

Department of the Navy SBIR/STTR Transition Program

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Topic # SB052-028

Development of DSTS; a Digital Static Tracking System
Hood Technology Corporation

WHO

SYSCOM: NAVAIR

Sponsoring Program: IR/RF Countermeasures Div, WXR, NSWC Crane

Transition Target: Phosphorous Decoy Flare Trajectory Mapping

TPOC:
(812)854-4065

Other transition opportunities: The Digital Static Tracking System is readily deployable to track any visible object in the electro-optical spectrum (or infrared if an IR imager is substituted). For example, mapping the trajectory of a terminal guidance ordinance for which GNSS data is not readily available due to the destructive nature of the target. Or tracking an adversarial aircraft through a roughly predetermined region of the sky.

Notes: The DSTS can also be used for surveying non-moving objects without the need for the persistent presence of a human operator.



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WHAT

Operational Need and Improvement: Offered as a portable, lower cost, simpler version of a legacy target tracking system currently in use on bombing ranges, the DSTS a good alternative for small teams to set up quickly. Storage and maintenance of the DSTS is minimal in comparison to mechanical tracking equipment. Training a team to use the DSTS takes a single day. Highly modular, the DSTS can be adapted to track a variety of targets in almost any environment. The entire DSTS can be transported in a pickup truck.

Specifications Required: The requirements of the DSTS were to track a ballistic decoy flare with greater accuracy than GNSS and greater precision than existing mechanical tracking equipment.

Technology Developed: The Digital Static Tracking System is a portable tracking system using multiple imaging nodes to track airborne objects through a pre-specified volume in the sky.

Warfighter Value: Using the DSTS will give weapon and countermeasure development teams more flexibility in conducting tests, especially on short timelines and with limited personnel in rugged environments.

WHEN

Contract Number: N68335-20-C-0396 **Ending on:** December 31, 2021

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Node Build and Test Report	N/A	Demonstrate preliminary design and build of prototype.	TRL 3. Completed prototype.	November 2020
Report of Imaging Flares and Algorithmically Tracking	N/A	Demonstrate feasibility of technology.	TRL 5. Tested prototype.	January 2021
First DSTS Field Evaluation	N/A	Demonstrate technology and shakedown technical problems.	TRL 6. First field deployment.	July 2021
Second DSTS Field Evaluation	Low	Demonstrate resolution of any problems.	TRL 7. Second field deployment.	July 2021
Third DSTS Field Evaluation	Low	Final, training deployment to on-board Prime Contracting Agency for handover of technology.	TRL 8. Third field deployment with training of end users.	September 2021
DSTS System Hardware and User's Manual	Med	Prime Contracting Agency takes possession of technology for field use.	TRL 9. Completed Phase II Product for handoff.	December 2021

HOW

Projected Business Model: Hood Technology Corporation is in the business of designing, validating, building and selling small, precision pointing devices. The DSTS is the first ground-based target tracking system from Hood Tech. Future sales of this product to the prime contracting group or to another group within the DoD would generate business for Hood Tech. Improving the DSTS or customizing the product for other uses would also generate business for Hood Tech.

Company Objectives: With regards to the DSTS project, Hood Tech is pleased to provide the engineering, testing, and logistical expertise to develop a custom solution for the DoN. This has been an interesting project which expands the company experience and perhaps opens the door to future projects through contacts made during implementation of the DSTS.

Potential Commercial Applications: Commercial uses of this technology could include tracking the trajectory of moving objects in any transparent medium. General survey work can also be accomplished with this equipment.

Contact: Andreas von Flotow, Engineer
andreas@hoodtech.com 5413992464