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JOINT APPLIED PROJECT REPORT

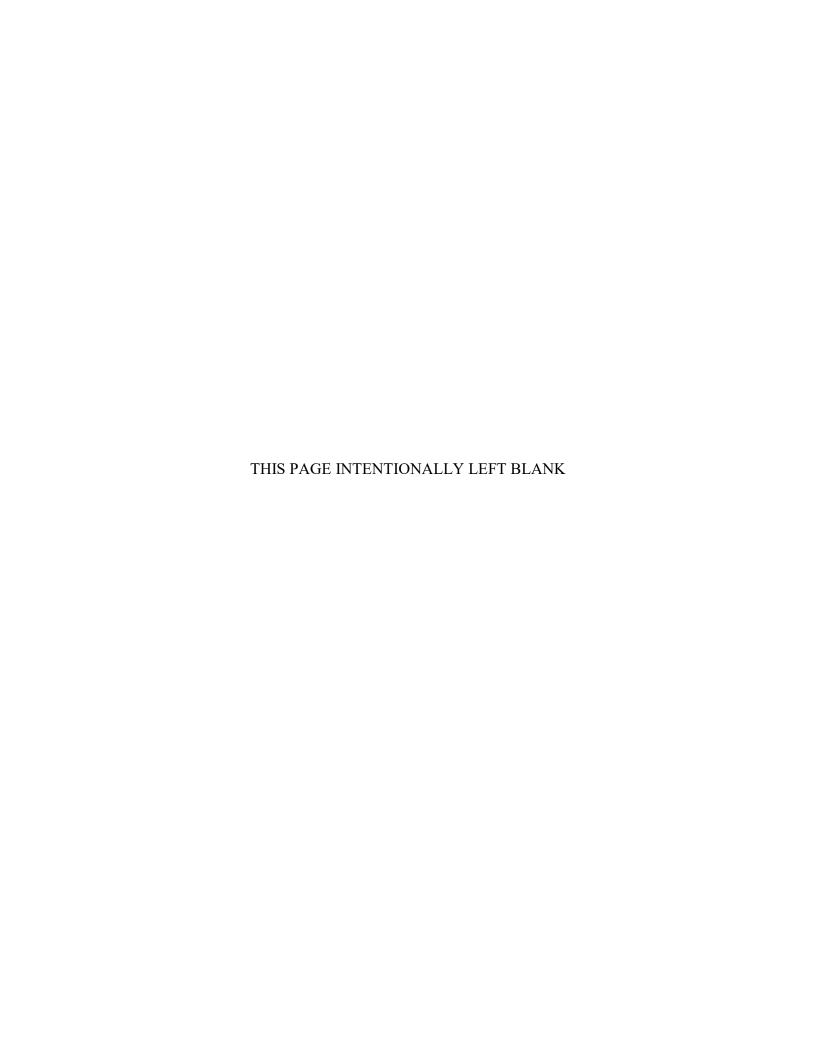
TECHNICAL DATA RIGHTS: SMALL BUSINESS INNOVATION RESEARCH PROGRAM

June 2019

By: Christopher R. Hebert

Advisor: Raymond D. Jones Co-Advisor: Robert F. Mortlock

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The Small Business Innovation Research (SBIR) Program was founded in 1977 and is coordinated through the Small Business Administration (SBA). The current policy concerning technical data rights under the SBIR Program has caused significant problems for both the government and SBs. The lack of clear policy concerning technical data rights across both the government and SBs has caused impacts to program management and procurement of goods and services. This study conducted an analysis of current policy concerning technical data rights asserted under the SBIR Program through multiple methods. This study reviewed current and past federal policies concerning the SBIR program and technical data rights. In addition, informant data were collected through interviews with the Department of Defense, SBA, and defense contractor employees, though ultimately SBA and contractors proved difficult to reach. This project showed that the SBIR Program requires reform to clarify when the government inherits technical data rights to better promote competition and reduce government spending. It also showed the need to provide better education and training to contracting professionals and SBs interested in the SBIR Program. Results are discussed in an effort to provide concrete policy recommendations for reform.

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TECHNICAL DATA RIGHTS: SMALL BUSINESS INNOVATION RESEARCH PROGRAM

Christopher R. Hebert, Civilian, Department of the Navy

Submitted in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE IN CONTRACT MANAGEMENT

from the

NAVAL POSTGRADUATE SCHOOL June 2019

Approved by: Raymond D. Jones

Advisor

Robert F. Mortlock

Co-Advisor

Brett M. Schwartz

Academic Associate, Department of GSBPP Program Office

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TECHNICAL DATA RIGHTS: SMALL BUSINESS INNOVATION RESEARCH PROGRAM

ABSTRACT

The Small Business Innovation Research (SBIR) Program was founded in 1977 and is coordinated through the Small Business Administration (SBA). The current policy concerning technical data rights under the SBIR Program has caused significant problems for both the government and SBs. The lack of clear policy concerning technical data rights across both the government and SBs has caused impacts to program management and procurement of goods and services. This study conducted an analysis of current policy concerning technical data rights asserted under the SBIR Program through multiple methods. This study reviewed current and past federal policies concerning the SBIR program and technical data rights. In addition, informant data were collected through interviews with the Department of Defense, SBA, and defense contractor employees, though ultimately SBA and contractors proved difficult to reach. This project showed that the SBIR Program requires reform to clarify when the government inherits technical data rights to better promote competition and reduce government spending. It also showed the need to provide better education and training to contracting professionals and SBs interested in the SBIR Program. Results are discussed in an effort to provide concrete policy recommendations for reform.

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LIST OF ACRONYMS AND ABBREVIATIONS

DoD Department of Defense

IRB Institutional Review Board
NPS Naval Postgraduate School

RFP Request for Proposal

SB Small Business

SBA Small Business Administration

SBC Small Business Concern

SBIR Small Business Innovation Research

STTR Small Business Technology Transfer

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I. INTRODUCTION

The Small Business Innovation Research (SBIR) program was founded in 1977 and is coordinated through the Small Business Administration (SBA) (Small Business Administration, n.d.). The primary purpose of this thesis is to conduct an analysis of the current policy concerning technical data rights asserted under the SBIR program and the required reform needed for the SBIR program to succeed for both small businesses (SB) and the government.

The current policy concerning technical data rights under the SBIR program has caused significant problems for both the government and SB. The lack of clear policy concerning technical data rights for both the government and the SB has caused impacts to program management and procurement of goods and services. Data were collected from current and past federal policy concerning the SBIR Program and technical data rights. In addition, data were collected through interviews with Department of Defense (DoD), Small Business Administration (SBA), Defense contractor employees. This project confirms that the SBIR program requires policy reform as a result of inconsistent interpretation of the SBIR Policy Directive among agencies and SBs based on inconsistent interpretation of the SBIR Policy Directive which conflicts with SBIR statutes as demonstrated through qualitative findings. Results also show the need to provide better education and training to contracting professionals and SB interested in the SBIR program.

In an article published by the National Institute of Standards and Technology, through their manufacturing innovation blog, the SBIR program was highlighted as a viable option for small businesses to consider. "Over 45 percent of the manufacturing companies that MEP [Manufacturing Extension Partnership] National Network serves identify product development as one of their top three challenges over the next three to five years, while many say financing is also an issue" (Wilkins, 2018, para 1). This article details the need for the SBIR program to support product development and innovation among small businesses. The author states "plus you own the intellectual property, give up no equity and take on no debt" (Wilkins, 2018, para. 4). The author makes an interesting statement by suggesting a company will always own the intellectual property.

This article identifies a key question within the current SBIR policy as written: does the government send the message to small businesses that they will have full ownership of intellectual property for perpetuity? One of the SBIR program's statutory purposes, further discussed in the background, is to "foster and encourage participation by socially and economically disadvantaged small businesses" (Small Business Administration, Office of Investment and Innovation [SBA], 2014, p. 3). However, were contractors owning government-funded intellectual property allowed data rights in perpetuity, it would severely impact the participation of future small businesses and negatively affect competition. If the government is sending this message to small businesses and industry, then the government is not following the statutory purpose of the SBIR program. The SBIR policy would need to be rewritten in order to provide small businesses a clear understanding of how the SBIR program works, specifically how the technical data rights are issued, and clarify that companies will not receive the data rights for perpetuity. The current chapter details the purpose of this Joint Applied Project. Further details are provided in the following text on the background, purpose, and scope of the project.

A. BACKGROUND

The Small Business Innovation Research (SBIR) program, founded in 1977, is coordinated through the Small Business Administration (SBA) (SBIR STTR, n.d.). Within the Small Business Act is the Small Business Innovation Development (SBID) Act, Pub. L. No 97–219, and within this act, the SBID became effective October 1982 (Small Business Administration, n.d.). The two individuals that pioneered the SBIR program were Senator Edward Kennedy and First Lieutenant Roland Tibbets (Small Business Administration, n.d.). "The statutory purpose of the SBIR Program is to strengthen the role of innovative Small Business Concerns (SBCs) in Federally-funded research or research and development (R/R&D)" (Small Business Administration, Office of Investment and Innovation [SBA], 2014, p. 3). In accordance with 13 C.F.R. SS 121.702, firms wishing to participate in the SBIR program must be owned or controlled by U.S. entities. These firms also face requirements based on employee numbers and must have 500 or fewer employees (SBA, 2014).

The SBIR Program itself has specific regulations for Phase I, Phase II, and Phase III contracts. These contracts also include specific regulations concerning the technical data rights asserted during performance. The SBIR Policy Directive defines SBIR technical data rights as "The rights SBIR awardee obtains in data generated during the performance of any SBIR Phase I, Phase II, or Phase III award that an awardee delivers to the Government during or upon completion of a Federally-funded project, and to which the Government receives a license" (SBA, 2014, p. 7).

The government can acquire three different kinds of rights concerning data and intellectual property. The first, restricted rights

applies to only noncommercial computer software and mean the Government's rights to use a computer program with one computer at one time transfer a computer program to another Government agency without permission of the Contractor if the transferor destroys all copies of the program and related computer documentation; make the minimum number of copies of computer software required for safekeeping (archive), backup or modification purposes; modify computer software; and permit contractors or subcontractors performing services in support of a contract to use computer software for correcting deficiencies. (Defense Information System Agency [DISA], 2019)

The second kind is Government Purpose Rights. Government Purpose Rights "means the rights to use, modify, reproduce, release or disclose the technical data or computer software within the Government without restriction and outside Government for a Government purpose. A Government purpose license remains in effect for 5 years unless the parties negotiate a different period. Upon expiration of the five-year term or another negotiated period, the Government shall have an "unlimited rights" license in the noncommercial technical data or noncommercial computer software" (DISA, 2019). The third right is unlimited rights which provides the government the ability to "use modify, reproduce, release or disclose technical data or computer software in whole or in part, in any manner, and for any purpose whatsoever, and to have or authorize others to do so" (DISA, 2019).

B. PURPOSE

With the current policy in place, the government could potentially never receive government purpose rights, or more importantly unlimited rights, and could theoretically be in a sole source situation for an extensive period of time. The issue stems from the policy directive itself which states "If an SBIR awardee receives a funding agreement (whether competed, sole sourced or subcontract) for work that derives from, extends, or completes efforts made under prior SBIR funding agreements, then the funding agreement for the new work must have all SBIR Phase III status and data rights" (SBA, 2014, p. 13). Based on this policy, a resulting contract that involves work deriving from an SBIR contract is for all intents and purposes an SBIR Phase III contract and must include the appropriate data rights. The policy directive further instructs agencies to insert the following language in solicitations to notify SBs of the SBIR technical data

To preserve the SBIR data rights of the awardee, the legend (or statements) used in the SBIR Data Rights clause included in the SBIR award must be affixed to any submissions of technical data developed under that SBIR award. IF no Data Rights clause is included in the SBIR award, the following legend, at minimum, should be affixed to any data submissions under that award. These SBIR data are furnished with SBIR rights under Funding Agreement No,___ (and subcontract No. if appropriate), Awardee Name , Address, Expiration Period of SBIR Data Rights The Government may not use, modify, reproduce, release, perform, display, or disclose technical data or computer software marked with this legend for (choose four (4) or five (5) years). After expiration of the (4-or-5-year period), the Government has a royalty-free license to use, and to authorize others to use on its behalf, these data for Government purposes, and is relieved of all disclosure prohibitions and assumes no liability for unauthorized use of these data by third parties, except that any such data that is also protected and referenced under a subsequent SBIR shall remain protected through the protection period of the subsequent SBIR award. Reproductions of these data or software must include this legend. (SBA, 2014)

This statement and the resulting language imbedded within the SBIR policy directive is the major source of confusion among government and SBs alike.

The lack of details and inconsistencies within the SBIR policy creates confusion and contractual problems for both the government and industry. Throughout contract

performance if any work is updated or changed through a modification or Engineering Change Proposal (ECP) this would restart the data rights clock in accordance with SBIR policy and extend the contractors rights for additional years (SBA, 2014). This causes serious problems from the program management side all the way to the contracting officer. The government could potentially be in a sole source situation for the life of the program. The contractor in this scenario, knowing the government is facing a sole source situation, can charge a higher fee or profit and increase prices that normally would not be increased in order to stay competitive among other potential vendors. As the DoD is predominately an R&D field, the current policy directive concerning technical data rights is written in such a way as to provide contractors the ability to own technical data rights for longer than five years and to create a sole source market that puts that Government at risk to paying higher costs for technology previously funded by SBIR contracts over time.

C. SCOPE

The scope of this Joint Applied Project (JAP) includes a primary focus on the SBIR Policy Directive, effective February 2014. This policy directive contains information on the use and the purpose of the SBIR Program (SBA, 2014). In addition, this JAP reviews the use and implementation of the SBIR policy within the DoD. The review will identify other areas of inconsistencies within the SBIR policy directive and the impact these inconsistencies have on technical data rights. This JAP also includes data contained in interview responses with DoD employees within the contracting career field that work with this policy on a daily basis. These individuals are the contracting professionals who create solicitations, evaluate proposals, and award SBIR contracts. Within this scope, this JAP will determine what areas of the current policy should be updated to accurately reflect the Governments statutory purpose of the program and to resolve inconsistencies that lead to negative impacts on the government with regards to R&D technical data rights.

D. RESEARCH METHODOLOGY

In order to determine if the current SBIR policy is sufficient, several research methods, including interview responses from current DoD contracting professionals, and independent review of SBIR and DoD-related policies, are utilized in order to gather data

to properly evaluate the SBIR policy. Qualitative interviews with professionals were utilized to provide real-world context to the current policy directive and determine if limitations identified by professionals are reflected in the current policies in place within the SBIR Program.

In addition, current standing Government Accountability Office (GAO) cases concerning SBIR contracts and data rights were evaluated in terms of relevancy to the contracting professionals utilizing the SBIR program and the specific concerns surrounding the technical data rights. This research is an in-depth look into the current standing SBIR policy directive issued by SBA in 2014. Part of this evaluation includes a critique of the current policy directive and how the policy can be updated and improved to better support the SB concerns and the government alike.

1. Methodology and Interview Process

The study procedures were approved by the NPS Institutional Review Board (IRB) application. Subjects for inclusion in this interview were Department of Defense, Small Business Administrative, and Defense contractor employees who work within federal contracts and are familiar with the SBIR program and technical data rights. In order to further provide insight into the DoD implementation of the SBIR program and identify inconsistencies and the impact of an R&D industry utilizing this program, participants recruited included contracting officers, contract specialists, program managers, and small business representatives. Individuals in these specific roles were believed to have the most relevant experience concerning the SBIR program and resulting SBIR awards. The exclusion criteria are all individuals outside this domain.

This study used a qualitative approach to better contextualize current SBIR policy in professional practice and to better understand how limited detail or inconsistencies within SBIR policy might affect contracting professionals. The questions utilized in the interview process were developed and structured in an open-ended format to allow interviewees to identify their main concerns within the SBIR program and policy directive concerning technical data rights. As such, the interviewees were provided the latitude to answer the questions in a narrative format in order to allow as much detail as possible. This

narrative approach was used to extract themes from the interviewees' responses on SBIR program policy within DoD.

Individuals were contacted between 24 January 2018 and 15 March 2018 by the student investigator. The subjects were recruited by email, by phone, and/or in person between these dates. As detailed in the interview, participation was solicited as optional to individuals contacted. Participants were sent an email with a description of the purpose of this study, along with the interview questions in the format of both Microsoft Word and PDF. The level of effort estimated for the responses was between 30 minutes and one (1) hour depending on the individual's response. In order to minimize coercion, the student investigator conducted the recruitment process on 100% volunteer basis. In addition, individuals were not compensated for participation or encouraged by senior leadership to participate.

The student investigator minimized risks or discomforts associated with this research as much as possible. The potential risk associated with this interview was the minimal risk of breaches of confidentiality. Due to the interview being submitted and received via email, names and email addresses were collected, but no additional information was collected. As the interview questions were attached in a separate document, no names or email addresses were kept with interview responses.

2. Interview Questions

The questions provided to participants are included in Appendix A. The responses to the interview questions provided one of the major data sources in this thesis. The responses are from individuals with direct experience with the SBIR Program and the technical data rights asserted within the program. The individuals that responded provided insight into the everyday workings of the program and how their experience has shaped their overall opinion of the SBIR Program. In the hope of receiving as much information as possible, the interview questions were structured in an open-ended format. In addition, the questions were worded in a way to allow participants to provide both positive and negative experiences. The questions provided to participants are included in Appendix A

E. PROJECT OVERVIEW

The next chapter will review and evaluate the SBIR program policy directive, literature from the Formation of Government Contracts, and additional literature on the SBIR program. In Chapter III, the results and findings from the interviews, as well as recent GAO cases concerning technical data rights will be discussed, highlighting areas of concern. Chapter III will highlight excerpts from the interviewees tying back to the literature analysis conducted in Chapter II. Chapter IV will summarize this project and use the findings from Chapter III to conclude with recommendations concerning the SBIR program.

II. SBIR LITERATURE AND POLICY REVIEW

A. SMALL BUSINESS INNOVATION RESEARCH PROGRAM POLICY DIRECTIVE

The Small Business Administration (SBA) Office of Investment and Innovation established the SBIR program policy directive. The SBA is required by statute to issue guidance and directive to federal agencies participating in the SBIR program. The directive details that the

specific program purposes are to: (1) stimulate technological innovation; (2) use small business to meet Federal R/R&D needs; (3) foster and encourage participation by socially and economically disadvantaged small businesses (SDBs), and by women-owned small businesses (WOSBs), in technological innovation; and (4) increase private sector commercialization of innovations derived from Federal R/R&D, thereby increasing competition, productivity and economic growth. (SBA, 2014, p. 3)

The SBIR program is structured into three unique phases. The first phase, being Phase I, are "awards to determine, insofar as possible, the scientific and technical merit and feasibility of ideas that appear to have commercial potential" (SBA, 2014, p. 4). The second phase, Phase II, are "awards to further develop work from Phase I that meets particular program needs and exhibits potential for commercial application" (SBA, 2014, p. 4). The third and final phase, Phase III, are "awards where commercial applications of SBIR-funded R/R&D are funded by non-federal sources of capital; or where products, services or further research intended for use by the federal government are funded by follow-on non-SBIR federal funding agreements" (SBA, 2014, p. 4).

The SBIR program policy directive also provides a definition of the SBIR technical data rights (SBA, 2014). These rights are defined as "the rights an SBIR awardee obtains in data generated during performance of any SBIR Phase I, Phase II, or Phase III award that an awardee delivers to the government during or upon completion of a federally-funded project, and to which the government receives a license" (SBA, 2014, p. 7). Although the SBIR program is structured in a way to encourage SBC to participate in government contracts, the directive opens the government to vulnerability, specifically

concerning SBIR technical data rights (SBA, 2014). This vulnerability presents itself in the form of the contractors owning the SBIR technical data rights.

Federal agencies are required to follow the SBIR policy directive and cannot include conflicting information or clauses within their contracts that would create inconsistencies between the SBIR policy directive and agency specific guidance. The SBIR policy directive as written can potentially create a situation where the government is unable to compete future requirements for the hardware or services in support of a program because they do not have unlimited or government purpose rights. As such, the government is forced to go to one vendor and is at their mercy in regards to profit or fee.

B. FORMATION OF GOVERNMENT CONTRACTS

As previously mentioned the SBIR program is structured into three unique phases. Phase I typically involves contract awards of \$100,000 or less and is in direct support of R&D efforts for up to six months (Cibinic, Nash, & Yukins, 2011, p. 1094). This phase begins the SBIR process and is used commonly "to demonstrate the scientific and technical merit and feasibility of a proposed innovation" (Cibinic et al., 2011, pp. 1094). Phase I of the SBIR program is designed to issue the Request for Proposal (RFP), similar to that of a Broad Agency Announcement (BAA), and determine if the R&D is feasible and in the best interest of the government to proceed (Cibinic et al., 2011, pp. 1094).

A Phase II award within the SBIR program is only eligible to those SBC's that received Phase I awards (Cibinic et al., 2011, pp. 1094). These awards "generally involve a maximum of \$750,000 to support up to two years of work to further develop the innovation" (Cibinic et al., 2011, pp. 1094). In addition, an important note that will be discussed further in this thesis is the concern of commercialization. One of the major unique factors within this phase is the consideration of commercial potential (Cibinic et al., pp. 1094). "Projects with commercial potential receive special consideration for a Phase II award" (Cibinic et al., 2011, pp. 1094).

Building off of Phase I and Phase II, are Phase III SBIR awards which are "for the commercialization of Phase II results and does not involve SBIR/STTR funding" (Cibinic et al., 2011, pp. 1094). Phase III is an important aspect of the SBIR program as it is within

this phase that many changes occur. For example, funds not appropriated specifically for the SBIR program must be utilized and committed for this award (Cibinic et al., 2011, pp. 1094). Another specific, unique, and important note concerning Phase III contracts is that they can be awarded to a contractor that is no longer a SB (Cibinic et al., 2011, pp. 1094). In addition, "There is no limit on the number, duration, type, or dollar value of Phase III awards made to a business concern. There is no limit on the time that may elapse between a Phase I or Phase II award and Phase III award, or between a Phase III award and any subsequent Phase III award" (Cibinic et al., 2011, pp. 1102). This is a key aspect to the SBIR program as within this statement the government permits SBIR Phase III contracts to be potentially limitless with contractors having the ability to receive multiple subsequent SBIR Phase III contracts for significant period of time.

It is clear the SBIR program was designed with a specific structure and goal in mind. "The program is designed to assist small businesses by establishing simplified and fairly uniform procedures, while also allowing sufficient flexibility to the participating agencies" (Cibinic et al., 2011, pp. 1094). However, with this uniformed procedure and through experience with the program, there are clear policy issues that have created significant work and delay for the government and SBC. These issues come to light within the third phase of the program. In this phase the government is able to award SBIR phase III contracts to other than SBC and for an infinite number of Phase III contracts (Cibinic et al., 2011, pp. 1094). These issues are also highlighted in the interview responses detailed further in this thesis.

C. GOVERNMENT ACCOUNTABILITY OFFICE (GAO) REPORT FINDINGS

This section provides a further analysis of the results of a Government Accountability Office (GAO) Report published in January 2018. The GAO Report, titled *Small Business Research Programs Agencies Need to Take Steps to Assess Progress toward Commercializing Technologies*, made 11 recommendations to agencies utilizing the SBIR and Small Business Technology Transfer (STTR) program as well as to the SBA (Neumann, 2018).

1. Overview of Agencies Utilizing the SBIR and STTR Programs

Many agencies make use of the SBIR and STTR programs. Although not specific to DoD, the GAO report still provides valuable insight into the program. Through the SBIR and STTR programs, federal agencies have awarded about 162,000 contracts and grants totaling \$46 billion to small businesses to help them develop and commercialize new technologies" (Neumann, 2018). The table provided in the GAO report breaks down the participation of the SBIR and STTR programs by agencies.

Table 1. Agencies Participating in the SBIR and STTR Programs.

Adapted from Neumann (2018).

Agency	SBIR	STTR
Department of	Yes	No
Agriculture		
Department of	Yes	No
Commerce		
Department of Defense	Yes	Yes
Department of	Yes	No
Education		
Department of Energy	Yes	Yes
Department of Health	Yes	Yes
and Human Services		
Department of	Yes	No
Homeland Security		
Department of	Yes	No
Transportation		
Environmental	Yes	No
Protection Agency		
National Aeronautics	Yes	Yes
and Space		
Administration		
National Science	Yes	Yes
Foundation		

2. GAO Recommendations

Within the GAO report, eleven (11) recommendations were made to SBA and participating agencies. These agencies include the Department of Commerce National Oceanic and Atmospheric Administration, Department of Defense, Department of

Education, Department of Energy, Department of Health and Human Services, the Environmental Protection Agency, and National Science Foundation. The first three recommendations are directed to SBA specifically while the remaining eight (8) recommendations are directed to each specific agency. These recommendations will be discussed and analyzed in this Joint Applied Project.

a. Recommendation One

GAO recommended that "the Director of the Office of Investment and Innovation with SBA should work with participating agencies to improve the reliability of its SBIR and STTR award data" (Neumann, 2018). In order for a revision to the current policy directive to take place, SBA and federal agencies need to establish an open line of communication concerning SBIR and STTR award information. If there is no established open line of communication, SBA could be unaware of any concerns or contractual issues with the current standing policy. As GAO recommended, if the Director of the Office of Investment and Innovation with SBA worked with agencies in regards to award data they could potentially identify weaknesses and areas of improvement within the policy. This could then improve the award data received and potentially strengthen the relationship between SBC and the Government (Neumann, 2018).

b. Recommendation Two

The GAO recommended that "the Director of the Office of Investment and Innovation within SBA should work with participating agencies to implement the Commercialization Benchmark or, if that is not feasible, revise the benchmark so that it can be implemented" (Neumann, 2018). The SBA utilizes two different benchmarks to assess businesses under the SBIR and STTR programs (Neumann, 2018). In addition, the two benchmarks (transition rate and commercialization) that the SBA utilizes primarily focus on Phase I and Phase II of the SBIR Program. There is no consideration or benchmark established for the third Phase of the SBIR Program. Therefore, no data is being collected concerning the awards and execution of SBIR Phase III initiatives. Without this data and awareness, SBA and the Director of Office of Investment and Innovation could be unaware of the potential risk and increased costs for future follow-on efforts the government faces.

c. Recommendation Three

The GAO recommends "The Director of the Office of Investment and Innovation within SBA should update the SBIR and STTR policy directives to accurately reflect how the consequence of the benchmarks is to be implemented" (Neumann, 2018). The GAO report identifies further that SBA faces significant data challenges in order to truly evaluate the SBIR and STTR programs (Neumann, 2018). As discussed in recommendation number two, the benchmarks are essential for the success of the SBIR and STTR policy. If the benchmarks are not clearly detailed including their consequences of not meeting these benchmarks, the agencies implanting the guidance are not able to hold the SBC accountable.

d. Recommendations Four through Eleven

The GAO also makes an additional eight recommendations to each of the participating agencies within the report. The recommendation for each agency is the same and states "The SBIR Program Administrator within the Department of Defense should update the agency's SBIR and STTR project solicitations to accurately reflect how the consequence of not meeting the benchmarks is to be implemented" (Neumann, 2018). GAO is correct in their recommendation but in order to follow this recommendation, SBA needs to update their current standing policy to accurately reflect the consequences or allow agencies to develop their own.

3. Inaccurate or Lack of Data Concerning the SBIR Program

As identified in the interview responses and mirrored in the GAO Report, SBA and the SBIR Program face difficulties concerning their data and current policies. "According to the policy directives, SBA maintains a system that records SBIR and STTR award information—using data submitted by the agencies—as well as commercialization information, such as information about patents, sales, and investments reported by small businesses that received these awards" (Neumann, 2018). However, the GAO report identified "Data challenges have limited SBA's and the 11 participating agencies' efforts to fully implement the benchmarks" (Neumann, 2018). In addition, the assessments that have been made since 2014 are based on data that is either incomplete or inaccurate

(Neumann, 2018). The lack of accurate data could be impacting both SBs and the government on properly tracking SBIR efforts and their impacts. Indeed, the recommendations issued by GAO paint a clear picture that the SBIR policy directive needs to be updated and clarified for multiple reasons to assist agencies in the implementation of the program.

D. ASSESSMENT OF THE SMALL BUSINESS INNOVATION RESEARCH PROGRAM AT THE DEPARTMENT OF DEFENSE

This section provides a review of the assessment results of the SBIR program within DoD conducted by the National Academy of Sciences. The assessment titled, SBIR at the Department of DoD, highlights an assessment of the program and identifies specific concerns regarding within the DoD.

1. Commercialization and the SBIR Program within DoD

A distinct aspect of Phase III SBIR awards is commercialization, which begins at the end of Phase II (Wessner, 2009, p. 8). The Small Business Administration (SBA) officially defines commercialization as

[t]he process of developing marketable products or services and producing and delivering products or services for sale (whether by the originating party or by other) to Government or commercial markets (Wessner, 2009, pp. 95).

Furthermore, "At DoD, however, "Phase III" also has additional and separate meanings; in general, it means not that a project has reached the market, but that it has transitioned into use within DoD" (Wessner, 2009, pp. 95). For example, if a contractor holding SBIR data rights has a product using that data and sells to both the Navy and Army it is considered commercial for DoD standards. As the literature has identified, there is a distinct difference in the interpretation of commercialization and Phase III awards among DoD and SBA issued guidance within the SBIR program. This difference could be hindering the DoD in correctly implementing the SBIR program impacting both taxpayers and SBCs. If there is a discrepancy concerning interpretation among government agencies then this confusion could be impacting SBCs and negatively affecting competition. In

limiting competition among SBCs, this could negatively impact DoD by driving up costs, while also hindering the wider small business community by effectively creating a sole-source environment (Wessner, 2009).

2. Current and Accurate Data

One aspect that has been consistently brought up throughout the literature reviews discussed is the concern of accurate data. GAO incorporated this concern into one of the eleven recommendations previously discussed. This analysis also brings up the concern of data collection specifically targeting commercial metrics. This is becoming an import topic concerning the SBIR program and DoD; so much so that Congress has expressed concerns regarding this issue. "Recent Congressional interest in the DoD SBIR program has reflected strong interest in the commercialization of technologies funded through SBIR" (Wessner, 2009, pp. 239).

The definition of commercialization is subject to interpretation leading to differences in establishing commerciality, which can then impact SBIR Phase II and III awards. Not only does this present difficulties concerning execution of the SBIR program but also the difficult task of tracking and collecting data across agencies. As the assessment points out there are multiple forms of commercialization within the DoD that are utilized and reported (Wessner, 2009). Therefore, this can impact the accuracy of the data concerning the commercial status of an SBIR initiative. With different definitions and forms of commercialization, it could have an impact on the contracts being issued and the success of the overall SBIR program.

The tracking tool utilized within the DoD is the Federal Procurement Data System (FPDS) (Wessner, 2009). The tool contains contractual information for all federal contracts (Wessner, 2009). A flaw with this system is that it relies on individuals reporting and coding the correct data leaving the system vulnerable to human error. As the assessment points out, the data being reported for SBIR Phase III award contracts is not always accurate (Wessner, 2009). For example, "Interviews with senior Services SBIR staff confirm that Contracting Officers (COs) do not always recognize that follow-on SBIR contracts with a small firm is a "Phase III contract" and hence do not mark the contract as

such in FPDS" (Wessner, 2009, pp. 242). Some agencies have acknowledged this data collection problem and have taken steps to mitigate it. The Navy, for example, has a civilian contractor review and confirm SBIR Phase III awards are reported accurately in FPDS (Wessner, 2009). But, not all agencies have taken this or similar steps concerning the reporting of data in FPDS. In order to enact reform on SBIR policy, accurate data must be reported and analyzed in order to determine what reform is needed in order to meet the needs of SBCs and the government.

E. EVALUATION AND RECOMMENDATIONS FOR IMPROVEMENT OF THE DOD SBIR PROGRAM

In 2006, the RAND National Defense Research Institute, a division of the Corporation, prepared a briefing titled Evaluation and Recommendations for the Improvement of the Department of Defense Small Business Innovation Research (SBIR) Program for the Office of the Secretary of Defense. In the evaluation, RAND provides "three fundamental steps for improving the DoD SBIR Program" (Held et al., 2006). This section provides an analysis on the recommendation made by the RAND Corporation and if these recommendations are still needed today.

1. RAND Recommendation #1: DoD SBIR Program as a Potential Resource

"At present, R&D managers often view the SBIR program primarily as a tax on their R&D programs" (Held et al., 2006). The RAND analysis concluded, however, that benefits of the SBIR program to DoD R&D remained untapped at that time. Note, however, that this analysis was completed in 2006, prior to the release of the policy directive in 2014. The SBIR program more than ten years later has further developed and has been utilized throughout the DoD R&D industry. With that said, the implementation of the SBIR program has presented problems that might not have been predicted prior to the RAND evaluation. As more recent literature has pointed out there are difficulties in executing the SBIR program and the nature of the R&D defense industry. These difficulties could potentially have negative impacts on SBCs and the government. Despite historical efforts, by RAND, to encourage use of the SBIR program in DoD, it could be argued that the R&D

defense industry is not the best fit for SBIR initiatives. One reason for this, as outlined in this thesis's problem statement, is the issue of technical data rights and their assertions.

2. RAND Recommendation #2: DoD Specific Goals

As part of this evaluation, RAND points to the lack of measurable DoD-specific goals related to the SBIR program (Held et al., 2006). The evaluation states that "Such goals are needed to provide a focus around which an effective investment strategy may be formed and to provide a benchmark for evaluating how well the program is serving the department" (Held et al., 2006). More recent literature also echoes this sentiment. Realistic and relevant benchmarks should be developed in support of this program as the GAO report discussed. With programs, such as the SBIR, it is essential for the DoD and other federal government agencies to conduct proper analysis and set specific goals in order to measure the success of the program. DoD-specific goals and benchmarks can assist the agency in determining strengths, weaknesses, opportunities for improvement, and threats in executing the program.

III. RESULTS AND FINDINGS

This Chapter describes the results of the interviews conducted to further support this project. This Chapter will begin with an analysis of interview responses as well as an analysis of the findings conducted by the Government Accountability Office (GAO) in January 2018. This Chapter will then conclude with a comparative analysis of interview responses and GAO findings.

A. INTERVIEW RESULTS AND FINDINGS

Of the 113 interviews submitted, the majority were solicited utilizing the Naval Postgraduate School (NPS) cohort as well as through the Naval Undersea Warfare Center, Division Newport (NUWCDIVNPT) Contracts Department. The cohort is represented by all of the U.S. military branches, the Defense Logistics Agency (DLA), the Department of Defense Education Activity (DODEA), and Defense Contractors. The Contracts Department is represented by contracting officers, contract negotiators, cost/price analysts, and policy representatives all working for the Navy, but with varying past experience with the Air Force and Defense Contract Management Agency (DCMA). In addition, interviews were sent to multiple military commands, as well as SBA representatives. The content of the results received was informative, though the participation rate was lower than expected.

Of the 113 interviews solicited, only five (5) completed interviews. One participant provided a survey response, but indicated they did not have experience with the SBIR program and could not provide any information or insight and therefore was excluded from analysis. Thus, only 4 participants provided valid response included for analyses. The 108 remaining potential participants either did not respond to the inquiry or responded that they did not have experience with SBIR program and therefore did not fill out the survey. The Navy had the highest participation among the agencies within the DoD, but also had the highest amount of participants contacted. Surprisingly, the SBA and their representatives had one of the lowest participation rates. Appendix B details the responses provided as a result of the interviews.

1. Themes Extracted from Interviews

a. Follow-on Efforts to SBIR Contracts

One of the major issues identified by participants within the interview is the concern regarding follow-on contracts to previously awarded SBIR efforts. Contracting Officer 2 explained, "The lack of clear guidance and different interpretations make it difficult to develop acquisition strategies that are beneficial for both government and contractor" (email to author, 08 February 2018). In addition, another Contracting Officer 3 responded in a similar fashion stating "The primary issue I see with the SBIR data rights language and guidance is that they are not consistent with the entirety of the guidance on the SBIR Program" (email to author, 24 January 2018). Contracting Officer 3 further explained "A clear road map from Phase I to Phase III to a defined time after delivery of the data under the Phase III. A clear definition on what constitutes 'data.' Is it software? Is it any piece of hardware that includes data? Is it a piece of hardware that through testing generates data? etc." (email to author, 24 January 2018). Thus, participants identified several areas where current policy is unclear or not specific, which created challenges in their efforts to follow the policies as intended.

b. Impact to the Government

Two of the respondents provided details of past and current experiences working with contractors under the umbrella of the SBIR Program. Contracting Officer 2 explained, "The current structure tips the scale in favor of the small business for the life of the government's requirement" (email to author, 08 February 2018). In addition, the same contracting officer stated in regards to challenges faced within the SBIR Program, "Other challenges relate to increased costs by the company—dip in performance, or the purchase of the small business by a large business—yet a de facto sole source for the life the government has a need remains" (email to author, 08 February 2018). Both interviewees expressed concerns negotiating follow-on SBIR efforts. Contracting Officer 3 further summarized the concerns

The contractor has no or minimal incentive to: a. Negotiate fair terms with the government (no leverage, no fair and reasonable price or other reasonable terms to the government.) b. See other uses for the item (commercialization and transition which is supposed to be the purpose of the program). Expand their business base (these turn into cash cows and the company becomes one trick pony's or they sell off to a large business who somehow (given the current regs) maintains the data rights/phase III followons forever even though they are not a small business. (email to author, 24 January 2018)

Based on the interview responses it appears that federal agencies, especially the Navy, are facing difficulties when negotiating follow-on contracts to SBIR Phase III contracts.

However, not all responses were uniform. Contracting Officer 1 stated "I believe that the SBIR data rights serve their intended purpose" (email to author, 07 March 2018). Contracting Officer 1 expressed:

"The purpose of the SBIR program is to aid small businesses in commercializing new technologies. The policy of the contractor retaining data rights insures that the government does not pass the protected information on to the competing contracts that could negatively impact the commercialization of the SBIR contractor product. The five-year period gives the contractor sufficient time to establish commercial production before competing companies are introduced to the industry" (email to author, 07 March 2018).

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IV. SUMMARY

The purpose of this Chapter is to summarize the findings and identify key concepts that were acknowledged through research and analysis. In addition, this Chapter further provides conclusions on the research and areas that need to be further analyzed to support this effort.

A. ANALYSIS OF FINDINGS

The results of the interviews and the analysis of the recent GAO report on the small business research programs as well as the literature reviews have contributed to the analysis of the research findings.

1. Should the SBIR Program Remain or Has the Time of the SBIR Program Passed?

Through the literature reviews, interview responses, and the most recent GAO report it is clear that the SBIR program is still utilized among the agencies. "Federal agencies awarded 162,000 contracts and grants totaling \$46 billion, since the programs inceptions in 1982 and 1992, respectively" (Neumann, 2018). Based on these figures the program is still strongly utilized, but is it as relevant as it was back in its inception? Based on the lack of interview responses and experience from individuals at SBA concerning the SBIR program it seems many contracting professionals are not familiar or have little to no experience with the program. SBA and the participating agencies should conduct an analysis on the use of the SBIR program and the involvement of small businesses to determine if the program remains essential to support the Government's, specifically defense, R&D efforts and small business concerns. Agencies already have established policies and requirements for acquisitions that promote SB though they are not set-aside for SB. These policies include SB subcontracting plans, SB percentage goals, and mandating Contracting Officers receive higher-level approval if these goals are not met. SBA can develop training and potential road shows to market these programs to agencies and commands.

2. Does Small Business Already Play a Large Role in the DoD Contracting Field?

Within the DoD, contracting small business play a large role in the contracting field. In 2017 alone, \$264.1 billion were awarded to prime small businesses and \$122.9 billion were awarded to subcontracting small businesses (Office of Small Business Department of Defense, 2019). Small businesses play a vital role in DoD contracting, and the Defense agency has recognized this by incorporating statutes and regulations within their supplemental guidance to the Federal Acquisition Regulation (FAR). So much so that if a large business were to propose a small business subcontracting plan, on a DoD requirement, that contained a goal of less than five percent for small disadvantaged business the plan would need higher level approval in order to be determined acceptable. The DoD also places prime and subcontracting goals each Fiscal Year (FY) for small business contracted dollars. With these regulations and policies in place within the DoD it is a clear and effective strategy to maximize the available opportunities to small businesses'. Based on the figures previously discussed and the established DoD policies in place it appears the SBIR program is no longer needed to promote SB within DoD. However, there may be alternative reasons to keep the SBIR program in place, including to promote competition within the DoD marketplace or logistic, infrastructural, or legislative challenges in removing the program. Thus, should the program remain in place, revisions to policy are necessary to improve the program's usefulness.

3. Should the SBIR Program Develop a Third Benchmark for SBIR Phase III Contracts?

One area ripe for reform, based on the analysis previously discussed and the information identified in the GAO Report, is appropriate benchmarking. SBA first needs to correct the use of inaccurate data in their already established two benchmarks. Once this is addressed SBA should develop a pilot benchmark for SBIR Phase III efforts. This benchmark can help contracting officers and program managers determine if an SBIR Phase III is in the best interest of the government and the small business. As Contracting Officer 3 noted, there is no clear benchmark for commercialization that requires companies provide data backing up the commercialization. This statement also aligns with GAO's

recommendations and could help determine what the third benchmark is. A benchmark concerning the commerciality of the items funded through SBIR Phase III awards could require contractors to consistently explain how and what steps the contractor is taking to further commercialize these items to both the market and DoD. An SBIR Phase III benchmark will also ensure contractors remain competitive among rival businesses to ensure the government is receiving the best value.

4. The SBA Needs to Update and Revise the SBIR Policy Directive to Reflect the Current Concerns of the Data Rights

The SBIR policy directive has not been updated since 2014. It is evident from the interview responses and the GAO Report that the policy directive needs to be updated to address inconsistencies between the policy and the SBIR statues. As noted by contracting officers in the qualitative interviews and GAO's recommendations, the data received from the standing policy is inaccurate and the established benchmarks are not clearly identified. Specifically, concerning the data rights, the SBA needs to establish and enforce a specific cut-off time even if the work is derived from an SBIR contract. This should clearly state at what point the data rights convert to government purpose rights or unlimited rights. It is recommended SBA should include language in the policy directive stating contractors shall only receive up to two (2) SBIR Phase III awards on the same project to allow contractors sufficient time to reach commercial production while also preventing situations where SB indefinitely retain data rights. It is further recommended that during the SBIR Phase III effort, the government shall receive Government Purpose Rights or Unlimited Rights at no additional cost to the government, so that when the government inherits these rights, they can further compete these requirements to foster competition in the R&D industry versus repeatedly issuing sole source contracts. Competing these requirements can foster further improvements to the hardware or services and competition will require contractors to propose competitive pricing, which can reduce the cost to the government.

5. Isolated Incidents?

Are the concerns from the two Contracting Officers discussed previously isolated incidents or is there a lack of accurate data to truly reflect the concerns of the SBIR Data

Rights? These two Contracting Officers work within the Navy, while contracting officer 1 works within the Air Force. When asked if the current Policy concerning technical data rights asserted under the SBIR program is in the best interest of both the government and small business, he expressed feeling that it is. However, the two Contracting Officers working for the Navy reported finding the policy unhelpful and confusing. Thus, opinions were not unanimous.

Based on these responses, it is evident there are differing of opinions among agencies and contracting officers, which is to be expected. Nonetheless, this insight brings up the questions as to whether these are isolated incidents or if the Air Force implements the SBIR Phase III and, thus, data rights in a different manner than the Navy. In addition, multiple SBA representatives were provided the same set of interview questions. All of the SBA representatives contacted, across multiple agencies, explained that they had little to no experience with the SBIR Program and could not provide responses. This also brings up concerns, about employee awareness and training in the SBIR program. However, it should be noted that the small sample size from a specific type of responses (i.e., Contracting Officers) limits how generalizable and fully contextualized the data are.

In sending out interview e-mails to over a hundred individuals, the hope was to receive a wide variety of responses from different agencies within DoD and outside the Department as well. Due to the limited sample size of only four (4) responses that were provided the conclusions and themes extracted were limited. Nevertheless, the significant proportion of potentially eligible participants who were unfamiliar with the program and the widely differing opinions among the respondents, suggests that more research could be beneficial. Having identified these themes between the Air Force and Navy it would be beneficial to conduct further interviews between both agencies to determine if one is implementing the program in a different manor. Potential interviewees should include contracting officers from both the Navy and Air Force as well as legal representatives with experience and knowledge of the SBIR program. For future research, a strong focus should be placed on the education and training each interviewee received on the SBIR program. This will help to identify an area that can be improved and SBA could establish training for current and future contracting personnel when working with the SBIR program.

A larger sample size, particularly from other military branches would provide the opportunity to identify additional common themes, specifically if the difficulties are a result of an agency's own policies and practices or if it is a DoD cultural trend.

B. CONCLUSIONS AND RECOMMENDATIONS

This Joint Applied Project finds that the data rights asserted under the SBIR program are an issue concerning contracting professionals. In addition, the SBIR program requires the attention of SBA and other agencies to revise and implement their policies in manner that is in the best interest of the government and the small business that rely on the program. The lack of clear and accurate data concerning the SBIR program presents contracting professionals and program managers the difficult task of evaluating small businesses to the defined benchmarks.

Based on the research and analysis previously discussed it is recommended that SBA and participating agencies further evaluate the knowledge and use of the SBIR program. If the SBIR program is to remain and be successful, contracting professionals must be educated on the proper use and implementation of the program to best protect the government and to prevent sole source type situations. I further recommend SBA to establish a third benchmark within the program to evaluate SBIR Phase III specifically targeting the use of the data and the impact this data can have on the government. In addition, I recommend SBA update the SBIR policy directive to reflect these recommendations as well as provide a specific and clear cutoff date for SBIR data rights to protect the government and save taxpayer dollars. With these recommendations, SBA can refine and adapt the current SBIR policy to maximize its opportunity for sustained success for both government and small business.

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APPENDIX A. INTERVIEW QUESTIONS

Question#1: What is your position in the Government (Please do not include location/specifics)?

Question #2: What is your experience with the Small Business Innovation Research (SBIR) Program?

Question #3: Are you familiar with the Technical Data Rights asserted under the SBIR Program? If so, what is your experience with Technical Data Rights asserted under the SBIR Program?

Question #4: Do you believe the current Policy concerning Technical Data Rights asserted under the SBIR Program is in the best interest of both the Government and Small Businesses. If no, what are the issues or problems with the current Policy?

Question#5: If you answered no to Question #4, what changes or revisions need to be made to the current Policy concerning Technical Data Rights asserted under the SBIR Program to be in the best interest of both the Government and Small Businesses?

Question#6: If you answered yes to Question #4, how is the current Policy in the best interest of the Government and Small Businesses?

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APPENDIX B. INTERVIEW RESPONSES

A. CONTRACTING OFFICER 1

Question#1: What is your position in the Government (Please do not include location/specifics)?

Contracting Officer

Question #2: What is your experience with the Small Business Innovation Research (SBIR) Program?

I am the sole CO in our office awarding and administering SBIR contracts.

Question #3: Are you familiar with the Technical Data Rights asserted under the SBIR Program? If so, what is your experience with Technical Data Rights asserted under the SBIR Program?

I have awarded Phase I, II, and III contracts that contain the SBIR technical data rights clauses. I have dealt with SBIR data rights issues when awarding post-SBIR contracts based on the research performed under the SBIR program.

Question #4: Do you believe the current Policy concerning Technical Data Rights asserted under the SBIR Program is in the best interest of both the Government and Small Businesses. If no, what are the issues or problems with the current Policy?

I believe that the SBIR data rights serve their intended purpose.

Question#5: If you answered no to Question #4, what changes or revisions need to be made to the current Policy concerning Technical Data Rights asserted under the SBIR Program to be in the best interest of both the Government and Small Businesses?

Question#6: If you answered yes to Question #4, how is the current Policy in the best interest of the Government and Small Businesses?

The purpose of the SBIR program is to aid small businesses in commercializing new technologies. The policy of the contractor retaining data rights insures that the government does not pass protected information on to competing contractors that could negatively impact the commercialization of the SBIR contractor product. The five-year period gives the contractor sufficient time to establish commercial production before competing companies are introduced to the industry.

B. CONTRACTING OFFICER 2

Question#1: What is your position in the Government (Please do not include location/specifics)?

Supervisory Contracting Officer.

Question #2: What is your experience with the Small Business Innovation Research (SBIR) Program?

As a contract specialist and contracting officer I have dealt with SBIR data assertions in contractor's proposals. More recently I have worked with the personnel within my Division on various challenges related to the follow-on efforts for existing contracts that included SBIR data assertions. The lack of clear guidance and different interpretations make it difficult to develop acquisition strategy that are beneficial for both Government and Contractor.

Question #3: Are you familiar with the Technical Data Rights asserted under the SBIR Program? If so, what is your experience with Technical Data Rights asserted under the SBIR Program?

See #2 above.

Question #4: Do you believe the current Policy concerning Technical Data Rights asserted under the SBIR Program is in the best interest of both the Government and Small Businesses. If no, what are the issues or problems with the current Policy?

No. The current structure tips the scale in favor of the Small Business for the life of the Government's requirement. I am a strong advocate in the importance of Small Business and giving them opportunities on the front end to truly be innovative and put their best effort forward, in hopes that through a Phase II and Phase III those ideas can be prototyped and ready for commercialization. But once the item is produced, the Small Business should receive a defined amount of time to maintain the rights (e.g., similar to a patent).

Other challenges relate to increased costs by the company, a dip in performance, or the purchase of the Small Business by a large business - yet a de facto sole source for the life the Government has a need remains.

Question#5: If you answered no to Question #4, what changes or revisions need to be made to the current Policy concerning Technical Data Rights asserted under the SBIR Program to be in the best interest of both the Government and Small Businesses?

A clear road map from Phase I to Phase III to a defined time after delivery of the data under the Phase III.

A clear definition on what constitutes "data." Is it software, is it any piece of hardware that includes data, is it a piece of hardware that through testing generates data, etc.?

Question#6: If you answered yes to Question #4, how is the current Policy in the best interest of the Government and Small Businesses?

C. CONTRACTING OFFICER 3

Question#1: What is your position in the Government (Please do not include location/specifics)?

Contracting Officer with unlimited warrant and Branch Head

Question #2: What is your experience with the Small Business Innovation Research (SBIR) Program?

As a contract specialist and contracting officer, I have dealt with SBIR data assertions in contractor's proposals. More recently I have worked with the personnel within my Division on various challenges related to the follow-on efforts for existing contracts that included SBIR data assertions. The lack of clear guidance and different interpretations make it difficult to develop acquisition strategy that are beneficial for both Government and Contractor.

Question #3: Are you familiar with the Technical Data Rights asserted under the SBIR Program? If so, what is your experience with Technical Data Rights asserted under the SBIR Program?

I am very familiar with the technical data rights associated with the SBIR program. The primary issue I see with the SBIR data rights language and guidance is that they are not consistent with the entirety of the guidance on the SBIR program. For instance, the data rights lapse 5 years which would lead one to believe that 5 years after the last delivery under a phase III contract the government would get government purpose rights and be able to compete the requirement. This would seem fair, the company invests in the time and effort into it and then effectively get 2 phase III awards uncontested before it becomes competitive.

However, there is conflicting guidance which states that any requirement that is derived from (not exact or complete quote) a phase I or II contract is a phase II contract. As a result, we can never break the SBIR sole source and the contractor will retain the rights for eternity meaning the government is married to the contractor until the product is completely out of service.

This is a problem for many reasons most notably:

- 1. The contractor has no or minimal incentive to:
 - a. Negotiate fair terms with the government (no leverage, no fair and reasonable price or other reasonable terms to the government.)

b. Seek other uses for the item (commercialization and transition which is supposed to be the purpose of the program)

Expand their business base (these turn into cash cows and the company become one trick pony's or they sell off to a large business who somehow (given the current regs) maintains the data rights/phase III follow-ons forever even though they are not a small business.

2. The government loses the right to build off the SBIR product to leverage improvements of other companies and the innovation that competition within industry fosters to improve the product.

The depths the regulations go to keep the SBIR requirements sole source for ever is in direct contradiction with every other goal of federal competition which are built around a focus of full and open competition and the market bearing the best cost/price and technical results.

Question #4: Do you believe the current Policy concerning Technical Data Rights asserted under the SBIR Program is in the best interest of both the Government and Small Businesses. If no, what are the issues or problems with the current Policy?

No. for the reasons detailed in Q3 above it is not in the best interest of the government. Regarding small businesses, I do not believe it serves its intent for the following reasons:

- 1. Having a perpetual sole source can make a company become a one trick pony because you have a perpetual sole source where margins are high. This hurts some company's willingness to go after more competitive work and build the business.
- 2. Many of the products by the time they get to Phase III are being sold by large businesses that bought out small businesses with an in on an SBIR program. What is the benefit to small businesses as a result of there where future work is effectively earmarked for a large business? None. This also doesn't benefit the business base and therefore, not the government.

Question#5: If you answered no to Question #4, what changes or revisions need to be made to the current Policy concerning Technical Data Rights asserted under the SBIR Program to be in the best interest of both the Government and Small Businesses?

My recommendation, as eluded to in Q3 above is to remove the language regarding all derived work being phase III work and let the data rights carry the day in terms of getting the small businesses two phase III contracts to help build their businesses as a result of their innovation which should be the purpose.

Question#6: If you answered yes to Question #4, how is the current Policy in the best interest of the Government and Small Businesses?

Overall, I have issues with the current policy but acknowledge the intent. It is critical that we incentivize small businesses to go after more technical work and take some technical challenges and risks on and in that regard the program is beneficial. It is the follow-through where the program needs to be adjusted as I don't think it meets its original intents in that area.

D. CONTRACTING OFFICER 4

Question#1: What is your position in the Government (Please do not include location/specifics)?

Contracting Officer with unlimited warrant and Branch Head

Question #2: What is your experience with the Small Business Innovation Research (SBIR) Program?

I've been involved with one SBIR procurement.

Question #3: Are you familiar with the Technical Data Rights asserted under the SBIR Program? If so, what is your experience with Technical Data Rights asserted under the SBIR Program?

Yes. Very little experience.

Question #4: Do you believe the current Policy concerning Technical Data Rights asserted under the SBIR Program is in the best interest of both the Government and Small Businesses. If no, what are the issues or problems with the current Policy?

As of 6 March 2018, I do not believe I understand the policy well enough to answer anything other than yes.

Question#5: If you answered no to Question #4, what changes or revisions need to be made to the current Policy concerning Technical Data Rights asserted under the SBIR Program to be in the best interest of both the Government and Small Businesses?

See question 4 answer.

Question#6: If you answered yes to Question #4, how is the current Policy in the best interest of the Government and Small Businesses?

See question 4 answer.

LIST OF REFERENCES

- Cibinic, J., Jr., Nash, R.C., Jr., & Yukins, C.R. (2011). Formation of government contracts (4th ed.). Riverwood, IL: CCH Incorporated.
- Defense Information Systems Agency. (2019, April 21). Data rights. Retrieved from https://disa.mil/about/legal-and-regulatory/datarights-ip/datarights
- Department of Defense Office of Small Business Programs. (n.d.). Small Business Program goals and performance. Retrieved 21 April 2019, from https://business.defense.gov/About/Goals-and-Performance/
- Held, B., Edison, T., Pfleeger, S.L., Antón, P. S., Clancy, J. (2006). Evaluation and recommendations for improvement of the Department of Defense Small Business Innovation Research (SBIR) Program. Retrieved from https://www.rand.org/pubs/documented briefings/DB490.html
- Neumann, J. (2018). Small Business Research Programs: Agencies need to take steps to assess progress toward commercializing technologies (GAO-18-207). Washington, DC: Government Accountability Office.
- SBIR STTR. (n.d.). Birth & history of the SBIR program. Retrieved May 10, 2018 from https://www.sbir.gov/birth-and-history-of-the-sbir-program
- Small Business Administration, Office of Investment and Innovation. (2014, February 24). *Small Business Innovation Research (SBIR) Program* (Policy Directive). Washington, DC: Author. Retrieved from https://www.sbir.gov/about/about-sbir#embedded_flash_111707621
- Wessner, C. W. (Ed.). (2009). An assessment of the SBIR program at the Department of Defense. Washington, DC: National Academies Press. Retrieved from https://www.nap.edu/read/11963/chapter/1
- Wilkins, T. (2018, February 21). Overcoming challenges with the Small Business Innovation Research (SBIR) Program [Blog post]. Retrieved from https://www.nist.gov/blogs/manufacturing-innovation-blog/overcoming-challenges-small-business-innovation-research-sbir

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