

SBTC Summary of Topics to Engage AFWERX Leadership

Pursuant to our teleconference meeting with Dr. O'Brien and staff on April 8th, 2020, the Small Business Technology Council (SBTC) deeply appreciates the opportunity to engage with AFWERX Leadership to discuss issues and concerns around the changing Air Force SBIR program under AFWERX efforts. The action call from that meeting focused on identifying a collection of individual topics that AFWERX and the SBTC could pursue in follow-up targeted discussions to ensure common understanding of SBTC's concerns and to provide a framework to pursue addressing of those issues. To that end, the SBTC has identified the following five (5) topics for future discussion.

Topic 1: Clarification of Expected 80/20 Split of FY20 SBIR Funding

In our April 8th discussion, AFWERX confirmed that the current planned split of USAF SBIR funding for FY20 is expected to be 80% to AFWERX open topics, and 20% to defense-only topics. This preference towards the aspirational, but yet unproven, AFWERX approach to SBIR funding, concerns us in the SBTC. Some items to explore in this topic include:

- What will be the open versus defense-only topic counts in the 20.2 and future solicitations?
 - What, if any, risks does AFWERX see in biasing aggressively towards the new AFWERX open topic format?
- Is there any appetite within AFWERX leadership to consider a slower transition to this aggressive introduction of the AFWERX process?
 - This suggestion recognizes that the AFWERX concept and process remains, in our minds, an experiment. Unless and until that experiment bears out in the marketplace, and meets the aggressive goals for rapid technology insertion into AF program offices, we risk alienating the historical SBIR performer base, which may be difficult to recover in the future, should the need arise.
- What is total estimate for spending in the 2020 budget year?

Topic 2: Plans to Address Phase II Orphaning of Prior SBIR Awards

Approximately 600 firms competed and won Phase I SBIR awards based on the Air Force's identified needs in 2017 and 2018. Traditionally, about 50% of these firms would have won a Phase II follow on to their Phase I awards. It appears that most of these firms and their awards have now been orphaned. These firms are part of the Air Force industrial base. They provided what the Air Force requested and did it well. We have also learned anecdotally from our SBTC member companies that there are multiple (scale unknown as of yet) awarded Phase I programs from the 2019 SBIR solicitations that will not lead to Phase II contracts, not as a result of performance issues, but rather, as a result of shifted budgets in the AF SBIR programs. That is, companies received award notifications for Phase II programs, but were later informed that

awards would not be made due to lack of funding and/or organizational changes within the AF SBIR program related to the rollout of the AFWERX program. This obviously concerns us greatly, as it is likely to lead to an industry assessment of the AF SBIR program as an unreliable investment path for innovation funding. We believe it is imperative to understand the scale of this problem, the future potential for it to continue, and mitigation steps that the AF can put in place to protect its longstanding small business industrial base from such concerns (both in hindsight and in the future). To that end, we suggest focusing on the following issues in a breakout group:

- Data collection and analysis to understand the full scope of the problem from 19.3 and 20.1
 - We have consulted the SBIR.gov data dashboards, but it is our understanding that that data set is currently incomplete, and therefore, not helpful to this analysis as of yet.
 - Can the USAF provide updated data to support this analysis?
- Compare historical award trends in the USAF SBIR program (2018 and earlier) to 2019 and early 2020 data to identify the scale of change in award actions
 - Understand the numbers of awardees, and the spread across industrial base (geographically (by state), minority and women-owned, etc.)
 - Focus this analysis both on the number of awards and participant demographics, as well as on the dollars, so we can identify how the AFWERX approach may be limiting participation by broad swaths of the industrial base.
- It is our understanding that the Air Force has closed at least one AFRL SBIR office (RH) and subsumed its funding into the AFWERX program. Can you confirm that organizational change and any other similar changes? And if so, what analysis was performed leading to this decision?

Topic 3: Legal Issues with AFWERX Implementation Against SBIR Legislation

As discussed in our prior meetings with Dr. Roper, the SBTC is concerned about whether the current implementation of the AFWERX program is or is not well aligned with the spirit and the letter of SBIR program legislation. When the original SBIR legislation was passed in 1982, Congress established four (4) goals or objectives for the program to accomplish: (1) stimulate technological innovation; (2) use small business to meet Federal R&D needs; (3) foster and encourage participation by minority and disadvantaged persons in technological innovation; and (4) increase private sector commercialization of innovations derived from Federal R&D.

The AFWERX open topics appear to move the program away from these goals in the following ways:

1. **Does not stimulate technological *innovation*, the first of four goals for the SBIR program.** Instead, the AFWERX program focuses on collecting already commercialized and venture-funded technologies, overspending innovation dollars on advanced maturity technology development and commercialization, while starving access to SBIR

for earlier stage technologies. In redirecting SBIR money to adapting already-commercial technology for Air Force needs, AFWERX is missing the key purpose of stimulating innovation. SBTC believes the Air Force should be using non-SBIR Phase III funding to further advance technologies that are already commercial.

2. **Only meets a very narrow cross-section of Air Force R&D needs, the second SBIR program goal.** Heavy concentration of funding into just a few topics already being funded by venture capital and existing AF programs greatly narrows the degree to which the SBIR money meets the Air Force broad needs for innovation.
3. **Does not foster and encourage participation in innovation and entrepreneurship by women and socially or economically disadvantaged persons, the third SBIR program goal.** By concentrating awards towards firms already receiving venture capital funding and entrepreneurs who have left executive positions in venture-funded firms, a group characterized by having fewer women and socially or economically disadvantaged persons, AFWERX appears to be selecting against this SBIR program goal.
4. **Does not increase private sector commercialization of R&D derived from Federally sponsored research, the fourth SBIR program goal.** The AFWERX program appears to do the reverse, in that it increases Federal sponsorship of research derived from privately sponsored research.

Another concern is that any reference to matching funds implies significant ability to provide capital by the company. Since the average size of SBIR firms is 5-10 employees, this will make a giant shift in the current makeup of the AF SBIR industrial base. More importantly, it will bias new awards towards the four states that receive the highest amount of Venture Capital (VC) investment. SBTC believes this will have a long term deleterious effect on Congressional support for the SBIR program.

The jumbo Phase II awards that have been announced for some \$113M will go to 21 firms, all of which apparently have substantial VC support. Almost all are located in states rich in VC funding, including 70% to Massachusetts and California.

- Is this the case? Assuming so, is this coincidence, or is there some underlying factor influencing this—possibly an implicit use of VC funding as a basis for Phase II selection?
- For the Air Force SBIR awards to these 21 firms, did Air Force legal counsel ensure that those firms met the SBA small business definition, especially relating to individual control, before making SBIR awards to those firms?
- Do the 20.1 awards have the similar types of investments and geographic distribution?

Topic 4: Technical Merit Concern with Current AFWERX Implementation

The longstanding history of the Federal SBIR program is rooted in its execution as a *merit-based* funding program—that is, the *best* ideas with the *strongest* chance of being successful to solve a *defined* USAF problem are the winning ideas. The SBTC remains concerned that the AFWERX program implementation counters this long-prized trait of the SBIR program in two major ways:

- Lack of technical depth in the evaluation of proposals by appropriate Subject Matter Experts (SMEs)
 - The SBTC certainly appreciates the participation of and buy-in from the USAF Program Offices that the AFWERX program is providing. Early access to program office input provides a significant boost to awardees to ensure that their capabilities are being driven towards real USAF needs in a laser-focused manner. We encourage this level of program office participation in all SBIR efforts, not just in the AFWERX program.
 - However, we are deeply concerned that the proposal evaluation process through Pitch Days and rapid marketing-oriented briefs to program officers is insufficient to properly evaluate the technical depth and merit of a given proposal.
 - The USAF has long had access to a deep bench of technical experts throughout the Air Force Research Laboratory (AFRL). How is this deep expertise being leveraged in the AFWERX proposal evaluation process to ensure that the USAF can avoid buying good marketing ideas that may not meet the real technical needs of the warfighter?
- Limiting of parallel SBIR awards (even addressing fundamentally different USAF problems) to a given small business imposes artificial limits on the USAF's ability to buy the *best* ideas and products for the warfighter
 - In our prior discussions with Dr. Roper and Dr. O'Brien, we have been assured that this one-award limit shall be removed from the program definition.
 - However, we have not yet seen the evidence of that change going forward (hopefully in the upcoming 20.2 solicitation), nor in repairing its impact on the prior 20.1 solicitation.
 - What process will the AFWERX leadership put in place to address this concern, and when will that process be published to the small business industrial base?

Topic 5: Balancing Innovation and Technology Transition in the AFWERX Implementation

A primary stated goal of the AFWERX program is to speed transition of technology to the warfighter. SBTC agrees wholeheartedly with this goal! However, we caution against what we see as the current implementation of this goal, since it appears to largely trade investment in technical innovation in favor of marketing existing commercial technologies to the USAF Program Offices. To explore this issue, we pose the following questions:

- How does a focus on already-commercial technologies provide the Air Force with innovation or long-term competitive advantage? The Air Force calls this “dual use”, but in fact, it seems to be “transitioned from commercial use”.
- How confident is AFWERX in their ability to gain competitive advantage from commercial technologies already available in the marketplace for purchase? Might this commercial base mean that Air Force applications will later face analogous versions developed by competitive nations, and so fail to provide competitive advantage?

- To what extent has AFWERX imposed ITAR restrictions on these technologies, including ensuring advances made with military money do not get fed back into internationally-available commercial products?
- What is being done beyond dual use? Are PEOs helping with specific topics for Air Force specific research needs?
- How does AFWERX reconcile the “pull” from USAF Program Offices to address specific AF problems with the generality of Open Topic solicitations? Broad and vague problem statements in open topics miss the goal of expressing clear requirements pull from the Program Offices, since no targeted guidance is provided through them to guide industry bids.