U.S. ARMY SBIR|STTR

2022 YEAR IN REVIEW

U.S. ARMY

SMALL BUSINESS
IGNITING BIG INNOVATION

FROM THE DIRECTOR

Dr. Matt Willis

Director of Army Prize Competitions and Army Applied SBIR Program

Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology

Rapidly developing technologies are at the forefront of the nation's defense capabilities and help shape how the Army prepares for future conflicts. Every day, novel solutions, innovations, and processes such as artificial intelligence and machine learning see major advancements.

These technologies influence the Army's national defense operations while significantly contributing to a robust commercial sector. The continued development of emerging technologies determines whether the U.S. maintains its advantage on the battlefield and in the international economy. To remain globally competitive, businesses must continuously adapt. Similarly, the Army must modernize to retain the technological edge our nation's warfighters have traditionally held.

In 1982, Congress established the Small Business Innovation Research and Small Business Technology Transfer Programs — SBIR and STTR — to facilitate small-business growth as a critical part of the nation's economic landscape and strengthen innovation across federal agencies. Now, 40 years later, SBIR|STTR continue to address the Army's critical modernization and technology development efforts.

With small businesses comprising an astounding 99.9% of all U.S. businesses, it is crucial that small-business success and growth continue to contribute to the nation's economy. To facilitate this, the SBIR|STTR program supports the evolution of the Army's technology development efforts, while ensuring the enduring success of small businesses as a critical part of our economy and innovation ecosystem.

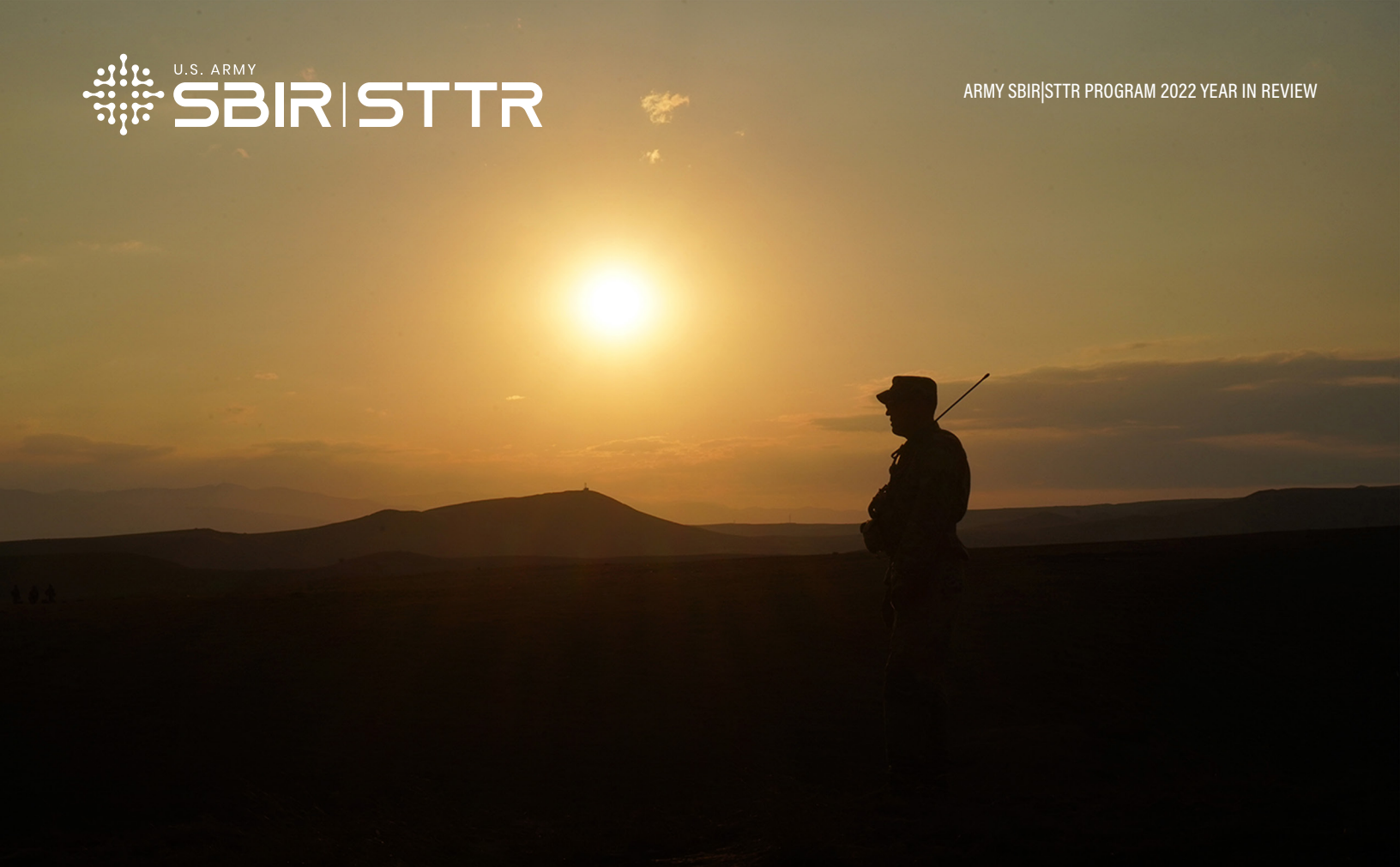
In 2022, the number of small businesses participating in Army SBIR|STTR surged more than 165% from the previous year, demonstrating that recent changes in the Army SBIR|STTR Program resonate with small-business innovators that want to do business with the Army. With Congressional reauthorization of the federal SBIR|STTR programs in 2022, we expect this trajectory to continue as SBIR|STTR solidify their programs as pivotal mechanisms to inject small-business innovation into federal efforts and Army programs.

In 2022, the Army SBIR Program released its first open-topic solicitation, within our Immersive and Wearables portfolio — creating a critical path for companies to provide truly disruptive technologies to the Army. Through this open solicitation, the subsequent release of an AI/ML open topic and the launch of the xTechSBIR Clean Tech competition with its open-topic category, the program attracted a variety of businesses that had not traditionally worked with the government and received proposals for novel solutions capable of overcoming multiple Army challenges.

Combined with the fully operational Army SBIR Contracting Center of Excellence, these efforts helped drive an increase in business participation while reducing the time to execute awards — down to as few as 17 days. The result was a big year for the Army SBIR|STTR Program, which reinvigorated its approach to enhance small-business collaboration, maximize cash flow and equip Soldiers with next-generation technologies.

This novel approach has increased growth in both the defense and commercial ecosystems, while providing industry with an improved ability to collaborate with the Army and resolve operational capability gaps through a series of open and technology-specific contracts, all while supporting the Army's mission.

Since its inception, the Army SBIR|STTR Program's mission has remained firm, seeking not only to streamline processes but also to quicken the development of novel technologies. Through new, emerging initiatives such as the Army SBIR CATALYST Program, the xTechPrime Competition and Army Tech Marketplace, the Army continues to adapt the SBIR|STTR program so our Soldiers remain a globally dominant force capable of efficiently operating on any front, while also supporting the U.S. small business sector through advanced technology solutions found nowhere else.



ABOUT THE ARMY SBIR|STTR PROGRAM

Established under the Small Business Innovation Development Act of 1982, the U.S. SBIR|STTR Program connects small businesses and innovative technologies with Army programs focused on sustained readiness and modernization.

The program ensures that the Army continues to be the most dominant combat force in history — capable of defeating any adversary on any battlefield.

Awarding more than $350 million annually to small and nontraditional businesses, Army SBIR|STTR sustains the Army's technological superiority, and stimulates economic competition, growth and productivity across government and commercial markets.

EVOLUTION OF ARMY SBIR|STTR

For 40 years, the Army SBIR|STTR Program has leveraged innovative small-business technologies to support Army goals and evolve its capabilities to respond to emerging global threats.

In October 2020, the Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology revamped the Army SBIR|STTR Program to boost collaboration between small businesses and Army programs, setting the program on a path toward more successful transitions and the commercialization of small-business solutions.

This reimagined program is more adaptive and responsive to the needs of small and nontraditional businesses, as well as Army acquisition and sustainment programs. Additionally, changes to the Army SBIR|STTR Program have made it easier to provide valuable opportunities for small businesses to engage with experts, tackle the Army's technological needs, and effectively operate within the Army research and development ecosystem.

ARMY SBIR|STTR PROGRAM PORTFOLIO BREAKDOWN

The Army SBIR|STTR Program has three distinct, yet synchronized portfolios, allowing for multiple pathways to acquire innovative technologies from small and nontraditional businesses. This pronged approach provides insertion points for industry and academia to collaborate with the Army and further develop their capabilities.

TRANSITION-FOCUSED SBIR PORTFOLIO

The Army Applied SBIR Program, or Transition-Focused SBIR portfolio, incorporates mature technologies and sustainment innovations to Army Programs of Record, while brokering relationships between small businesses and the Army to tackle acquisition priorities.

The Transition-Focused portfolio's contract opportunities include Phase I awards up to $250,000 for technologies that show feasibility, and Phase II, Direct to Phase II and Phase II Sequential awards up to $1.9 million to businesses that demonstrate the use-case of their technologies. All contracts are awarded through the centralized Army SBIR Contracting Center of Excellence, employing a streamlined process to award funding and bring innovative technologies to the Soldier faster than ever.

MODERNIZATION-FOCUSED SBIR PORTFOLIO

Known as the Army Fundamental SBIR Program, the Modernization-Focused portfolio collaborates with Army laboratories and the science and technology ecosystem regarding modernization priorities. The Modernization-Focused SBIR portfolio awards small businesses up to $250,000 for Phase I opportunities, and awards nontraditional companies up to $2.5 million for Phase II contracts.

SMALL BUSINESS TECHNOLOGY TRANSFER PORTFOLIO

The STTR portfolio focuses on research partnerships. Through STTR, small businesses collaborate with a university, federally funded research and development center, or a qualified nonprofit research institution. Once partnered, small businesses are required to perform the technology integrator portion of the project and at least 40% of the research and development, while the research partner must perform at least 30% of the R&D.

2022 BY THE NUMBERS

Army SBIR
Army STTR

PARTICIPATING SMALL BUSINESSES

493

166

TOTAL ARMY OBLIGATIONS

$353.3M

$68.1M

TOTAL SOLICITATIONS RELEASED

138

26

TOTAL PROPOSALS RECEIVED

1,075

313

TOTAL NEW CONTRACTS AWARDED

325

139

TOTAL CONTRACT ACTIONS

1,252

316

FY22 ARMY SBIR NEW-START CONTRACTS

Contract	Total Obligated Amount	# Of New Contracts Awarded	# Of Firms Receiving Awards
Phase I	$28.3 million	129	99
Phase II	$187.9 million	196	135
Total	$216.2 million	325	234

FY22 ARMY STTR NEW-START CONTRACTS

Contract	Total Obligated Amount	# Of New Contracts Awarded	# Of Firms Receiving Awards
Phase I	$17.2 million	97	80
Phase II	$27.2 million	42	27
Total	$44.5 million	139	97

FY22 TRANSITION AWARDS RESULTING FROM ARMY SBIR|STTR CONTRACTS

Contract	Total Funding Amount	# Of Awards Selected	# Of Firms Receiving Awards
Phase III	$318.7 million	159	60

OUR 2022 ACCOMPLISHMENTS

In 2022, the Army SBIR|STTR Program identified critical, next-generation technology domains where Army needs intersect with unrivaled private sector expertise. To ensure the Army continues to develop the right capabilities at the right time and cost, the program applied a transition-focused acquisition approach that coordinated with Army program goals and priorities while maximizing the commercial benefits for our industry partners.

> "This program is more active and hands-on than other DoD business programs that we have participated in in the past."
>
> — *Quantum Ventura*

Spotlight on Transition and Commercialization

- As part of a Phase III effort with the U.S. Army Combat Capabilities Development Command Chemical Biological Center, Numat Technologies and Northwestern University leveraged their successes from an STTR project to produce a Metal Organic Framework-embedded material capable of chemical absorption, retention and neutralization. Additionally, these organizations noted planned development of their MOF materials for commercial applications in gas storage, clean energy, chemical separations and personal protective equipment.
- Researchers from Integrated Solutions for Systems, or IS4S, and Auburn University collaborated on a series of STTR projects to develop a Positioning, Navigation and Timing initialization system for dismounted Soldiers, allowing for operation in GPS-contested environments.
- The Vision Based Inventory Management, or VBIM, streamlines and accelerates the process of field artillery ammunition transfer through automation using computer vision and artificial intelligence algorithms. In 2022, this technology transitioned to Joint Program Executive Office Armaments & Ammunition.
- The Robotic Army Ammunition Resupply, or RAAR, developed a vehicle-mountable robotic arm for loading and unloading the resupply vehicle and Extended Range Cannon Artillery, or ERCA, AutoLoader. It also developed a small arm to internally load and move shells as well as a receiver table to move the heavy shells within the resupply vehicle. These individual parts transitioned to the U.S. Army Combat Capabilities Development Command Armaments Center, the U.S. Air Force and the commercial construction market.

> "If you have a small business just starting out, [the Accelerator] is completely invaluable."
>
> — *Trident Systems*

- Area I, Inc., developer of an Extended Endurance Air-Launched, Tube-Integrated, Unmanned System, or ALTIUS, received Phase III SBIRs, in October 2022 for over $5 million and December 2022 for over $15 million, with the Army Aviation Applied Technology Directorate.
- Creare LLC is the developer of Silicon Carbide-based Electrical Distribution, a high-voltage power controller for high-voltage vehicle power systems, which enhances the Army's offensive capabilities through power systems that can efficiently control and distribute energy while matching the increased energy demands of today's heavy ground combat vehicles. Creare's Phase III was initiated at the end of FY22 and is set to produce a qualified HVPC in FY24 as part of the Army's Optionally Manned Fighting Vehicle and ERCA Middle-Tier of Acquisition programs.
- L3 Harris developed the Inflatable Tracking Antenna, a 2.4-meter GATR TRAC that features mechanical and electrical components housed on a ruggedized base with support arms that allow the antenna to track satellites moving across the sky. The company received a Phase III SBIR in June 2022 for over $2 million through Army Program Executive Office for Command, Control and Communications-Tactical.

Distinguished Civilian Service Medal

- Army Applications Laboratory Deputy Director Dr. Casey Perley was awarded the Distinguished Civilian Service Medal for her extraordinary efforts in planning, initiating, and implementing revolutionary business models and practices to accelerate, evaluate, and transition innovative dual-use technologies from nontraditional businesses, reshaping how the Army delivers capabilities to support Army modernization. These efforts resulted in the new AAL Special Program Awards for Required Technology Needs SBIR program.

Open-Topic Solicitations

- In its first open-topic solicitation, the Army SBIR Program awarded 24 small businesses with Phase I SBIR contracts up to $150,000 each for Immersive and Wearable technologies.
- The Army SBIR Program received over 400 proposals for its second open-topic solicitation, in Artificial Intelligence and Machine Learning.
- The U.S. Army xTech Program launched the xTechSBIR Clean Tech competition, which included an open-topic category within clean tech. The competition received 183 valid submissions from small businesses and included both cash prizes, and the opportunity for winning companies to submit for Phase I and Phase II Army SBIR awards as they progressed through the competition.

> "I thought the Pitch event was great! Multiple folks reached out to us to follow up."
>
> — *Outside Analytics Inc.*

CONTRACTING AT SPEED

Fully operational as of March 2022, ASA(ALT) established the Army SBIR Contracting Center of Excellence to make it easier and faster for U.S. companies to collaborate with the Army by awarding, administering and positioning all Army SBIR Phase I and Phase II contracting resources within one centralized office.

Throughout the year, the CCoE's rapid response helped support the Army SBIR|STTR Program's approach to releasing contract opportunities on a rolling, ad-hoc basis — enabling programs to explore timely and innovative solutions for their most critical modernization priorities.

As a result, the Army SBIR|STTR Program increased its flexibility and timeliness in addressing emerging Army needs by decreasing the average time to award from 220 days to as few as one day for a Phase I contract and two days for a Phase II contract — up to 99% faster compared with the previous timeline.

Total Phase I and Phase II contracts executed by CCoE in FY22: 114

> "Thanks to the entire Army Applied SBIR Accelerator team for a smooth, informative and engaging experience! We have new colleagues, collaborators and insight into the DoD directions to pursue in Phase I."
>
> — *neuroFit*

Events and Conferences

To better reach small businesses and demonstrate how to do business with the Army, the Army SBIR|STTR Program participated in dozens of industry panels, expos and other events — furthering its goal of breaking down barriers for small businesses to engage with government personnel and programs, while hearing directly from industry on their challenges and capabilities.

Association of the United States Army 2022 Annual Meeting and Exposition

- The ASA(ALT) Office of Army Prize Competitions and Army Applied SBIR Program hosted the Innovator's Corner at the AUSA 2022 Annual Meeting and Exposition at the Walter E. Washington Convention Center in Washington, D.C.
- The event drew more than 30,000 individuals over three days and consisted of members from all components of the DoD, civilians, contractors and industry.
- The Innovator's Corner featured 29 winning companies from past xTech and Army SBIR competitions, including xTechSearch 6, xTechSBIR Clean Tech, xTechInternational and xTechDetect, that each shared their science and technology innovations with Army and DoD warfighters, civilians and industry leaders — to demonstrate the value of their technology to Army readiness and modernization challenges.
- HON Gabe Camarillo, Under Secretary of the Army, announced several initiatives launching in 2023 aimed at expanding partnerships between prime defense contractors, small businesses and the Army — including the Army SBIR CATALYST Program, the xTechPrime competition, and the Army Tech Marketplace, all led by the Office of Army Prize Competitions and Army Applied SBIR Program.

South by Southwest Conference

- The Army SBIR Program participated in the SXSW 2022 Technology and Innovation Conference, where attendees from around the globe traveled to Austin, Texas, to share and discuss novel topics, technologies, ideas, and strategies.
- As a panelist at SXSW, Dr. Matt Willis, director of Army Prize Competitions and the Army Applied SBIR Program, discussed how small businesses leverage more than $4 billion set aside in annual federal funding to further the government and Army's mission requirements.
- Jennifer Shieh, program director of the Small Business Administration, moderated the panel — which also featured Ela Mirowski of the National Science Foundation and Victor Udoewa of NASA — informing small businesses and investors new to working with the government and SBIR about collaborative opportunities.

> "Through this, I had a realization that there is a great opportunity to do B2B with big [technology integrators]."
>
> — *Cenith Innovation*

Regional Events and Outreach

- In addition to the AUSA 2022 Annual Meeting and Exposition and SXSW 2022, the Army SBIR|STTR Program participated in dozens of external events and engaged with a variety of audiences from across the United States. These engagements provided opportunities to share with nontraditionals, small businesses and academia how to participate in the Army SBIR|STTR program.
- Participating in events across the country provided the program the opportunity to engage with geographically diverse, under-represented and underserved communities, exemplified by Pacific Tech 2022, New Mexico SBIR|STTR Innovation Summit, and events with regional Procurement Technical Assistance Centers and Accelerators.
- Pacific Tech 2022, a bi-annual conference hosted by the Hawaii Technology Development Corporation in Honolulu, provided an opportunity for Dr. Matt Willis, director of Army Prize Competitions and Army Applied SBIR Program, to speak with companies in and focused on the Indo-Pacific region about their unique challenges and new initiatives launching in 2023.
- The New Mexico SBIR|STTR Innovation Summit, hosted by New Mexico's Federal and State Technology program's Arrowhead Center at New Mexico State University, consistently sees high attendance from women-owned and minority-owned small businesses. In 2022, Nicole Fox, Army Applied SBIR program analyst and Autonomy portfolio manager, represented the Army SBIR|STTR Program during a roundtable with peers and counterparts at the NM SBIR|STTR Innovation Summit.
- Throughout the year, the Army SBIR|STTR Program participated in panels and presentations for accelerators and Procurement Technical Assistance Centers — or PTACs — based throughout the country to expand the reach of the program and inform nontraditionals, small businesses, and academia of the program's contract and funding opportunities.

Army SBIR Accelerator Program

The Army SBIR|STTR Program has made it easier than ever to do business with the Army — and that includes providing companies with critical information and tools to mature and transition their technology to deliver to the Soldier.

To best support awardees, the Army SBIR Accelerator provides community building, education models, targeted networking and mentorship for small businesses navigating the Army acquisition process — at no cost to the companies.

> "I've been through other accelerator programs in the past, but this one was top-quality presentation and content."
>
> — *United Aircraft Technologies*

In 2022, the Army SBIR Accelerator started its first-ever prime networking events, at which the small businesses participating in the Accelerator cohort pitched their capabilities to prime integrators for potential partnership. The Accelerator conducted four cohorts — Alpha, Bravo, Charlie and Delta — with Army SBIR awardees from 49 small businesses. All cohorts focused on driving technology transition into Army systems and platforms.

- Cohort Alpha: 13 first-time SBIR-awarded businesses, each with 10 employees or less.
- Cohort Bravo: Nine companies developing AI capabilities.
- Cohort Charlie: 15 companies participated in the first prime networking pitch event.
- Cohort Delta: 11 companies received tailored advice from 21 mentors.

In 2022, over 160 prime integrators, industry leaders, academia and DoD representatives participated in Army SBIR Accelerator events. The Army SBIR Program also built on previous Accelerator programming and held the Army Applied SBIR Summit to expose small businesses to key Army ecosystems. The two-day summit attracted 241 registrants from industry, government and private finance, who learned about the strategic portfolio investments of the Army SBIR program and the emerging industry capabilities from Army SBIR awardees.

Complementing the Army SBIR Accelerator, the Army SBIR Program offered Technical and Business Assistance, or TABA, to its awardees, providing information and assistance at no cost to small businesses to drive faster technology transitions. In 2022, TABA offered support in six business function areas for small businesses, including:

- Communications
- Market Analysis
- Due Diligence
- Dual-Use Commercialization
- Intellectual Property
- Product Development

In 2023, the Army SBIR Accelerator and TABA have enhanced curriculums, incorporating lessons learned from previous cohorts. The new curriculum incorporates three overarching improvement areas: 1) Accelerator and TABA synchronization, 2) focus on transitioning companies, and 3) data-driven measurement of participants' experience.

STRATEGIC INITIATIVES

ASA(ALT)-LED INNOVATION INITIATIVES

During the October 2022 AUSA Annual Meeting and Exposition, HON Gabe Camarillo, Under Secretary of the Army, unveiled five ASA(ALT)-led initiatives to expand partnerships between prime defense contractors, small businesses and the Army — Army SBIR CATALYST Program, xTechPrime Competition, Army Tech Marketplace, Project VISTA, and Army IP Cadre.

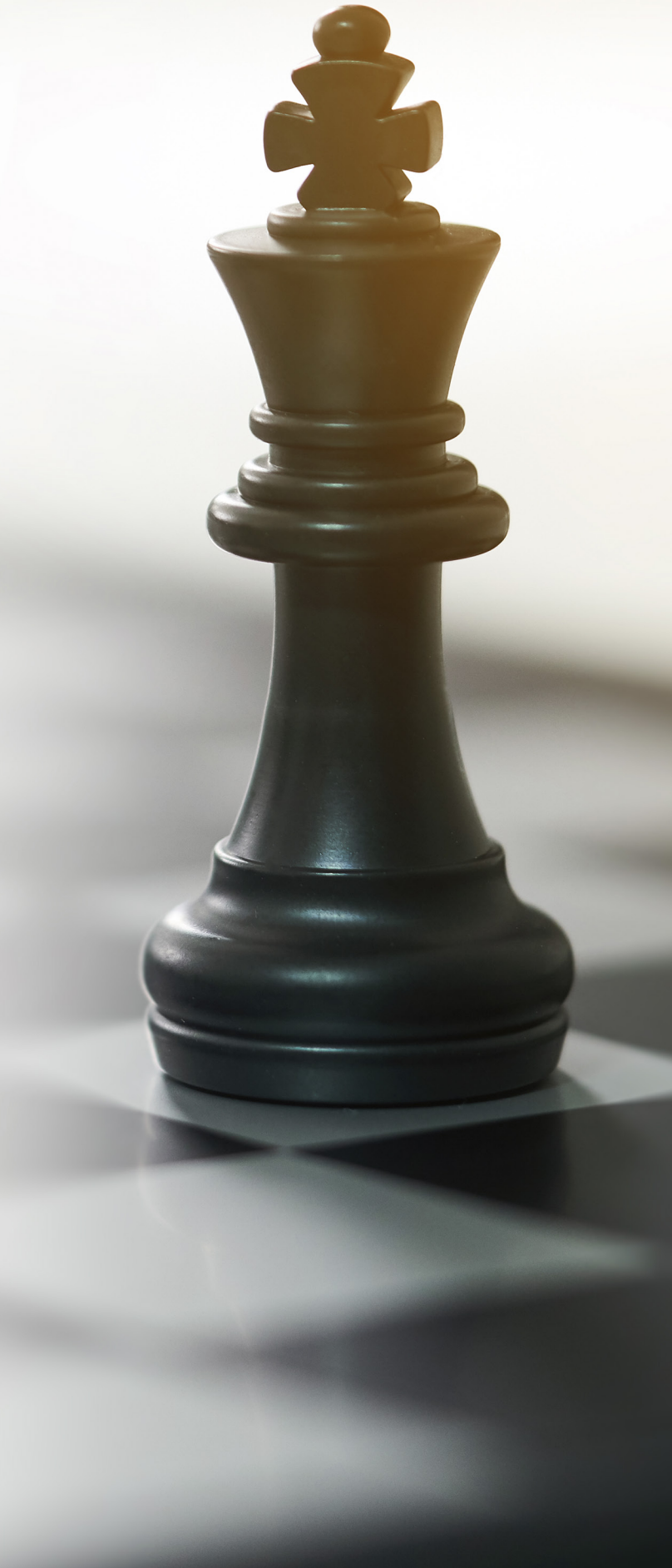
Rolling out in 2023, these initiatives seek to inject nontraditional innovators into the defense innovation ecosystem, drive partnerships, and increase successful transition into Phase III contracts and commercialization. The Office of Army Prize Competitions and Army Applied SBIR Program is leading three of the initiatives for the Army, which include:

Army SBIR CATALYST Program

This new program will fuse the power of prime integrators and U.S. small businesses to accelerate innovation and equip the Soldier of 2030. The program will incentivize technology integrators and Army Program Executive Offices to transition innovative technologies. Most excitingly, the Army SBIR CATALYST pilot will provide five awards up to $15 million each — nearly eight times larger than the typical SBIR contract — of combined Army SBIR, Army transition partner, and prime integrator funding to small businesses that have received an Army SBIR|STTR award within the previous four fiscal years (FY19 to FY22) but have not yet been awarded a second SBIR|STTR Phase II under the same project.

xTechPrime Competition

As the Army's prize competition, the xTech Program allows businesses to compete for nondilutive cash prizes, with some competitions also awarding SBIR contracts to accelerate and transition winners' transformative technology solutions into the Army. The xTechPrime competition flips the switch on this model. It will challenge small businesses to work together in teams with technology integrators to submit their innovative solutions that contribute to the Army's current modernization goals. xTechPrime will assist in driving innovation, ultimately delivering novel and often overlooked technologies to the Army. Through the xTechPrime competition, the Army will encourage collaboration between small businesses and technology integrators by providing an opportunity to form teams to compete for non-dilutive cash prizes and, for the winners, the potential for Direct to Phase II SBIR contract awards.



Army Tech Marketplace

Leveraging artificial intelligence and data fusion, the Army Tech Marketplace will be an online portal and IT platform with twin sides: external and internal. Externally, the Army Tech Marketplace permits Army, Joint Services and innovation economy members to appropriately share information and build relationships. It also facilitates collaboration, contracts and the integration of innovations into the Army enterprise. Internally, it is a common, secure space for Army and eventually Joint Service research centers, acquisitions and other programs to learn about cross-organizational activities, mitigate R&D risks through shared learning, and capitalize on collaborative opportunities.

Innovation Framework

In 2022, the Army SBIR Program penned its Innovation Framework, the innovation model underpinning the Army SBIR|STTR Program.

This framework provides state-of-play information regarding the structure of the innovation economy and its participants, as well as context about the Army's role in facilitating technological innovation.

> "The program was great, and we are extremely grateful to have had the opportunity to attend!"
>
> — *Innovation Semi*

In turn, the Innovation Framework provides the foundation that anchors the Army SBIR|STTR Program's core purpose. In reaffirming the program's mission, roles, functions and objectives, it describes the program's best practices in allocating capital through its role akin to a financial industry investment team.

Each of these elements drives a greater understanding of the program structure and how it resolves Army capability gaps through novel technologies. These elements also help streamline the design and management of SBIR-funded research and development efforts, while utilizing advanced solutions from the innovation economy.

The Army SBIR|STTR Program focuses on its investments yielding long-term revenue for small businesses beyond their SBIR|STTR contracts. The Innovation Framework outlines Army SBIR|STTR approaches derived from the commercial financial sector — exercising fiduciary responsibilities, taking necessary risks and simplifying processes.

As the Army SBIR|STTR Program continues to evolve, it will remain critical to fine-tune this approach with valuable contributions from partners' diverse thinking. This enables the program to transition technologies to large programs — thereby enabling small businesses to commercialize solutions and achieve financial success beyond the Army's limited investments. In that same vein, these efforts better support our national security strategy and foster an Army that is in sync with the innovation economy.

ARMY SBIR TECH SCOUTING TRENDS

To better capture and deliver disruptive small-business innovations to the Army, the Army SBIR|STTR Program strategically deploys its capital on specific technologies that can provide game-changing solutions for the Army. Through technology scouting, market analysis, and research, the Army SBIR|STTR Program identified five technology ecosystems best suited for small business research and development, Army application, and potential for dual-use application in the commercial sector. In 2022, Army SBIR|STTR launched two innovative technology portfolios — Climate and Clean Tech, and Immersive and Wearables — in addition to the portfolios launched in 2021 — Artificial Intelligence/Machine Learning, Autonomy, and Sensors.

From 2022 to today, the Army SBIR Program has awarded nearly 700 contracts to nontraditional small-business innovators — nearly $408 million total. The Army SBIR Program prioritizes investments in technology ecosystems that have the highest potential for small-business innovation and align with Army priorities. From 2022 to today, the program has awarded AI/ML contracts totaling more than $91 million; Autonomy contracts totaling more than $32 million; Climate and Clean Tech contracts totaling nearly $42 million; Immersive and Wearables contracts totaling nearly $10 million; Sensors contracts totaling more than $56 million; and Enabling Technologies contracts totaling nearly $176 million.

Climate and Clean Tech

With the release of the Army Climate Strategy and enterprise-wide efforts to reduce environmental impacts, Army SBIR|STTR focuses on bringing in nontraditional innovators to develop climate and clean tech solutions for the Army. Army SBIR's Climate and Clean Tech portfolio focuses on technologies that maximize efficiency and minimize emissions across a range of technology areas.

- **Energy Storage**: Energy storage systems (batteries, capacitors, hybrid devices and DC/DC converters) and solutions to optimize single-cell modules and vehicle-packaged cost, performance, safety, life, abuse tolerance, recycling and sustainability within production, use and disposal processes, focusing on expeditionary power solutions.
- **Clean Energy Generation**: Focuses on reliable and affordable ways to generate energy from renewable, zero-emission, non-polluting sources, including solar, wind, water, nuclear, thermal and waste-to-energy-based solutions or a combination of these alone or with legacy power generation systems, focusing on expeditionary power generation (installation systems excluded).
- **Clean Micro-Grid**: Devices and controlling digital information systems that optimize the efficiency, reliability and security of grid-delivered power, including management, energy storage, metering and monitoring, AI grid optimization, sensors, diagnostics/prognostics and analytics, focusing on expeditionary and distributed power solutions (installed systems excluded).
- **Electric Transportation**: Software and hardware solutions for electric and hybrid-electric systems for vehicles and aviation, including supporting infrastructure for operational energy availability and sustainment. Components may include platform rechargers with or without power generation sources, range extenders and battery technologies.
- **Clean Industry Technology**: Sustainability and carbon-effluence of industrial processes, including fuel alternatives, mining technologies, direct processes and associated tools for manufacturing.

Immersive and Wearables

The Army SBIR|STTR Program scanned the private sector for immersive and wearable innovation, with the goal of informing stakeholders and influencing future capital decisions. The Immersive and Wearables portfolio focuses on the integration or extension of the real world through digital or simulated reality, such as augmented, virtual and mixed reality. It also prioritizes the implementation of smart electronic devices that users can wear or attach to themselves to gather data and provide insight during mission operations.

- **AR/VR/MR Solutions**: Includes training and simulation, cognitive resilience, maintenance, collaboration, command and control, enhanced vision and autonomous teaming.
- **Physiological Monitoring**: Includes Soldier-borne sensors to collect physiological data and assess aspects of Soldier health and readiness, battlefield performance, illness prediction, disease detection and behavioral health.
- **Energy Harvesting**: Includes the use of smart materials, fabrics, and biomechanical systems to collect and store radiant and kinetic energy to augment Soldier power systems.
- **C5ISR**: Includes position, navigation and timing tech; tactical communications and networks; micro-UAV/UAS; gesture control; haptic feedback; technology implants; and casualty and blue-force tracking.
- **Environmental and Threat Sensors**: Includes Soldier-borne sensors to detect and assess CBRNE exposure, directed energy, altitude effects, thermoregulation, and blast and gunshot detection.

U.S. ARMY SBIR|STTR

CONCLUSION

Thank You

This was a big year for the Army SBIR|STTR Program, thanks to the talented individuals working to connect small businesses with Army needs. The Army SBIR|STTR Program thanks you for your involvement and efforts to continue this focus into 2023.

By 2030, the Army must be ready to deploy, fight, and win decisively against any adversary, anytime and anywhere. To achieve its goal, the Army must develop technology at the rate of innovation. This can only happen with the support of industry, whose investments in research and development are one of the key drivers to bring innovative ideas and capabilities into the Army.

The DoD understands the essential role small businesses play in this endeavor. Often, ambitious ideas unlock new and revolutionary military applications that were previously unrealized. At the same time, they address critical modernization challenges and advance the goals of the National Defense Strategy.

To facilitate increased inclusion from nontraditional companies, the Army SBIR|STTR Program will launch the SBIR CATALYST Program, xTechPrime Competition and Army Tech Marketplace in 2023. Combined, these initiatives will streamline and incentivize collaborations with nontraditional companies — driving down risk and improving transition and commercialization outcomes in the process.

Additionally, the Army SBIR|STTR Program will explore a greater number of open topics, as well as cooperative opportunities with the Army xTech Competition, the Army's prize competition, which hosts myriad opportunities throughout the year to win nondilutive prize money while engaging directly with Army programs and subject matter experts.

The Army SBIR Contracting Center of Excellence will further enhance these combined efforts as it actively facilitates these awards and innovations. The CCoE has greatly improved the efficiency of the program by streamlining proposal requirements, reducing time to capital, and incentivizing rapid contracting so that commercial success and technology partnership with the Army are not mutually exclusive.

Through the CCoE, the Accelerator Program, the expansion of the Army SBIR|STTR technology ecosystems and other strategic initiatives, the program remains committed to furthering the Army's modernization and sustainment priorities to equip our Soldiers for future multi-domain operational environments. We continue to collaborate with Army stakeholders and independent technology scouts to identify and invest in topics and solutions that directly align with the Army's critical needs, focusing on what is most likely to transition to actual Army use so that our ultimate customer — the Soldier — can effectively operate and win in any environment.

In that same vein, the program aims to not only reduce the barrier to entry but also accelerate the development of transformative technologies. As we continue to evolve the program, we will further improve our technology ecosystem through smart investment decisions while supporting the people behind innovative and emerging solutions.

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