Robust Quantum Sensors (RoQS)
Program Solicitation: DARPA-PS-25-11

Proposers Day

January 31, 2025

Natalie Kent
Agreements Officer
DARPA Contracts Management Office

Proposers Day Disclaimer

The purpose of Proposers Day is to make general information available to potential proposers to clarify program goals/objectives and proposal preparation instructions.

A lot of information is made available to potential proposers to clarify program goals/objectives and proposal preparation instructions.

- The information/instructions in the PS takes precedence over any other source of information to include material from today.
- Proposals will only be evaluated in accordance with the instructions provided in the PA
- Any response provided by the Government in the FAQ that's different than what is provided in the PA will be made formal by an amendment to the PA
- Such responses will make note of an impending PA amendment
- Only a duly authorized Contracting Officer may obligate the Government

RoQS Program Structure

- RoQS is a two-phase program; soliciting **only** Phase 1 under DARPA-PS-25-11
- Phase 1 will be executed in two separate but aligned technical areas (TA1 and TA2)

- **Technical Area 1:**
  - Phase 1 (Base) – 30-month period of performance
  - Other Transaction for Prototype
  - Include the deliverable of two (2) prototype sensors

- **Technical Area 2:**
  - Phase 1a (Base) will be 6 months, Phase 1b (Option) will be 6 months; Phase 1b (Option) 18 months
  - Other Transaction for Research

- A single proposal shall not address both technical areas. However, proposers may submit two separate proposals, each addressing a single technical area
- Both TAs will run concurrently during Phase 1.
- Associate Contractor Agreements (ACAs) between TA1 & TA2 performer must be executed within 30-days of award.

Phase 2 *(not solicited as a part of this PS; provided for informational purposes only)*
- Estimated 12-month period of performance
- TA1 and TA2 performers will need to team for a Phase 2 proposal
- Phase 2 proposal is a deliverable of Phase 1
- Other Transaction for Prototype Award

RoQS PS Overview

- **The RoQS PS:**
  - Permits a variety of technical solutions
  - Defines the problem set, the proposer defines the solution

- **Types of Instruments that may be awarded:**
  - Phase 1 TA1: Other Transaction for Prototype Agreements under 10 U.S.C. 4022
  - Phase 1 TA2: Other Transaction for Research Agreements under 10 U.S.C. 4021
  - Phase 2: Other Transaction for Prototype Agreements *(Not solicited under this PS; provided for informational purposes only)*

- **DARPA Scientific Review Process**
  - Proposals are evaluated on individual merit and relevance as it relates to the stated research goals/objectives rather than against one another
  - Selections will be made to proposers whose proposals are determined to be most advantageous to the Government, all factors considered, including potential contributions to research program and availability of funding
  - Evaluation Criteria for each TA are in Section II of the PS

- **Government may select for negotiation all, some, one, or none of the proposals received**
- **Government may accept proposals in their entirety or select only portions thereof**
- **Government may elect to establish portions of proposal as options**

Proposer Eligibility Considerations

- UARCs, FFRDCs, and government laboratories **are prohibited** from proposing as performers. UARCs, FFRDCs, and government laboratories interested in this solicitation must contact the Agency Point of Contact (POC) listed in the Overview section to discuss **potential participation as part of the government team.** Please note that this paragraph supersedes the *"Special Eligibility Considerations for Federally Funded Research and Development Centers (FFRDCs) and Government Entities"* section found at Proposer Instructions and General Terms and Conditions.

- Non-U.S. organizations and/or individuals **may** participate to the extent that such participants comply with any necessary nondisclosure agreements, security regulations, export control laws, and other governing statutes applicable under the circumstances.

- Organizational Conflicts of Interest (OCI):
    - Cannot simultaneously serve in advisory (i.e., SETA, IV&V, etc.) and performer role
    - Identify any conflicts
    - If any are identified, a mitigation plan must be included

RoQS PS Timeline

Dates/Time: All Times are Eastern Time Zone (ET)

- Posting Date: 24 January 2025
- Proposers' Day: 31 January 2025
- Abstracts Due: 20 February 2025, 4:00 PM
- Question Submittal Closed: 24 March 2025, 4:00 PM
- Proposal Due: 31 March 2025, 4:00 PM
- Oral Presentation dates: 7-15 April 2025
- Estimated Period of Performance Start: 1 August 2025

See PS in SAM.gov for complete date/time information; monitor PS amendment(s)

RoQS Abstract & Proposal Content

- Abstracts Required for both TA1 and TA2
  - Required Templates: Attachment A & B
- DARPA will respond with Encourage/Discourage of Full Proposal letter
- Regardless of DARPA's response to an abstract, proposers may submit a Full Proposal

- **TA1 Full Proposal (Written & Oral)**
  - Attachment C*
  - Attachment D
  - Attachment E
  - **Attachment F** (Cost Spreadsheet)
  - (informational) Attachment H
  - (informational) Attachment I
  - Attachment J
  - Attachment K
  - Attachment L
  - (informational) **Attachment M**

  *Oral Presentation Guidance: 20 slides, 40-minutes

- **TA2 Full Proposal (Written & Oral)**
  - Attachment C*
  - Attachment D
  - Attachment E **(see notes within)**
  - **Attachment G** (Price Spreadsheet)
  - (informational) Attachment H
  - (informational) Attachment I
  - Attachment J
  - Attachment K
  - Attachment L
  - (informational) **Attachment N**

  *Oral Presentation Guidance: 10 slides, 20-minutes

RoQS Special Considerations

- TA 1:
  - Prototype OT under 10 U.S.C. 4022
  - The OT agreement will not require cost sharing unless the offeror is a traditional defense contractor who is not working with a nontraditional defense contractor participating in the program to a significant extent.
  - DARPA has determined a reasonable fee range for **Phase 1 – Technical Area 1 of the RoQS program is 9.0% – 10.5%. TA1 proposers should propose a fee that falls within the above range and need not include any further fee justification.**
    - Elimination of fee as a negotiation item is expected to result in reduced contracting timelines for any proposal selected for award negotiation.
    - Proposers are reminded that when cost share is required to meet the requirements of 10 U.S.C. 4022(d)(1); fee should not be included.

- TA 2:
  - Research OT under 10 U.S.C. 4021
  - Phase 1 awards limited to $500,000 of Government share
  - The Government will seek a cost share to the **maximum extent practicable**.
    - Resource sharing generally consists of labor, materials, equipment, software, and facilities costs directly related to the project. This may include, but is not limited to, pre-liminary testing and risk reduction activities. The government will not consider pre-existing proprietary data or software. The final amount of the required resource share will be based on full consideration of factors such as the team's existing tools, equipment, and staff, prior investment in the technology, commercial versus military relevance, and unusual performance risk.

Intellectual Property

- For Phase 1 – Government will require Government Purpose Rights (GPR) to intellectual property (IP) developed under the program
- **Identify any items that would prohibit GPR**
- Phase 1 performers will provide regular updates to the government regarding:
  - Any changes to the overall IP posture that specifically deviate from GPR,
  - Additions to previously asserted or defined rights due to technology development,
  - Anticipated challenges to GPR.
- This information will help inform the Phase 2 SOO and any subsequent IP negotiations.
- Evaluation Criteria, Potential Contribution & Relevance to DARPA Mission, includes the following consideration:
  - *Potential Contribution and Relevance to the DARPA Mission (Applicable to TA1 and TA2): The potential contributions of the proposed effort bolster the national security technology base and support DARPA's mission to make pivotal early technology investments that create or prevent technological surprise.* ***The proposed intellectual property restrictions (if any) will not significantly impact the government's ability to transition the technology*****.**

Other Considerations

- RoQS is subject to the program-specific CUI Guide (see Attachment I)
- Proposal submissions are anticipated to be unclassified or CUI.
  - However, should a proposer wish to submit classified information, an unclassified email must be sent to RoQS@darpa.mil notifying the MTO Program Security Officer.
- Fundamental Research:
  - If you believe an effort includes fundamental research, it is the **proposer's responsibility** to (1) identify the work; and (2) explain why it qualifies as fundamental; and (3) intended results of the research.
  - The government shall have the sole discretion to determine fundamental research designation
  - Given the nature of the program, both fundamental and non-fundamental research **may** prescribe publication requirements and other restrictions, as appropriate

Tips for a compliant proposal

- **Submit the proposal on time!**
  - Proposal due date and PS closing date are the same – do not be late!

- **Submit all required Attachments!**
  - **READ** instructions contained within each Attachment!
  - TA1 – please be cognizant of thee supporting documents required for Volume 2!
  - All proposals must include a detailed list of key, observable payment milestones (Milestone Plan)
  - All proposals must include a list of identified deliverables (PS requested and additional proposed)

- **Submit within the page limitations described in the PS!**
  - Pages beyond the limit will not be reviewed

Communication

- **Prior to Receipt of Proposals (Solicitation Phase): No restrictions, however Gov't (PM/PCO) shall not dictate solutions or transfer technology**
  - Typically handled through the FAQ, but see PS exceptions

- **After Receipt of Proposals/Prior to Selections (Scientific Review Phase): Limited to Contracting Officer or PS Coordinator (with approval) to address clarifications requested by the review team**
  - Proposal cannot be changed in response to clarification requests

- **After Selection/Prior to Award (Negotiation Phase): Negotiations are conducted by the Contracting/Agreements Officer**
  - PM and/or COR typically tasked with finalizing the SOW (with PI)
  - PM and/or COR typically involved in any technical discussions (i.e., partial selection discussions)
  - Pre-award costs will not be reimbursed unless a pre-award cost agreement is negotiated prior to award

- **Informal Feedback Sessions (Post Selection): May be requested/provided once the selection(s) are made**
  - If made on a timely basis (~2 wks. after letter), all requests will be accepted

www.darpa.mil

MTO Overview

Dr. Whitney Mason

Acting Deputy Director of DARPA

DARPA MTO, Director

Robust Quantum Sensors (RoQS) Proposers Day
Quantum sensors for the real world

Jonathan Hoffman, PhD

DARPA MTO

The challenges of fielding quantum sensors on platforms

Quantum sensors are highly sensitive, making them susceptible to degradation from platform effects

Fields

EM fields from electronics, motors, and wires

- Conflates energy levels

Gradients

EM gradients across sensor from platform

- Loss of identicality

Vibration

Movement of the platform

- Loss of coherence, limits sampling rate

RoQS will develop **inherently robust** sensors that maintain SoA sensitivity agnostic to DoD platform or environment

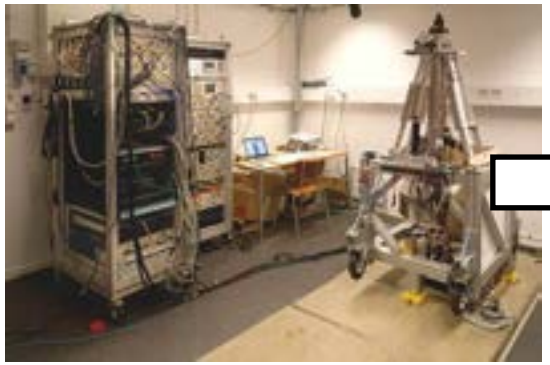
EM: electromagnetic; SoA: state of the art

Current approach for high-performance quantum sensing

$$\text{Measurement Error} \sim \frac{1}{\text{Measurement time} \times \text{Atom number} \times \text{Number of photons}} + \text{Environmental degradation}$$

Increase coherence time to maximize measurement time

Increase vapor cell size to maximize atoms



Increase passes of laser beam to maximize photons

Magnetic shielding and vibration isolation

Optimizing sensitivity in pristine static environments

However, the real world inhibits the value proposition of quantum sensors

$$\text{Measurement Error} \sim \frac{1}{\text{Measurement time} \times \text{Atom number} \times \text{Number of photons}} + \text{Environmental degradation}$$

Things move:
Decreases sampling rate

Things move:
Loses coherence

EM happens:
Increases impact of gradients

Gyroscopic stabilization

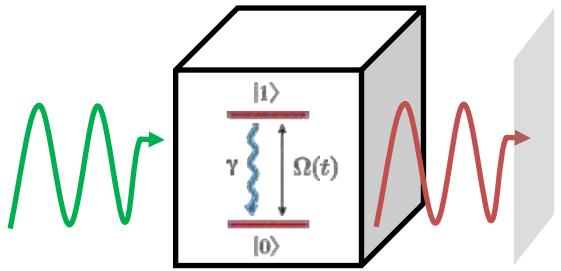
EM happens:
Increases SWaP

No more band-aids

EM: electromagnetic

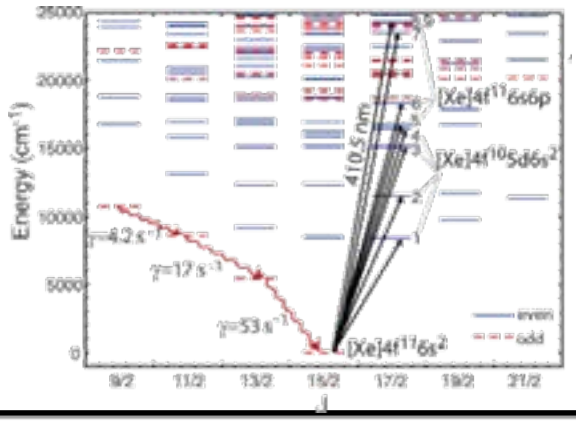
Robust Quantum Sensors (RoQS): Reimagining quantum sensors

Current systems

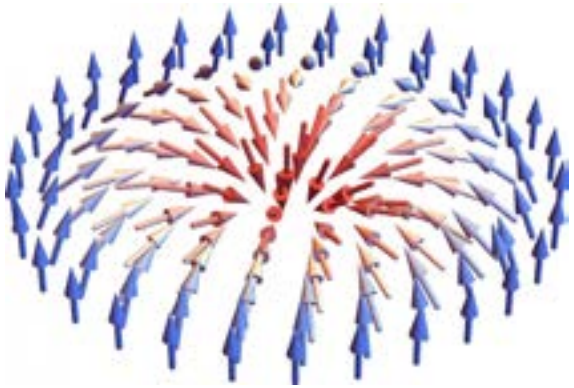


Physics

Exploit the richness of multilevel systems

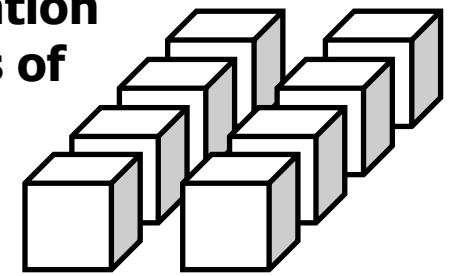


Utilize the strong coupling regime

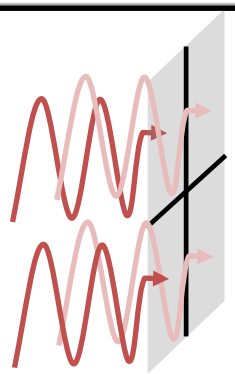


Design

Use advanced fabrication techniques for arrays of vapor-cells



Use imaging to gather more information



Embracing complexity at the physics and design level to enable robustness at the sensor system level

Physics-Focused #1:
Selective higher-order superposition states suppress field interferers

Current philosophy: Manipulate two quantum superposition states

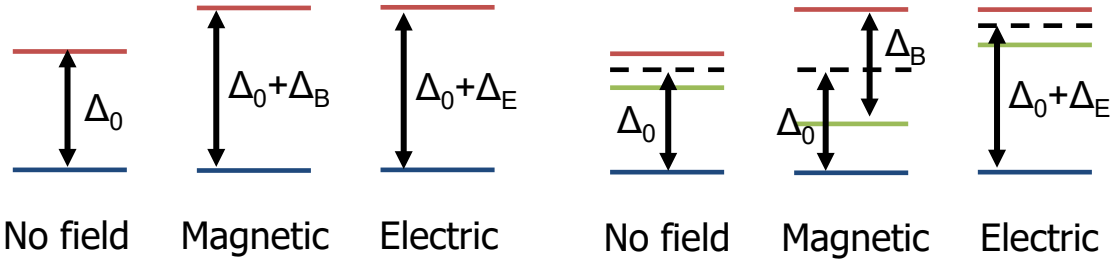
New philosophy: Manipulate **higher-order superposition** states to selectively cancel unwanted fields

<u>Single Quantum (SQ)</u>

Cannot differentiate impact on energy levels

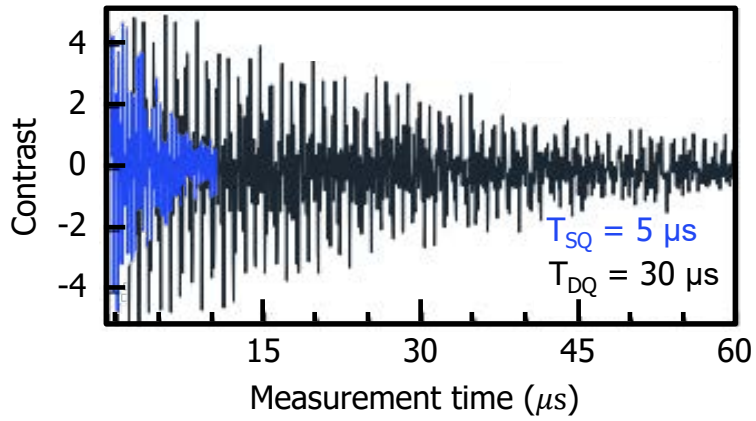
<u>Double Quantum (DQ)</u>

Differentiates by common-mode shifts



Hypothesis: May suppress multiple interferers simultaneously

<u>Experimental evidence DQ differentiates fields [1,2]:</u>



SQ limited by E noise

DQ suppresses E noise 6x improvement

But improved field robustness at expense of increased gradient degradation

RoQS: Hop between SQ and DQ to learn and mitigate gradients

Mitigates field effects with path forward to suppressing gradient effects

[1] Physical Review Applied, 15(4), **2021**, 044020
[2] Physical Review X, 8(3), **2018**, 031025

Physics-Focused #2:
Collective spin modes suppress nearby fields enabling antigradiometry

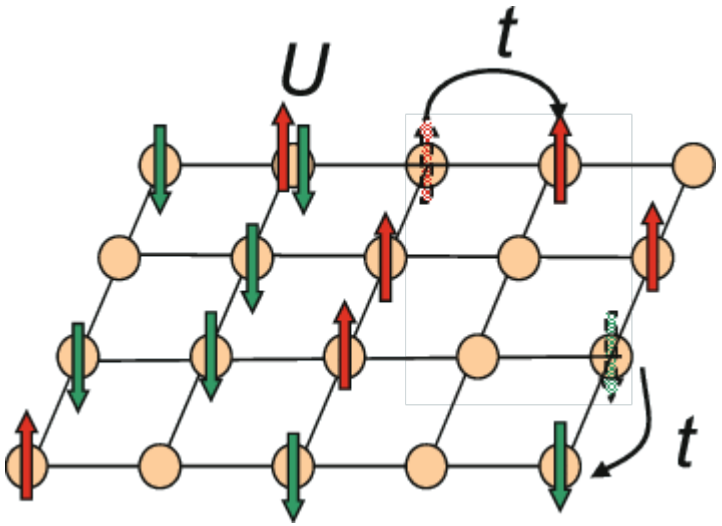
Current philosophy: Decouple each atom from all others and response is the sum of the collective

New philosophy: Exploit **atomic coupling** for collective output to be insensitive to gradients (anti-gradiometer)

Intrinsic Antigradiometer

Collective coupling selectively responds to fields on spatial scales which excite the uniform spin mode

Hypothesis: Antigradiometry enables sensitivity to distant sources rather than fields or gradients from the platform



But improved gradient robustness at expense of spin instabilities

RoQS: Mode-engineering to mitigate vibration-spin coupling

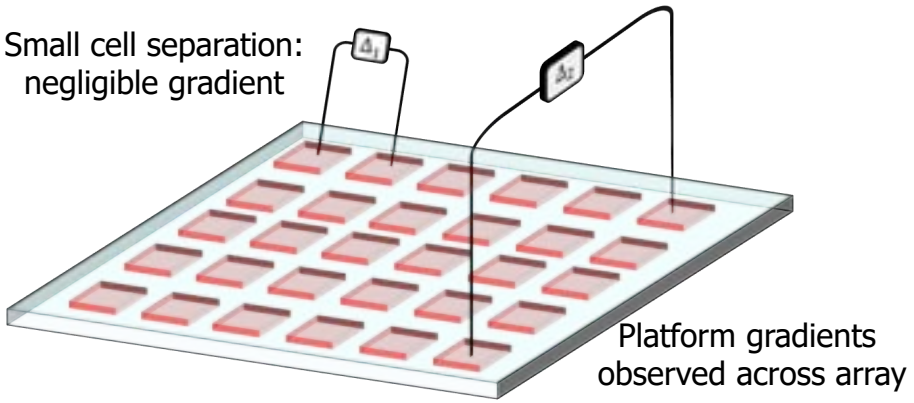
Mitigates field effects with path forward to suppressing vibration

Design-Focused #1:
Reconfigurable, point-like vapor cell arrays

Current philosophy: All quantum states in a single housing

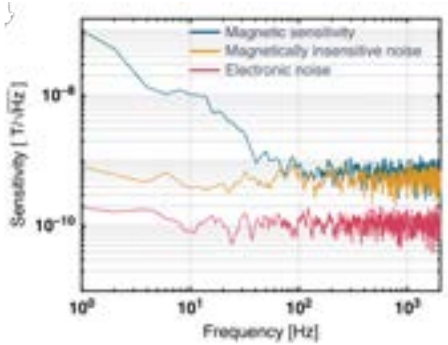
New philosophy: **Array** of microcells individually addressable to mitigate gradients

Antigradiometer through design

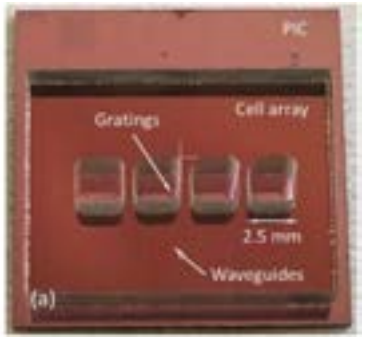


Hypothesis: A tightly-spaced array can overcome fields, gradients, and vibrations through collective comparison

Experimental realization of micro-vapor cell:



Demonstrated 30 μm cells with degraded sensitivity [1]



Proof of concept array development [2]

But point-like vapor cells lead to sensitivity loss

RoQS: Develop imaging of micro-vapor cell, engineering surface coatings, and coherent ensembling to restore sensitivity

1. *Nature* 10.1038 (2021)
2. ArXiV, 2409.05254 (2024)

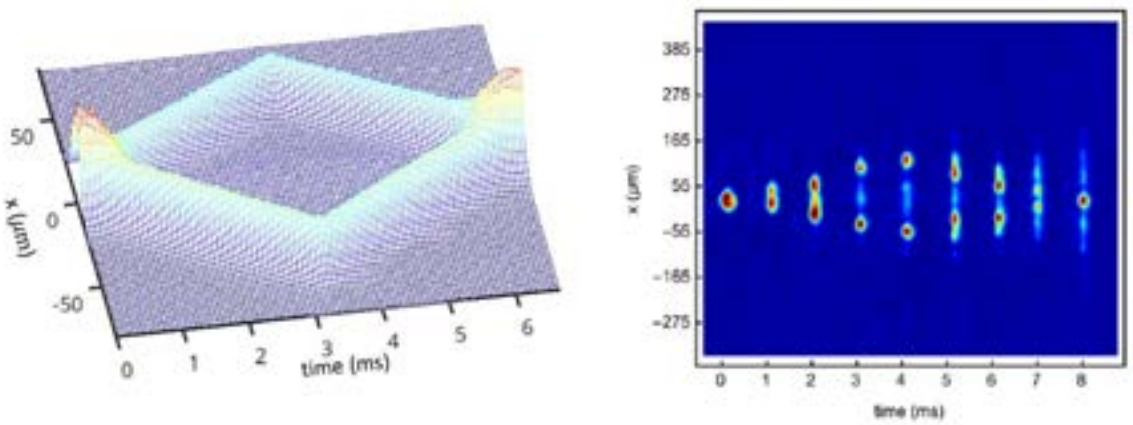
Mitigates gradients, fields, and vibration with path towards improving sensitivity

Design-Focused #2:
Trapped-lattice interferometer overcomes fields, gradients, and vibration

Current philosophy: Free-space atom beams with a large inertially-sensitive area and maximized measurement time

New philosophy: Lattice interferometer allows vibration-immunity through distributed space-time **trapped atom** scheme

Utilizes trapped atom interactions to overcome vibrations



Space-time atomic distributions: theory (left) and experiment (right)

Hypothesis: Lattice interferometer integrates out platform vibrations and changes underlying scaling laws for quantum sensing

Experimental realization of first-ever LI accelerometer [1]

Compatible with field and inertial sensing modalities

Multi-axis, single shot capability

Measurement time ~ 1 ms

Duty cycle ~ 0.01%

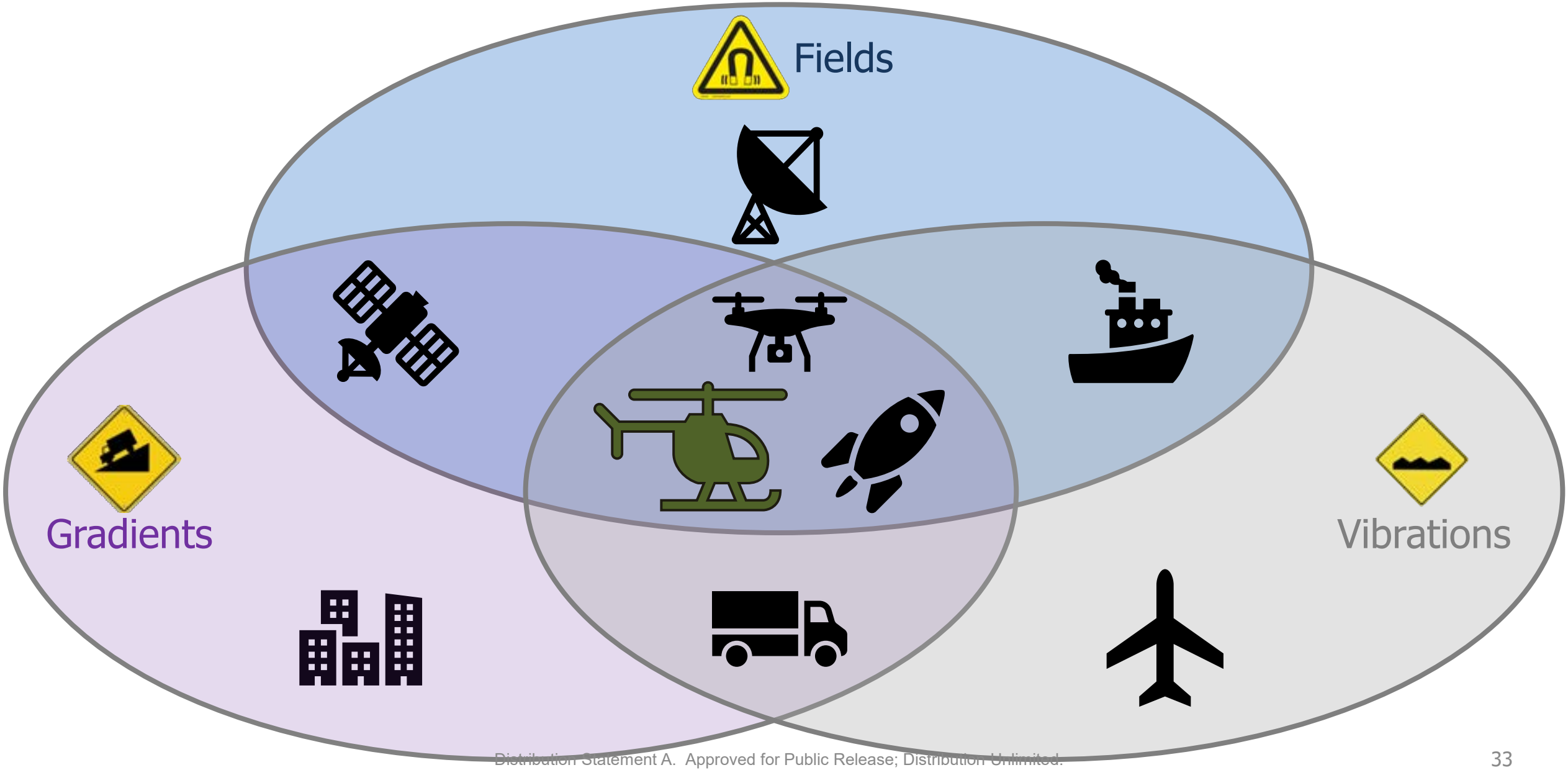
But duty cycle from atom loading and preparation into lattice arrays degrades sensitivity

RoQS: Development and manipulation of rapid atomic assembly line to mitigate dead-time and restore sensitivity

1. Arxiv:2496,94874 (2024)

Mitigates gradients, fields, and vibration with path towards improving sensitivity

RoQS will finally enable the promise of quantum sensing



Phase 1 TA1 Metric

Demonstration of state-of-the-art (SoA) performance in a 10 L system on a government provided helicopter throughout operation

CH-53K

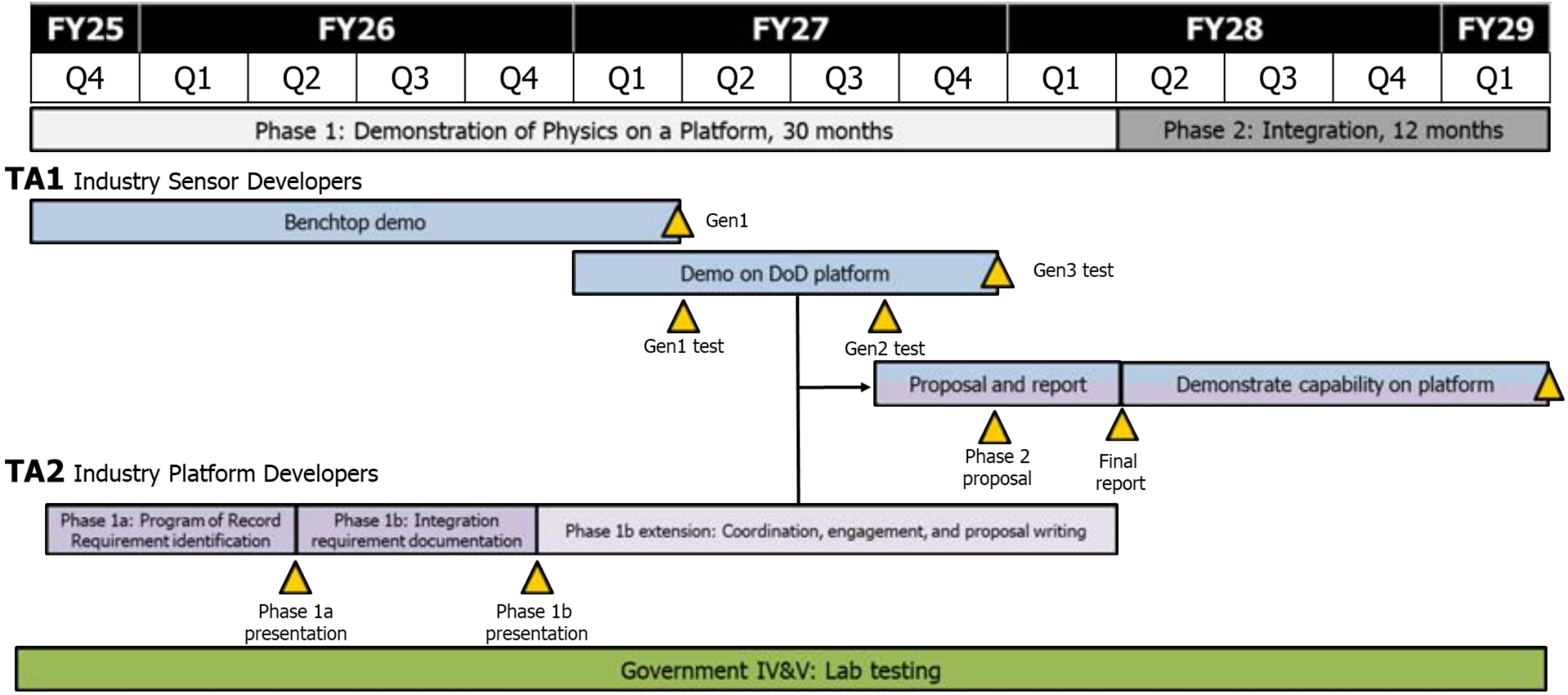
Designated SoA for quantum sensor modalities

Sensing modality	Unit	Value
Magnetometer	$fT/Hz^{1/2}$	10^2
Electrometer	$nV/m/Hz^{1/2}$	10^2
Accelerometer	$m/s/hr^{1/2}$	10^{-6}
Gyroscope	$\mu deg/hr^{1/2}$	10^2
Gravimeter	$\mu Gal/Hz^{1/2}$	10
Gravity gradiometer	$E/Hz^{1/2}$	1

Optional Government provided lab testing

Parameter	Testing Specifications	
	Value	Unit
Fields	1	mT
	200	V/m
Gradients	10	mT/m
Vibration	1.0	g^2/Hz

RoQS program structure and schedule



Phase 1: TA1

Goal:
Robust quantum sensor development for DoD platforms

- Phase 1 is a 30-month base phase
- It will consist of:
  - Building a walk-on/walk-off quantum sensor tested on a DoD provided helicopter in the presence of fields, gradients, and vibrations
  - Testing of quantum sensor at government IV&V labs and on government-provided platforms
  - These tests will demonstrate the applicability and deploy-ability to a wide range of DoD platforms

Phase 1: TA2

Goal:
Identification and evaluation of platforms and Programs of Record for quantum sensors

Prerequisites:
Phase 1b: DARPA concurrence with the results of the Phase 1a report initiates Phase 1b

- Phase 1a is a 6-month base phase
- It will consist of:
  - A platform integration study of TA1 concepts
  - Identification of specific platform integrations and Programs of Record for quantum sensors
  - A model describing how the quantum sensor will meet the identified Requirements under realistic conditions
- Phase 1b is a 6-month option phase which may be extended 18 months
- It will consist of:
  - Specifying the system integration requirements for the selected platform(s).

ACA expectation

- Coordination between TA1 and TA2 is critical for the RoQS program's success.
- Therefore, it is required that all TA1 and TA2 teams sign Associate Contractor Agreements (ACAs) within 30 days so the two TAs can best work together towards the final RoQS goals in Phase 2.

Phase 2

Goal:
Demonstrate a quantum sensor on a Program of Record

Prerequisites:
1. A quantum sensor that achieves TA1 metric
2. A Program of Record whose Requirements could be met using the quantum sensor

- Phase 2 is a 12-month option phase
- It will consist of:
  - developing a quantum sensor integrated into a Program of Record platform
  - support for testing on platform
- TA1 and/or TA2 performers will be invited to propose to Phase 2 by Month 25
- TA1 and TA2 performers may team together for Phase 2 proposals
- Program of Record requirements will be provided by the government during Phase 1
  - size, weight, and power (SWaP), pin outs, operating temperature range, and vibration spectrum, etc.
- Phase 2 proposals are due by Month 27
- Performers may be requested to negotiate a Phase 2 effort under their existing RoQS Agreement

Testing

- **Phase 1:** TA1 performers will send out integrated sensors (Gen 1 and Gen 2 sensor iterations) to government IV&V teams for validation of sensor against specific field, gradient, and vibration profiles to evaluate path and progress towards Phase 1 testing.

- TA1 performers should expect each sensor will be at the government lab for at least one month for IV&V testing. Table 2 provides details of IV&V maximum testing environments and associated MIL standards. IV&V serves multiple purposes: 1) allows proposers to identify source of performance degradation; 2) ensures solutions will not be overfit to the end of phase helicopter test.

- Phase 1 testing will be on a government-provided helicopter platform, conducted by government personnel

- Sensor must be walk-on/walk-off and be able to be operated by government personnel

- Performers may choose to attend the test to assist with sensor mounting and start-up

- Performers must be able to provide a method where the state-of-the-art intrinsic sensor performance (see Table 1) can be extracted from background clutter arising from operation of the government platform

- Analysis does not need to occur in real-time during the test and can be done via post-processing

- **Phase 2:** Phase 2 metric will be to integrate the quantum sensor into a specific government provided platform of interest maintaining the performance demonstrated in Phase 1. Specific details on integration will be provided in Phase 1 to inform the Phase 2 proposals.

Deliverables

TA 1 and TA 2 performers will be expected to provide, at minimum the following deliverables:

- Monthly teleconferences with government, including presentations utilizing government-provided template.
- Technical presentations utilizing a government-provided template in support of:
  - Kick-off meeting
  - Semi-annual technical reports regarding progress on tasks as defined in the SoW,
  - Semi-annual in-person meetings to report on technical progress
  - Changes and updates to the Intellectual Property posture (See Section F below)
- Technical reports as defined in the milestone table
- Phase 2 Proposal if invited for Phase 2 in accordance with the SOO and other guidelines provided by the government during Phase 1
- A phase-completion (or final) report submitted within 30 days of the end of each phase, summarizing the research done. This report will include:
  - Description of the technical developments and achievements toward the metrics.
  - Tables and explanations of how experiment results meet or exceed program metrics.
  - Plans and projections for the subsequent phase with an updated risk assessment in each of the critical program areas.
- TA1 only: Delivery of a minimum of two complete and functional final Phase 1 sensors to the government

Intellectual Property Rights

- For Phase 1, the government will require Government Purpose Rights (GPR) to intellectual property (IP) developed under the program. For IP developed prior to the start of the agreement that will be utilized during program activities, and delivered to the government, clearly identify that IP and the anticipated level of IP rights that will be given to the Government. Identify any items that would prohibit GPR, including but not limited to anticipated license restrictions, patents, etc.
- As the Phase 1 efforts progress, it is anticipated Performers will provide regular updates to the government regarding any changes to the overall IP posture that specifically deviate from GPR, additions to previously asserted or defined rights due to technology development, and any anticipated challenges to GPR. This information will help inform the Phase 2 SOO and any subsequent IP negotiations. For purposes of this Program Solicitation, the following definitions apply:

    - **"Data"** refers to recorded information, regardless of form or method of recording, which includes but is not limited to, technical data, software, mask works and trade secrets. The term does not include financial, administrative, cost, pricing or management information and does not include inventions.
    - **"Government Purpose"** means any activity in which the United States Government is a party, including cooperative agreements with international or multi-national defense organizations, or sales or transfers by the United States Government to foreign governments or international organizations. Government purposes do not include the rights to use, modify, reproduce, release, perform, display, or disclose technical data for commercial purposes or authorize others to do so.
    - **"Government Purpose Rights"** means the rights to use, duplicate, or disclose Data, in whole or in part and in any manner, for Government Purposes only, and to have or permit others to do so for Government Purposes only.

CUI guide

Element of Information	Index	Category	Reason	LDC or Distribution Statement	Remarks
Prototypes, blueprints, and designs of completed systems.	Defense	Controlled Technical Information	48 CFR 252.204-7012; Title 10, § 130; 31 CFR 800.209; Parts 22 CFR 120-130; 15 CFR 730-774; 22 USC 2778 (AECA); Export Control Reform Act of 2019 (FY 2019 NDAA, Subtitle B - Sections 1741-1781/PL 115-232);10 USC 130(a) (DoD authority to withhold export controlled space/mil info); 32 CFR 250 // DoDD 5000.01; DoDD5000.02; DoDI 5200.39; DoD Directive 5230.25; DoDI 3200.12	DISTRIBUTION STATEMENT D. Distribution authorized to Department of Defense and U.S. DoD contractors only [category] [date of determination]. Other requests for this document must be referred to [controlling DoD office]	FOIA Exemption 3 may be applicable
Performance (robustness, sensitivity, dynamic range, etc.) of mobile systems.	Defense	Controlled Technical Information	48 CFR 252.204-7012; Title 10, § 130; 31 CFR 800.209; Parts 22 CFR 120-130; 15 CFR 730-774; 22 USC 2778 (AECA);Export Control Reform Act of 2019 (FY 2019 NDAA, Subtitle B - Sections 1741-1781/PL 115-232);10 USC 130(a) (DoD authority to withhold export controlled space/mil info); 32 CFR 250 // DoDD 5000.01; DoDD5000.02; DoDI 5200.39; DoD Directive 5230.25; DoDI 3200.12	DISTRIBUTION STATEMENT D. Distribution authorized to Department of Defense and U.S. DoD contractors only [category] [date of determination]. Other requests for this document must be referred to [controlling DoD office]	FOIA Exemption 3 may be applicable

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Characterization of sensor performance against vibration.	Defense	Controlled Technical Information	48 CFR 252.204-7012; Title 10, § 130; 31 CFR 800.209; Parts 22 CFR 120-130; 15 CFR 730-774; 22 USC 2778 (AECA); Export Control Reform Act of 2019 (FY 2019 NDAA, Subtitle B - Sections 1741-1781/PL 115-232);10 USC 130(a) (DoD authority to withhold export controlled space/mil info); 32 CFR 250 // DoDD 5000.01; DoDD5000.02; DoDI 5200.39; DoD Directive 5230.25; DoDI 3200.12	DISTRIBUTION STATEMENT D. Distribution authorized to Department of Defense and U.S. DoD contractors only [category] [date of determination]. Other requests for this document must be referred to [controlling DoD office]	FOIA Exemption 3 may be applicable
Physics development informed by DoD platforms parameters targeting robustness to platform interferers	Defense	Controlled Technical Information	48 CFR 252.204-7012; Title 10, § 130; 31 CFR 800.209; Parts 22 CFR 120-130; 15 CFR 730-774; 22 USC 2778 (AECA); Export Control Reform Act of 2019 (FY 2019 NDAA, Subtitle B - Sections 1741-1781/PL 115-232);10 USC 130(a) (DoD authority to withhold export controlled space/mil info); 32 CFR 250 // DoDD 5000.01; DoDD5000.02; DoDI 5200.39; DoD Directive 5230.25; DoDI 3200.12	DISTRIBUTION STATEMENT D. Distribution authorized to Department of Defense and U.S. DoD contractors only [category] [date of determination]. Other requests for this document must be referred to [controlling DoD office]	DARPA does not consider fundamental physics divorced from platform parameters to be CUI. Example: Hamiltonian engineering, state preparation, multi-species, multi-state, etc. to explore general performance degradation when exposed to varying electromagnetic fields FOIA Exemption 3 may be applicable May be classified higher IAW with system or platform SCG.

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Engineering techniques targeting sensor integration informed by DoD platforms parameters	Defense	Controlled Technical Information	48 CFR 252.204-7012; Title 10, § 130; 31 CFR 800.209; Parts 22 CFR 120-130; 15 CFR 730-774; 22 USC 2778 (AECA); Export Control Reform Act of 2019 (FY 2019 NDAA, Subtitle B - Sections 1741-1781/PL 115-232);10 USC 130(a) (DoD authority to withhold export controlled space/mil info); 32 CFR 250 // DoDD 5000.01; DoDD5000.02; DoDI 5200.39; DoD Directive 5230.25; DoDI 3200.12	DISTRIBUTION STATEMENT D. Distribution authorized to Department of Defense and U.S. DoD contractors only [category] [date of determination]. Other requests for this document must be referred to [controlling DoD office]	FOIA Exemption 3 may be applicable May be classified higher IAW with system or platform SCG.
Non-public data controlled by a business or individual as proprietary	Proprietary Business Information	General Proprietary Business Information (PROPIN)	18 USC 1905 29 USC 664	Federal Employees and Contractors Only (FEDCON)	FOIA Exemption 4 may be applicable.

University participation

- We anticipate and encourage University participation
  - It is possible!
- Read through CUI guide to understand cut lines

- For certain research projects, it may be possible that although the research to be performed by a potential awardee is non-fundamental research, its proposed subawardee's effort may be fundamental research. It is also possible that the research performed by a potential awardee is fundamental research while its proposed subawardee's effort may be non-fundamental research. In all cases, it is the potential awardee's responsibility to explain in its proposal which proposed efforts are fundamental research and why the proposed efforts should be considered fundamental research.

- Proposers should indicate in their proposal whether they believe the scope of the research included in their proposal is fundamental or not. While proposers should clearly explain the intended results of their research, **the government shall have sole discretion to determine whether the proposed research shall be considered fundamental** and to select the award instrument type.

FFRDC / UARCs / National Labs

- DARPA encourages technical solutions from all responsible sources capable of satisfying the government's needs. To ensure fair competition across the ecosystem, DARPA prohibits contractors/performers from concurrently providing Systems Engineering Technical Assistance (SETA), Advisory and Assistance Services (A&AS), or similar support services and being a technical performer, unless the DARPA Deputy Director grants a written waiver. DARPA extends this prohibition to University-Affiliated Research Centers (UARCs), Federally Funded Research and Development Centers (FFRDCs), and government laboratories including National Laboratories.

- UARCs, FFRDCs, and government laboratories are prohibited from proposing as performers. UARCs, FFRDCs, and government laboratories interested in this solicitation must contact the Agency Point of Contact (POC) listed in the Overview section to discuss potential participation as part of the government team. Please note that this paragraph supersedes the "Special Eligibility Considerations for Federally Funded Research and Development Centers (FFRDCs) and Government Entities" section found at Proposer Instructions and General Terms and Conditions.

Timeline

- Dates/Time: All Times are Eastern Time Zone (ET)
- Posting Date: January 24, 2025
- Proposers Day: January 31, 2025
- Proposal Abstract Due Date: February 20, 2025, at 4:00 p.m.
- Question Submittal Closed: March 24, 2025, at 4:00 p.m.
- Proposal Due Date: March 31, 2025, at 4:00 p.m.
- Oral Presentation dates: April 7–15, 2025
- Estimated Period of Performance start: August 1, 2025

Abstracts submissions are required to write a Proposal, but are not a gate

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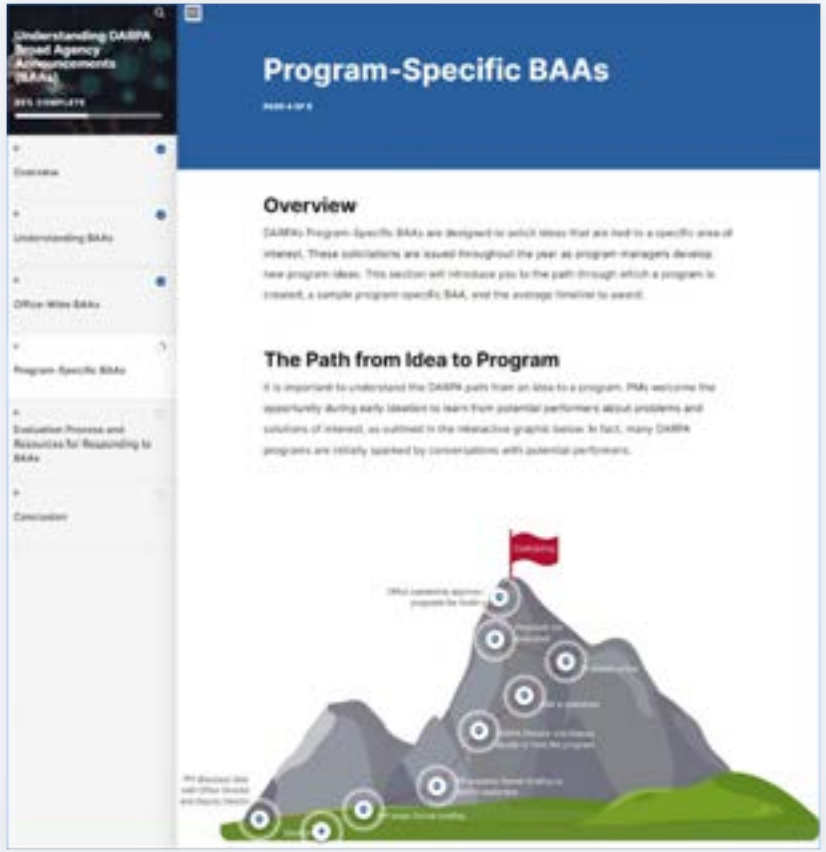
- Engaging DARPA Program Managers
- Heilmeier Catechism: Understanding Effective DARPA Communication
- Understanding DARPA Announcements and Contract Vehicles
- Reviewing and Analyzing a DARPA Opportunity
- DARPA SBIR and STTR Program
- Understanding DARPA Security Resources
- Preparing Your DARPA Proposal
- Tying It All Together: Strategies for Success
- Opportunities for Networking

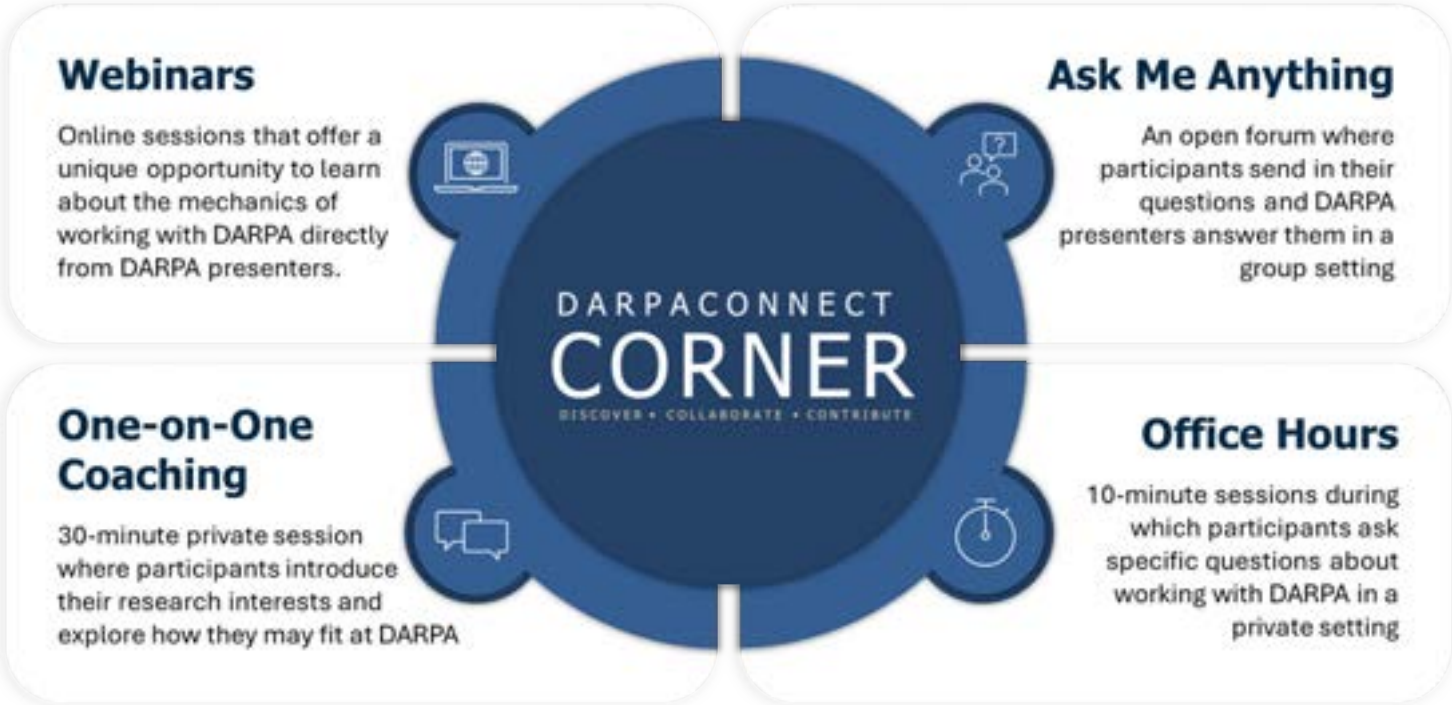
Curriculum

Lessons Include:

- Understanding BAAs
- SBIR/STTR
- DARPA 101
- DARPA Award Vehicles & Solicitations
- Proposal Tips
- Preparing for Proposers Day
- Heilmeier Catechism
- Engaging DARPA Program Managers
- Becoming a PM
- DARPA Innovation Fellows
- Introduction to Security
- Global Participation & Engagements



Connect Corner



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NOT FOR QUESTIONS SPECIFIC TO AN OPEN BAA.

Thank You.

For more information or to request assistance, please visit:
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