Introduction

Review of 2006 and a Sneak Peek at 2007

This past year has been action-packed in the SBIR/STTR arena and the Navy SBIR program has been right in the mix of things. Some of the most memorable events and policy decisions include the following:

» The Commercialization Pilot Program (CPP) was created when the National Defense Authorization Act for FY 2006 became Public Law 109-163. The CPP is meant to “accelerate the transition of technologies, products and services developed under the SBIR program to Phase III, including the acquisition process.” To read more about the CPP see page 2 of this newsletter.

» Team Sub surpassed the $1 billion mark in Phase III awards when Trident Systems was awarded a $50 million contract in May, for delivery of a Shipboard Mobile Computing Engineering Model.

» The sixth Navy Opportunity Forum® was held June 5-7. Over 1300 attendees, including acquisition officers, R&D managers, prime contractors, 1st and 2nd tier suppliers, and defense personnel were on hand to peruse 160 projects.

» Rear Admiral William E. Landay succeeded Rear Admiral Jay M. Cohen as Chief of Naval Research on Jan. 20. Landay was the PEO for Littoral and Mine Warfare at NAVSEA before coming to ONR, where he assumed the management of the science and technology programs of the Navy and Marine Corps, under which the Navy SBIR and STTR programs reside.

» A new STTR Policy Directive took effect in January, though it was published in December 2005, which provided the right to subcontract with a Federally Funded Research and Development Center (FFRDC) without obtaining an SBA waiver.

» Following a three year hiatus, the 2006 Tibbetts Awards were held in September. Nearly 60 organizations and 30 individuals were honored for their accomplishments. Honorees representing the Navy were Linda Whittington, Stephen Brown, Kenneth Campbell and Randall Scott from SPAWAR, Richard McNamara from Naval Sea Systems Command, Carol Van Wyk from NAVAIR S&T, and John Williams from ONR.

As the Tibbetts Awards would suggest, many companies with SBIR-funded technologies have basked in their successes in 2006. One such company is Luna Innovations, which successfully completed its Initial Public Offering (IPO) in June 2006. Read more about Luna and its path to an IPO on page 3.

To further assist SBIR companies down the path to transitioning their technologies, Cathy Nodgaard, ONR SBIR Program manager, outlines the importance of Option Funding in the Phase III process on page 5.

As for 2007, the DoD SBIR 07.1 Solicitation closed on January 10. The SBIR study, done by the National Academies, is to be released this year and is expected to have a favorable rating on the program. This will, no doubt, assist with the upcoming SBIR reauthorization. Transitions will bring you information on these stories and more as the year progresses.

Plans are also underway for the 2007 Navy Opportunity Forum®, May 7-9. Registration begins February 28. For more information, see the Forum website at www.navyopportunityforum.com.
The Commercialization Pilot Program (CPP) is a new initiative authorized by Section 252 of the FY 2006 National Defense Authorization Act (NDAA). The objective of this initiative is “to accelerate the transition of technologies, products, and services developed under Small Business Innovation Research (SBIR) to Phase III.”

The Act further requests that SBIR research programs that have potential for rapid transition, and meet a high priority requirement, be identified. The emphasis is squarely placed upon transition to the Department of Defense (DoD) in order to rapidly assist the warfighter.

Some highlights from Section 252 of the FY2006 NDAA:

» Amends all four provisions of the original SBIR law, 15 USC 638, and emphasizes the defense commercialization goal.

» Authorizes SECDEF and SECNAV to create the CPP and identify SBIR research programs that have potential for rapid transition and meet high priority requirements.

» Requires involvement of Program Executive Offices (PEOs) and acquisition Program Managers (PMs) in SBIR topic development, and Phase III transition planning.

» Provides 1% of SBIR funds for CPP administration.

» Requires annual reporting of CPP and SBIR commercialization activities by PEOs, PMs and primes.

» Ties into SBIR law Executive Order 13329, which encourages manufacturing innovation.

» Allows for T&E work in Phases II and III.

Each of the services will have a Commercialization Pilot Program that will take a form appropriate for that service. The Navy CPP initiative will accelerate the transition of high-priority SBIR projects into critical Navy systems by providing needed assistance to SBIR firms and to key technology transition stream participants.

“The Navy is committed to accelerating and incentivizing transition of technology to the Fleet, and it has initiated many programs to achieve this goal,” says Navy SBIR Program Director, John Williams. This includes the Navy Transition Assistance Program (TAP), a program intended to even the playing field for small businesses involved in the SBIR program by providing tools and information aimed at accelerating transition to SBIR Phase III. Unlike the TAP, the CPP will operate from a different vantage point. The Navy, as the customer, will be looking backwards through the technology supply chain to select technologies that should be moved forward quickly to assist the warfighter. Additional resources will then be applied to achieve the Navy’s objective.

Williams has initiated a two-pronged approach to the implementation of the Navy CPP Program. First, the major Navy Systems Commands (SYSCOMs) have been given the flexibility to implement tailored approaches within their respective SYSCOM CPP programs to gain maximum innovation within the Navy’s total approach. Both the Naval Air Systems Command (NAVAIR) and the Naval Sea Systems Command (NAVSEA) have implemented CPP programs tailored to their PEO and Acquisition Program organizational structures. By allowing this type of flexibility, Williams hopes to “use the differences within each approach to test drive and evaluate different innovative processes, identify best practices and improve PEO/PM involvement in the Navy SBIR program.”

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—John Williams, Navy SBIR Program Director

The second aspect of the Navy CPP implementation is the commission of a “Tiger Team” to assist the Navy SBIR Program Director in identifying best practices and roadblocks across the Navy’s SBIR program, from topic development to Phase III. The Tiger Team is composed of a small group of experts in DoD Weapon Systems Acquisition, Technology Transfer, Navy requirements generation and the SBIR program. The team is chartered to accomplish the following tasks:

» Identify and catalogue Best Practices regarding transition of SBIR technologies.

» Assist in developing proposed CPP processes from Best Practices for Navy SBIR review.

» Help identify and define optimal CPP metrics.

» Plan for continuous CPP process improvement.

» Identify and aid in the removal of roadblocks to improving SBIR technology transition.

These tasks will be accomplished through brainstorming, benchmarking, interviews and facilitated working sessions.

Taken together, the Navy’s approach to CPP implementation involves a combination of experimentation, innovation and continuous process improvements. A successful Navy CPP will accelerate mission critical SBIR technology to the Fleet to save lives, mitigate risk and increase affordability of technological innovation.

For more information on the Navy Commercialization Pilot Program Initiatives, contact the Navy SBIR Program Office at williajr@onr.navy.mil.
Success Story

LUNA’S PATH TO AN IPO

One of the primary objectives of the Small Business Innovation Research (SBIR) program is to foster the development of new technologies to make American industries more competitive in the world economy. The SBIR program provides small businesses with the initial funding for development of promising technologies and then assists them in identifying potential applications. This initial investment provides a crucial foundation for these entrepreneurial firms during the volatile incubation phase of technology development.

Once through this fragile incubation period, many companies develop sustainable applications in a variety of competitive markets and while most SBIR companies start out on a modest scale, successful implementation of a technology can often lead to rapid and substantial corporate growth.

Translating a technology success into a sustainable business success, however, requires an equally innovative business strategy. This can come in many forms: licensing agreements, joint ventures, spin-out companies and, potentially, a public stock offering. “Going public” is generally undertaken to provide the equity capital needed to finance the rapid growth associated with successful technology implementations. It additionally provides meaningful financial returns to the company founders and investors.

This is, in fact, the experience of Luna Innovations, a successful provider of molecular technology and sensing solutions and a veteran of the Navy SBIR program. Founded in 1990 by Kent Murphy, who has served as its Chairman and CEO since 1992, Luna has developed more than a dozen products serving various industries including energy, telecommunications, life sciences and defense. Headquartered in Roanoke, Va., the company employs more than 125 engineers, scientists and administrative staff in six different cities.

Through its disciplined and integrated business model, Luna Innovations has accelerated the process of bringing new and innovative products to market in two areas of focus. The first area of focus is Luna’s Molecular Technology Solutions, which involves new materials with enhanced performance characteristics. These materials are produced by harnessing unique chemical, physical and biological properties through novel combinations of matter and include metals, ceramics, polymers, nanostructures and composites. The second area of focus is Luna’s Sensing Solutions, which involve the integration of multiple technologies to design, manufacture and commercialize new products. Luna develops integrated sensing solutions to measure and monitor chemical, physical and biological properties using fiber optics, ultrasonic and sensor technologies.

Throughout its history, Luna has demonstrated its ability to provide superior technology development. And since 1998, Luna has been recognized for its outstanding achievements by being selected, on three different occasions, for the Tibbets Award—a nationally recognized honor presented by the Small Business Technology Council to businesses and individuals working in research, development and commercialization of high-tech products. This highly prestigious award is given to those companies judged to best exemplify the philosophy and doctrine of the Small Business Innovation Research (SBIR) program.

“The SBIR program has been the foundation upon which we have built our business,” says Murphy. “It is very hard for a small, rural company to get the necessary resources to grow its business. SBIR contracts have pro-
vided Luna with the initial funding needed to develop more than a dozen products for use in industrial process control, energy production, life sciences and defense. To date, Luna and its subsidiaries have created more than 250 high tech positions throughout Virginia. Without the SBIR process, we probably wouldn’t be here today.”

Luna Innovations has leveraged this SBIR foundation by initially licensing its technology to fund growth into new areas of research. This licensing approach continued to serve Luna as it developed other forms of commercialization such as corporate spinouts of standalone companies and joint ventures with other technology firms.

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—Kent Murphy, Luna Chairman and CEO

Since its inception, Luna has created five separate companies—selling two of them to industry leaders—raised private capital for two other companies, formed two joint ventures and entered into three licensing agreements. Representative examples of independent businesses created by Luna Innovations are:

» Luna Analytics, Inc.—Created in June 1999 to commercialize analytical instruments that improve the assessment of protein interactions. Luna Analytics’ devices are being developed to provide advanced disease diagnostics, treatment and drug discovery.

» Luna Energy, LLC—Created in February 2002 to commercialize real-time, state-of-health pipeline monitoring sensors for the oil and gas industry (subsequently acquired in December 2004 by Baker Hughes, a leader in oil field services).

» Luna iMonitoring—Created in May 2002 to commercialize a suite of highly integrated wireless sensors for cost-effective remote monitoring for the oil and gas marketplace. (Luna iMonitoring was acquired by IHS Energy in October 2003.)

Creating these independent firms has provided the management team with valuable insights into the challenges and complexities of implementing different commercialization strategies. It also reinforced the fact that Luna had a unique business model that needed to be preserved.

Murphy explains, “Many outside investors wanted Luna to implement a traditional business model based on developing and marketing a single product offering. This approach conflicted with Luna’s inherent strategic focus of commercializing many different technologies in a variety of sophisticated markets.”

In the end, it was Luna’s steadfast need to maintain its unique business model that allowed the organization to move to its current state of corporate maturity. When it came time to consider an IPO, Luna Innovations had already established an experienced Board of Directors, a strong technical Advisory Board and a broad range of business experience.

On June 9, 2006, Kent Murphy presided over the opening bell at the NASDAQ exchange to celebrate its Initial Public Offering (IPO) of LUNA. The successful completion of the IPO brought the company approximately $18M in equity financing and culminated 15 years of technology evolution and commercial development.

For SBIR firms considering different commercialization strategies, Murphy emphasizes the need to build a sustainable business process that can demonstrate your firm’s ability to deliver on its predictions. Investors want to know that the company can perform with a high level of quality on a consistent, repeatable basis. And, as he often says, “Say what you are going to do and then do what you say.”

This philosophy has sustained Luna Innovations throughout its corporate development and will likely project Luna to even greater success as it pursues future business opportunities as a publicly held company.
SBIR Program Manager Corner

**IMPORTANCE OF OPTION FUNDING IN PHASE III TRANSITIONS**

“The mission of the Office of Naval Research (ONR) is to foster, plan, facilitate and transition scientific research in recognition of its paramount importance to enable future naval power and the preservation of national security,” says Cathy Nodgaard, ONR SBIR Program Manager. The ONR Small Business Innovation Research (SBIR) Program is an integral part of the Naval Science and Technology program which has both a near term and long-term development mission. ONR SBIR topics address naval needs and should ultimately transition to the fleet through enabling technologies for future naval capabilities or directly to naval acquisition programs.

“While the Naval System Commands’ SBIR investments are primarily oriented toward nearer term acquisition programs, the ONR science and technology projects are designed to foster investment in early stage initiatives that do not have clearly defined applications or operational platforms; however, target needs must be identified,” Nodgaard explains.

The typical ONR SBIR program is structured for an initial concept demonstration period (Phase I) of approximately 6 months. Based on the alternative approaches or various concepts to provide the capability or solve the problem, ONR will often fund two or more companies during this first phase to encourage technical creativity. Once the initial concept has been demonstrated, the most promising firm is invited to submit a proposal for continuation of the effort to achieve full breadboard validation and/or prototype demonstration. Based on their Phase I achievements and Phase II base effort, the SBIR firm needs to work with the Navy Program Manager and Technology program which has both a near term and long-term development mission. ONR SBIR topics address naval needs and should ultimately transition to the fleet through enabling technologies for future naval capabilities or directly to naval acquisition programs.

The SBIR firms should be constantly seeking Phase III opportunities with prime contractors and government users that can benefit from their technology.

—Cathy Nodgaard, ONR SBIR Program Manager

The SBIR firms should be constantly seeking Phase III opportunities with prime contractors and government users that can benefit from their technology. Consequently, Phase II proposals and the resulting contracts often include follow-on “option periods” for further breadboard and prototype development. Given technical and programmatic success during the initial phases of the project, ONR may exercise these Options to bridge the technology development to a full TRL5/6 level of performance (i.e. breadboard validation and/or prototype demonstration in a relevant environment).

The purpose of Options in the Phase II contracts is often misunderstood by SBIR companies. Continuation of the base effort and exercising Options is not an automatic process. Continued funding is based on specific criteria. Firstly, the objective of the ONR development program is to transition these technologies to the Fleet. To achieve this transition, each SBIR firm needs to identify potential applications and operational platforms that can benefit from its technology and a path to achieve it in the Phase II proposal transition plan. The transition path should be evaluated and revised periodically to ensure that the customer will be satisfied not only in technology performance, but in time and in budget. Once discussions are underway with a potential “end user,” the SBIR firm can leverage the Option funding to enhance negotiations with the SYSCOM or prime contractor.

“The SBIR firms should be constantly seeking Phase III opportunities with prime contractors and government users that can benefit from their technology,” advises Nodgaard.

The criteria for release of these Option funds are clearly defined by the ONR Program Office. Near the end of the Phase II base effort, the SBIR firm needs to work with its Technical Point of Contact (TPOC) to review the technical progress and ensure that it is meeting the project objectives. The TPOC will review the Transition Plan and assess the probability of achieving successful transition. With a positive assessment, the TPOC will recommend release of the Option funding.

“The key element in this assessment process is one of assuring that there is a defined application or operational need for this technology. Many times, the prime contractors and major sub-contractors are reluctant to commit to these new technologies due to their inherent risk.” Potential Phase III partners often withhold active support until the SBIR firm has demonstrated a full breadboard achievement in a relevant environment (TRL 5). Thus the Phase II Option funding is provided to underwrite this further development, once a viable end user has acknowledged the need for and operational value of this technology.

“The Option should only be viewed as a financing tool to provide reduced technology risk to the Phase III partner who is committed to transitioning this technology to the user,” says Nodgaard.

For more information, contact Cathy Nodgaard at nodgaac@onr.navy.mil.
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Transitions is brought to you by the Navy Transition Assistance Program

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