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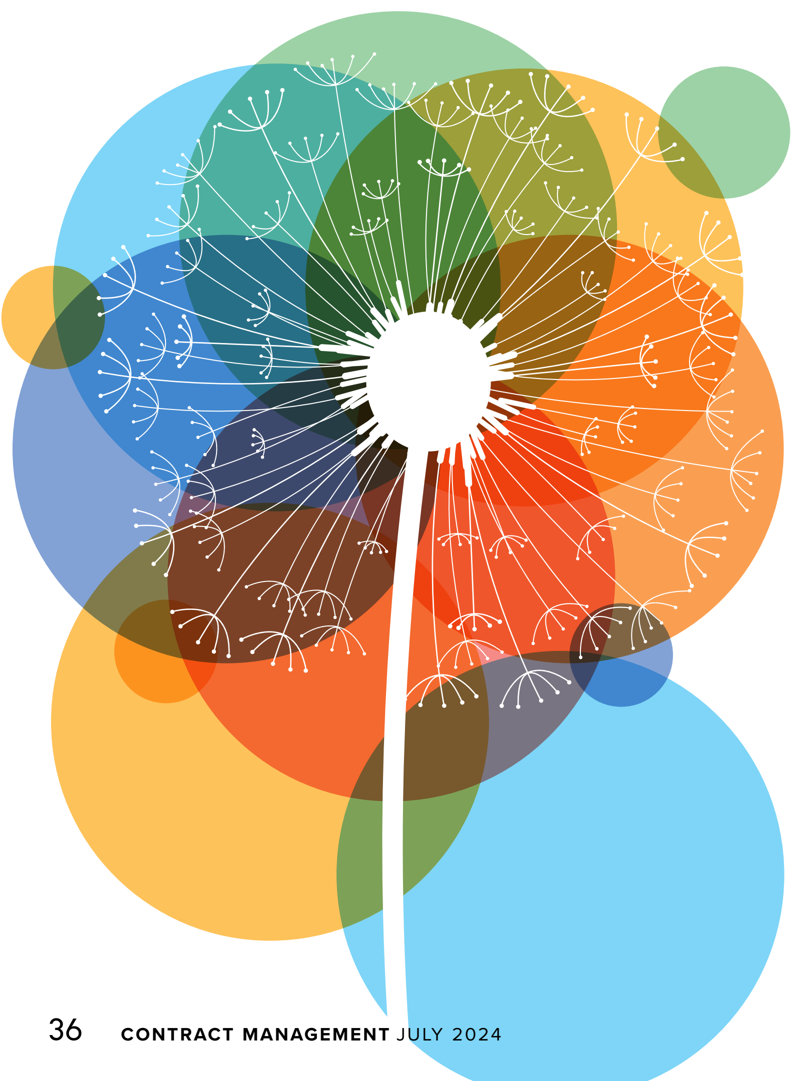
SBIR PHASE III

Bridging the Valley of Death: From Concept to Commercialization



Moving technologies from concepts and prototypes to commercialization is essential to continuing innovation. Some recommendations for improving commercialization under SBIR Phase III should be considered.

By Stephanie Lemaitre, PMP

The so-called "valley of death" refers to the stage of development when innovative technologies fail to transition from prototype to production. Under the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs,[1] this gap is addressed by a unique phased structure, which includes Phase I (concept), Phase II (prototype), and Phase III (commercialization).

The purpose of Phase III is to support innovations by successfully transitioning concepts and prototypes across the valley of death into commercialization. Phase III has served as an incubator to some of the most successful and transformative innovations in government. Yet, challenges related to the current policy and regulatory framework, funding, and lack of knowledge, resources, and data around SBIR Phase III currently exist.

Targeted solutions to address these pain points should be implemented to enable federal agencies to fully realize the benefits of the SBIR program, and to ultimately increase the pace of technological innovation and advancement to meet mission needs.

Origin of SBIR

The SBIR program was established by Congress in 1982 (P.L.97-219) to stimulate high-tech innovation by encouraging participation of small businesses in federally funded research and development (R&D) efforts.

The program is structured in three phases, with each phase encompassing unique acquisition requirements and characteristics. Phases I and II are highly competitive phases in which domestic small businesses submit proposals in R&D topic areas designated by federal agencies participating in the SBIR program. Resulting Phase I and II awards encompass concept and prototype work respectively, and are relatively small and short-term efforts, capped in both dollar value and duration. Whereas Phase I/II contracts are used to establish technical merit, feasibility, and commercial potential, Phase III contracts are used for commercialization and are not subject to the same requirements and limits as Phase I/II.

Phase III contracts are larger longer-term efforts that incorporate the awardee's concept/prototype work from Phase I/II. After an initial Phase III contract is awarded, the contractor may receive additional Phase III awards, which can derive, extend, or complete efforts from any Phase I, II, or III contract that the contractor was awarded. Another important aspect of Phase III is that those contracts do not use SBIR funding, which can make it difficult for organizations seeking the benefits and flexibility of using those funds.

FIGURE 1. SBIR Program Phases

PHASE I Concept & **PHASE II** Prototype	**PHASE III** Commercialization
• Highly competitive awards for R/R&D work • May only be procured by federal agencies that participate in SBIR program • Must utilize SBIR funding – no other color of money permitted • Must be awarded to domestic small businesses with 500 or fewer employees • Must be within specific dollar value and period of performance limits	• Direct awards for any type of work that derives from, extends, or completes a company's prior SBIR efforts (sole source-like but considered competitive) • May be procured by any federal agency (i.e., agency does not need to participate in SBIR program to issue Phase III awards) • May utilize any color of money except SBIR funding • May be awarded to any size business, including a business that has grown to Other than Small size status (e.g., via revenue growth or acquisition) • No limits on award number, duration, type, dollar value

SBIR Phase III Challenges

SBIR Phase III challenges have gathered more attention during the past few years, especially during the last SBIR/STTR program reauthorization, completed in September 2022.

The sections below explain the policy and regulatory framework, funding uncertainty, and the lack of expertise and resources that affect Phase III of the SBIR program.

Complicated Policy and Regulatory Framework

The SBIR/STTR[2] Policy Directive is published by the Small Business Administration (SBA) and provides rules, policies, and guidance to federal agencies on the SBIR program, implementing the statutory authority provided to SBA by Congress. Federal agencies are required to adhere to the SBIR/STTR Policy Directive through agency procedures.

Several award instruments can be used to issue Phase III contracts. Challenges are most common when contracting officers awarding Phase III contracts are working within the *Federal Acquisition Regulation* (*FAR*). The *FAR* currently includes some provisions that apply specifically to SBIR procurements, such as data rights, but does not address all the unique characteristics of Phase III contracts. Specifically, *FAR* provisions structured for traditional competitive or sole-source procurements differ from SBIR/STTR Policy Directive guidance around Phase III direct award contracts. These variances can be difficult for contracting officers to navigate.

For example, FAR Subpart 6.3 includes provisions for Other than Full and Open Competition, including 6.303 Justifications and 6.304 Approval of the justification (J&A). These provisions do not specifically state that there is a J&A requirement for SBIR Phase III awards. However, the SBIR/STTR Policy Directive states that if a J&A is deemed required by an agency, it is sufficient to state that the project is an SBIR/STTR Phase III award that is derived from, extends, or completes efforts made under prior SBIR/STTR Funding Agreements and is authorized pursuant to 15 U.S.C. 638(r)(4).

Although a J&A for Phase III awards is not explicitly required by either the *FAR* or the SBIR/STTR Policy Directive, it is still sometimes required by federal agencies due to internal preferences, policies, and/or procedures. This complicated regulatory framework around Phase III introduces ambiguity and confusion where policies and guidance have not been sufficiently aligned.

Funding Implications

SBIR and STTR are together known as "America's Seed Fund." This nomenclature reflects the mission of the SBIR and STTR programs to seed technological innovations through federal funding mechanisms, and these mechanisms are mandated by the U.S. Congress.

The SBIR/STTR Policy Directive requires that each federal agency with an extramural budget for research and research and development (R/R&D) of more than $100,000,000 must participate in the SBIR program. These agencies are obligated to spend a minimum percentage of their extramural R/R&D budgets to

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fund small businesses through the SBIR program. While Phase I and II are innately tied to these funding requirements contained in the SBIR/STTR Policy Directive, there are currently no mandates for Phase III funding obligations. This lack of Phase III funding requirements leads to a lower level of participation, and thus return on investment, in the commercialization phase.

Additionally, funding for Phase III contracts can often take longer to secure than new technology or small businesses can remain relevant. Under traditional federal funding cycles, it may take years for new funding allocations for Phase III work to materialize; by the time this funding becomes available, the technology may be obsolete, or the small business may no longer be viable.

Lack of Knowledge, Resources and Data

Phase III has been known for years as the most ambiguous phase in the SBIR/STTR program, largely because most contracting professionals do not work with SBIR contracts or receive in-depth training on SBIR. Some SBIR resources are available on the web, including at www.sbir.gov and www.sbtc.org, but these materials are typically high-level or specific to certain agencies.

Although the SBA offers some general training resources, there is no central location with publicly available and comprehensive how-to training for contracting officers at any federal agency to use for executing Phase III procurements. For contracting professionals at federal agencies that do not participate in the SBIR program, written guidance from their agencies on Phase III procurements often does not exist, and locating peers with Phase III experience to consult with at these agencies may be challenging.

Furthermore, publicly available Phase III award data is lacking. The SBIR website publishes a wealth of Phase I and II data, but no Phase III data. The Federal Procurement Data System can be used to search for Phase III data, but there is no consistent or streamlined way to generate reports about it, making searches challenging and inaccurate. SBA does not collect and publish Phase III contracting statistics.

Federal agencies vary in their requirements for Phase III contract reporting, and no federal requirement exists for prime contractors to report Phase III subcontract awards.[3] With no centralized mechanism for publicly available Phase III award data, visibility into Phase III contracts is extremely limited. This lack of reporting and data creates barriers to fully understanding the metrics on Phase III conversions, and more generally inhibits collaboration through reduced transparency.

Bridging the Valley of Death

Phase III has led to the creation of some of most successful innovations used every day around the world across the federal government and commercial enterprises. Focusing efforts on solutions to Phase III difficulties will enable government and industry to better reap the benefits of SBIR investments and the SBIR program overall.

As the SBIR program enters its final year of the SBIR and STTR Extension Act of 2022 (S. 4900),[4] addressing these challenges has been a topic of conversation as policymakers are looking forward to the next reauthorization in 2025.

Procurement Regulatory Updates, Guidelines, and Additional Resources

Ideally, the *FAR* should be updated to fully reflect the unique characteristics of Phase III procurements in a way that would clear up confusion while still providing room for flexibility. This has been a challenge in part due to the short-term nature and instability of the SBIR program, which must be re-authorized by Congress every three years.

Updating the *FAR* is also not a quick process, as many steps need to be followed to introduce amendments to existing provisions. At a minimum, all federal agencies should prioritize developing their own Phase III resources and training to help contracting officers navigate nuances between the *FAR* and the SBIR/STTR Policy Directive.

Federal agencies should establish partnerships both within and outside the federal government to provide education and hands-on assistance with Phase III procurements. This could take the form of agency collaboration through the General Services Administration (GSA) Assisted Acquisition Services (AAS) or other assisted acquisition providers, with either free or paid training and consulting, as well as rotations or mentorship programs with the federal agencies that have the highest spending level on Phase III procurements (namely, the U.S. Air Force, Navy, Army, Defense, Department of Homeland Security, and National Aeronautics and Space Administration).

Federal agencies should also seek opportunities to partner with procurement focused organizations, such as NCMA, to provide contracting professionals from both government and industry with Phase III-focused professional development and networking opportunities.

Spending Mandate, Incentives, and Reporting

Similar to Phase I/II, mandatory requirements for Phase III spending should be developed to increase federal agencies' funding obligations under Phase III. This could take many different forms, including requiring federal agencies to allocate a certain percentage of their fiscal year budgets to new Phase III contracts (regardless of the color of money),[5] or modifying the existing SBIR funding mandate to allow Phase III awards to count towards the required SBIR R&D spending level for agencies participating in the SBIR program.

Applying financial incentives at all levels, from the federal agency down to the individual contracting officer, would reward and presumably increase Phase III participation. According to the Federal Register's notice of revisions to the SBIR/STTR Policy Directive,[6] which became effective in May 2019, one commenter suggested that SBA revise the policy directive to include bonuses or incentives to contracting officers and prime contractors that make Phase III awards. While this type of compensation structure may be considered controversial, monetizing as well as mandating participation in Phase IIIs should be considered and could be structured in many different ways.

In addition to funding requirements and incentives, a central repository for Phase III funding data should be publicly available, as it currently is for Phase I and Phase II. The SBA should implement mandatory Phase III reporting by all federal agencies and display this data on www.sbir.gov. This type of transparent and publicly accessible Phase III reporting would help us to better understand the Phase III transition landscape. It would also serve as a catalyst in creating visibility into potential synergies between government and industry and between prime contractors and subcontractors through additional commercialization opportunities. As the reauthorization of the SBIR/STTR program approaches, it will be interesting to see if Congress introduces any new measures to better track transitions among all the SBIR phases across the federal government through SBA.

Optimizing Phase III Acquisitions

Contract vehicles should be utilized to make Phase III procurements broader, flexible, and more efficient. This would help alleviate major challenges associated with Phase III procurements, provide easier and more streamlined contracting, increase awareness and availability of Phase III options across agencies and throughout the federal government, and help bridge the valley of death by making Phase III more accessible.

Rather than issuing standalone Phase III single awards, federal agencies should consider the use

A Visionary Approach to a New Type of Phase III Contract

A Government-Wide Acquisition Contract (GWAC) for Phase III was explored by GSA's Assisted Acquisition Services (AAS) through its market research efforts for the Research Innovation and Outcomes (RIO) Program. GSA AAS' RIO concept was the first of its kind, an innovative solution to Phase III challenges that brings the benefits of a GWAC model into the Phase III space.

In July 2022, GSA AAS issued a Request for Information (RFI), and then communicated to industry in May 2023 that it had begun an Acquisition Plan for RIO and expected to release a draft Request for Proposal (RFP) in the summer of 2023. Since then, no further updates on RIO have been announced by GSA AAS publicly or to industry.

While we await news of the status of RIO, GSA AAS should be applauded for taking this critical first step towards enabling federal agencies and contracting officers to award Phase III contracts more efficiently and effectively. Whatever the end result, RIO introduces a truly innovative approach to Phase III contracting and models creative solutioning within the acquisition community for all federal agencies to emulate.

of Basic Ordering Agreements[7] (BOAs), Indefinite Delivery, Indefinite Quantity[8] (IDIQ) contracts, Blanket Purchase Agreements[9] (BPAs), and Government-Wide Acquisition Contracts[10] (GWACs) to create economies of scale and allow a higher volume of ordering through quicker and more efficient acquisition methods.

Phase III BOAs allow the federal government to quickly create ordering agreements with one or more companies under an unlimited ceiling and with maximum ordering flexibility. Phase III IDIQ/BPA awards, when decentralized and open for ordering across a federal agency, allow all components within the same agency to award, fund, and manage their own Phase III orders. These agreements cut down on the time and investments required by acquisition offices by streamlining efforts.

A Phase III GWAC would transform the way Phase III contracting is done and create an unprecedented opportunity to bolster innovations across the federal government through Phase III commercialization. GWACs such as U.S. General Services Administration's (GSA) Alliant 2 and OASIS, National Institute of Health's (NIH) CIO-SP3, and National Aeronautics and Space Administration's (NASA) SEWP are widely popular contract vehicles that offer simplified and expedited ordering for information technology across the federal government. Using a GWAC for Phase III awards would provide the same benefit of efficiency and speed, as well as increase participation in Phase III across federal agencies and industry by making it easier to contract.

Conclusion

Phase III contracts have the potential to bring innovative solutions into the federal government across every industry and mission need. As part of the prestigious Tibbetts Awards program,[11] which recognizes companies, organizations, and individuals that exemplify the very best in SBIR/STTR achievements, a range of Phase III success stories are honored, highlighting the significant achievements Phase III contracts make possible.

Examples include technology that can be used to screen for infectious diseases in near-real time, a processing system that positively impacts nutritional deficiencies of children abroad, and a three-dimensional printing modification that can create functional goods out of trash in disaster situations. These innovations change the way we live and interact in the world for the better. More can and should be done to overcome the challenges federal agencies and industry face with Phase III contracts to better capitalize on R/R&D investments made through increased Phase III participation. CM

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ENDNOTES

1 https://www.sbir.gov/sites/all/themes/sbir/dawnbreaker/img/documents/Course1-Tutorial1_v2.pdf
2 https://beta.www.sbir.gov/sites/default/files/2022-05/SBA_SBIR_STTR_POLICY_DIRECTIVE_OCT_2020_v2.pdf
3 Phase III awards can be issued as prime contracts or subcontracts.
4 https://www.sbir.gov/node/2274471
5 "Color of money" refers to different categories of appropriations associated with federal government funds.
6 https://www.federalregister.gov/documents/2019/04/02/2019-06129/small-business-innovation-research-program-and-small-business-technology-transfer-program-policy
7 A BOA is an instrument of understanding (not a contract) executed between a procuring activity and a contractor that sets forth negotiated contract clauses that will be applicable to future procurements between the parties during the term of the agreement. It includes as specific a description as possible of the supplies or services and a description of the method for determining pricing, issuing, and delivery of future orders. https://www.dau.edu/glossary/basic-ordering-agreement
8 An IDIQ is a type of contract used to acquire supplies and/or services when the exact times and/or exact quantities of future deliveries are not known at the time of contract award. https://www.dau.edu/glossary/indefinite-delivery-contracts
9 A BPA contract is a simplified acquisition method that government agencies use to fill anticipated repetitive needs for supplies or services. BPAs are negotiated on an individual agency level, and generally only a small number of agency offices can place orders on them. One advantage of traditional BPAs is that a buyer can use them to acquire a full range of services under one BPA, rather than having to purchase through multiple contracts. https://www.dau.edu/glossary/blanket-purchase-agreement
10 A GWAC is a task-order or delivery-order contract for information technology established by one agency for Governmentwide use that is operated (1) by an executive agent designated by the Office of Management and Budget pursuant to section 5112(e) of the Clinger-Cohen Act, 40 U.S.C. 1412(e); or (2) under a delegation of procurement authority issued by the General Services Administration (GSA) prior to August 7, 1996, under authority granted GSA by the Brooks Act, 40 U.S.C. 759 (repealed by Pub. L. 104-106). https://www.fpds.gov/help/Create_a_GWAC.htm
11 https://tibbettsawards.com/