

Defense Industrial Supply Chain Summit

Oct 29-30, 2024
Charlotte, NC

Hosted by:

Office of Senator Thom Tillis

Office of Senator Ted Budd

NC Military Business Center

NC Defense Technology Transition Office





Why Present Your Technology or Innovation to the Federal Government

Speakers:

- TJ Gilroy, Program Manager, North Carolina Defense Technology Transition Office



What is DEFTECH?



The North Carolina Defense Technology Transition Office (DEFTECH) is a state-funded North Carolina Military Business Center entity.

The North Carolina innovation ecosystem consists of

- businesses,
- the university and community college systems,
- public-private partnerships,
- investors,
- State agencies, and
- military commands.





What is DEFTECH?

DEFTECH serves DoD, federal agencies, and the innovation ecosystem by:

- Scouting the state for breakthrough technologies
- Coaching industry to identify defense applications
- Communicating federal technology needs
- Positioning businesses to meet requirements
- Representing North Carolina to federal customers
- Conducting emerging technology forums
- Serving as the North Carolina liaison to DoD and federal innovation offices.

Our main goal is to help innovative NC companies win SBIRs (Small Business Innovation Research) contracts and grants.

Why present your Technology or Innovation to the Federal Government?

1. For contracts

DOD budget for FY 2025 is **\$848.9 Billion**

2. For R&D money

Up to **\$1.5 Million**

Presenting your innovation to the DOD

Your innovation is your “baby” and you think of it and talk about it in your way.
That’s fantastic, **BUT...**

The people you would like to present your innovation to (the ones with the \$\$\$)are

- Very regimented
- Review 100’s if not 1000’s of innovations every year
- Probably as an additional duty

They want to see your information in very specific formats

- **White papers**
- **Quad charts**

White paper

- A whitepaper is a persuasive, authoritative, in-depth report on a specific topic that presents a problem and provides a solution.
- Companies create whitepapers to educate their audience about a particular issue or explain and promote a particular innovation or technology.
- **The information in a white paper can be used in Quad Charts**



USAF White Paper Template

This template is provided as a suggested format.

1. Company Information

Provide the following information: Company Name, CAGE code, Company Size (large or small), and RFI number (if applicable). Include a synopsis outlining the firm's capabilities, facilities (location, square footage, etc), and experience.

2. Background/Problem Statement

Provide a brief background and identify the problem and problem statement. Please include all NSNs, Part Numbers, Nomenclature, Equipment List (if applicable), and Type (Manufacture, Repair or Overhaul, Reverse Engineering, Repair Development, Additive Manufacturing). What current problem does this project address?

3. Solution

What is the intent/objective of this effort? Provide a summary of the effort to include solution and value to the USAF. Describe solution(s) company is proposing. How is your company going to accomplish the task? Make a compelling case that the problem in question is significant enough it warrants a USAF investment. What are the potential benefits?

4. Deliverables

Provide intended deliverables (i.e. Test Plan, Test Results, Drawings, Tech Data Package, Specifications, Prototype, and First Article). What will this effort entail? How will this effort address the needs outlined in the previous sections? Please discuss the ownership of the Technical Data Package.



USAF White Paper Template

5. Rough Order of Magnitude (ROM)

Provide estimated total cost for the effort. If the proposed solution is divided into phases, please include the deliverables and cost of each phase or stage.

6. Schedule

Provide a draft timeline of effort to include major activities/tasks and milestones. When will items be delivered (i.e. TDP or First Article)? What is the anticipated completion of the effort?

7. Conclusion

Synopsis the request, the benefits to the USAF, and the deliverable(s).

8. Disclaimer(s)

USE AND DISCLOSURE OF DATA – “This white paper includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed – in whole or in part – for any purpose other than to evaluate Return on Investment of effort”

SBIRs and STTRs

Through the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs, the Government awards **non-dilutive** funding to develop your technology and chart a **path toward commercialization**

SBIR/STTR Phases

- **Phase I** Feasibility Study Phase (up to 250K):
 - **Awards range from \$50K to \$250K**. Around 1000-1500 awards are granted annually.
- **Phase II** Prototype Development Phase (up to 1.5M):
 - **Awards range from \$750K to \$1.5M**. Roughly 300-500 Phase IIs awards granted annually (typically) • ‘Direct to Phase 2s’ aka D2P2s: Direct to Phase II are topics where the government is looking to skip the Phase I process altogether.
- **Phase III** Sole Source Production Contract:
 - This phase does not have a fixed award amount meaning contractors essentially create your own contract vehicle and can sell to any agency as **a sole source provider of your offering**. Dozens are awarded each year
- <https://www.sbir.gov/topics>

How it works



How to apply

Do you have an idea for a specific technology solution?

Explore opportunities for funding to take your idea from concept to commercialization.

<https://www.sbir.gov/topics>



Identify Opportunities

With help from organizations that support technology entrepreneurs like you



Apply

With the help of supporting organizations



Develop Your Idea

America's Seed Fund provides funding with the freedom to manage your business your way.

SBIR Agencies

Department of Agriculture (USDA)



Supports: Forests Resources, Plant and Animal Production and Protection, Conservation of Natural Resources, Food Science and Nutrition, Rural Development, Aquaculture, Biofuels and Biobased Products, Small and Mid-Size Farms

Department of Commerce (DOC)



Funds technologies in support of the missions of the National Oceanic and Atmospheric Administration (NOAA) and the National Institutes of Standards and Technology (NIST).

Department of Defense (DOD)



Priority Areas include: 5G, AI/Autonomy, Biotechnology, Control and Communications, Cybersecurity, Directed Energy, Hypersonic, Microelectronics, Network Command, Nuclear, Quantum Sciences, Space, and more.

Department of Energy (DOE)



Research areas include: Advanced Scientific Computing Research, Environmental Management, Fossil Energy, Biological and Environmental Research, Fusion Energy Science, Cybersecurity, Energy Security, Renewable Energy, and more.

Department of Education (ED)



Funds New Education Technology Products for Use by Students, or Educators, or those used by Infants, Toddlers, or Students With or At Risk for Disabilities, or Teachers in Early Intervention or Special Education Settings

Health and Human Services (HHS)



Funds health, life science, and biomedical discoveries that could impact the lives of patients and their families.

Department of Homeland Security (DHS)



Funds innovation supporting: Borders and Maritime Security, Chemical and Biological Defense, Critical Infrastructure and Resilience, Cybersecurity, Explosives Detection and Aviation Screening, First Responders, and more.

Department of Transportation (DOT)



Funds technologies in support of DOT Operating Administration: Federal Highway Administration, Federal Railroad Administration, Federal Transit Administration, and Pipeline and Hazardous Materials Safety Administration.

Environmental Protection Agency (EPA)



Broadly funds technologies addressing Air Quality, Homeland Security, Sustainable Materials Management, Safe Chemicals, Land Revitalization, and Clean and Safe Water.

National Aeronautics and Space Administration (NASA)



Seventeen (17) technology areas, including: Propulsion Systems, Flight Computing and Avionics, Aerospace Power and Energy Storage, Robotic Systems, Communications, Navigation, and Orbital Debris Tracking/Characterization Systems.



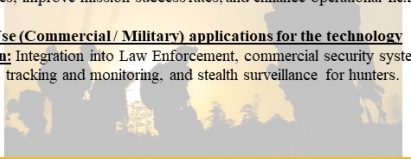
National Science Foundation (NSF)



Funds almost all areas of technology and market sectors (with the exception of clinical trials).

The purpose of a Quad Chart

- Provide a standardized format
- That addresses specific information
- Enabling evaluators to make quick decisions regarding
 - Need
 - Technology
 - Possibility of successful implementation

Example SCOUT CARD		Company Logo	Name of Company POC: name/phone/email
		Warfighter ACS	
Problem <u>Technology name, picture, and a brief description:</u> Adaptive Camouflage System (ACS) allows the Warfighter to hide in plain sight.		Solution Specifics <u>How do you solve the problem?</u> The Adaptive Camouflage System utilizes advanced materials and real-time image processing to dynamically adjust the appearance of military personnel and equipment, providing effective camouflage in different terrain and conditions.	
<u>What problem do you solve?</u> Warfighters face increased vulnerability due to their visibility in various environments, making them susceptible to detection and attacks.		ACS seamlessly blends with the surroundings, significantly reducing the chances of detection by enemy forces.	
Next-generation stealth is required for the Joint Force to conduct Multi-Domain Operations.			
Impact and Technical Approach <u>Technology Readiness Level (TRL):</u> 6 ACS has been demonstrated in a relevant operational environment in DAX '22 with positive feedback from Special Operations Soldiers.		Performance <u>End-user payoff/expected operational value/new capability:</u> ACS is a transformational innovation to increase protection for Warfighters, reduce casualties, improve mission success rates, and enhance operational flexibility.	
<u>What is the Impact of your Solution?</u> The impact of the Adaptive Camouflage System includes enhanced survivability, reduced risk of enemy detection, improved stealth capabilities, and increased operational effectiveness in various mission scenarios.		<u>Dual Use (Commercial / Military) applications for the technology solution:</u> Integration into Law Enforcement, commercial security systems, wildlife tracking and monitoring, and stealth surveillance for hunters.	
<u>The Technical Approach:</u> NC A&T patented engineering principles used to create and advance the technology.			



SCOUT CARD:

Capability Name

Company Logo

Name of Company
POC: name/phone/email

Problem

Technology name, picture, and brief description:

- Provide a concise overview of the evaluated technology.

What problem do you solve?

- Identifying the specific problem or challenge faced by the Warfighter (military personnel or units).

Solution Specifics

How do you solve the problem?

- Details of how the technology proposed in the quad chart addresses the identified problem.

Why you? What makes you different from the competition?

- Unique Selling Proposition (USP)

Impact and Technical Approach

Technology Readiness Level (TRL): The TRL scale ranges from 1-9

Manufacturing Readiness Level (MRL): The MRL scale ranges from 1-10

What is the Impact of your Solution?

- The potential impact of the proposed technology on addressing the identified problem.

What is the Technical Approach?

- Methodology employed in developing the technology.

Performance

End-user payoff/expected operational value/new capability:

- Expected outcomes or benefits that end-users, typically the Warfighter, would gain from employing the proposed technology.

Dual-Use (Commercial / Military) applications for the technology solution:

- Technology's potential applications beyond the military domain in both commercial and military contexts.

1. Problem:

Technology name, picture, and brief description: This section of the DEFTECH TIDE Tech Scouting Quad Chart provides a concise overview of the evaluated technology. It includes the

- name of the technology,
- a representative picture,
- and a brief description that highlights its key features and functionalities.

What problem do you solve?

- Identify the specific problem or challenge.
- Which SBIR topic or transformation issue does it address.
- How it addresses the issue.
- Define the gap or need that the technology aims to fill.

2. Solution Specifics:

How do you solve the problem? How does your proposed technology addresses the identified problem.

- Describe the specific
 - capabilities,
 - features, or
 - functionalities that make the technology a viable solution.
- Highlight the technology's unique selling points or advantages
- Any key components, algorithms, methodologies, or approaches

What makes you different from the competition?

- **Unique Selling Proposition (USP)**
 - A USP communicates the key factors that separate your product from the competition.
 - It communicates your brand's values and differentiates what your company offers.

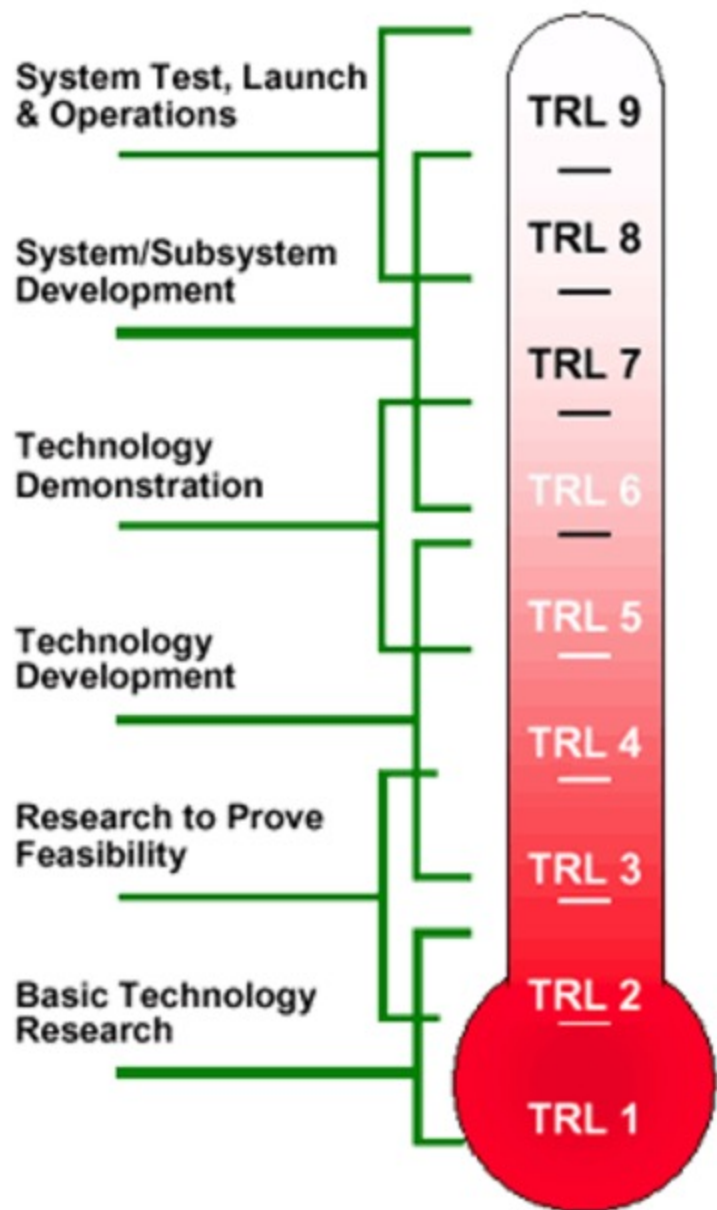
3. Impact and Technical Approach:

Technology Readiness Level (TRL): The TRL scale ranges from 1 to 9, with 1 indicating basic principles observed and 9 representing a fully operational technology deployed and proven in its intended environment. The TRL assigned to the technology indicates the level of technological development and readiness for deployment. It helps evaluate the feasibility and potential risks of implementing the technology within the desired context.

Manufacturing Readiness Level (MRL): The MRL scale ranges from 1-10, with 1 indicating basic manufacturing implications being identified and 10 representing full rate production being in place.

What is the Impact of your Solution? The impact could include improvements in efficiency, effectiveness, cost reduction, enhanced capabilities, reduced risks, or any other positive outcomes that can be attributed to the technology.

Technical Approach: What is the technical approach or methodology employed in developing the technology. It overviews the key steps, processes, or methodologies used to design, build, and refine the solution. The technical approach may involve specific engineering principles, scientific methods, research and development practices, software development methodologies, or other relevant approaches used to create and advance the technology. This section highlights the technical expertise and innovation behind the solution.



Manufacturing Readiness Level

AIM Photonics
Manufacturing Focus

Material Solutions Analysis	1	Basic manufacturing implications identified
	2	Manufacturing concepts identified
	3	Manufacturing proof-of-concept developed
	4	Capability to produce the technology in a laboratory environment
Technology Development	5	Capability to produce prototype components in a production relevant environment
	6	Capability to produce a prototype system or subsystem in a production relevant environment
Engineering and Manufacturing Development	7	Capability to produce systems, subsystems or components in a production representative environment
	8	Pilot line capability demonstrated. Capability in place to begin full rate production
Production and Deployment	9	Low rate production demonstrated. Capability in place to begin full rate production.
Operation and Support	10	Full rate production demonstrated and lean production practices in place

4. Performance:

End-user payoff/expected operational value/new capability: What are the expected outcomes or benefits for end-users. Outline the potential to provide a significant and measurable advantage or new capability. This could include increased operational effectiveness, improved situational awareness, enhanced decision-making capabilities, reduced workload, increased speed. (Faster, Lighter, more Capable)

Dual-Use (Commercial / Military) applications for the technology solution: Describe how the technology can be employed by both commercial and military users. Describe the technology's potential for broader adoption, scalability, and commercialization.

- how the technology can be re-purposed,
- modified, or
- integrated into existing commercial systems or processes

Problem

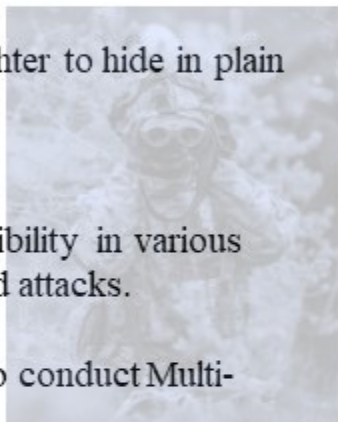
Technology name, picture, and a brief description:

Adaptive Camouflage System (ACS) allows the Warfighter to hide in plain sight.

What problem do you solve?

Warfighters face increased vulnerability due to their visibility in various environments, making them susceptible to detection and attacks.

Next-generation stealth is required for the Joint Force to conduct Multi-Domain Operations.

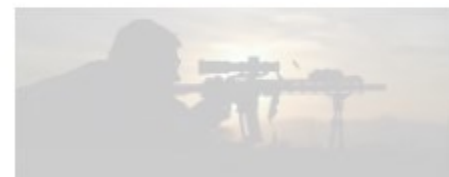


Solution Specifics

How do you solve the problem?

The Adaptive Camouflage System utilizes advanced materials and real-time image processing to dynamically adjust the appearance of military personnel and equipment, providing effective camouflage in different terrain and conditions.

ACS seamlessly blends with the surroundings, significantly reducing the chances of detection by enemy forces.



Impact and Technical Approach

Technology Readiness Level (TRL): 6 | ACS has been demonstrated in a relevant operational environment in DAX '22 with positive feedback from Special Operations Soldiers.

What is the Impact of your Solution?

The impact of the Adaptive Camouflage System includes enhanced survivability, reduced risk of enemy detection, improved stealth capabilities, and increased operational effectiveness in various mission scenarios.

The Technical Approach: NC A&T patented engineering principles used to create and advance the technology.

Performance

End-user payoff/expected operational value/new capability: ACS is a transformational innovation to increase protection for Warfighters, reduce casualties, improve mission success rates, and enhance operational flexibility.

Dual-Use (Commercial / Military) applications for the technology

solution: Integration into Law Enforcement, commercial security systems, wildlife tracking and monitoring, and stealth surveillance for hunters.



Next Steps

1. Join our next Friday Coffee Call and our innovation ecosystem
2. Book a meeting to discuss your technology and situation
3. Determine where your technology fits within the needs of the Government
4. Find a SBIR or STTR opportunity
<https://www.sbir.gov/topics>
5. Submit your proposal
May qualify for proposal cost reimbursement from NC Commerce



Join us for our Friday
Coffee Call

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Book a meeting
with TJ

