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## **Unleashing DOD's Small Business Technology Potential** *How the DOD Can Quickly Improve Transitions Utilizing new Technology from SBIR, DIU RIF, APFIT, and other sources*

Improving and speeding transitions from the lab and market to the warfighter has in recent years become a key area of focus within the DOD innovation ecosystem. No matter what program is developed to transition new technology in DOD, they will all encounter the same challenges that have existed for decades. While programs like SBIR/STTR have been successful in getting new and small businesses into the DOD Innovation ecosystem, they often run into barriers and choke points later in the development cycle when trying to transition their technologies. Improvements could be made to open the narrow end of the funnel and fully unlock the innovative potential of high-tech small businesses in the Defense space.

The Small Business Technology Council (SBTC) in this paper proposes several administrative actions the DOD and the military departments could make to better connect the technology produced by SBIR to programs of record and ultimately the warfighter and other end users. In most cases, these recommendations can be implemented quickly and will aid in transitions new technology into DOD whether it comes from DIU, RIF, APFIT, SBIR, STTR or other innovation programs. To succeed DOD will need to take a holistic approach with a coordinated approach with these and many other actions.

With only 3.65% of DOD's extramural R&D budget, the SBIR/STTR program plays a critical role in driving the most innovative part of the innovation ecosystem, small business, to develop next generation technology and transition it to programs of record. This is in spite of challenges in recognizing and advancing SBIR technologies and innovations for transition. To meet the warfighter's future needs and superiority, DOD could do more to better support advancing development and transition of SBIR technologies. More money is needed for such transitions, but perhaps more importantly improving the SBIR transition process is needed to further encourage technology transition – if we can better streamline and reduce frictional elements in the process, we can better leverage the SBIR technologies DOD has cultivated and speed their path to maturity and insertion into DOD weapons and systems. The power of the SBIR/STTR programs lies in smart utilization of the program's authorities and has demonstrated the ability to scale its results if provided additional funding.

An example of a DOD's success in transitioning technology is the tremendous growth DOD has seen in recent years in SBIR Phase III. Every dollar DOD invests in the SBIR program is followed-on by much more than a dollar in non-SBIR Phase III funds. In addition to identified Phase III contracts, there are also millions of dollars of awards not identified as Phase III and millions of



dollars of subcontracts with prime contractors that follow-on from SBIR I/II awards. In the last 4 years DOD has executed over \$10 Billion in identified follow-on Phase III contracts. Last year alone Navy had over a billion dollars of Phase III sales, accounting for \$2 in non-SBIR funding for every SBIR dollar invested, while the Air Force also had a billion dollars in Phase III contracts. In 2022 over 600 small businesses received at least one DOD Phase III contract. All told, Phase III contracts have more than doubled in the last four years. In each of the past two years, DOD has issued more Phase III contracts above \$250,000 than Phase II contracts:

<b>Number of DOD SBIR Awards by year and Phase</b>			
<b>FY</b>	<b># Phase I</b>	<b># Phase II</b>	<b># Phase III &gt; \$250k</b>
<b>2021</b>	2,210	1,264	1,733
<b>2022</b>	1,692	1,590	2,153

DOD deserves a lot of credit for increasing SBIR Phase III, the GSA’s Assisted Acquisition Service (AAS) also played a key role in this increase. GSA’s SBIR contracting program has increased the speed with which a program office can execute a follow-on contract with a small business, while at the same time lightening the burden on DOD’s own contracting operations. Since 2018 GSA AAS has executed over 90 contract awards totaling nearly \$2 billion dollars obligated and \$10 billion in total contract value.

While Congress and the DOD have created new innovation programs over the years, such as Competition in Contracting and others, few of these programs have succeeded as hoped. New programs need to be focused on new technologies and new companies, and not be open to current huge primes. A recent study by GAO determined that Congress created 26 programs at the DOD related to R&D and innovation:

*Congress provided the Department of Defense (DOD) at least 26 authorities related to budgeting and financial management that allowed DOD flexibility in its use of funds to support research and development (R&D), innovation, and modernization activities during fiscal years 2017 through 2021.<sup>1</sup>*

This report shows that Congress have been active in trying to support R&D activities but while these and earlier efforts by Congress have helped, they have not completely achieved DOD’s technology development and insertions requirements. A continuum of change does not allow for any one program to mature like the SBIR program has.

With this in mind, SBTC proposes the following several administrative actions DOD could take to improve technology transition for DIU, SBIR, STTR, RIF, APFIT and other programs that would make for meaningful impact in the short term.

<sup>1</sup> GAO-23-105822 Research and Development: DOD Benefited from Financial Flexibilities but Could Do More to Maximize Their Use, <https://www.gao.gov/products/gao-23-105822>



## **Reporting, Goals, and Incentives for PEOs**

1. Require PEOs to report each new technology/innovation, time, and money saved for each new technology they have inserted in their programs deriving from utilization of SBIR/STTR, small businesses and non-traditional firms.
2. Issue awards and incentives to PEOs who successfully transition innovative technologies into their programs. We believe such reporting and financial incentive will encourage PEOs to take the risk of using new technology. PEOs who take the risk of using new technology should be rewarded.
3. Set goals for PEOs to insert new and innovative DOD technology deriving from utilization of SBIR/STTR, small businesses and non-traditional firms into their programs of record.
4. Eliminate roadblocks that are usually found in the cumbersome contracting processes used for \$1 billion dollar contracts applied to \$2 million Phase 2 contracts. A risk reduction effort that begins months after deciding does not offer the PM a real rapid solution, yet a simple \$250K PO can be issued in a few days to kickstart the SBIR risk reduction effort while contract papers are put in to place.

## **Reporting, Goals, and Incentives for Primes**

1. Make small business technology insertion a requirement and evaluated criteria for new awards to large prime contractors. Tie these requirements to incentives for primes if they exceed, or penalties if they fall short. By getting more Small Businesses involved there will be more SBIR/STTR, DIU, RIF, APFIT, etc vetted small businesses participating as part of the prime contract. These innovation vehicles are all vetting tools, and offer DOD and the Primes a test drive of the small business.
2. Require Prime Contractors to report the number and value of each new technology deriving from utilization of SBIR/STTR, DIU, RIF, APFIT, and other innovative technologies and small business and non-traditional firms. The vast majority of DOD R&D dollars go to Large Prime contractors. If they continue to resist inserting innovative technology from programs such as SBIR, DIU, RIF, and APFIT, the rate of technology transition will remain too slow. Additionally, writing a guideline to Primes on rights and obligations relating to SBIR Phase III subcontracts would clear the way for many more Prime Phase III awards.
3. Develop programs to help innovative small and new firms to become a trusted Defense supplier, such as the Navy's SBIR/STTR Transition Program.



## **Recommendations for SBIR/STTR**

Improvements made by the Congress and DOD to better emphasize SBIR and Phase III have been working. But as successful as SBIR Phase III has become, more can be done to improve transitions within the DOD. While some DOD SBIR offices have undertaken major reorganizations and overhauls of how they do business, there are smaller, more immediate changes that could be made that would result in faster transitions and better implementation of the technologies created by DOD's SBIR program.

4. Expand Contract Standardization to Phase IIIs: Complete Phase I and Phase II SBIR model contract standardization to also create a standardized Phase III contract. Two Types of standard Phase III contracts would substantially speed Phase III transition actions. One should be prepared for 6.3 advanced development programs for further testing and evaluation of SBIR technologies. A second 6.4 limited production standardized contract should also be developed by DOD to make sure each of the services can promptly get the SBIR technology into the hands of a number of warfighter units to test the technologies' advantages. Both of these standardized contracts need to:
  - a. Ensure that the data and patent rights of the SBIR firms are protected. If DOD is to develop a new generation of support firms, DOD contracting officers cannot usurp the SBIR firms rights but instead allow the firm to maintain the rights to produce the product.
  - b. Ensure that funding and payment to the contractor is available early in the program for the firm to produce the product or service so that the SBIR firm does not need to finance the development, testing, and/or production. This is critical for firms to survive and provide continued improvements.
  - c. Optimize profit to the SBIR firm. A 15% fee for R&D should be provided as allowed by the FAR.
  - d. Expedite the standardization of contracts would save up to a year of development time. If GSA can do Phase III contracts in 120 days, why can't DOD?
5. Matchmake the backlog: As DOD may have many SBIR funded technologies that the PEOs do not realize may offer solutions for their programs and are therefore are not being transitioned, create a process to match SBIR companies and their prior SBIRs with the program offices and the Prime Contractors. The Commercialization Research Program (CRP) allows matching funds. Utilize AI tools for digging through data to help match innovation with need. DOD has 11 departments, creating a huge history to search through.
6. More closely match the program offices with the new topics: Make sure new topics have program office transition interest and serve the long term R&D needs of the DOD. Match topics to Defense Department's priorities.



7. Encourage and support the use of GSA’s AAS program by PEOs to facilitate Phase III contracting. In the past 4 years GSA has executed \$10 Billion of Phase III contracts. GSA’s Assisted Acquisition Service and other initiatives can provide DOD with another contracting resource to help break through the backlog and get contracts out quicker to award winners. They are fast, efficient and dedicated satisfying a pent up demand
8. Increase SBIR allocation. The provision requiring 3.2% of extramural R&D to SBIR is a floor, not a ceiling. The military departments could, if they so choose, increase the allocation, sending more R&D money to the most innovative sector – small business. There are already many more good proposals than can be funded, so much that Air Force has been sending many firms with good proposals “selected but not funded” notices, promising to fund their proposal if the money becomes available in the future. Increasing the set-aside would allow services to do fund all the proposals that the services need. Utilize SBIR/STTR as the scaling pilot to demonstrate best practices that major acquisition programs can and should adopt.
9. Suggest no DCAA audit required prior to an SBIR Phase I, II, or III award after the first award. Subsequent DCAA audits can be made during the contract execution. Or make Commercial bookkeeping acceptable.

## **Recommendations for other Defense Programs**

10. Expand and increase support for the Accelerate the Procurement and Fielding of Innovative Technologies (APFIT) program
11. Fund the Rapid Innovation Program. The program has been successful but lacks funding; DOD could take action to state its support for reinitiating the program.
12. Publish a memorandum encouraging direct Phase III awards, and other innovative technologies to procurement, contracting officers, and PEOs encouraging the use of new technologies. A memo by Assistant Secretary of the Navy Sean Stackley in January 2015<sup>2</sup> highlighted that SBIR Phase III sole source awards were an authorized and encouraged exemption under J&A to further competition, and set the Navy on a faster SBIR transition path that has since continued and strengthened. The Navy success in transitions technology was aided by clear direction from the Assistant Secretary of the Navy. A similar DOD-wide directive for use of new technology from all sources would be helpful.

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<sup>2</sup> “Tapping Into Small Business in a Big Way”, <https://sbtc.org/wp-content/uploads/2015/01/Navy-Ass.-Sec.-Stackley-Small-Business-Memo.pdf>



## **General SBIR Comments:**

It is important to recognize the high commercialization success already achieved by the SBIR companies, and build on success. In terms of commercialization SBIR is the highest performing R&D program in the Federal government. The DoD SBIR Commercialization outcomes study by Techlink confirms the commercial quality of the technologies overall by measuring Phase III outcomes, citing a 22:1 economic impact with over half of all Phase IIs moving forward. Two dollars and seventy-three cents (\$2.73) of tax dollars are returned for every dollar spent on SBIR. Thus, SBIR not only pays for itself, it provides another \$1.73 for other programs with additional tax dollars. And, perhaps most importantly, SBIR commercializes research; 58% of the Phase II's resulted in the sales of new products and services. Those statistics also contain two large data holes, making them understated – they generally exclude sales by acquiring firms and they exclude licenses sales by licensees, two primary outcomes for successful SBIR innovations.

Profitability is insufficient to fully support a healthy defense infrastructure. Especially for innovation, DoD's weighted cost of capital guidelines already encourage higher fees for more innovative work, and higher fees would also support more effort towards IP and commercial market entry. This reduces the number of new entrants to the program and makes it harder for existing firms to survive. Encourage COs to accept a fee of 12-15 % for all SBIR/STTR and other innovative small business contracts.<sup>3</sup> Venture Capital is unlikely to invest in companies and technologies that return less than 15%. For all technology development program recipients, profitability needs to recognize the risk and allow the firm to grow its technology.

Keep the Phase I/II process, enhance its linkage to PEO interests and the DOD National Defense Strategy. The SBIR Phase I/II process achieves high technical quality by virtue of its focus on new innovations and being highly-competed (only 1 Phase I proposal in 20 reaches Phase II). The SBIR Phase I review process is directed to assessing innovation and technical review, the Phase I performance directed to proof-of-concept, and the Phase II proposal process also includes substantial technical review. The result is a high quality, "show me the facts" technical evaluation process. A key success factor in getting innovations transitioned to the warfighter is making sure the technologies really are innovative and merit-worthy, and the current system achieves this.

It has been asserted that the current Phase I/II process does not adequately link up with program office needs (hence the Open Topic focus on doing this matchup). This could be solved more directly and elegantly by better requiring program office support and sign-on for new Phase I topics and by requiring PEO support for Phase II selection. But if SBIR offices are also looking for solutions the PEOs would not have come up with themselves, then they could also

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<sup>3</sup>[https://www.acq.osd.mil/dpap/cpf/docs/contract\\_pricing\\_finance\\_guide/vol3\\_ch11.pdf](https://www.acq.osd.mil/dpap/cpf/docs/contract_pricing_finance_guide/vol3_ch11.pdf). (Note: the profit is significantly less than the fee as other non-reimbursable costs must be paid for out of the fee.)



have an "Open" topic that includes both strong technical review and Phase I proof-of-concept performance while also supporting a \$50K hunting license for the winners to ALSO seek out program office support. Open topics awards should focus on DOD National Defense Strategy when possible. SBIR/STTR topics should not only link to DOD needs, they need to ensure alignment to the acquisition process which enables transition/commercialization of those innovations. An end to end holistic process has shown to be a best practice.

In addition, in some cases the TPOCs screen the companies away from direct contacts with the PEOs, perhaps thinking they have a gatekeeping role. Stop this practice which blocks the linkage between the innovators and the PEOs, and thereby inhibits further improved solutions development. Scale the Department of Navy program which has the PEOs involved in Phase II and Phase III plans and decisions, and in fact interactions during the Phase I stagewould lead to better Phase II proposal focus. Improving this flow would also improve the R&D as the companies will want to best meet the needs of the PEO customers, to encourage a transition path forward.

While there has been significant improvement in transitioning SBIR technology, much more needs to be done. Transition does take longer than it needs to, but this is not for lack of SBIR innovation. PEO interests and the transition process could be much better aligned with the SBIR R&D, leading to a higher PEO-driven transition rate. Use the directed Phase III authority granted by Congress for companies that have already passed Phase I and II merit selections, to avoid any requirement for further competition, and move to speedy Phase III awards leading to transition to the field The PEO just has to decide which technologies it wants to advance. DOD already has the tools needed to do this by encouraging contracting officers and PEOs to use this tool for speeding the transition cycle, and to otherwise prioritize solutions for the warfighter. From our members' experience, even today few COs/PEOs feel they can use this tool to achieve fast cycles.

Provide priorities and expedite reviews for security clearances for SBIR firms that can potentially provide new technologies to classified programs. Currently many SBIR firms cannot get security clearances even as their technologies would help achieve competitive overmatch. Lack of security clearance bars SBIR firms from briefings to better understand the potential applications for their technologies, as well as from competing for new work. This hampers SBIR firms from transitioning new technologies.



We welcome the opportunity to discuss these matters, and to work towards better and stronger SBIR programs at the DOD. We believe there are substantial improvements that can be made without legislative action to provide better alignment of SBIR topics with DOD needs and to provide better, faster transitions of successful SBIR innovations.

Thank you, we appreciate your consideration,

A handwritten signature in black ink that reads "Jere W. Glover". The signature is fluid and cursive, with a long, sweeping tail on the letter "e" at the end.

Jere W. Glover  
Executive Director  
Small Business Technology Council