Special Notice

Future Program Announcement:

Precision Inertial Navigation & Positioning On an Integrated Tesseract (PINPOINT)

DARPA-SN-26-88

May 29, 2026

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Precision Inertial Navigation & Positioning On an Integrated Tesseract (PINPOINT)
Defense Advanced Research Projects Agency (DARPA)
Defense Sciences Office (DSO)

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BACKGROUND:
The purpose of this Special Notice (SN) is to provide public notification of additional research areas of interest to the Defense Advanced Research Projects Agency (DARPA) Defense Sciences Office (DSO), specifically for the contemplated forthcoming PINPOINT program.

If released, the solicitation will be made available at https://sam.gov/ and grants.gov.

PROGRAM GOALS:
The defense community has long faced a critical vulnerability: a systemic over-reliance on the Global Positioning System (GPS) for precision navigation. When GPS is denied, tactical platforms must rely on Micro-Electro-Mechanical Systems (MEMS) Inertial Measurement Units (IMUs). However, the performance of low-SWaP (size, weight, and power) microfabricated IMUs has plateaued for over a decade because design paradigms remain tethered to operating mechanical structures strictly within their linear regimes.

The PINPOINT program will challenge the research community by building upon the scientific discoveries and physical limits explored under the Highly Accelerated Learning of Vibratory Systems (HALOVS) portfolio. [1]

PINPOINT will explore revolutionary approaches to inertial sensing by actively leveraging nonlinear mechanical dynamics, advanced surface materials, and complex physical potential wells. Translating these complex physical phenomena into stable, mission-ready navigation systems will require a radical departure from traditional, siloed engineering approaches, forcing a tight co-design of the physical sensor package with advanced, real-time adaptive control systems.

This Special Notice is to signal the direction of the upcoming program so potential proposers can begin forming the multidisciplinary "dream teams" necessary to address these national security challenges. Because PINPOINT aims to bridge fundamental physical discovery with manufacturable, ruggedized outcomes, DARPA strongly anticipates that successful efforts will require deep, integrated partnerships between academic research institutions and commercial industry from the outset.

A formal solicitation detailing specific technical areas, performance metrics, and proposal instructions is anticipated in the near future.

[1] For more information, see https://www.darpa.mil/research/programs/halovs

DARPACONNECT:
For those new to DARPA or national security, DARPA makes available a free, comprehensive resource via DARPAConnect on how to do business with the agency. In addition to DARPA 101 materials, relevant preparatory modules include "Making the Most of a Proposers Day" and "Understanding DARPA Broad Agency Announcements." Registration and access are free at www.darpaconnect.us.

ADMINISTRATIVE:
This Special Notice is issued solely for information and program planning purposes and does not constitute a formal solicitation for proposals or white papers.