Acquisition Notice Posting

Headquarters Acquisition Division

FACILITATED ACCESS TO THE SPACE ENVIRONMENT FOR TECHNOLOGY

General Information

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Office Address

NASA/Goddard Space Flight Center, NASA Headquarters Acquisition Branch, Code 210.H, Greenbelt, MD 20771

Description

Facilitated Access to the Space Environment for Technology (FAST)

ANNOUNCEMENT OF OPPORTUNITY

OPPORTUNITY TO ADVANCE TECHNOLOGY MATURITY IN A MICRO-GRAVITY OR REDUCED GRAVITY ENVIRONMENT

1.0 INTRODUCTION AND BACKGROUND

The FAST program has been established to increase opportunities to advance the maturity of key technologies and thereby reduce the risk of adopting those technologies by providing access to space-environment testing. The FAST program also encourages commercial development and competition by using commercially available services when available.

The purpose of the FAST program is targeted toward technologies that:
• Support NASA's missions but are not yet mature enough for adoption into NASA's programs with acceptable risk; and
• Might not otherwise be tested due to lack of funding, such as those developed by private companies including SBIR/STTR contractors and other small companies, universities or research institutions and NASA projects in early development.

This Announcement solicits interest from U.S. federal, state and local government entities, U.S. private entities (including, but not limited to, commercial firms, non-profit entities, and academic institutions), and partnerships between such entities, for the use of a parabolic aircraft as a micro-gravity or reduced-gravity testbed environment. Awards under this Announcement to private entities will be made using NASA's authority to enter into Space Act Agreements and will include providing access to NASA facilities, personnel and technical information. There will no funds provided to any Proposer in connection with awards made under this Announcement. Proposers are responsible for financing their own activities. Awards made to NASA organizations or other public entities will be made under appropriate agreement structures. NASA Centers proposing partnerships will be responsible for entering into appropriate agreements supporting the proposed activities, subject to the review and concurrence of the FAST Program Coordinator.

Selected Project Teams will be provided flight time in a micro-gravity or reduced gravity environment through access to parabolic aircraft flights. Each flight includes approximately 40 parabolic trajectories and each parabolic trajectory provides approximately 25 seconds of reduced-gravity time. Microgravity and reduced gravity conditions such as lunar gravity (.16 g) or Mars gravity (.38 g) as well as other partial gravity levels can be created. The aircraft and its payload will experience increased gravity levels (~ 2 g) in between parabolas. It is anticipated that 15-20 experiments will be selected from this Announcement for flights scheduled during September 2010. Proposals that are not selected under this Announcement due to limited flight opportunities may be considered for future flight opportunities.

Response Date: This announcement is open through April 19, 2010.

NASA will not issue paper copies of this Announcement. NASA reserves the right to select for negotiations all, some, or none of the proposals submitted in response to this Announcement. NASA provides no funding for reimbursement of proposal development

costs. Material submitted in response to this Announcement will not be returned. It is the policy of NASA to safeguard all proposals as confidential and privileged information, as provided by law. NASA will not, without permission of the proposers, use the proposal contents for other than evaluation purposes. It is not NASA's intent to publicly disclose proprietary information obtained during this Announcement. To the full extent that it is protected pursuant to the Freedom of Information Act and other laws and regulations, information identified by a respondent as "Proprietary or Confidential" will be kept confidential. NASA may use contractor support personnel to assist in providing expertise regarding proposals. Any support contractor involved in the evaluation process shall be free of conflicts of interest, will be bound by appropriate non-disclosure agreements to protect proprietary and competition sensitive information. By submitting a proposal under this Announcement, the proposer is deemed to have consented to release of data in its proposal to NASA contractors supporting evaluation of proposals.

2.0 GENERAL INFORMATION

Agency Name: NASA (National Aeronautics and Space Administration)

Opportunity Title: Opportunity to Advance Technology Maturity in a Micro-Gravity or Reduced Gravity Environment.

Response Date: 4:30 PM, EDT, April 19, 2010

Points of Contact: If you have questions concerning this Announcement please contact the FAST Program Coordinator: Amy B. Hiltabidel, NASA Glenn Research Center, Phone: 216-433-8063, Email: Amy.Hiltabidel@nasa.gov. Proposers are encouraged to periodically check the FAST program website: http://www.nasa.gov/offices/ipp/innovation_incubator/FAST/index.html . The website will be used to post information pertinent to this Announcement. For other issues contact the FAST Program Executive at NASA Headquarters: Andrew Petro, Phone: 202-358-0310, Email: andrew.j.petro@nasa.gov.

Instrument Type(s): It is anticipated that awards to private entities under this Announcement will be in the form of Space Act Agreements, executed under the authority of 42 U.S.C. 2473(c)(5). A Space Act Agreement template for the FAST program will be posted on the FAST program website.

Selection Recommendation Committee: Government personnel from NASA and NASA contractors may participate in the evaluation of proposals. All contractor personnel participating in the evaluation will be bound by conflict of interest provisions and appropriate non-disclosure requirements to protect proprietary information.

Selection Notification Date: Selection for negotiations is anticipated to be within 45 days of the Response Date. Proposals that are not selected under this Announcement due to limited flight time and space may be considered for future flight opportunities.

Submission Instructions: All Proposals, including signed Commitment Letters, must be submitted in a single PDF file by electronic mail to the FAST Program Coordinator: Amy.Hiltabidel@nasa.gov no earlier than April 12, 2010 and no later than the deadline of 4:30 PM, EDT, April 19, 2009. If a proposal includes partners at a NASA Center, a copy of the proposal must also be submitted to the appropriate NASA Center Point of Contact (see section 7.0 below). Paper submissions will not be reviewed. Proposals received after the Response Date will not be accepted. If a proposer is concerned about information security during transmission NASA has the ability to accept secure transmission. Contact the FAST Program Coordinator for secure transmission requirements.

Schedule: The following milestone schedule is provided as a guideline. Some dates may be modified and updates will be provided on the FAST program website.

March 10, 2010 - Call for proposals
April 19, 2010 - Proposal deadline
May 14, 2010 - Selection Announcement
June 18, 2010 - Space Act Agreements completed
June-August 2010 - Project teams prepare for flight-testing and submit required documentation
September 2010 - Parabolic aircraft flight week occurs

3.0 ELIGIBILTY INFORMATION

All categories of domestic entities are eligible to submit proposals in response to this Announcement. NASA will not consider proposals that do not include a domestic entity as the lead proposer.

4.0 PROPOSAL EVALUATION AND SELECTION

4.1 Evaluation and Selection Process.

All proposals will be initially screened to determine their compliance to the eligibility (section 3.0), technical requirements (section 5.0) and proposal instructions (section 6.0) of this Announcement. Proposals that do not comply may be declared noncompliant and rejected without further review. Proposals deemed in compliance with this Announcement will be assessed against the evaluation criteria outlined in Section 4.2 by the Selection Recommendation Committee.

Proposers should be aware that during the evaluation and selection process, NASA may request clarification of a specific point or points in a proposal. Such a request and the Proposer's response shall be in writing. The Selection Recommendation Committee members will conduct independent assessments of the proposals according to evaluation criteria outlined in Section 4.2.

4.2 Evaluation Criteria

The evaluation factors below are of equal weighting during evaluation.

1. Relevance and Value to NASA – The proposed effort must accomplish reduced-gravity testing of a technology of interest and value to NASA's missions, programs or projects.

2. Technology Readiness for Testing in a Micro-Gravity or Reduced Gravity Environment – The proposal must demonstrate that the technology is appropriate for the available parabolic testbed and that the proposed testing will advance its Technology Readiness Level (see Appendix A). There must be a reasonable expectation that the reduced-gravity testing will significantly contribute to advancing the maturity of the technology. Highest priority will be placed on an approach or concept that will create substantial increases in the current state-of-the-art. The proposal must clearly demonstrate that the technology is ready for flight-testing.

3. Resources and Schedule – The overall merit, rationale, feasibility, and suitability of the proposed effort or concept for testing in a micro-gravity or reduced gravity environment in light of available resources and schedule. Proposers should request the minimum number of flight days, aircraft volume and number of on-board participants required to meet the proposal objectives. The FAST program would like to accommodate as many projects as possible and so the extent of requested flight time, volume, personnel or other special needs may be a factor in the selection process.

4. Strength of Project Team – The brief resumes of the project leader and key team members should indicate knowledge of the subject technology area and familiarity with the test hardware and planned test operations. Previous experience among team members in flight-testing or other space-environment testing is not mandatory but is desirable.

4.3 Selection Factors

As described in Section 4.1, the results of the proposal evaluations based on the criteria above and the subsequent Selection Recommendation Committee deliberations will be considered in the selection process. The Selection Recommendation Committee may take into account a variety of programmatic factors in deciding whether or not to select any proposals, including, but not limited to, available resources and alignment with NASA technology needs. All eligible proposals, regardless of source, will be evaluated together and ranked for selection. The Selection Authority shall be the Director of the Innovative Partnerships Program. The Selection Authority will make the final selection of those approved for this opportunity after the completion of negotiations, depending on the outcome of the negotiations.

4.4 Selection Notification

NASA will notify all proposers of the results of the evaluation and selection process. After the completion of the evaluation and selection process, NASA will begin discussions with the selected proposer(s). The purpose of the negotiations is to finalize

the terms and conditions of any Agreement. All work will commence after the parties execute the Space Act Agreement or other agreement, as applicable.

5.0 TECHNICAL REQUIREMENTS

Technologies selected for reduced-gravity environment testing aboard the parabolic aircraft flights must meet equipment design and other requirements as provided in the "JSC Reduced Gravity Program User's Guide" and "Experiment Design Requirements and Guidelines" which can be found at: http://jsc-aircraft-ops.jsc.nasa.gov/Reduced_Gravity/guides.html .

All projects selected for parabolic flights must submit information for technical and safety reviews including a Test Equipment Data Package. Project teams must also submit specified information on proposed participants. All participants must attend a safety briefing at the flight facility and flight participants must complete Physiological Training in advance of the flight week. All participants must comply with safety requirements on the aircraft and in ground facilities and must follow all directions given by NASA staff and aircraft crewmembers. All participants must behave in a professional manner and must not interfere in the research activities of others. Failure by participants to submit required information, obtain training by required deadlines, or engage in appropriate behavior will render a Project Team ineligible to participate in scheduled flights. Participants include all researchers, test subjects, support personnel and any others associated with the Project Team who are present at the airfield facility.

Parabolic flight activities will be conducted at Ellington Field in Houston, Texas. NASA cannot guarantee the ultimate schedule or availability of the parabolic flights. If flights are cancelled due to weather or mechanical problems, reasonable efforts will be made to reschedule those flights. Project Teams remain responsible for all costs associated with rescheduled or cancelled flight opportunities. Project Teams should provide margin in their travel budgets to account for an unlikely but possible change in flight location or postponement of a flight week.

A flight week typically includes a test readiness review on the first day (Monday) and one flight per day for four days (Tuesday through Friday). Project Teams can request one, two, three or four flight days in their proposal. The aircraft will allow for relatively large equipment and can accommodate several test personnel for each project, if required.

A space experiment support system called FASTRACK, developed by NASA Kennedy Space Center (KSC) and Space Florida may be available to support proposed investigations. FASTRACK provides a rack structure and standard mid-deck locker accommodations with demonstrated interface compatibility aboard the reduced gravity aircraft. Proposers who wish to consider use of this capability should contact Alexis Hongamen of the KSC IPP Office at 321-867-3107 (email Alexis.Hongamen-1@nasa.gov).

Proposers should anticipate that multiple Project Teams will occupy the aircraft cabin and

pre-flight preparation areas on the ground at the same time and the aircraft will be carrying multiple projects. Aircraft operations personnel will participate in loading, securing and unloading project hardware. In accordance with NASA's mission to "provide for the widest practicable dissemination of information," video recording and photography of FAST program activities will be conducted by NASA. It is likely that aircraft personnel and other project teams will engage in similar recording activities on-board the aircraft and in preparation areas. These photographs and video recordings will be posted on public websites and in other publications. Project teams are responsible for ensuring the protection of any proprietary aspects of their technology. For all selected proposals, NASA will publish information regarding the selected Project Team, including the abstract provided in the proposal, and may use photographs and video recordings of related flight test activity in public briefings and publications.

Reporting Requirements

All Project Teams are required to deliver reports as described below. All reports must include a separate publicly releasable summary of the Project Team's activities under the FAST program. Failure to provide required reports will disqualify the Project Team from participation in any future FAST program activities.

1. Preliminary Report (1 page, not including photographs or video): A brief summary of the test activity prepared immediately after the flight. Photographs and video recordings are also desired, if available. Due: No more than five business days after the final flight day.

2. Final Report (5-20 pages, not including photographs or video): A full description of test activity and results including an assessment of the technology readiness level before and after reduced-gravity testing, any lessons learned or other observations and considerations for further development. Due: No more than 60 calendar days after the final flight day.

3. Follow-up Report (1 page): A brief update on further progress with the technology including any new technical conclusions based on data from the reduced-gravity testing. Project Teams should advise the FAST program regarding any opportunities for further development or use of the subject technology through contracts or agreements with government or commercial partners. Due: One year after the final flight day.

6.0 PROPOSAL INSTRUCTIONS

Proposals must comply with the following requirements and the page limits noted. Pages in excess of the page limitations for each section will not be evaluated. A page is defined as one (1) sheet 8 1/2 x 11 inches using a minimum of 12-point font size for text and 8-point for graphs. Proposals shall include Letters of Commitment described below for each organization involved. These letters are excluded from the page limit and should be placed at the end of the proposal.

Proposals must include the following sections, in this order:

Proposal Cover Page (1 page): Include title of Announcement, Project Title and identify each proposing company or organization. For each include the city, state and nine-digit zip code. Include Notice of Restriction on Use and Disclosure of Proposal Information, if any.

Points of Contact (1 page): List contact information for the Project Manager and a secondary Point of Contact, if available. Include complete mailing address, telephone number and email address for each point-of-contact.

Overview (1 page):
a) Project Title

b) Abstract: Publicly releasable abstract (no more than 150 words) describing the prominent and distinguishing features of the proposal and the anticipated outcomes, including how proposed participation in FAST program activity will accelerate availability of technology for NASA programs and projects, also include information on advancement of commercial applications of technology.

c) Relevant NASA Mission Directorates and Programs: Indicate which NASA Mission Directorate (Aeronautics Research, Exploration Systems, Science or Space Operations) is most aligned with Proposer's technology. Identify all applicable. If known, include any specific programs, projects or future applications that the Proposer's technology might support.

d) Relevant NASA Centers: Indicate any NASA Center associated with the technology or for which the proposed technology would have relevance.

e) Government Contracts and Agreements: If the proposed technology is the subject of any current or previous contracts, grants, cooperative agreements or other agreements (such as Space Act Agreements) between the proposing entity and the US government, including SBIR or STTR contracts or an IPP Seed Fund project, provide the contract or agreement numbers, the name of relevant agency, the name of the COTR (if applicable), and the starting and ending dates of those contracts, grants or agreements.

Proposal Detail (7 pages):

Description of Technology (1 page): Describe the background of the technology and its value and relevance to NASA missions, program or projects including the specific benefits expected. Also describe any commercial applications or other characteristics of the technology that may be of interest. Indicate the current technology readiness level (TRL) with supporting evidence. Indicate the TRL expected after testing and explain how the proposed testing will advance the TRL. (Definitions in Attachment A)

Planned Test Objectives and Process (1 page)

Test Hardware to be Used (1 page, including figures and tables): Include at least one recent photograph of the hardware to be tested, preferably in its flight-test configuration

Test Requirements (1 page, including figures and tables):
a) Indicate size category (Type 1, 2 or 3) and actual dimensions of the equipment, including objects stored separately. (Dimensions: length-along along aircraft axis, width across aircraft and height above aircraft floor – in cm.)
Type 1: 50 x 50 x 50 cm or less
Type 2: larger than Type 1 but 100 x 100 x 100 cm or less
Type 3: Larger than 100 x 100 x 100 cm (provide justification in Proposal Attachment)
b) Indicate dimensions (in cm) of the overall volume required inside the aircraft for test operation including the space for on-board researchers positioned around hardware
c) Mass of the equipment in kg
d) Amount and type of power required, if any
e) Required gravity level(s)
f) Duration of test and number of flight days needed to adequately validate results;
g) Number of test personnel required for flight and a description of the requirement for each participating individual's presence – if more than three persons, include justification in Proposal Attachment,
h) Special testing or accommodation requirements such as venting, cooling, heating, etc., special constraints or support required, including security.

Preliminary Hazard Analysis (1 page, including figures and tables): Identify hazards and controls, if applicable.

Project Team Resources (2 pages, including figures and tables):
a) Describe the experience, capabilities and facilities available to the project team. Brief resumes of key personnel should be included.
b) Indicate how the team resources will support the conduct of this project.
c) Include any relevant experience in reduced-gravity testing.
d) Provide an estimate of the overall cost in dollars of the project preparation and testing activity including labor, hardware, software, facilities, shipping and travel. If the proposal is a partnership, provide a breakdown of the cost by partner. This information will be used to establish the level of team commitment and assess the realism of the proposal. Note that the FAST program will not provide funding for any of these expenses.

Appendix

Quad Chart 1 page, must use template at the FAST Program website.

Letters of Commitment (1 page per letter per organization): Provide a letter committing the organization's resources in support of the proposal, signed by an official who is authorized to commit the organization's resources in support of the proposed project. Proposals from partnerships of more than one entity must include a letter of commitment from each partner organization.

Proposal Attachment (1 page):

a) If applicable, explain the requirement for equipment larger than 100x100x100 cm.
b) If applicable, explain the requirement for more than three on-board researchers.

7.0 NASA CENTER POINTS OF CONTACT

(NASA Center, name, phone number and email address)

Ames Research Center:
David Morse, 650.604.4724, david.r.morse@nasa.gov
Dryden Flight Research Center:
Ronald Young, 661.276.3741, ronald.m.young@nasa.gov
Glenn Research Center:
Kathy Needham, 216-433-2802, kathleen.k.needham@nasa.gov
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Kathy Packard, 281-244-5378, kathryn.b.packard@nasa.gov
Kennedy Space Center:
Alexis Hongamen, 321-867-3107, alexis.hongamen-1@nasa.gov
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Elizabeth Plentovich, 757.864.2857, elizabeth.b.plentovich@nasa.gov
Marshall Space Flight Center:
Gwen Jasper, 256-544-1666, gwenevere.l.jasper@nasa.gov
Stennis Space Center:
Ramona Travis, 228-688-3832, ramona.e.travis@nasa.gov

Point of Contact

Name: Amy B Hiltabidel
Title: FAST Program Coordinator
Phone: 216-433-8063
Fax: 000-000-0000
E-mail: Amy.Hiltabidel@nasa.gov

Attachment A: Technology Readiness Level (TRL) Descriptions

The Technology Readiness Level (TRL) describes the stage of maturity in the development process from observation of basic principals through final product operation. The exit criteria for each level documents that principles, concepts, applications or performance have been satisfactorily demonstrated in the appropriate environment required for that level. A relevant environment is a subset of the operational environment that is expected to have a dominant impact on operational performance. Thus, reduced-gravity may be only one of the operational environments in which the technology must be demonstrated or validated in order to advance to the next TRL.

TRL	Definition	Hardware Description	Software Description	Exit Criteria
1	Basic principles observed and reported.	Scientific knowledge generated underpinning hardware technology concepts/applications.	Scientific knowledge generated underpinning basic properties of software architecture and mathematical formulation.	Peer reviewed publication of research underlying the proposed concept/application.
2	Technology concept and/or application formulated.	Invention begins, practical application is identified but is speculative, no experimental proof or detailed analysis is available to support the conjecture.	Practical application is identified but is speculative, no experimental proof or detailed analysis is available to support the conjecture. Basic properties of algorithms, representations and concepts defined. Basic principles coded. Experiments performed with synthetic data.	Documented description of the application/concept that addresses feasibility and benefit.
3	Analytical and experimental critical function and/or characteristic proof of concept.	Analytical studies place the technology in an appropriate context and laboratory demonstrations, modeling and simulation validate analytical prediction.	Development of limited functionality to validate critical properties and predictions using non-integrated software components.	Documented analytical/experimental results validating predictions of key parameters.

4	Component and/or breadboard validation in laboratory environment.	A low fidelity system/component breadboard is built and operated to demonstrate basic functionality and critical test environments, and associated performance predictions are defined relative to the final operating environment.	Key, functionally critical, software components are integrated, and functionally validated, to establish interoperability and begin architecture development. Relevant Environments defined and performance in this environment predicted.	Documented test performance demonstrating agreement with analytical predictions. Documented definition of relevant environment.

5	Component and/or brassboard validation in relevant environment.	A medium fidelity system/component brassboard is built and operated to demonstrate overall performance in a simulated operational environment with realistic support elements that demonstrates overall performance in critical areas. Performance predictions are made for subsequent development phases.	End-to-end software elements implemented and interfaced with existing systems/simulations conforming to target environment. End-to-end software system, tested in relevant environment, meeting predicted performance. Operational environment performance predicted. Prototype implementations developed.	Documented test performance demonstrating agreement with analytical predictions. Documented definition of scaling requirements.
6	System/sub-system model or prototype demonstration in an operational environment.	A high fidelity system/component prototype that adequately addresses all critical scaling issues is built and operated in a relevant environment to demonstrate operations under critical environmental conditions.	Prototype implementations of the software demonstrated on full-scale realistic problems. Partially integrate with existing hardware/software systems. Limited documentation available. Engineering feasibility fully demonstrated.	Documented test performance demonstrating agreement with analytical predictions.
7	System prototype demonstration in an operational environment.	A high fidelity engineering unit that adequately addresses all critical scaling issues is built and operated in a relevant environment to demonstrate performance in the actual operational environment and platform (ground, airborne, or space).	Prototype software exists having all key functionality available for demonstration and test. Well integrated with operational hardware/software systems demonstrating operational feasibility. Most software bugs removed. Limited documentation available.	Documented test performance demonstrating agreement with analytical predictions.

8	Actual system completed and "flight qualified" through test and demonstration.	The final product in its final configuration is successfully demonstrated through test and analysis for its intended operational environment and platform (ground, airborne, or space).	All software has been thoroughly debugged and fully integrated with all operational hardware and software systems. All user documentation, training documentation, and maintenance documentation completed. All functionality successfully demonstrated in simulated operational scenarios. Verification and Validation (V&V) completed.	Documented test performance verifying analytical predictions.

9	Actual system flight proven through successful mission operations.	The final product is successfully operated in an actual mission.	All software has been thoroughly debugged and fully integrated with all operational hardware/software systems. All documentation has been completed. Sustaining software engineering support is in place. System has been successfully operated in the operational environment.	Documented mission operational results.

Definitions

Proof of Concept: Analytical and experimental demonstration of hardware/software concepts that may or may not be incorporated into subsequent development and/or operational units.

Breadboard: A low fidelity unit that demonstrates function only, without respect to form or fit in the case of hardware, or platform in the case of software. It often uses commercial and/or ad hoc components and is not intended to provide definitive information regarding operational performance.

Brassboard: A medium fidelity functional unit that typically tries to make use of as much operational hardware/software as possible and begins to address scaling issues associated with the operational system. It does not have the engineering pedigree in all aspects, but is structured to be able to operate in simulated operational environments in order to assess performance of critical functions.

Proto-type Unit: The proto-type unit demonstrates form, fit, and function at a scale deemed to be representative of the final product operating in its operational environment. A subscale test article provides fidelity sufficient to permit validation of analytical models capable of predicting the behavior of full-scale systems in an operational environment

Engineering Unit: A high fidelity unit that demonstrates critical aspects of the engineering processes involved in the development of the operational unit. Engineering test units are intended to closely

resemble the final product (hardware/software) to the maximum extent possible and are built and tested so as to establish confidence that the design will function in the expected environments. In some cases, the engineering unit will become the final product, assuming proper traceability has been exercised over the components and hardware handling.

Mission Configuration: The final architecture/system design of the product that will be used in the operational environment. If the product is a subsystem/component, then it is embedded in the actual system in the actual configuration used in operation.

Laboratory Environment: An environment that does not address in any manner the environment to be encountered by the system, subsystem, or component (hardware or software) during its intended operation. Tests in a laboratory environment are solely for the purpose of demonstrating the underlying principles of technical performance (functions), without respect to the impact of environment.

Relevant Environment: Not all systems, subsystems, and/or components need to be operated in the operational environment in order to satisfactorily address performance margin requirements. Consequently, the relevant environment is the specific subset of the operational environment that is required to demonstrate critical "at risk" aspects of the final product performance in an operational environment. It is an environment that focuses specifically on "stressing" the technology advance in question.

Operational Environment: The environment in which the final product will be operated. In the case of space flight hardware/software, it is space. In the case of ground-based or airborne systems that are not directed toward space flight, it will be the environments defined by the scope of operations. For software, the environment will be defined by the operational platform.

Reference: NPR 7120.8 - February 05, 2008