (a) develop SBIR topics for solicitation that lead to SBIR results which best meet agency technology needs; (b) select SBIR firms for Commercialisation Pilot Projects; and (c) ultimately transition (sell back) SBIR results to meet agency technology needs.
- Effective linkages between the SBIR program and the government agency's acquisition (procurement) offices and a thorough understanding of procurement requirements and procedures.
- Adequate incentives to encourage prime contractors to subcontract to SBIR firms.
- For the Transition Assistance Program, experienced entrepreneurial and business staff that understand business development, etc. and/or linkages with programs to help SBIR firms develop business plans, conduct marketing, etc.
- Opportunities to showcase and network SBIR firms to government agency R&D units, procurement officers, prime contractors and investors.
- Incentives and assistance for SB IR firms to identify markets and develop commercialisation plans early in the SBIR process.

6.3 What is the expected impact of implementing the proposed action/tool?

It is difficult to predict the outcome of adapted SBIR CPP and NTAP programs to the EU environment. One of the keys to success of such programs is to find a balance between providing a wide enough scope to foster innovative solutions and yet a directed enough approach to insure that technologies meet the government's technological needs. If the program is properly structured and SBIR firms are provided adequate incentives to transition products back to the funding agencies, the outcomes might include:

- Greater procurement of SME technology-related goods and services by the EU and member states.
- More innovative products, processes and services introduced to government markets.
- Increased number of start-ups in technological areas targeted by the EU (such as health, environment, energy, telecommunications and information, etc.)

6.4 Based on the insights gained in the feasibility studies and good practice identification, what is the judgement/advice on the support that already has been created by stakeholders?

The SBIR program is funded at 2.5% of the extramural R&D budget of the government agency; the CPP is funded at 1% of the agency's (DOD) SBIR budget and the NTAP program is funded at about \$4 million per year. The funding for the total program has been somewhat controversial with some believing that the funding is too high and that it takes away from other (more important) research activities of individual agencies, while others believe that the funding levels are too low. We believe that the funding levels for the SBIR program is appropriate and that the percentage of the SBIR funding used for commercialisation and transition assistance activities should be greater.

6.5 What is the advice on how to disseminate the action/tool?

We would suggest developing and implementing a pilot program that could be tested by one EU DG and subsequently evaluated for potential replication across EU DGs.

Addendum 1

Abstracts of SBIR Technologies for Procurement Opportunities

#3: Griffin Analytical Technologies, LLC Field Chemical Analysis Tool

chemical detection, reconnaissance, portable, toxic industrial chemicals, explosives



Syscom: MARCOR

Topic: N03-001

TRL: (TBA)

DoD requires field-deployable systems that provide quick and accurate chemical analysis for a broad range of threats to enable troops to make informed decisions regarding life and safety. Based on patented ion trap technology, this 6-year old analytical instrumentation company has developed the only portable, self-contained GC/MS/MS. The suitcase-sized system, including on-board computer and handheld (2.5lb) sample collector/thermal desorber for safe and efficient $\frac{1}{2}$ hot zone $\frac{1}{2}$ air sampling, is capable of confirming the presence of explosives, chemical warfare agents, toxic industrial chemicals and organic compounds in near real-time (2-3 min). Pilot manufacture will begin Q3 2007 with full-scale production and ISO certification by Q2 2008. Relationships are sought with DoD platforms and prime system integrators tasked with reconnaissance and ensuring the safety of troops and civilians.

#4: Invocon, Inc. Electromagnetic Personnel Interdiction Control (EPIC)

Non-lethal weapon, stand-off, electromagnetic



Syscom: MARCOR

Topic: N03-163

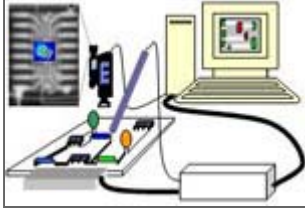
TRL: 2

This company is developing a non-lethal, stand-off weapon for military and law enforcement personnel that could ultimately work through walls and other non-metallic structures. Through disruption of the vestibular system, the device would render a human temporarily powerless to effectively resist arrest or subjugation without causing permanent physical damage. The first known demonstration of a vestibular response to an electromagnetic stimulus has been performed. This response constitutes the basis of a potential non-lethal weapon. This systems engineering company provides research and product development services related to radio frequency electronics, precision instrumentation, and communication for aerospace and defence customers. Additional funding is sought for research into the effects of the stimulus and potential delivery mechanisms for non-lethal weapons as well as medical diagnostic or treatment applications.

#5: Radiation Monitoring Devices, Inc.

Damage Characterization Assessment of Circuit Cards Through Nanotechnology

Nondestructive inspection, printed circuit board, prognosis, intermittent failure, incipient defect



Syscom: MARCOR













Topic: N03-158

TRL: (TBA)

This 32-year-old company is a national leader in the R&D of sensors, instrumentation systems, and custom detector applications. It has developed a low-cost, printed circuit board (PCB) inspection instrument that pinpoints failed/failing electronic components in minutes. A robotically controlled probe sees through conformal coatings and device packages, and utilizes ultra-sensitive nanoscale solid-state magnetic sensor arrays. It images incipient aging- or damage-related defects ($< 15 \mu\text{m}$), which leads to intermittent faults or premature device failures. An imaging subsystem prototype was sold to INTEL, Q1-2006. Demonstrated the ability to find failed components on Marine Corps-supplied PCBs. Initial target platform is the Light Armored Vehicle (LAV25). The company seeks relationships with Defence PM's and contractors to integrate this innovative technology into the Defence and Commercial PCB inspection markets.

Addendum 2

Example of the Navy Virtual Acquisition Showcase

CATEGORIZATION	COMPANY / DOCUMENTS	PROJECT DESCRIPTION
 <p>Syscom: NAVSEA Topic: N04-T005 TRL: 5</p>	<p>#69: 21st Century Systems, Inc. 2611 Jefferson Davis Hwy, Suite 11100 Arlington, VA 22202 Kevin Blenkhorn (703) 231-0240 kevin.blenkhorn@21csi.com www.21csi.com</p> <hr/> <p> QUAD CHART  NARRATIVE BRIEFING  CAPABILITIES BROCHURE  ABSTRACT</p>	<p>COMSTAR</p> <p>COMSTAR provides automation to allow the safe and effective operation of multiple cooperating UAVs. It greatly reduces the manpower requirements for flying single or multiple UAVs and increases the ability of the UAVs to detect potential threats.</p> <p>Presentation: Tuesday, 9:05am - 9:25am Booth #: 402</p> <p> Add to My Briefcase</p>
 <p>Syscom: NAVSEA Topic: N04-159 TRL: 5</p>	<p>#68: 21st Century Systems, Inc. 2611 Jefferson Davis Hwy, Suite 11100 Arlington, VA 22202 Kevin Blenkhorn (703) 231-0240 kevin.blenkhorn@21csi.com www.21csi.com</p> <hr/> <p> QUAD CHART  NARRATIVE BRIEFING  CAPABILITIES BROCHURE  ABSTRACT</p>	<p>SubAutoSim</p> <p>SubAutoSim provides automation of the training environment on the Los Angeles class SSN. It allows the training team to create hundreds of hostile or neutral targets that react in intelligent and believable manners in order to meet their training objectives.</p> <p>Presentation: Monday, 11:00am - 11:20am Booth #: 402</p> <p> Add to My Briefcase</p>



Syscom: NAVSEA
Topic: N03-063
TRL: (TBA)

#66: 3e Technologies International
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- [PDF](#) [QUAD CHART](#)
 - [PDF](#) [NARRATIVE BRIEFING](#)
 - [PDF](#) [CAPABILITIES BROCHURE](#)
 - [HTML](#) [ABSTRACT](#)

Affordable, Flexible, Network Capable Application Processor for Data Acquisition and Processing (Affordable NCAP)

Affordable Network Capable Application Processor Our Affordable NCAP modules enable IEEE 1451.4 smart sensor data acquisition and 802.11 wireless networking for Fairmount Automation Chameleon component level control systems. The wireless module uses a FIPS 140-2 compliant cryptographic module and supports both Ethernet and Serial interfaces.

Presentation: Monday, 2:05pm - 2:25pm
Booth #: 452

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