BAA Call N0001426SBC10_FLASH INP
Special Programs Announcement for Office of Naval Research Opportunity: Enabling Technologies for Hypersonic Boost-Glide Vehicles

I. INTRODUCTION

This announcement describes the specific technology areas, entitled Hypersonic Aerodynamics, High Speed Propulsion and Materials under N0001425SB001, Long Range Broad Agency Announcement for Navy and Marine Corps Science and Technology, which can be found at https://www.nre.navy.mil/-workwithus/funding-opportunities/announcements. The submission of proposals, their evaluation and the placement of contracts will be carried out as described in the above Long-Range Broad Agency Announcement.

The purpose of this announcement is to focus attention of the scientific, aviation and weapons communities on **(1)** the areas of interest, including advancements in Hypersonics and the associated enabling technologies necessary to operate in the hypersonic flight regime, **(2)** encourage dialogue amongst those interested in this area, and **(3)** the planned timetable for the submission of white papers and full proposals to provide for the immediate needs of the subject program as described below.

II. TOPIC DESCRIPTION

The Flight Advancement of Structures for Hypersonics (FLASH) Innovative Naval Prototype (INP) program integrates advanced hypersonic vehicle technologies that will demonstrate the viability of the concept to be fielded as a surface-launched, tactical range, hypersonic strike capability. FLASH will design, develop, manufacture and flight test a number of prototype vehicles to inform decisions concerning the FLASH capability. FLASH will address vehicle structural, aerodynamic and thermal performance, vehicle controllability and affordability related to its technologies and assess compatibility with the Vertical Launch System (VLS) and Virginia Payload Module (VPM). The FLASH concept, which leverages prior Applied Research, was selected by Navy Leadership as an INP in FY 2026 due to promising technology maturation.

A number of precursor, subscale ground and flight test efforts are planned to advise full-scale FLASH vehicle demonstrations. In support of this effort, the program office seeks to gather technical, performance, scalability, risk reduction options, technology/material readiness level (TRL/MRL), availability and cost information to include (technical on-site/financial) participation interest from other government and industry partners in a number of Critical Enabling Technology (CET) areas and engineering thrust categories to include:

1. **High TRL/Flight Qualified Command and Control Systems and System Components**
2. **High Temperature Structures, Thermal Protection Systems, Assemblies and Components**
3. **Scaled Design Verification and Flight Test Demonstration Capabilities**
4. **Multidisciplinary Design, Analysis and Optimization (MDAO)**

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Additional performance related mission requirements that will likely impact this technology acquisition effort will be accessible via a CUI and/or classified addendum. Requests for access to the addendum should be directed to ONR Code 543 with the following contact information and this specific BAA call number. Eligible attendees of the planned Industry day will also be assisted in accessing the information as appropriate.

The primary focus of the FLASH program is to demonstrate a tactically relevant range, low cost, hypersonic capability via advanced aerodynamics, control techniques and resulting relaxed reliance on exquisite materials. Therefore, existing compatible and the minimum necessary onboard mission systems will be sought for vehicle integration to enable negligible GNC flight test risk. This demonstration philosophy allows for the concentrated development efforts of the program to laser-focus on the extremely promising aero and aerothermodynamic concepts developed in previous applied research efforts that are of highest risk, highest interest and highest payoff to the ONR and the war fighter.

TECHNICAL AREA DESCRIPTIONS:

TECHNICAL AREA 1.

High TRL/Flight Qualified Guidance, Navigation and Control (GNC) Systems and System Components

Background: The FLASH program is seeking detail technical, cost and delivery schedule information the existing industry standard thru state-of-the-art (SOTA) in all manner of flight qualified and or flight heritage hypersonic vehicle compatible GNC systems and system elements for potential application to its Hypersonic class, flight vehicle system component suite. Of particular interest include but are not limited to:

- Flight Computer
- Inertial Navigation System (INS)
- Inertial Measurement Unit (IMU)
- GPS Systems
- Flight Termination
- Power (High and low Voltage)
- Communications

Proposed offerings within this subtopic of interest must be fully compatible with the extreme operational environments and various support systems of the vehicle under development as described here:

To Be Determined (TBD) Table of defined environmental requirements including:

- Vibe
- Shock

- Acceleration
- Bus Voltage
- Temperature Extremes by subsystem
- EMI/EMC
- Assent1* (Pre-deployment, encapsulated)
- Assent2* (Pre-deployment, deployed fairing)
- Re-entry* (Post Deployment)

*Environmental requirements are further broken down into these subcategories until deemed unnecessary by system level assessment and/or analysis results. The combination of peak environmental extremes may not be warranted for design consideration since peak physical performance regimes do not necessarily coincide during the execution of the mission profile.

Objective: With limited physical on-board space, mass and power available, the FLASH program must rapidly optimize, package and support a GNC architecture that meets all performance and environmental requirements to reliably operate the vehicle throughout all mission phases, profiles and performance envelopes. This specific area of interest serves to:

1. Identify existing industry interest, capability and Commercial-Off-The-Shelf (COTS) systems and components.
2. Quickly confirm/right size the basic GNC system SWAP for early FLASH architecture conception leading to a viable baseline design while serving to identify any areas of need early on for further development and packaging advancements.
3. Foster industry engagement/partnership in the identification, engineering development and provision of viable system components and solutions that meet form, fit and function of the program system performance requirements while forging government/industry transitionary relationships.

For consideration, a formal Specification and/or detailed description of each system/system element offered is required to include at a minimum:

- Size, Weight and Power (SWaP)
- Component/System performance capabilities to include but not limited to:
    - Bandwidth
    - Channel capacities
    - Precision Resolution
    - Compatibility
- Operational/environmental envelope
- Interface Control documentation (ICD)
- Pertinent Analysis and Test Reports
- Relevant applications/Scaling options
- ROM cost and delivery schedule
- Flight history/TRL/MRL assessment

TECHNICAL AREA 2.

High Temperature Structures, Thermal Protection Systems, Components, Manufacture and Test

Background: The FLASH concept is anticipated to significantly improve key mission performance parameters over similar size (class) hypersonic systems currently under consideration for fielding to the war fighting magazine. Through a combination of analytical techniques and Computational Fluid Dynamics (CFD), scaled development, ground, captive carry and free flying demonstration activities, this funded INP intends to systematically develop an optimized, robust and lethal planform while utilizing readily available, less costly materials via advanced aerodynamics. These optimizations include pitch-roll-yaw maneuverability and will provide for maximum range, lethality and survivability.

Objective: In order to withstand the environmental impacts of operating and maneuvering at hypersonic speeds and within these extraordinarily hazardous regimes, vehicle outer mold line (OML) components and supporting structures, mechanisms and systems will be required to tolerate extreme temperatures while enduring incredibly stressing mechanical loads.

FLASH is seeking information and detail application descriptions of the use of traditional, less exquisite materials and systems, directing program risk away from optimized mass and volume options to that of low(er) cost, available, conventional alternatives in order to readily demonstrate the scaled beneficial aspects of advanced aerodynamic concepts and their operational advantages.

Specific needs in the category of materials include High to Very High temperature materials and systems for immediate consideration for integration but are not limited to: (Lower TRL/MRL technology components with significant potential for advancement may be considered at a later time.)

1. High MRL skin materials
2. Carbon/Carbon (C/C) or similar Ultra High Temperature Systems
3. Large, lower cost Ceramic/Ceramic Matrix Composites (CMC) Structures/Systems
4. High temperature elastomers
5. Metal Based Super Alloys and Coatings
6. Ablative Materials and Material Coatings

Specific needs in the category of High to Very High temperature devices and components include but are not limited to: (Lower TRL/MRL technology components with significant potential for advancement may be considered at a later time.)

1. High Power Permanent Magnet Synchronous (PMS) Motor technologies
2. High Power Actuation Systems and components
3. Non-Backdriveable Speed Reducer Systems
4. Springs and Torsion Springs
5. Rotary Dampers
6. Field oriented control (FOC) motor drive systems and components
7. High Temperature Pre-load elements, springs, seals and techniques

8. Linear displacement sensors
9. Vapor barrier materials and systems
10. Inflatable class Gaskets/Bellows/Boots

Specific needs in the category of High to Very High temperature system element manufacture and test include but are not limited to:

1. Structural Assembly test system (or capability) for Aero structures
2. Large format, Laser Powder Bed Fusion (LPBF) or other Additive Manufacturing (or capability)

TECHNICAL AREA 3.

Scaled Design Verification and Flight Test Demonstration Capabilities

Background: As an innovative Navy prototype program, predicted performance of the FLASH concept has the potential to push the boundaries of Navy warfighting might. These improved capability metrics are the result of unproven concepts resulting from previously funded research.

Objective: The FLASH program is in need of affordable heritage, appropriately sized, subscale, free-flying vehicles which can be adapted/modified for FLASH technology demonstration activities. This program seeks to identify viable flight proven, commensurate hypersonic demonstration vehicles and capabilities of scale for flight verification and risk reduction opportunities for subsystems, materials, assemblies and components to definitize the performance of core technologies and capabilities under development.

TECHNICAL AREA 4.

Multidisciplinary Design, Analysis and Optimization (MDAO)

Background: The comprehensive process of defining, planning, and optimizing offensive mission strategies while considering the coupled aero-thermo-structural effects, flight control limits, trajectories, mission-critical maneuvers, and vehicle survivability combine as an extremely complex simultaneous equation set in the development and fielding of an effective and affordable weapon system. Arriving at a manageable subset of the most optimized mission profiles in order to inform an all-up round vehicle configuration is at the forefront of the FLASH program concept development effort.

Designing such vehicles is highly complex due to the strong coupling between aerodynamic heating, structural loading, control authority, system mass, and mission trajectory. Traditional sequential design methods are too slow, fragmented, and costly to support rapid capability development. Multidisciplinary Design, Analysis, and Optimization methods offer an integrated, holistic approach, enabling the concurrent consideration of all relevant disciplines to find superior, optimized designs that balance performance, cost, and risk.

Objective: The FLASH program is seeking government and industry insight into existing capabilities, promising techniques under development, and novel concepts for the integrated design and optimization of hypersonic systems. The primary objective is to acquire and apply an MDAO framework to accelerate the conceptual and preliminary design and mission analysis of hypersonic boost-glide weapons.

This framework should assist in navigating the extremely broad and complex trade space to produce globally optimal design options that maximize critical performance characteristics. Proposals may include the development of new tools, the adaptation of existing Government or commercial solutions, or the integration of partial elements to form a comprehensive and informative capability.

Responsive proposals should demonstrate capabilities that address the following areas:

- **Integrated Design:** Concurrent optimization of vehicle geometry, mission trajectory, and control strategies while accounting for launch platform constraints (e.g., volume, mass, interface requirements).

- **Coupled Aero-Thermo-Structural (ATS) Analysis:** Integrated analysis of tightly coupled aerodynamic, thermal, and structural effects. This includes predicting forces, moments, and heating loads (including control surface and deformation effects) and evaluating the resulting stresses, strains, and deformations. The analysis must support high-temperature materials, composite structures, and Thermal Protection System (TPS) behavior.

- **Systems Packaging:** Optimization of internal layouts for payloads, sensors, and power systems while maintaining center-of-gravity control and packaging feasibility.

- **Trajectory and Control:** Optimization to enhance flight performance while meeting constraints on range, maneuverability, survivability, and terminal accuracy.

- **Framework Integration:** System-level integration into an existing or proposed MDAO architecture (e.g., ADAPT, OpenMDAO) with support for geometry parameterization, solver coupling, and multi-objective optimization.

- **AI/ML Integration:** Application of artificial intelligence and machine learning methods to accelerate convergence, construct reduced-order models, support adaptive sampling, and enable data-driven design exploration. This may include learning weighting factors for multi-objective problems, generating surrogate models for expensive simulations, or discovering improved formulations via symbolic regression.

- **Risk and Manufacturability:** Delivery of outputs that inform system cost estimation, manufacturability assessments, technology development roadmaps, and risk reduction strategies.

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III. OFFICE OF NAVAL RESEARCH FLASH INDUSTRY ENGAGEMENT DAY

Who: Industry professionals seeking to do business with the Office of Naval Research (ONR).

What: The Office of Naval Research (ONR) plans to conduct an Industry Day to engage the **Hypersonics Technologies and Weapons** communities in a CONTROLLED UNCLASSIFED INFORMATION (CUI) forum to present the benefits and technical challenges of a novel, funded, ONR Innovative Naval Prototype (INP) program, Flight Advancement of Structures for Hypersonics (FLASH). Presentation topics are intended to inform industry of the program goals and intentions in the development of a new class of Hypersonic delivery system. Topics will include a broad range of critical materials, technologies, manufacturing techniques and processes, test and evaluation plans and sub to full scale performance demonstration campaigns. The intended resulting strategic capability transition to industry/industry partners will also be discussed.

Details concerning registration will be available here:
https://forms.osi.apps.mil/Pages/ResponsePage.aspx?id=AD4z43fIh0u2rUXpQt4XUMDYhbcsgepCie7Qj4szy_1UM1k1SFVLRTc0Nk1RRlBLRjlKNUdDTkxYRC4u

All registrations should be completed by **1700 (EDT) on Monday, 27 April 2026.**

If requested attendance exceeds the capacity of the conference room, it will be necessary to limit attendance of personnel from each organization, and organizations will be notified. ONR will reply via e-mail with the registration confirmation. All expenses for attendance will be borne by the participants.

This meeting will be conducted at the CONTROLLED UNCLASSIFIED INFORMATION (CUI) level. Interested parties must, therefore, be prepared to provide proof of United States Citizenship prior to entry into the facility. Access is restricted to United States Persons (USPERS), which includes U.S. citizens, lawful permanent residents, and those born in the U.S.. Non-U.S. persons may be granted access only if a specific exception or fully executed NDA is in place. ONR Security Division Phone: 703.696.6845, Email: ONR.NCR.054.list.Security-Division@us.navy.mil

When: 4 May 2026 (times provided upon registration)

Where: ONR headquarters Bobby Junker Executive Conference Center (BJECC), 875 North Randolph Street, Arlington, VA 22203

Agenda: The notional agenda for the Industry Day is below and is subject to change.

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Monday, May 4, 2026

Registration, Check-In, Networking, Posters Displayed
Formal Greeting – Program Officer (PO)
Meeting Objectives and Engagement (PCO) – Program Contract Officer
FLASH Program Intro – PO
FLASH Program Execution – Program Manager (PM)
Break
Topics of Interest – Principal Investigator (PI)
Breakout/Poster Session 1
Lunch (on your own)
Breakout/Poster Session 2
One on One Meetings
Program Schedule and Way Forward – PM
Closing Remarks – PO

Classification: CUI
Question and Answer: Yes
Media: No
Max Number of Attendees: 120
VIPs Attendees and Keynote Speakers: (TBD)

IV. WHITE PAPER SUBMISSION

Although not required, white papers are strongly encouraged for all offerors proposing to provide a COTS component or capability, work or specific solution to the topics presented. Each white paper shall respond to a single topic area and will be evaluated by the Government to determine whether the proposed technology appears to be of "particular value" to the FLASH program. Initial Government weighted evaluations and feedback will be issued via email notification from the Technical Point of Contact. Whitepapers that are deemed to be of "particular value" to the government may be invited to provide an oral presentation as described in Section V below.

The ***no more than*** 10-page body of a white paper should include the organizations solution to the specific problem set associated with a topic described in Section II, Topic Description, by providing the following information:

- **Technical** – A complete description of the offer as it pertains to and addresses the program need to include performance metrics, design margin, risk, availability, scalability and options. Any published documentation such as specifications or test reports may be provided as an attachment to the white paper and will not be included in total page count.

- **Operational Utility Assessment Plan (where applicable)** – A plan for demonstrating and evaluating the operational effectiveness of the offeror's proposed work, products or solutions.

- **Rough Order of Magnitude (ROM)** cost and schedule estimate.

- **Organization Details** – Point of contact details, key personnel, organization portfolio and novel applicable accomplishments.

White papers should ***not exceed*** 10 single-sided pages, exclusive of cover page, product and resume(s) of key personnel, and should be in 12-point Times New Roman font with margins not less than one inch. White papers shall be in Adobe PDF (preferred) or Microsoft Word format.

To ensure full, timely consideration, white papers should be submitted **no later than (NLT) 15 MAY 2026 1600 EST**. White papers received after that date will be considered as time and availability of funding permit. The planned date for completing the review of white papers is **29 MAY 2026**.

V. ORAL PRESENTATIONS

FLASH program management requests that Project Managers provide an expanded oral presentation from those Offerors whose proposed technologies have been identified as being of "particular value" to the FLASH program. The purpose of the oral presentation is to provide greater detail than can be contained in the White Paper and to permit the evaluation panel to ask questions to better understand aspects of the proposed effort. However, any such request does not assure a subsequent award. Any Offeror whose White Paper technology was not identified as being of "particular value" to FLASH will not be invited to make an oral presentation. The requested oral presentations will occur on, or around, **25 JUN 2026**. The time, location, and briefing format of the oral presentations, if requested, will be provided at a later date via email notification. Evaluations of the oral presentations will be issued via email notification on or about **10 JUL 2026**.

VI. FULL PROPOSAL SUBMISSION AND AWARD INFORMATION

A detailed full proposal (Technical and Cost volumes) will be subsequently encouraged from those offerors whose proposed technologies have been identified through the above referenced email as being of "particular value" to the government. However, any such encouragement does not assure a subsequent award. Full proposals may also be submitted by any offeror whose white paper was not identified as being of particular value to the government or any offeror who did not submit a white paper.

For proposed efforts that are considered of particular value to the Navy, but either exceed available budgets or contain certain tasks or applications that are not desired by the FLASH program, this office may suggest a full proposal with reduced effort to fit within expected available budgets or an effort that refocuses the tasks or application of the technology to maximize the benefit to this program.

Full proposals should be submitted under **N0001425SB001** by **AUG 17, 2026.** Full Proposals received after that date will be considered as time and availability of funding permit.

FLASH anticipates that multiple contracts will be issued for this effort. At this time, grants are not being considered.

Full proposals for contracts should be submitted in accordance with the BAA instructions at Appendix 2.D, Requirements Applicable to Contracts and Other Transaction Agreements Only. Technical Proposal/Content shall be single spaced and not exceed 15 pages. The cover page, resumes, previously published specifications and table of contents are excluded from the page count. For contract proposal submission, all submissions should be submitted electronically per section VIII unless submitting a classified proposal. Classified submissions can be mailed.

Tech areas 1-3 will have specific and near-term need dates to be published NLT May 2026. FLASH plans to allocate approximately $(TBD) dollars per year in total for the MDAO tech area 4 only. The period of performance for any MDAO awarded projects will be one to three (1-3) TBR years.

Proposed efforts should have clear milestones that can be reviewed and evaluated on an annual basis. It is anticipated that multiple awards will be made in Technical Areas 1-4 based on the quality of the proposed efforts. White papers are strongly encouraged from all offerors seeking funding.

Although FLASH expects to execute the program plan described above, the program reserves the right to make changes according to program priorities and funding availability.

VII. SIGNIFICANT EVENTS and DATES (Timeline)

All dates are notional and subject to change (STC). Cadence is expected to remain fixed.

- **APR 10, 2026 (STC):** Publish FLASH INP BAA at SAM.Gov (Official government website)
- **MAY 4, 2026 (STC):** Execute FLASH INP Tech Industry Day – ONR, Arlington VA.
- **MAY 15, 2026 (STC):** Dead Line – Final White Paper Submission Date
- **MAY 29, 2026 (STC):** Notification of White Paper Evaluation
- **JUN 01, 2026 (STC):** E-mail notification of request for Oral Presentations
- **JUN 25, 2026 (STC):** Oral Presentations – ONR, Arlington VA. - Execution depends on interest
- **JUL 10, 2026 (STC):** Provide Presentation Results and Request For (full) Proposals (RFP)
- **AUG 17, 2026 (STC):** Full Proposal Submission (NLT)
- **JAN 29, 2027 (STC):** Notice of Contract Awards (NLT)

VIII. SMALL BUSINESS SUBCONTRACTING

As indicated in ONR Broad Agency Announcements large businesses and non-profit organizations must submit a subcontracting plan along with their research proposal. While large businesses and non-profits are responsible for making these subcontracting arrangements, ONR will help facilitate prime contractor/small business contracting connections by posting to the ONR external website contact information of small businesses that have indicated their subcontracting interests and technological niche

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for prime contractor consideration for this program. This is not an endorsement, but an effort by ONR to help bring these parties together to provide superior solutions.

If you are a small business, and your company is interested in subcontracting activities with large businesses and/or non-profits considering your technology for this program, please provide the following information by email, to the ONR Small Business Director at andrew.h.chappell.civ@us.navy.mil with the subject line, "BC N0001426SBC02". Provide this information:

1) Company Name and Website
2) Individual (POC) name and POC email address
3) Business Size and socio-economic category
4) Brief Technology Description (no more than 3 sentences) 5) Technology Key Words (no more than 10 words)

Note: Do not include ANY proprietary information. This information will be posted on the ONR website under this BAA call and will be available to the public.

IX. POINTS OF CONTACT

In addition to the points of contact listed in N0001425SB001 the specific points of contact for this announcement are listed below:

Technical Point of Contact:
Dr. Eric Marineau
Hypersonic Aerothermodynamics, High-Speed Propulsion and Materials Program Officer
ONR Code 352
usn.pentagon.cnr-arlington-va.mbx.ONR-Hypersonics-BAR@us.navy.mil

Business Point of Contact:
Mr. James Farnsworth
Contracting Officer
Office of Naval Research
james.e.farnsworth8.civ@us.navy.mil

IX. ADDRESS FOR THE SUBMISSION OF WHITE PAPERS AND FULL PROPOSALS FOR CONTRACTS

White Papers/Full Proposal:

Unclassified white papers and full proposals should be submitted electronically (via direction supplied within Appendix II) with copy to ONR.NCR.312.list.ISR-Admin@us.navy.mil by 16:00 ED on **MAY 15, 2026** (white paper) and **AUG 17, 2026** (full proposals) by 16:00 ED. Additionally, please send a notification after submitting a whitepaper via the Topic Response Form (https://forms.osi.apps.mil/r/rwuA7jjrJ9).

Files exceeding 10MB in size should not be emailed, but instead transmitted via a file transfer service, for example DoD SAFE, https://safe.apps.mil. If you will be using DoD SAFE, please request a Drop-Off link from the Technical POCs via the Topic Response Form (https://forms.osi.apps.mil/r/rwuA7jjrJ9) at least 7 days prior to the submission deadline.

Classified White Papers/ Full Proposals:

Classified white papers and proposals up to the general service (GENSER) Secret level should be mailed via traceable means, with the outer envelope addressed to the Office of Naval Research, Attn: Document Control Unit, ONR Code 43, 875 N. Randolph St., Arlington, VA 22203-1995. The inside envelope should indicate the classification level and be addressed as: Office of Naval Research, Attn: Dr. Eric Marineau, ONR Code 352, 875 N. Randolph St., Arlington, VA 22203- 1995. If you will be mailing a classified white paper or proposal, please send a notification to the technical POC's via the Topic Response Form (https://forms.osi.apps.mil/r/rwuA7jjrJ9).

X. SUBMISSION OF QUESTIONS

Any questions regarding this announcement must be provided to the Technical Points of Contact and/or the Business Point of Contact listed above. All questions shall be submitted via the Topic Response Form (https://forms.osi.apps.mil/r/rwuA7jjrJ9). Answers to questions submitted in response to this BAA Call will be addressed in the form of an Amendment and will be posted to the following web pages:

- SAM.GOV Webpage – Contract Opportunities (https://sam.gov/content/home)
- ONR BAAs, FOAs and Special Program Announcement WebPage https://www.nre.navy.mil/work-with-us/funding-opportunities/announcements

Questions regarding **white papers or full proposals** should be submitted NLT two weeks (TBR) before the dates as ascribed in Section VIII. Questions after this date may not be answered.