



February 19, 2020

Dr. William Roper
Assistant Secretary of the Air Force for Acquisition, Technology, and Logistics
The Pentagon
Washington DC

Robert Schmidt
Kevin Burns
Co-Chairmen

Jere Glover
Executive Director

Subject: How to improve transition from SBIR to the warfighter

Larry Nannis
Treasurer

Dear Dr. Roper:

Matt Oristano
Mid-Atlantic
Regional Chair

You asked the Small Business Technology Council (SBTC) how the Air Force can improve its transition rate from SBIR R&D programs to get the technology in the field faster to help the warfighter. This is a great objective, which SBTC fully supports.

Ash Thakker
Southeast
Regional Chair

Here are 6 actions Air Force could take in the short term for meaningful impact:

Mary Delahunty
Southwest
Regional Chair

1. Extend contract standardization to Phase IIIs: Complete Air Force Phase I and Phase II SBIR model contract standardization to also create a standardized Phase III contract. A standard Phase III contract would substantially speed Phase III contracting actions. Standardizing contracts could save a year or more of development time.
2. Publish a memorandum encouraging Air Force direct Phase III awards, to procurement and contracting officers as well as PEOs. These can follow Phase I/II and do not require matching. This would explain how directed SBIR Phase III awards may be made without further competition, an empowerment tool provided by NDAA and the SBIR Policy Directive. Combined with the standardized Phase III contract, this would encourage more rapid transition of desired SBIR technologies. A memo by Assistant Secretary of the Navy Sean Stackley in January 2015 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 transition path.
3. Encourage Primes to implement SBIR technologies into their deliverables by encouraging and incentivizing them to subcontract to SBIR firms, perhaps to include added value in procurement decisions or perhaps through setting percentage targets under major awards. 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. The law allows incentives for primes.
4. Matchmake the backlog: Air Force may have many SBIR technologies that offer solutions for Air Force programs but are not being transitioned for lack of PEO knowledge. Create a process to match SBIR companies and their prior Air Force SBIRs with the program offices and the Prime Contractors. This could take lessons learned from the recent AFWERX open topic on how to best empower companies to link with program offices and Primes. The CRP allows matching funds.
5. Profitability is insufficient to encourage VC funded firms and most other firms to participate or remain in the SBIR/STTR program. This reduces the number of new

Russ Farmer
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entrants to the program and makes it harder for existing firms to survive. Encourage COs to accept a fee of 15 % for all Ph I, II, and III SBIR/STTR contracts.¹

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 Air Force.

We agree transition can be improved, and Air Force has the procurement tools to do this.

General comments:

1. 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. These statistics are understated in that they also generally exclude sales by acquiring firms and licensed sales by licensees, two primary outcomes for successful SBIR innovations. Further, 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.

2. Keep the Phase I/II process, enhance its linkage to PEO interests: The current (pre-AFWERX open topic) SBIR Phase I/II process achieves high technical quality by virtue of being highly-competed (only 1 in 20 reaches Phase II). The SBIR Phase I review process is directed to 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 technical screening process seeking innovation and impact. A key success factor in getting innovations transitioned to the airfighter is making sure the technologies really are innovative and merit-worthy, and the current system achieves this.

The recent AFWERX \$50K Phase I process that focused on finding a program office customer substantially downgrades the technical review and quality controls. While program offices will certainly not want to pick weaker technologies, relying on PEO funding commitment decisions to indicate technical merit unnecessarily reduces data for decisions, is subject to systematic error and overbias to high TRL, and will reduce the flow of new high quality innovations.

You may feel 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 topics and by requiring PEO support for Phase II selection. But PEO perspective could also be augmented with an "Open" topic that includes both strong technical review and Phase I proof-of-concept



performance while supporting a \$50K hunting license for the winners to ALSO seek out program office support.

In addition, currently the TPOCs by practice tend to screen the companies away from direct contacts with the PEOs. Stop this practice which blocks the linkage between the technologies and the PEOs, and encourage the PEOs to get involved in Phase II and Phase III plans and decisions. Improving this flow would also improve the R&D as the companies will want to best meet the needs of the PEOs to encourage a transition path forward.

3. By reducing the SBIR budget for new innovations to fund what should be Air Force Phase III transition funding, AFWERX is converting the SBIR program to a transition program. You have stated you want to use half the SBIR budget to support the AFWERX venture model, wherein much of the money will be used to fund Phase III or commercialization efforts. SBTC has serious concerns with this. First, it appears to be illegal. This is contrary to Congressional intent, which clearly calls for innovative R&D and the prescribed Phase I/II staging to be followed by Phase III funding by both the agencies and private industry. It is also contrary to Air Force interests, risking a reduction in new innovations in the five to ten year period, plus it will damage the innovative capability of the Air Force's small business industrial base. Meanwhile our adversaries will be investing in truly exclusive military technologies.

a. Instead, encourage use of higher TRL non-SBIR Air Force R&D budgets for these transitions. The program offices should fund the technologies they want to transition – why would they need added incentive to act in their best interests? Ask programs to fund the highest potential transitions regardless of whether or not the technology was produced by SBIR or non-SBIR earlier stage R&D, and when some of these are for SBIR-derived technologies, accept this as a success story and figure out how to do it more often. Provide more training and evaluate Program Managers, PEOs and Contracting Officers on the numbers and dollar amounts of Phase III SBIR programs they have awarded. Consider evolving towards the Small Business Contracting Goal of 23% for all SBIR/STTR phases as a percentage of external R&D to evaluate procurement teams.² Europe is awarding some 20% of its R&D to small business, well beyond our ~5% overall (including SBIR).

b. Encourage reintroduction of the Rapid Innovation Fund program as a cross-DoD department mechanism for advancing technologies from earlier stage TRL 4/5 SBIR Phase IIs to TRL7, in preparation for subsequent PEO-driven Phase III program transitions to the field.

4. 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 sequential Phase III awards leading to transition to the field. We agree speeding up the R&D transition cycle is a primary key to American DoD



competitive success. Leaner, meaner, faster, agile and smart. Directed Phase IIIs are meant for this; the PEO just has to decide which technologies it wants to advance. Encourage contracting officers and PEOs to use this tool for speeding the transition cycle, and to otherwise prioritize solutions for the airfighter. From our members' experience, even today few COs/PEOs feel they can use the directed Phase III tool to achieve the faster transition cycles you are encouraging.

a. We suggest a memorandum from you instructing the procurement offices to do this and informing the COs & PEOs that they both have the authority to do this.

b. You could further facilitate this by developing a standard Air Force SBIR Phase III award contract simplified to accomplish this rapid transition objective.

c. 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, as well as from competing for new work. This hampers SBIR firms from transitioning new technologies.

5. Miscellaneous actions that may harm the program:

a. The recent AFWERX solicitation limited companies to one AFWERX project. While since withdrawn, that this got put into the solicitation was an attempt to remove the companies that had been capable enough to win more than one project at a time. We wonder at the underlying motivation here. The Air Force has many primes and universities who do more than one contract at a time for the Air Force; it is astonishing that someone thought that it would be okay to truncate the involvement of small businesses when the Air Force chooses to award many contracts to many of its large primes. In comparison, one university alone gets more R&D dollars than the entire SBIR budget federal government-wide, as do several primes. Limiting single company awards appears discriminatory against small businesses.

b. We are concerned about the "venture" model that is being advanced, and would like to learn more about it. The concept of seeking new suppliers for whom Air Force work is just a sideline is interesting, but it is already in place – hardly any Air Force SBIR contractors survive on just Air Force work. They already have viable business models directed to serve a diversified customer base beyond the Air Force. The push for one company/one project was odd in this context. We doubt many VCs will be interested in AFWERX other than as a way to reduce private investment requirements for their primary commercial objectives (though there would be takers for \$15 million who will use the money to leverage their private investment). VCs have been reluctant to also meet military ITAR and other requirements while pursuing their commercial business interests, and there are SBA SBIR small business ownership and control requirements that must be met to avoid fraud.



c. We are also concerned with the move away from technical merit-based decision-making, which is a mainstay of SBIR innovation quality.

d. Matching funding as a criteria for selection or funding SBIR Phase I or II awards is not permitted: this appears to be an effort to encourage a VC-matching fund program, but VCs don't currently fund DoD or aerospace seed work, and SBIR is not a venture capital pool.

e. In your webinar yesterday we are told you stated you intended to use half of SBIR dollars to fund the Air Force Ventures model (AFWERX overhaul)? Much of this money appears directed to fund Phase III or commercialization efforts. SBTC has serious concerns about this. SBIR funds cannot be used for Phase III; this is contrary to the law and Congressional intent of the program. Second, it is likely to draw significant criticism directed to the whole SBIR program that will jeopardize the highly successful SBIR program. The Rapid Innovation Program was criticized in Roll Call, a Capitol Hill newspaper, and then DoD tried to divert a portion of its funding to other R&D activities. The result was that Congress de-funded the entire program the following year. Other successful technology/industry programs have been eliminated after being criticized as Federal subsidization of private investment in commercialization of technology. Once the AFWEX SBIR program is more broadly known, it too will be criticized in the press and on Capitol Hill. We are concerned AFWERX will taint SBIR R&D as a commercialization subsidy program.

We welcome the opportunity to discuss these matters with you, and to work towards a better and stronger Air Force SBIR program. We believe you can substantially improve Air Force procurement to provide better alignment of SBIR topics with Air Force needs and to provide better, faster transitions of successful SBIR innovations.

Thank you, we appreciate your consideration.

Robert N. Schmidt
Co-Chair, SBTC

Jere W. Glover
Executive Director, SBTC

Kevin Burns
Co-Chair, SBTC

¹ 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.)

² <https://www.sba.gov/about-sba/sba-newsroom/press-releases-media-advisories/federal-government-achieves-small-business-contracting-goal-fifth-consecutive-year-record-breaking>