Translational Research Institute for Space Health
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Translational Research Institute for Space Health (TRISH)

Brain State Assessment Tool (B-SAT)

Request for Proposals (RFP)

Release Date: September 4, 2024
Pre-Proposal Briefing: September 16, 2024 at 3 pm ET
Proposals Due: October 15, 2024, 11:59 pm ET
Estimated Selection Announcement: January 2025
Anticipated Start Date: March 2025

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A. About TRISH

The Translational Research Institute for Space Health (TRISH) is an applied space health research catalyst supported by the NASA Human Research Program (HRP) that funds disruptive, high-impact scientific studies and technologies to equip astronauts for space exploration. TRISH relentlessly pursues and funds novel research to deliver high-impact scientific and technological solutions that advance space health and help humans thrive wherever they explore, in space or on Earth.

TRISH support focuses on maintaining and improving human health in space. Since its inception, TRISH has funded over 150 projects that have advanced medical science for both our world and the worlds that lay beyond. As the only institute dedicated to promoting space health discoveries and technologies, TRISH is accelerating research that will benefit all people with a future in deep space and here on Earth.

Founded on October 1, 2016, TRISH works in partnership with NASA's HRP through Cooperative Agreement NNX16AO69A. Led by Baylor College of Medicine's Center for Space Medicine, TRISH's consortium leverages partnerships with the California Institute of Technology (Caltech) and the Massachusetts Institute of Technology (MIT). More details on TRISH, its mission and funding opportunities can be found at https://www.bcm.edu/spacehealth.

TRISH recognizes the need to encourage innovation among the space health community, to attract cutting-edge technologies and high-risk, high-reward ideas, and to translate existing technologies for use in spaceflight. Our primary goal is to help mitigate NASA HRP's Human Research Roadmap (HRR) Risks and enable future Artemis missions and deep space exploration.

B. Opportunity

Maintaining high levels of performance is crucial for successful space missions and for successful execution of duties during spaceflight. In the space environment, various stressors such as microgravity and radiation have a strong potential to negatively impact performance readiness, even without the astronaut's awareness. This is a major unsolved issue, since even small errors in performance, or a slight decline in the ability to focus, make calculations, or solve problems can have serious consequences and can potentially cost lives.

There are at least two fundamental classes of behavioral assessments to consider; one focuses on evaluating cognitive capabilities. For this, NASA has long used the Windows Spaceflight Cognitive Assessment Tool (WinSCAT), a computer-based, self-administered battery of five cognitive assessment tests derived from the larger military's Automated Neuropsychological Assessment Metrics (ANAM) test battery. In the same class, NASA has also more recently investigated the Cognition Test Battery, which consists of 10 tests and similarly takes 15-20 minutes to complete. Both of these tools provide a broad assessment of multiple cognitive capabilities and allow evaluation over time. A significant challenge with such batteries is that they require the user/crew member to stop what they are doing, find a suitable location, and take a test. This approach is fundamentally incompatible with a variety of operational use cases—in particular when one wants to assess readiness-to-perform, or to monitor a crew member's cognitive state in real time, during operational tasks, for on-the-fly decision making. For these

operational settings, a different approach is necessary—specifically, a tool that can assess behavioral or readiness states seamlessly without interrupting ongoing operations.

The second class of assessments are those that evaluate operational readiness-to-perform. WinSCAT is used in this capacity to a limited degree, for example after a known toxic exposure. However, as mentioned, this is only possible if the astronaut can pause their current activities to take the test. In contrast, an ideal readiness assessment is one that can be used in real-time, both to help the astronaut self-monitor their current state (and limits), as well as aiding the astronaut and/or control personnel in making go/no-go decisions during critical operations. One example would be continuous state-assessment *during* a spacewalk, where stopping to take a test is simply not an option, while understanding the astronaut's readiness to perform (or continue performing) is still key information.

Importantly, these two classes of assessments—cognitive and readiness—are not mutually exclusive. For example, readiness assessments can provide information about attention, response time, and potentially even decision making or other cognitive capabilities. Such tools are particularly useful, as they can simultaneously provide real-time information about readiness-to-perform as well as cognitive performance capabilities.

Today, operational assessments of "readiness" are most commonly performed in real time by mission control, based on input from the astronaut—similar to an "over-the-shoulder" assessment. This approach involves a judgement call made by a trained medical operations professional on the ground. Such a concept of operations will be seriously challenged by the Earth-independent operations that will be needed for late Artemis missions to Mars, due to the potentially lengthy communications delays involved. Thus, new strategies are needed to help enable crew members to self-determine their readiness to perform (or continue performing) a variety of mission-critical tasks.

Goal for this Request for Proposal (RFP)

TRISH seeks an operational tool (software and/or hardware) that can assess an astronaut's readiness-to-perform and provide such information on-the-fly to help empower decision-making during mission-relevant activities.

The goal of this RFP is to **procure an assessment tool capable of evaluating an individual's current readiness-to-perform**. We anticipate this assessment tool will involve **non-disruptive** and **minimally-obtrusive** sensors to monitor the users' state. The assessment should consider multiple factors, including but not limited to attention, fatigue, workload, stress, and drowsiness. Additional metrics—including those that may assess cognitive status—would further enhance the tool's usefulness.

This tool, which must meet criteria listed below, will deliver an on-the-fly assessment of this state while the crew member performs ongoing mission activities (*i.e.*, without requiring the user to interrupt their current activities to take a test). The tool must provide easily understood and ideally continuous output to help identify changes in the individual's state over time. This data should be available to the user and/or support personnel to enable improved decision-making. Such information could, for example, aid mission directors in task management and real-time planning, or could even be used directly by astronauts themselves, allowing them to track and manage their own behavioral resources (*e.g.*, knowing when they should slow down to avoid premature burnout). Ideally, the tool would provide insights and recommendations to help enhance the user's performance and mitigate potential health and safety risks.

TRISH anticipates that such a tool would be beneficial not only to astronauts on space missions but also to workers in a variety of other extreme environments or intense and high-consequence work settings. Potential users of the tool could include commercial spaceflight participants, governmental employees including professional astronauts, commercial space providers, or analog environment participants, such as the Antarctic winter-over crews.

The overarching goal is to enhance the well-being and performance of users engaged in critical tasks within demanding environments. By enabling greater independence and facilitating optimal performance, this readiness assessment tool can help users perform at their fullest capabilities.

1. Benefits to working with TRISH

TRISH's mission is to look for innovative ways to address space health challenges. Our selected partner in this endeavor will pivot an existing tool for assessing an individual's behavioral state which can provide actionable rapid insights that are capable of use by crew during spaceflight or spaceflight analogs. TRISH will publicly recognize our partner and provide outreach to a new community and burgeoning space sector. The nascent space industry has already captured the eye of the public and will remain in the public sphere as commercial space missions continue.

TRISH benefits your company/institution by:

- Providing access to commercial spaceflight including flight certification;
- Providing a path to future NASA and other government or industry opportunities;
- Increasing credibility within science and space health communities; and
- Increasing company and product visibility worldwide.

2. Required Characteristics

The list of requirements below serves as a guideline for proposing teams, outlining the key aspects that the proposed readiness assessment tool must fulfill:

1. The tool must provide feedback that is relevant to self-assessment and readiness-to-perform (*e.g.*, **attention/vigilance, mental alertness, focus, stress level, *etc.***).
2. The tool shall utilize **non-disruptive and minimally-obtrusive assessment methods**. That means that sensors will not be bulky or require long setup times, and the user will not be required to stop their current activities to perform a specific task. Possibilities include (but are not limited to): low-profile or stick-on sensors, stand-off sensors, and potentially embedded assessment techniques.
3. The tool shall be broadly suitable for use with a wide range of crew members. Expected users would include diverse commercial spaceflight participants on a single flight, frequent flyers (2+ flights), and employees of government agencies (*e.g.*, professional astronauts) or commercial spaceflight providers (who may spend extended periods of time in a space station, as well as having multiple flights over time), as well as Antarctic winter-over crews and participants in other ground-based spaceflight analogs.
4. The tool shall accommodate a diverse range of spaceflight participants, including multiple countries, cultures, and languages.
5. It must be possible for the tool to provide on-the-fly **feedback to the crewmember** and/or support personnel (*e.g.*, crew medical officer, mission control): during task performance, at the completion of a specific task, and/or periodically throughout a monitoring session.
6. Given that various spaceflight providers have certified different computing platforms, the tool shall be compatible with a diverse range of presentation platforms and hardware and

software systems. This includes seamless integration with popular operating systems such as iOS, Android, and Windows.

7. The tool shall be capable of operating in both offline and online modes. In the offline mode, it must not require cloud access to acquire and/or analyze the data. However, in the online mode, it should allow for on-the-fly data uploads to a suitably configured server.
8. Feedback and assessment should be flexible, for example allowing comparisons to the individual's baseline testing data as well as comparisons to a relevant population average.
9. The tool shall provide a reasonable way to **identify deviations in an individual's readiness to perform** (as measured by the tool), relative to their own baseline, over extended durations and through repeated testing.
10. To the extent possible, the tool shall minimize setup-time, mass, power, volume, consumables, and data requirements.
11. The tool shall be deployable in a spaceflight or a spaceflight-relevant analog **within six months** of the start of the award. Proposers must provide clear evidence of the tool's current state of deployment and/or timeline to deployment.
12. The tool shall incorporate "on-the-fly" calibration capabilities, enabling seamless adjustments without the need for a cumbersome pre-use calibration process. This will facilitate continuous monitoring, ease of use, and longitudinal assessments.

3. Preferred Characteristics

In addition to the requirements listed above, it is also beneficial to consider the following properties that, while not mandatory, could greatly enhance the functionality and user experience of the assessment tool.

1. The tool's measures should be stable across continuous or repeated monitoring sessions (users should not exhibit changing outcome measures merely caused by exposure to the system; *i.e*., no learning or orientation effects). If such exposure-related effects exist, there should be adequate methods to account for them.
2. It is anticipated that the tool will be broadly usable by relevant user groups such as spaceflight analog providers, commercial space providers, and NASA.
3. Open-source approaches and open licensing models for academic researchers or space operational professionals in government or industry are encouraged.
4. Ideally, the tool should be able to compare its results with – and/or have been validated against – measures from one or more clinical/research standardized cognitive or functional assessment tools.

4. Reasons for Non-Review

Failure to address the specific needs outlined in the RFP will render the proposed tool unsuitable for funding and may result in the proposal being declined without review. Some reasons for non-review include:

1. Standalone tests that require the user to stop what they are doing.
2. Tools that require excessive mass, power, volume, or setup time.
3. Tools that cannot be deployed **within six months** or less of the start of the award.

5. Example Use Cases

The applications below are examples of how the proposed monitoring tool might be deployed in operational settings. The list is not meant to be fully inclusive but intended to convey possible use-cases. In general, the goal is to provide on-the-fly monitoring and feedback to the crew member(s) and/or mission controllers to improve real-time mission decision-making for health, safety, and performance optimization. For example:

- If the monitoring tool identifies rapidly increasing workload or fatigue during a spacewalk, operations personnel (or the astronaut) may decide to schedule a short break or have spacewalkers work jointly or swap tasks.
- If the tool reveals steadily increasing stress levels over days or weeks, the interactions between the crew member and mission control may be altered to reduce that stress.
- Indications of decreasing attention while performing a long, critical, but boring task might call for more oversight or double-checking of performance.
- If the tool reveals high levels of drowsiness, this might trigger the deployment of a suitable countermeasure (*e.g.*, caffeine, alerting tones or vibrations, or high-tempo music). In the future (*i.e.*, not necessarily part of this project), countermeasures could even be coupled directly to the monitoring tool (*i.e.*, closed loop) and hence provided automatically.

6. Agreement Information

Following selection, TRISH will arrange a service agreement. It is anticipated that this agreement will begin by March 2025.

The duration for this contract is one year. Follow-on agreements may be available contingent upon satisfactory progress, performance review, and availability of funds. It is hoped that this capability will set a standard for spaceflight health monitoring and research as well as potentially support low resource or even home healthcare on Earth.

C. Eligibility

All categories of United States (U.S.) institutions and companies are eligible to submit proposals. Principal Investigators (PIs) may collaborate with universities, the private sector, and federal, state, and local government laboratories. In all such arrangements, the applying entity is expected to be responsible for administering the project according to the management approach presented in the proposal. For our policy on international proposers and institutions, please refer to the FAQ and FAR Supplement.

D. Application and Submission Information

Proposers considering applying should register in the system for award management (SAM) database (www.sam.gov) to ensure ability to receive funds if selected. It is recommended that new registrations on SAM are started as soon as possible in advance of any due dates to allow sufficient time to complete SAM registration before registering in the TRISH Grant Research Integrated Dashboard (GRID - https://spacehealth.bcm.edu/). **Any proposals not submitted through the TRISH GRID and sent directly to TRISH by email, fax, or other means will not be considered.** Format and template will be available on GRID and are detailed below.

1. TRISH Proposal Submission Website

The deadline for proposals submission is October 15, 2024 by 11:59 pm Eastern Time (ET). Proposals received after the deadline will not be reviewed.

To register on TRISH GRID:

- Go to https://spacehealth.bcm.edu/ and follow these instructions.
- Fill in the requested information and click the “Create Account” button at the bottom of the page.
- Verify your email via the “Send verification link” button at the top right. Email verification is required to submit an application. You will receive an email from noreply@smapply.io

to “Confirm Your Email Address.” The website will state that your email address has been verified.
- Click the “Continue” button.

To submit an application:
- After you have registered and verified your email, login to your GRID account.
- Click “Programs” in the top navigation bar.
- Select “Brain State Assessment Tool” and click “Apply.”
- Complete the tasks listed under “Your tasks.” When all sections are marked as complete, you will be able to review and submit your proposal.

Requests for assistance in accessing and/or using this website may be directed by email to spacehealth-info@bcm.edu. Any emails from the GRID will come from noreply@smapply.io. Please check your Spam folder if you are not receiving emails from the GRID.

2. Pre-Proposal Briefing

A pre-proposal virtual briefing will be held on Monday, September 16th at 3 pm ET.

The pre-proposal briefing will provide interested proposers with the opportunity to ask pre-submitted questions in order to better understand the intent, scope of work, and selection criteria. This meeting will be open to the public and accessible with an internet connection.
Questions submitted in writing to https://trish.my.site.com/s/concierge (click “Open Solicitation” from the drop-down menu) at least 24 hours in advance of the scheduled virtual meeting will be addressed. Questions submitted after 24 hours in advance of the scheduled virtual meeting may not be addressed.

Please find the link to join the pre-proposal virtual briefing below:
https://bcm.zoom.us/webinar/register/WN_e8GQI3tiTOe04Uj7Hqppmw#/registration

3. Proposal Requirements

Proposals that do not conform to these requirements may be declared noncompliant and declined without review.

a) Application Form

All proposals **must be** in the format given below. Key project information must include:
- Principal investigator (PI)
- Contact information (email, phone, mailing address)
- Proposing institution
- Team members and/or collaborating institutions (if any)
- Project title
- Proposed start/end dates
- Technical point of contact
- Authorized organizational representative, with contact information
- Total funds requested

Proposals are prepared by the principal investigator (PI) and submitted by the PI or an authorized representative from the PI’s company/institution. TRISH does not require institutional sign-off at the time of proposal submission, but PIs must follow their home organization’s institutional policies. **Proposals will not be accepted after the listed due dates.**

b) Project Description

The maximum page limit for the Project Description is 8 pages, using 8 ½ by 11-inch pages, a standard 12-point font and one-inch margins. The page limit includes all figures, tables, and charts (references are not included in the page limit). Figure and Table captions can use a 10-point font. The submission of appendices along with the proposal is strongly discouraged and reviewers will not be required to review any extraneous materials.

The Project Description should include the following required sections:

- Background: This should include the state-of-the-art relevant to the proposed area.
- Description of the tool: This should include a clear explanation of how the tool operates, what it measures, how it is deployed, and how it will meet the needs outlined in this RFP. Additionally, it should include a description of the hardware and software needed to support the tool and include the tool's current setup-time, mass, power, volume, consumables, and data storage and processing requirements.
- Past performance of the tool/preliminary data: This section should include clear evidence of the tool's prior performance in use, ideally in one or more settings discussed in the example use cases section. Beyond the use in spaceflight or a spaceflight analog, this could include military, sports or other relevant operational settings. This section should also include validation data comparing the tool's measures to existing cognitive/functional assessments or other standard tools.
- Milestones, Deliverables, and Timeline: Proposals should clearly describe the expected milestones, deliverables (consistent with the requirements listed above) and timeline (in table format). This section should clearly explain how the tool will achieve compatibility with spaceflight or other low-resource environments. The proposing team should clearly describe any changes to existing hardware or software that will be needed to translate their tool to the following non-exhaustive list of spaceflight needs: access to platforms that host the tool and data (if proprietary or closed), transition to platforms that are approved for spaceflight or more widely available, and optimization for mass, power, volume, and crew time. Where possible open-sourced or accessible technologies are encouraged for improved flexibility and better usability. Proposers must provide clear evidence of the tool's current state of deployment and/or timeline to deployment. Include a description of any planned validation studies as well. Proposals should of course explain the potential challenges for the project and mitigation strategies.

References must be included and support the scientific/technical validity of the proposed research (no page limit).

c) Team Member Resume, Biosketch, or Track Record

The proposal should describe the participants who will have critical management or technical roles including their qualifications, capabilities, and experience. These team members, defined as devoting ≥10% of their effort, must provide a biographical sketch or track record (NASA Proposer's Guide). See the "Categories of Proposal Personnel" section on page 39 of the NASA Proposer's Guide for more details on team members. Although TRISH does not require a specific biosketch format, the NIH biosketch template is provided here. Each resume or track-record must not exceed the 2-page limit.

d) Description of Institution/Organization, Resources, and Equipment

This section must describe the company/institution's current activities or projects, relevant partnerships and collaborations, and any features that differentiate the company/institution. It must also describe any existing facilities and equipment that are required for the proposed project and whether the team already has access or how they plan to gain access (no page limit).

e) Budget Form and Budget Justification

There is no specified budget limit outlined in the RFP. TRISH will assess competitive and cost-effective pricing during the programmatic review process.

Proposers must complete the TRISH budget form posted alongside the RFP.

The proposal budget is made up of two parts: the budget details and the budget justification. Each proposal shall provide a proposal budget for the proposed effort that is supported by an appropriate budget justification. There must be a direct parallel between the items described in the budget justification (*e.g.*, written description of planned purchase), those given in the budget details (actual estimates of costs, in whole dollars, for the purchase) and the figures entered in the proposal cover page and TRISH GRID forms. The budget details are the actual or estimated costs, in whole dollars, that correspond with to the budget narrative. In this section, the proposer must break out the costs, as needed.

The proposer must break out the cost for each team member's efforts individually.

- All proposers are required to submit a thoroughly detailed cost breakdown.
- All proposed costs must be directly related to the proposed project and scope of work.
- All proposed costs must be allowable, allocable, and reasonable.

The budget justification must **not** include any information that belongs in the Project Description. It must:

- Cite the basis of estimate and rationale for each proposed component of cost, including direct labor, subcontracts/subawards, consultants, other direct costs (including travel), and facilities and equipment;
- Include costs to travel to annual NASA Human Research Program Investigators Workshop for each year.

The Budget and Budget Justification section length is as needed to properly understand the expected costs for the funded work.

TRISH awards are total costs (direct + indirect costs, if applicable). TRISH caps indirect rates at negotiated federal rates.

Additionally, TRISH welcomes but does not require cost-sharing above the budgeted amount. See examples of cost-sharing in the Frequently Asked Questions (FAQ) posted alongside this RFP.

f) Terms and Conditions

The Baylor Master Service Agreement and Business Associate Agreement are provided alongside the RFP. Utilizing the basis of this agreement will allow for expedited legal review following selection.

The terms and conditions section should include the following:

- Software usage terms and conditions;
- Software renewal and termination options;

- Software performance and availability expectations;
- Details of support and services included in the software such as, but not limited to: "customer success" dedicated resource(s), issue resolution/escalation service level agreements (SLA's), implementation assistance/resources, access to training guides/materials, and inclusion in user communities; and
- Software Roadmap of upcoming features, enhancements, and upgrades planned in the next year which might be applicable to this effort.

A price competitive licensing plan will be considered during the proposal's review.

g) Letters of Collaboration and Resource Support

Every person who is expected to have a significant role (*i.e.*, assigned responsibilities appropriate to a defined category of personnel), regardless of their organizational affiliation, in the execution of the proposed effort, or who will be receiving payment for their contributions, should be identified by being added as a Collaborator on the proposal.

In GRID, PIs should click on the "Add Collaborator" button on the application's first page. Adding a collaborator within the GRID application will generate an invitation to the individual whom has been identified, facilitating account creation in GRID. Creation and verification of a GRID account from this email invitation will indicate collaborator acceptance.

Letters of resource support are only required if there is a facility or resource essential to the proposal not under the control of a Proposal Team member. Submitting the statement of commitment, the team member confirms that any facilities or resources needed for the proposal are readily available for the proposal team members(s) requiring its use. Appropriate institutional commitment to the program includes the provision of adequate staff, facilities, and educational resources that can contribute to the planned program.

TRISH funding through this TRISH Research Announcement may not be used to support research efforts by non-U.S. organizations at any level; however, the direct purchase of supplies and/or services that do not constitute research from non-U.S. sources by U.S. award recipients is permitted. Additional information on international participation can be referenced in the NASA FAR Supplement. If the proposal involves a non-U.S. organization, signed letter(s) of certification must be included that verifies that funding for their portion of the project will be provided by a responsible organization(s) or government agency(ies) should the proposal be selected by TRISH. Letters must be signed by an official at the organization or agency authorized to make such a commitment.

h) Special Matters (specific information on human subjects protocol approval, if applicable)

For proposals using human subjects, assurance of compliance with human subjects and use provisions is required.

TRISH utilizes just-in-time practices for approval of the use of human subjects. For proposals employing human subjects, assurance of compliance with human subjects and use provisions is requiring within 90 days of notice of award. For such proposals, please state whether for the Institutional Review Board (IRB) is "pending," "approved," or explain why it is not required. If the IRB certification is already approved at proposal submission, attach a copy of the certification as part of the proposal upload. This will not be considered part of the Project Description.

After award, a statement must be provided to TRISH from the proposing institution that identifies the selected proposal by name and certifies that the proposed work will meet all federal and local requirements for human subjects care and use. This includes relevant documentation of IRB approval.

TRISH will require current IRB certification prior to commencement of the funding.

Policies for the protection of human subjects in NASA-sponsored research projects are described in the NASA Policy Directive (NPD) 7100.8G "Protection of Human Research Subjects" (http://nodis3.gsfc.nasa.gov/displayDir.cfm?t=NPD&c=7100&s=8E).

i) Instructions for Preparation of Proposals

Section	Required?	Page Limit	Location
Table of Contents	Optional	As needed	
Project Description	Yes	8 pages	D.3.b
References and Citations	Yes	As needed	
Team Member Resume, Biosketch, or Track Record	Yes	As needed (2 pages/biosketch)	D.3.c
Description of Institution/Organization, Resources, and Equipment	Yes	As needed	D.3.d
Budget Form and Budget Justification	Yes	As needed	D.3.e
Terms and Conditions	Yes	As needed	D.3.f
Letters of Collaboration and Resource Support	Yes, if resources or facilities are not directly under PI control	As needed	D.3.g
Special Matters (specific information on human subjects protocol approval)	Yes, if applicable/available	As needed	D.3.h

Instructions for Preparation of Proposals

E. Review and Selection

1. Compliance Matrix

All proposals must comply with the general requirements described below. Upon receipt, proposals will be reviewed for compliance with these requirements including:

- **Proposals will not be accepted after the due dates and times listed in this RFP.**
- The proposal project description must be no more than 8 pages in length (including all tables and figures).
- Submission of an appropriate and justified budget.
- A description that provides track record of delivering research products and outcomes from previously supported research.
- Submission of all other appropriate information as required in this document.

Note: At TRISH's discretion, non-compliant proposals may be withdrawn from the review process and declined without further review. Excess material beyond the page limits specified in this document will be redacted and the PI notified. Compliant proposals submitted in response to this RFP will undergo an intrinsic scientific or technical merit review. Only those proposals most highly rated in the merit review process will undergo additional reviews for programmatic alignment and cost; however, at the TRISH science management's discretion, proposals with lower scores may also undergo additional reviews if they can be re-scoped and meet specific programmatic needs.

2. TRISH Initial Screening

All compliant proposals will be initially screened by the TRISH Science Office for availability of funds, programmatic relevance, and compliance with this RFP for the following attributes:

- Current maturity state of the tool;
- Unobtrusive and rapid assessment nature of the tool;
- Inclusion of preliminary data to support the use of the desired product or technology in spaceflight;
- Appropriateness of budget, timeline, and technical feasibility;
- Alignment of the desired product or technology with the TRISH mission; and
- Eligibility for federal funding support (see Eligibility Criteria for details).

For proposals declined during initial review the proposer will receive a notification by email indicating the proposal is not going to be reviewed.

3. Scientific and Programmatic Review

Proposals that are within scope of the TRISH mission and have programmatic relevance will be considered for technical and scientific merit review. It is the policy of TRISH to ensure impartial, equitable, and comprehensive proposal evaluations based on the evaluation criteria for scientific and technical merit, potential contribution, relevance to TRISH mission, and cost.

The overall evaluation process for proposals submitted in response to this RFP will include a First-Tier scientific merit review and a Second-Tier programmatic alignment and operational relevance review. The **First-Tier Review** will be a merit review conducted by a panel composed of scientific or technical subject matter experts. Proposals that are highly rated in the merit review process will undergo a **Second-Tier Review** for programmatic alignment and operational alignment. The Second-Tier review will be conducted by TRISH science management and overseen by TRISH's Chief Scientific Officer.

All of the following criteria will be used in determining the merit score:

Significance

Does the tool meet the specific needs outlined in the RFP? Does it fit with TRISH's overall mission and goals? Does it support future deep space exploration and enable a future crew to function more autonomously?

Proposing Team and Management

Have the proposing company/institution and individuals assigned to the effort demonstrated experience in completing similar projects on time and within budget?

Approach

Does the proposed tool have the potential to meet the needs as specified in the RFP? Does the proposed approach provide an unobtrusive and rapid assessment of behavioral/readiness status

without requiring a user to stop their current activity? Is there evidence that the proposed platform and management team will have the flexibility and ability to incorporate future capabilities as the need may arise? Is the proposed tool appropriate for the state of knowledge, current capabilities, and resources? Does the applicant acknowledge potential problem areas and consider contingency plans?

Deliverables and Value
Are the deliverables well defined and aligned with TRISH's requested deliverables? Are there appropriate milestones that ensure timely completion? Does the applicant have adequate resources to provide logistical and administrative assistance as well as operational support in a timely manner to achieve the deliverables? Will the tool be deployable in a spaceflight or a spaceflight-relevant analog within six months of the start of the award?

Efficient Usage of Requested Budget (non-merit)
Does the requested budget reflect the requirements? Is the bid competitive? Are there items that the proposer is contributing that will be "cost shared" (free of charge) that would add value to the bid?

F. Summary of Key information

Review considerations	TRISH will consider competitive and efficient cost during programmatic review
Duration	12 months
Pre-Proposal Briefing	September 16, 2024 at 3 pm ET
Deadline for submission of proposals	October 15, 2024 at 11:59 pm ET
Selection Announcement	January 2025
Submission Medium	Electronic proposal submission through the TRISH GRID is required
Web site for submission of proposal via TRISH GRID	https://spacehealth.bcm.edu/
TRISH point of contact concerning this call for proposals	https://trish.my.site.com/s/concierge (click "Open Solicitation" from the drop-down menu)