

NOTICE OF FUNDING OPPORTUNITY (NOFO)
NIST Public Safety Innovation Accelerator Program – Artificial Intelligence for IoT Information Prize Competition

EXECUTIVE SUMMARY

- **Federal Agency Name:** National Institute of Standards and Technology (NIST), United States Department of Commerce (DoC)
- **Funding Opportunity Title:** NIST Public Safety Innovation Accelerator Program – Artificial Intelligence for IoT Information Prize Competition
- **Announcement Type:** Initial
- **Funding Opportunity Number:** 2021-NIST-AI3-01
- **Assistance Listing (CFDA Number):** 11.609, Measurement and Engineering Research and Standards
- **Dates:** Full Applications must be received at [Grants.gov](https://www.Grants.gov) no later than 11:59 p.m. Eastern Time, July 26, 2021. Applications received after this deadline will not be reviewed or considered. Paper applications will not be accepted.

Applicants should be aware, and factor in their application submission planning, that the Grants.gov system closes periodically for routine maintenance. Applicants should visit [Grants.gov](https://www.Grants.gov) for information about any scheduled closures.

NIST expects to complete its review, selection of successful applicants, and award processing by October 2021. NIST expects the earliest start date for awards under this NOFO to be November 2021.

Applicants are strongly urged to read Section IV.2.b., Attachment of Required Documents, with great attention. Applicants should carefully follow the instructions and recommendations regarding attachments and use the Download Submitted Forms and Applications feature on www.Grants.gov to check that all required attachments were contained in their submission. Applications submitted without the required documents will not pass the Initial Administrative Review.

When developing the submission timeline, please keep in mind that: (1) all applicants are required to have current registrations in the electronic System for Award Management (SAM.gov) and Grants.gov; (2) the free annual registration process in SAM.gov generally takes between three and five business days but can take more than three weeks; and (3) applicants will receive e-mail notifications over a period of up to two business days as the application moves

through intermediate systems before the applicant learns via a validation or rejection notification whether NIST has received the application. (See [Grants.gov](https://www.grants.gov) for full information on application and notification through Grants.gov). Please note that a federal assistance award cannot be issued if the designated recipient's registration in SAM.gov is not current at the time of the award.

- **Application Submission Address:** Applications must be submitted using Grants.gov.
- **Funding Opportunity Description:** The NIST's Public Safety Innovation Accelerator Program (PSIAP) is seeking applications from eligible applicants for activities to collaborate with technical experts from NIST, industry/academia, and public safety in developing and implementing the Artificial Intelligence for IoT Information (AI3) Prize Competition. The AI3 Prize Competition aims to utilize artificial intelligence learning techniques to make disparate situational awareness data sources actionable for first responders. The AI3 Prize Competition seeks to attract experts and innovators from industry and academia to focus on this difficult challenge by offering a monetary prize purse and an opportunity to help public safety solve this overarching problem. The AI3 Prize Competition award will include all aspects of prize development, implementation, and post-competition publicity and evaluation of the project impact.
- **Anticipated Amounts:** In Fiscal Year 2022 (FY22), NIST anticipates funding 1 award for approximately \$1,200,000 with a project performance period of up to 2 years.
- **Funding Instrument:** Cooperative Agreement
- **Eligibility:** Eligibility for all programs listed in this NOFO is open to U.S. non-Federal entities. Eligible applicants include: Institutions of higher education, non-profit organizations, and for-profit organizations organized in the United States. NIST will not be accepting proposals from foreign entities. Please note that individuals and unincorporated sole proprietors are not considered "non-Federal entities" and are not eligible to apply under this NOFO. Although Federal entities are not eligible to receive funding under this NOFO, they may participate as unfunded collaborators.
- **Cost Sharing Requirements:** Non-federal cost share is not required for awards issued pursuant to this NOFO.
- **Public Website, Frequently Asked Questions (FAQs) and Webinar:** NIST has a public website (www.nist.gov/ctl/pscr/funding-opportunities/grants-and-cooperative-agreements/psiap-artificial-intelligence-iot) that provides information pertaining to this Funding Opportunity. NIST anticipates that a "Frequently Asked

Questions” section or other resource materials will be maintained and updated on the website as needed to provide additional guidance and clarifying information that may arise related to this Funding Opportunity. Any amendments to this NOFO will be announced through [Grants.gov](https://www.grants.gov).

Applicants must submit all questions pertaining to this funding opportunity via e-mail to pscr@nist.gov with ‘AI3’ in the subject line. Questions submitted to NIST may be posted on [pscr.gov](https://www.pscr.gov). Alternatively, applicants may ask questions during the informational public webinar as described in the next paragraph.

NIST will host a webinar to provide general information regarding this NOFO, offer general guidance on preparing applications, and answer questions. Scheduling details about the webinar will be available at www.nist.gov/ctl/pscr/funding-opportunities/grants-and-cooperative-agreements/psiap-artificial-intelligence-iot. There is no cost to attend the webinar, but participants must register in advance. Participation in the webinar is not required and will not be considered in the application review and selection process.

General questions about this opportunity including eligibility requirements, the review and selection process, and the general characteristics of a competitive application may be addressed during the webinar or by e-mail to pscr@nist.gov with ‘AI3’ in the subject line.

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FULL ANNOUNCEMENT TEXT

I. Program Description

The statutory authority for the NIST PSIAP is 15 U.S.C. § 3706 and 47 U.S.C. § 1443. This competition also incorporates NIST’s prize competition authority under the America COMPETES Reauthorization Act of 2010, 15 U.S.C. § 3719, as amended (“America COMPETES Act”).

The mission of the NIST Public Safety Communications Research (PSCR) Division is to research, develop, and test technologies to improve first responder

communications and operations. PSCR created PSIAP to stimulate external research and development (R&D) activities addressing critical technology gaps identified by stakeholders and to build a public-safety-focused R&D ecosystem with long-lasting impact.

Currently, first responders rely heavily on relayed voice communications and their own observations to maintain situational awareness during a mission critical event. As network connectivity becomes ubiquitous, the opportunities to use technology to enhance first responder situational awareness are also increasing. Due to the highly mobile and intense nature of first responder activities, small form factor sensors are an obvious choice for transmitting certain types of situational awareness data. Although there are currently a great number of these types of devices (also referred to as “Internet of Things” or IoT devices) on the market, the current commercial landscape results in the data being proprietary to a specific manufacturer, and viewable primarily via that manufacturer’s intended dashboard.

In an ideal situation, first responders will have the option to select their desired hardware in conjunction with the user interface that best suits their needs in order to stay safe during hazardous situations. Ideally, this would be accomplished without additional manual system integration between the data generating sensors and the data visualization platforms. This manual system integration, although widely used today, utilizes a great deal of resources—including personnel and financial resources—to build an overlay that will allow data transfer between two specific platforms. If changes are made to either platform, the integration must be modified.

This program seeks to implement a prize competition that will develop technology to bridge the incompatibility between sensor hardware outputs and visualization system inputs by creating an artificial intelligence (AI) platform or middleware solution that can identify, categorize, and distribute data from multiple types of IoT devices that could be used for a first responder’s situational awareness.

The PSIAP is, therefore, seeking to enter into a cooperative agreement with an organization possessing expertise in prize competitions to serve as a Prize Administrator (PA). This PA will collaborate with technical experts from NIST, industry/academia, and public safety in developing the Artificial Intelligence for IoT Information (AI3) Prize Competition to address the problem above. The AI3 Prize Competition aims to develop software and hardware components that can be integrated into an end-to-end middleware solution that will ingest, evaluate, and categorize data from multiple IoT devices with different output data formats. The solution should be capable of recognizing existing sensor data elements and incorporating previously unknown data elements based on contextual analysis. The aggregated output data will be utilized to improve individual situational

awareness for first responders as a communal resource capable of supporting multiple user interfaces and user experiences. The PSIAP seeks to attract experts and innovators from all areas to focus on this difficult challenge by offering a monetary prize purse.

1. Background Information

Throughout the U.S. today, there are numerous examples of how information analysis is being used to improve our lifestyle. From utilizing networked energy meters to reduce the amount of energy consumption in a city to using artificial intelligence to scan for anomalies in an MRI, the results that can be achieved through the automated analysis of data can be more accurate and faster than those driven solely by human capacity.

However, even as sensors become integrated into devices across many sectors of industry, it is difficult to find devices that meet the diverse situational awareness needs of first responders. A first responder often requires information that spans many traditional IoT market siloes. Information traditionally used by healthcare, industry, and household commercial applications could all be deemed important depending on the first responder's mission. First responders have neither the budget nor the personnel required to maintain the systems that would be needed to supply this data. Further, even if several systems could be utilized together, accessing and interpreting data from different platforms would be time consuming and potentially overwhelming to an individual who needs to focus their attention on life-saving efforts.

Although data standards are a topic of interest in the IoT landscape and there are several standards development organizations (SDO) working on these efforts, there are currently few benefits to implementation as none of these standards are widely used in commercial industry. Instead, sensor system manufacturers rely on proprietary data formatting, transmitted with secure connectivity to a cloud-based or otherwise secured server for analysis and storage. If the manufacturer feels that third party data accessibility is beneficial, they will make an Application Programming Interface (API) accessible to external developers that wish to interact with the allowed elements of the system's data. From there, the onus of the integration work is put on the external developer to determine how their platform will interact with the API, and to ensure that the integration is kept up to date. In examining the first responder model, the amount of effort required to consolidate disparate types of data from multiple sensor systems into a single dashboard would be impossible to maintain given their staffing and budget limitations.

Additionally, when responding to large-scale events, multiple public safety agencies must be able to communicate with each other even though their equipment may be manufactured by different companies or be otherwise

incompatible. The ability to have a secondary unit arrive at the scene and be able to immediately integrate their sensor information would greatly increase the efficiency and the safety of the individuals involved.

An example scenario for the AI3 Prize Competition is the hypothetical occurrence of a city level disaster event, such as a building explosion. Fire, law enforcement and EMS officials from City A have arrived to address the fires, direct citizens to safety, and treat the injured. As the disaster unfolds, the city management [incident command] realizes that additional help will be needed and calls for mutual aid from neighboring cities B and C. Cities A, B, and C all have personal area monitoring for their responders, but from differing systems. Additionally, responders from mutual aid cities B and C require environmental information from City A. Utilizing the output from an AI3 component, either responder group would be able to direct their system to the appropriate data source, and the AI3 component would be able to ingest the unknown data, evaluate it based on metadata or other contextual information and categorize the data appropriately so that it could be utilized on a situational awareness platform, and each city could have visibility to the actions of the others without manual sensor integration.

2. Overview

The Overview section is broken up into two parts: “Goals,” which describes the overall goals of the PSIAP NOFO; and “Prize Competition,” which outlines specific requirements for the final prize competition output.

A. Goals

The goal of this PSIAP NOFO is for the award recipient to implement the AI3 Prize Competition and obtain innovative solutions to the question: How can unidentified situational awareness sensor data be identified and classified so that previously unknown data can be integrated and used by public safety in real time?

The PA should implement a competition for contestants to develop a platform that can use current sensor information to learn how to categorize data from unknown sensor platforms.

For the information to be beneficial to a first responder’s contextual awareness, the identification and classification of the data should be specific enough that a situational awareness platform or similar tool used by first responders would be able to interpret and properly display the data once identified with all relevant associated information (e.g. timestamp, location, data source and units of measurement). A first responder would also need to

be able to utilize that information to inform their actions in a mission-critical event.

Ideally, sensor data classification would take place in real-time or near real-time, so that streaming data could be successfully ingested and interpreted without significantly affecting the timeliness of the information when accessed in the field. Rather than utilizing all public safety data housed within a smart city, the prize competition may focus on utilizing historical sensor data, and work towards the goal of real time data identification.

The following criteria must be addressed by the applicant in its design of the prize competition:

- The data to be identified or categorized must be discrete data (e.g. data points). The prize competition will not be addressing crowd sourced data such as social media feeds or text messages.
- The data to be identified or categorized must relate to a first responder's situational awareness. This can include fire service, law enforcement, emergency medical services, or any combination of the three entities.
- The data to be identified or categorized must be publicly available or must be created or owned by the PA. The prize competition cannot utilize any data scraped from private websites or accessed outside of its terms of use.

First responder-centric situational awareness data could include, but is not limited to:

- biometric sensor data,
- personal protective equipment (PPE) data,
- vehicle status data,
- transportation and city infrastructure data,
- data from public safety dispatch center

In addition, the prize competition may choose to focus on a specific category of data, such as:

- Personal Area Network level data,
- Building level data, or
- City level data

Two of the purposes of this prize competition are to cover a broad range of sensor types and have the data identification, categorization, interpretation, and output be performed in real-time.

B. Prize Competition

The PA will, in collaboration with PSCR, develop and implement a prize competition that meets the objectives described above. As PSCR expects that the final prize competition will encompass development of an artificial intelligence platform used to identify data, the PA will also be responsible for the procurement or development of training, test and evaluation datasets suitable to develop and evaluate the proposed prize competition submissions. PSCR expects that the PA will have previous experience in development of dataset(s) similar to the one requested in scope and magnitude, or that the PA will utilize a subcontractor or sub-recipient with the required experience. The dataset should be generic but representative enough that classification analysis of sensor type, content, and relevant information can be performed on the sensor data. The dataset should include multiple types of sensors from each category of data that the PA proposes. Within each sensor type category, there should be data diversification, so that the dataset depicts different methods of portraying the same type of sensor data (e.g. one outdoor temperature sensor using Fahrenheit, while another may use Celsius—but both are showing the same data). The image below depicts the type of data diversity that must be present in the dataset. This dataset will serve to provide training, test, and evaluation data for the prize competition contestants to base their solutions on, and thus should be appropriately diverse and relevant to the public safety use case. Additionally, if NIST determines that the dataset potentially includes data from human subjects, there must be an appropriate review as indicated in the section on Human Subjects Research (see Section VI.2.g.),

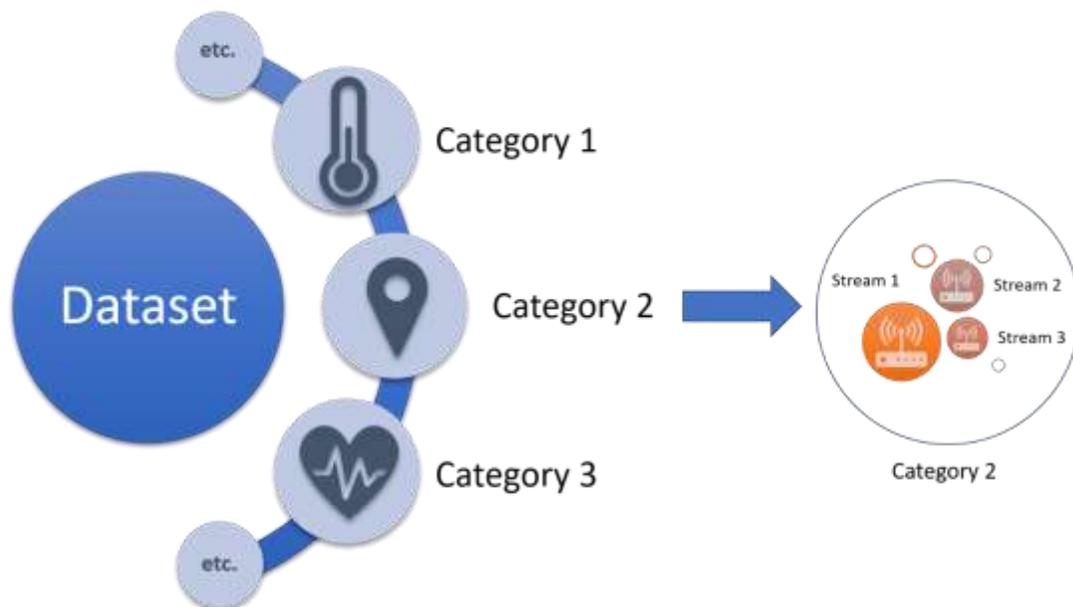


Figure 1: Example Data Diversity Representation in Dataset

Under this cooperative agreement, PSCR will be involved in the PA's development and implementation of the AI3 dataset, particularly as it applies to dataset content and relevance to the ultimate prize competition. The PA should specify whether it plans to make the dataset publicly available post-competition.

PSCR expects that the PA will have working knowledge of the public safety use case, and that they will regularly collaborate with subject matter experts from industry, academia, and public safety throughout all phases of the competition. The PA will be responsible for this collaboration, however PSCR may facilitate making connections to key public safety stakeholders who have been actively involved in various efforts related to this topic. Although most of the research shall be undertaken by the PA, PSCR will make engineering resources available for feedback and additional questions related to background research.

The PA, in collaboration with PSCR, will develop competition criteria and performance metrics during the prize design phase. It is PSCR's intent to rely on the PA's expertise to partly or completely develop these criteria to ensure a successful outcome from the competition. Competition criteria are the criteria against which applicants and competitors will be evaluated at various stages to ensure that winners' solutions will meet the objectives of the AI3 Prize. Example competition criteria could include accuracy, performance or scalability. Performance metrics are a subset of the competition criteria and are technical, quantitative measures that will be developed specifically to evaluate participants during test events. PSCR desires that the final evaluation events take place on an online prize competition hosting platform, although alternate suggestions from the PA will be considered. The PA will determine the distribution of the number and amount of prize award(s). The PA is encouraged to develop a prize structure that incentivizes the development and or commercialization of solutions. For a participant to win the prize award(s), PSCR envisions they would need to meet or exceed quantitative performance metric thresholds and receive the highest scores from a judging panel according to the competition criteria. In addition to the awards, PSCR anticipates the PA could pursue supplementary financial/resource support and non-monetary incentives to attract high-quality participants to the competition. Examples of non-monetary incentives could include mentorship, collaboration, and exposure to potential investors.

PSCR requires that costs for prize administration, i.e. total cost to execute the competition excluding the prize awards, do not exceed 70% of the total of this financial assistance award. Monetary awards to competition participants, including any prize awards, may range up to the remainder of the at least 30% of the total of this financial assistance award.

The PA will be responsible for administering the monetary awards to competition participants. If no competition participant is eligible for the prize award(s) (i.e. no one exceeds the performance metric threshold(s) during the final test and evaluation stage), the unused funds will not be considered reimbursable costs. In the Risk Management Plan, the PA shall explicitly detail any foreseeable risks and their mitigation strategies, including:

- How will any unused funds be allocated to further the outcomes of the current prize competition?
- How will the PA maximize competition participation?
- What other strategies or contingency plans are in place to ensure the applicant's chance of achieving the goals of this NOFO?

The PA will develop a marketing and outreach plan to attract participants and create exposure for the competition.

The PA, in collaboration with PSCR, will develop the competition rules. The PA will publish the rules and will be responsible for any updates to the rules. The PA will secure, coordinate, and compensate (if applicable) the judging panels for evaluation; the PA may propose using NIST personnel to participate in the judging panels where appropriate. If necessary, PSCR will facilitate invitations for key public safety stakeholders who have been actively involved in various efforts related to this topic to participate as judges.

The PA will determine the competition schedule and serve as project manager of the competition including participants, subject matter experts, facility staff, and judging panels. The PA will provide the necessary qualified personnel, facilities planning, on-site coordination and logistics, supplementary equipment and supplies, services, and related administrative and information technology to support the implementation of the competition stages.

The PA will be responsible for ensuring that all aspects of the competition are conducted in accordance with the prize authority established in the America COMPETES Reauthorization Act of 2010 (15 U.S.C. §3719).

The PA must develop an intellectual property management strategy that specifically addresses how the PA will protect the data and intellectual property of the competition participants including data and intellectual property associated with the participants' submissions, such as algorithms, any new data generated by the submission, and/or compilation data. This intellectual property management strategy should also address how data created by judges during the evaluation phase of the competition will be collected, organized and disseminated to the research community. At the end of the competition, the PA will conduct close-out activities to include: a)

developing a strategy to convert the AI3 Prize Competition results into a broader impact on advancing technology to bridge incompatibilities between sensor hardware outputs and visualization system inputs; b) evaluating the competition and process to determine if the objectives were met, and c) completing the data and intellectual property strategy for collecting, organizing, and disseminating the data created during the evaluation phase of the competition.

Qualified applicants must be able to demonstrate a substantial track record of successfully executing prize competitions of this magnitude and complexity, with an understanding of the requirements of the prize competition both from the data and public safety aspects. The applicants must be comfortable working with a diverse cross-section of experts from across academia, industry, and the public sector to create a clear and concise plan that achieves the high reaching goals of this proposed prize competition.

3. PSCR Public Safety Broadband Stakeholder Meeting

The recipient's Principal Investigator (PI) will be required to participate in the PSCR Public Safety Broadband Stakeholder Meetings (approximately five days) each calendar year during the term of the award to present research and meet with stakeholders from public safety, government, industry, and academia. Other essential project staff are encouraged to attend. Attendance at this event should be reflected in the project schedule and budget.

II. Federal Award Information

1. Funding Instrument

The funding instrument used in this program will be a cooperative agreement. The nature of NIST's "substantial involvement" will generally include collaboration with the recipient in executing the approved scope of work.

2. Multi-Year Funding Policy

When a proposal for a multi-year award is approved, funding will usually be provided for only the first year of the program. If a project is selected for funding, NIST has no obligation to provide any additional funding in connection with that award. Continuation of an award to increase funding or extend the period of performance is at the sole discretion of NIST. Continued funding will be contingent upon satisfactory performance, continued relevance to the mission and priorities of NIST, and the availability of funds.

3. Funding Availability

In FY22, NIST anticipates funding 1 award for approximately \$1,200,000 with a project performance period of up to two (2) years.

III. Eligibility Information

1. Eligible Applicants

Eligibility for all programs listed in this NOFO is open to U.S. non-Federal entities. Eligible applicants include: Institutions of higher education, non-profit organizations, and for-profit organizations organized in the United States. NIST will not be accepting proposals from foreign entities. Please note that individuals and unincorporated sole proprietors are not considered “non-Federal entities” and are not eligible to apply under this NOFO. Although Federal entities are not eligible to receive funding under this NOFO, they may participate as unfunded collaborators.

2. Cost Sharing or Matching

Matching funds are not required.

IV. Application and Submission Information

1. Address to Request Application Package

The application package is available at [Grants.gov](https://www.grants.gov) under Funding Opportunity Number 2021-NIST-AI3-01.

2. Content and Form of Application Submission

a. **Required Forms and Documents.** The Application must contain the following:

- (1) **SF-424 (R&R), Application for Federal Assistance.** The SF-424 (R&R) must be signed by an authorized representative of the applicant organization.

For SF-424 (R&R), Items 5, 14, and 19, use the Zip Code + 4 format (##### - ####) when addresses are called for.

For SF-424 (R&R), Item 17, the list of certifications and assurances is contained in the Federal Financial Assistance Certifications and Representations (Certs and Reps) as part of the SAM.gov entity registration.

SF-424 (R&R), Item 18. If the SF-LLL, Disclosure of Lobbying Activities form (item (5) below) is applicable, attach it to field 18.

Instructions for filling in the SF-424 (R&R) can be found on Grants.gov, as well as at the NIST Grants Management Division [SF-424 Research & Related \(R&R\) Application Package Guidance](#).

- (2) Research & Related Budget (Total Fed + Non-Fed).** The budget should reflect anticipated expenses for the full term of the project, considering all potential cost increases, including cost of living adjustments.

The budget should be detailed in these categories:

- A. Senior/Key Person;
- B. Other Personnel;
- C. Equipment Description;
- D. Travel;
- E. Participant/Trainee Support Costs
- F. Other Direct Costs;
- G. Direct Costs (automatically generated);
- H. Indirect Costs;
- I. Total Direct and Indirect Costs (automatically generated);
- J. Fee (not relevant to this competition);
- K. Total Costs and Fee (automatically generated);
- L. Budget Narrative and Justification document (item (8) below) should be attached to field L.

A separate detailed R&R Budget must be completed for each budget period during the proposed award (e.g., annual basis). To add additional budget periods (e.g., year 2), click “Add Period” embedded at the end of the form. Information regarding the Research & Related Budget (Total Fed + Non-Fed) is available in the [R&R Family Section](#) of Grants.gov, as well as at the NIST Grants Management Division [SF-424 Research & Related \(R&R\) Application Package Guidance](#).

- (3) CD-511, Certification Regarding Lobbying.** Enter “2021-NIST-AI3-01” in the Award Number field. Enter the title of the application, or an abbreviation of that title, in the Project Name field.
- (4) Research and Related Other Project Information.** Answer the highlighted questions and use this form to attach the Project Narrative (item (6) below), the Resume(s)/CVs (item (7) below), the Indirect Cost Rate Agreement (item (9) below), the Letters of Commitment, if applicable, (item (11) below), the Data Management Plan (item (12) below), and the Current and Pending Support Form (item (13) below). Instructions for completing the Research and Related Other Project

Information form can be found in [the Grants.gov R&R Forms Repository](#) by scrolling down to Research And Related Other Project Information and clicking the Instructions link, as well as in the NIST Grants Management Division [SF-424 Research & Related \(R&R\) Application Package Guidance](#).

Please note that the Project Summary/Abstract is not relevant to this competition. However, Grants.gov requires an attachment to field 7 of the Research and Related Other Project Information form to successfully pass through Grants.gov. Please attach a document to field 7 stating, “A Project Summary/Abstract is not relevant to this competition”.

- (5) **SF-LLL, Disclosure of Lobbying Activities** (if applicable).
- (6) **Project Narrative.** The Project Narrative is a word-processed document of no more than twenty-three (23) pages (double-spaced between lines), which is responsive to the program description and the evaluation criteria.

The Project Narrative should contain the following information:

- A. Cover Page.** The cover page should include:
- i. The name, address, and contact information of the applicant institution, partner organizations, and the principal investigator;
 - ii. The project title;
 - iii. Any statements regarding confidentiality; and
 - iv. A summary of the project in approximately three to five sentences using plain language that would be understood by a general, lay audience.
- B. Table of Contents.**
- C. Project Description.** This is a detailed description of the proposed prize competition and potential impacts. This section should include a detailed description of the:
- i. Approach to developing and implementing the prize competition to meet the goals of this NOFO. This description should include details related to competition design and rules, dataset design and implementation, competition criteria and performance metrics, monetary awards, marketing and outreach, event management, data management, and close-out.

- ii. Approach to collaborating with NIST and subject matter experts from both industry/academia and public safety to develop and implement the prize competition to meet the goals of this NOFO.
- iii. Expected outcomes and short-term impacts of the prize competition.
- iv. Expected long-term impacts beyond the prize competition to include stimulating additional R&D and market investment.

This section will be evaluated in accordance with the Project Description evaluation criteria: (see Section V.1.a. of this NOFO).

D. Prize Competition Dataset Description. This is an initial description of the dataset that must be developed for the eventual prize competition execution. Because this information is critical to the outcomes of the prize competition, it is required that the applicant put considerable thought towards development of this information. This section should include:

- i. Approach to developing dataset (in house, external contractor, open data), including previous experience of entity in performing similar dataset design work.
- ii. Description of method the applicant will use to ensure that the data is publicly available or will be created or owned by the PA and not data that is scraped from private websites or accessed outside of its terms of use.
- iii. Description of proposed size, content, origins and terms of use of proposed data, and relevance to the proposed situational awareness scenario.
- iv. A dataset sample demonstrating the types and breadth of the proposed data for use in the prize competition. This sample may be submitted as pages within the application, or submitted as a soft copy via a source code repository (e.g. Github or similar). If submission is made via a source repository, all required logins and locations must be provided, and the files must be timestamped prior to the application deadline. If the timestamp provided by the repository at the time of application review displays a date and time past the application deadline, or if the repository cannot be accessed via the login information provided, the application will be reviewed without the data sample.

This section will be evaluated in accordance with the Prize Competition Dataset Description evaluation criteria: (see Section V.1.b. of this NOFO).

- E. Project Execution.** This is a detailed description of the plan to execute the entire project, including the prize competition. Applicants should note that all information regarding costs are to be addressed in the Budget Narrative (see Section IV.3.a.(8) of this NOFO). This section should include:
- i. A summary of the overall approach to executing the prize competition and how the schedule, deliverables, milestones, and risk management will maximize the applicant's chances of achieving the goals of this NOFO.
 - ii. A detailed project schedule (Gantt chart of similar) for the entire prize competition.
 - iii. A deliverable summary table identifying all deliverables, a description of each, and due dates.
 - iv. A milestone summary table identifying all milestones, a description of each, due dates, and clear, measurable criteria to verify milestone completion.
 - v. A risk management plan identifying major risks during each phase of the prize competition and mitigation strategies. This plan should also specifically address how the awardee will utilize or allocate any unawarded prize competition prize money.
 - vi. An intellectual property management strategy that specifically addresses how the PA will protect the data and intellectual property of the competition participants including data and intellectual property associated with the participants' submissions, such as algorithms, any new data generated by the submission, and/or compilation data. This intellectual property management strategy should also specifically address how data created during the competition by the judges will be collected, organized and disseminated to the research community.
 - vii. A plan detailing any IRB submissions that will need to be undertaken if any of the data provided falls within Research Activities Involving Human Subjects (see Section VI.2.g. – “Research Activities Involving Human Subjects, Human Tissue, Data or Recordings Involving Human Subjects Including Software Testing”).

This section will be evaluated in accordance with the Project Execution evaluation criteria: (see Section V.1.c. of this NOFO).

F. Qualifications. This is a detailed description of the applicant's relevant qualifications, experience, and resources for successfully designing and implementing the proposed prize competition. This section should include:

- i. Qualifications of the individuals, teams, and organizations that will be executing or supporting the proposed prize competition relative to the program goals.
- ii. Demonstrated success executing prize competitions or technology demonstrations similar in scope and magnitude to the proposed project, including any examples of working with a diverse cross-section of experts from across academia, industry, and the public sector to create a clear and concise plan that achieved high-reaching goals.
- iii. Access to the necessary staff, equipment, facilities, support, and resources to accomplish the proposed objectives.

This section will be evaluated in accordance with the Qualifications evaluation criteria: (see Section V.1.e. of this NOFO).

(7) Resume(s)/CV(s). Resumes/CVs are required for all key personnel, including the principal investigator. Resumes are limited to two (2) pages per individual. Additional pages per resume/CV will not be considered during the evaluation of the application.

(8) Budget Narrative and Justification. There is no set format for the Budget Narrative and Justification; however, the written justification should include the necessity and the basis for the cost, as described below. Proposed funding levels must be consistent with the project scope, and only allowable costs should be included in the budget. Information on cost allowability is available in the Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards at 2 C.F.R. Part 200 (<http://go.usa.gov/SBYh>), which apply to awards in this program.

This section will be evaluated in accordance with the Budget Narrative evaluation criteria. It will also be reviewed to determine if all costs are reasonable, allocable, and allowable under 2 C.F.R. Part 200 Subpart E, Cost Principles.

Information needed for each category is as follows:

A. Senior/Key Person – At a minimum, the budget justification should

include the following: name, job title, commitment of effort on the proposed project in terms of average number of hours per week or percentage of time, salary rate, total direct charges on the proposed project, description of the role of the individual on the proposed project and the work to be performed.

Fringe benefits should be identified separately from salaries and wages and based on rates determined by organizational policy. The items included in the fringe benefit rate (e.g., health insurance, parking, etc.) should not be charged under another cost category.

- B. Other Personnel** - Data is requested at the project role level, and not at the individual level for Other Personnel. The budget justification should include the following: job title, commitment of effort on the proposed project in terms of average number of hours per week or percentage of time, salary rate, total direct charges on the proposed project, description of the role of the position on the proposed project and the work to be performed.

Fringe benefits should be identified separately from salaries and wages and based on rates determined by organizational policy. The items included in the fringe benefit rate (e.g., health insurance, parking, etc.) should not be charged under another cost category.

- C. Equipment Description** – Equipment is defined as an item of property that has an acquisition cost of \$5,000 or more (unless the organization has established lower levels) and an expected service life of more than one year. The budget justification should list each piece of equipment, the cost, and a description of how it will be used and why it is necessary to the successful completion of the proposed project. Please note that any general use equipment (computers, etc.) charged directly to the award should be allocated to the award according to expected usage on the project. Applicants should provide at least two (2) quotes, if available, for equipment costing \$25,000 or more. If two (2) quotes are not available, please provide a statement as to why two (2) quotes are not available. Any items that do not meet the threshold for equipment can be included under the Materials and Supplies line item in Section F, Other Direct Costs.

- D. Travel** - For all travel costs, required by the recipient to complete the project, including attendance at any relevant conferences, the budget justification for travel should include the following: destination; names or number of people traveling; dates and/or

duration; mode of transportation, lodging and subsistence rates; and description of how the travel is directly related to the proposed project. For travel that is yet to be determined, please provide best estimates based on prior experience. If a destination is not known, an approximate amount may be used with the assumptions given for the location of the meeting.

- E. Participant/Trainee Support Costs** – Participant support costs are stipends, subsistence allowances, travel, and registration fees paid to or on behalf of participants or trainees, who are not employees of your organization, for conferences or training projects. The budget justification should indicate the names or number of participants or trainees, a description and calculation of costs per person, a description and date of the event, and a description of why the cost is necessary for the successful completion of the proposed project.
- F. Other Direct Costs** – For costs that do not easily fit into the other cost categories, please list the cost, and the breakdown of the total costs by quantity or unit of cost. Include the necessity of the cost for the completion of the proposed project. Only allowable costs can be charged to the award.

Each subaward or contractual cost should be treated as a separate item in the Other Direct Costs category. Describe the services to be provided and the necessity of the subaward or contract to the successful performance of the proposed project. Contracts are for obtaining goods and services. Subawardees perform part of the project scope of work. For each subaward, applicants must provide budget detail justifying the cost of the work performed on the project.

Prize awards to be given to the competition winners are considered Other Direct Costs. Please provide amount of each proposed prize and justification of the amounts being proposed in this section.

- G. Direct Costs** – (automatically generated)
- H. Indirect Costs** – Commonly referred to as Facilities & Administrative Costs, Indirect Costs are defined as costs incurred by the applicant organization that cannot otherwise be directly assigned or attributed to a specific project. For more details, see Section IV.2.b.(9) of this NOFO.
- I. Total Direct and Indirect Costs** - (automatically generated)

J. Fee – (not relevant to this competition)

K. Total Costs and Fee (automatically generated)

- (9) Indirect Cost Rate Agreement.** If indirect costs are included in the proposed budget, provide a copy of the approved negotiated agreement if this rate was negotiated with a cognizant Federal audit agency. If the rate was not established by a cognizant Federal audit agency provide a statement to this effect. If the successful applicant includes indirect costs in the budget and has not established an indirect cost rate with a cognizant Federal audit agency, the applicant will be required to obtain such a rate in accordance with Section B.06 of the [Department of Commerce Financial Assistance Standard Terms and Conditions](#), dated November 12, 2020.

Alternatively, in accordance with 2 C.F.R. § 200.414(f), applicants that do not have a current negotiated (including provisional) indirect cost rate, except for those non-Federal entities described in [appendix VII, paragraph D.1.b.](#) of 2 CFR Part 200, may elect to charge a de minimis rate of 10 percent of modified total direct costs (MTDC). Applicants proposing a 10 percent de minimis rate pursuant to 2 C.F.R. § 200.414(f) should note this election as part of the budget portion of the application.

- (10) Subaward Budget Form.** The Research & Related Subaward Budget Attachment Form is required if sub-recipients and contractors are included in the application budget.

Instructions for completing subaward budget forms are available by visiting the [R & R Family section](#) of the Grants.gov Forms Repository and scrolling down to the R & R Subaward Budget Attachment(s) Form and selecting “Instructions.”

- (11) Letters of Commitment.** Letters of Commitment must be submitted by all funded and unfunded entities that will have an active role in executing the activities outlined in the Project Narrative. Letters of Commitment must address the level of participation, qualifications of the personnel who will be actively involved, and how successful completion of this project would positively impact their profession or community. Letters of Commitment must be signed by an individual with authority to legally bind the organization to its commitment.

Letters of Commitment will be evaluated in accordance with the Qualifications evaluation criteria (see Section V.1.e.(4) of this NOFO). Letters of commitment do not count against the specified page limits.

(12) Data Management Plan. Consistent with NIST Policy 5700.00¹, *Managing Public Access to Results of Federally Funded Research*, and NIST Order 5701.00², “*Managing Public Access to Results of Federally Funded Research*,” applicants proposing projects that include the conduct of research must include a Data Management Plan (DMP).

All applications for activities that will generate scientific data using NIST funding are required to adhere to a DMP or explain why data sharing and/or preservation are not within the scope of the project. For the purposes of the DMP, NIST adopted the definition of “research data” at 2 C.F.R. § 200.315(e)(3).

The DMP must include, at a minimum, a summary of proposed activities that are expected to generate data; a summary of the types of data expected to be generated by the identified activities; a plan for storage and maintenance of the data expected to be generated by the identified activities, including after the end of the award’s period of performance; and a plan describing whether and how data generated by the identified activities will be reviewed and made available to the public.

A template for the DMP, an example DMP, and the rubric against which the DMP will be evaluated for sufficiency is available at <https://www.nist.gov/open>. An applicant is not required to use the template as long as the DMP contains the required information.

If an application stands a reasonable chance of being funded and the DMP is determined during the review process to be insufficient, the program office may reach out to the applicant to resolve deficiencies in the DMP. If an award is issued prior to the deficiencies being fully rectified, the award will include a Specific Award Condition (SAC) stating that no research activities shall be initiated or costs incurred for those activities under the award until the NIST Grants Officer amends the award to indicate the SAC has been satisfied.

Reasonable costs for data preservation and access may be included in the application.

¹ https://www.nist.gov/system/files/documents/2018/06/19/final_p_5700.pdf

² https://www.nist.gov/system/files/documents/2019/11/08/final_o_5701_ver_2.pdf

(13) Current and Pending Support Form. Any application that includes investigators, researchers, and key personnel must identify all sources of current and potential funding, including this proposal. Any current project support (e.g., Federal, state, local, public or private foundations, etc.) must be listed on this form. The proposed project and all other projects or activities requiring a portion of time of the Principal Investigator (PI), co-PI, and key personnel must be included, even if no salary support is received. The total award amount for the entire award period covered, including indirect costs, must be shown as well as the number of person-months per year to be devoted to the project, regardless of the source of support. Similar information must be provided for all proposals already submitted or that are being submitted concurrently to other potential funders.

Applicants must complete the Current and Pending Support Form, using multiple forms as necessary to account for all activity for each individual identified in the PI, co-PI and key personnel roles. A separate form should be used for each identified individual.

Applicants must download the Current and Pending Support Form from the NIST website at <https://www.nist.gov/oaam/grants-management-division/current-and-pending-support> and reference the guidance provided as it contains information to assist with accurately completing the form.

b. Attachment of Required Documents

Items IV.2.a.(1) through IV.2.a.(4) above are part of the standard application package in Grants.gov and can be completed through the download application process.

Item IV.2.a.(5), the SF-LLL, Disclosure of Lobbying Activities form, is an optional application form which is part of the standard application package in Grants.gov. If item IV.2.a.(5), the SF-LLL, Disclosure of Lobbying Activities form is applicable to this proposal, attach it to field 18 of the SF-424 (R&R), Application for Federal Assistance.

Item IV.2.a.(6), the Project Narrative, should be attached to field 8 (Project Narrative) of the Research and Related Other Project Information form by clicking on “Add Attachment”.

Item IV.2.a.(8), the Budget Narrative and Justification, should be attached to field L (Budget Justification) of the Research and Related

Budget (Total Fed + Total Non-Fed) form by clicking on “Add Attachment”.

Items IV.2.a.(7), Resume(s)/CV(s), IV.2.a.(9), the Indirect Cost Rate Agreement, IV.2.a.(12), the Data Management Plan, and IV.2.a.(13), the Current and Pending Support Form, must be completed and attached by clicking on “Add Attachments” found in item 12 (Other Attachments) of the Research and Related Other Project Information form.

Item IV.2.a.(11), Letters of Commitment should be attached by clicking on “Add Attachments” found in item 12 (Other Attachments) of the Research and Related Other Project Information form.

Item IV.2.a.(10), the Subaward Budget Form(s), if applicable to the submission, should be attached to the Research & Related Subaward Budget (Total Fed + Non-Fed) Attachment(s) Form in the application package.

Following these directions will create zip files which permit transmittal of the documents electronically via Grants.gov.

Applicants should carefully follow specific Grants.gov instructions to ensure the attachments will be accepted by the Grants.gov system. A receipt from Grants.gov indicates only that an application was transferred to a system. It does not provide details concerning whether all attachments (or how many attachments) transferred successfully. Applicants will receive a series of e-mail messages over a period of up to two business days before learning whether a Federal agency’s electronic system has received its application. Applicants are strongly advised to use Grants.gov’s “Download Submitted Forms and Applications” option to check that their application’s required attachments were contained in their submission.

After submitting the application, check the status of your application here: [CHECK APPLICATION STATUS](#) . If any, or all, of the required attachments are absent from the submission, follow the attachment directions found above, resubmit the application, and check again for the presence of the required attachments.

If the directions found at <https://www.grants.gov/help/html/help/index.htm#t=GetStarted%2FGetStarted.htm> are not effective, please contact the Grants.gov Help

Desk immediately. If calling from within the United States or from a U.S. territory, please call 800-518-4726. If calling from a place outside the United States or a U.S. territory, please call 606-545-5035. E-mails should be addressed to support@grants.gov. Assistance from the Grants.gov Help Desk will be available around the clock every day, with the exception of Federal holidays. Help Desk service will resume at 7:00 a.m. Eastern Time the day after Federal holidays.

Applicants can track their submission in the Grants.gov system by following the procedures at the Grants.gov site (<http://go.usa.gov/cjamz>). It can take up to two business days for an application to fully move through the Grants.gov system to NIST.

NIST uses the Tracking Numbers assigned by Grants.gov, and does not issue Agency Tracking Numbers.

c. Application Format

- (1) Paper, Email, and Facsimile (fax) Submissions.** Will not be accepted.
- (2) Figures, Graphs, Images, and Pictures.** Should be of a size that is easily readable or viewable and may be displayed in landscape orientation. Any figures, graphs, images, or pictures will count toward the page limits for the Project Narrative.
- (3) Font.** Easy to read font (10-point minimum). Smaller type may be used in figures and tables but must be clearly legible.
- (4) Page Limit.** The Project Narrative is limited to twenty-three (23) pages double spaced. The Cover Page and Table of Contents are limited to one page each, and do not count towards the page count of the Project Narrative. The dataset sample is also not included in the page count of the Project Narrative. However, the sample content must not exceed: ten (10) pages (if submitted as pages in the application); or 540 lines of text (if submitted as an electronic repository).
- (5) Page Limit Exclusions:**
 - SF-424 (R&R), Application for Federal Assistance;
 - CD-511, Certification Regarding Lobbying;
 - SF-LLL, Disclosure of Lobbying Activities;
 - Cover Page;
 - Table of Contents;

Dataset Sample;
Budget Narrative and Justification;
Research & Related Budget (Total Fed + Non-Fed);
Research and Related Other Project Information;
Indirect Cost Rate Agreement;
Letters of Commitment;
Data Management Plan;
Subaward Budget Form;
Current and Pending Support Form.

(6) Page Layout. The Project Narrative must be in portrait orientation.

(7) Page size. 21.6 centimeters by 27.9 centimeters (8 ½ inches by 11 inches).

(8) Page numbering. Number pages sequentially.

(9) Application language. English. All documents must be in English, including but not limited to the initial application, any additional documents submitted in response to a NIST request, all reports, and any correspondence with NIST.

(10) Typed document. All applications, including forms, must be typed; handwritten forms will not be accepted.

d. Application Replacement Pages. Applicants may not submit replacement pages and/or missing documents once an application has been submitted. Any revisions must be made by submission of a new application that must be received by NIST by the submission deadline.

e. Pre-Applications. Pre-applications will not be accepted under this NOFO.

f. Certifications Regarding Federal Felony and Federal Criminal Tax Convictions, Unpaid Federal Tax Assessments and Delinquent Federal Tax Returns. In accordance with Federal appropriations law, an authorized representative of the selected applicant(s) may be required to provide certain pre-award certifications regarding federal felony and federal criminal tax convictions, unpaid federal tax assessments, and delinquent federal tax returns.

3. Unique Entity Identifier and System for Award Management (SAM).

Pursuant to 2 C.F.R. part 25, applicants and recipients are required to: (i) be registered in SAM before submitting its application; (ii) provide a valid unique entity identifier in its application; and (iii) continue to maintain an active SAM

registration with current information at all times during which it has an active Federal award or an application or plan under consideration by a Federal awarding agency, unless otherwise excepted from these requirements pursuant to 2 C.F.R. § 25.110. NIST will not make a Federal award to an applicant until the applicant has complied with all applicable unique entity identifier and SAM requirements and, if an applicant has not fully complied with the requirements by the time that NIST is ready to make a Federal award pursuant to this NOFO, NIST may determine that the applicant is not qualified to receive a Federal award and use that determination as a basis for making a Federal award to another applicant.

4. Submission Dates and Times

Applications must be received at Grants.gov no later than 11:59 p.m. Eastern Time, July 26, 2021. NIST will consider the date and time recorded by Grants.gov as the official submission time. Applications received after this deadline will not be reviewed or considered. Paper applications will not be accepted.

Applicants should be aware, and factor in their application submission planning, that the Grants.gov system is expected to be closed for routine maintenance. Applicants should visit [Grants.gov](https://www.grants.gov) for information on any scheduled closures.

When developing the submission timeline, please keep in mind that: (1) all applicants are required to have current registrations in the electronic System for Award Management (SAM.gov) and Grants.gov; (2) the free annual registration process in the SAM.gov generally takes between three and five business days but can take more than three weeks; and applicants will receive e-mail notifications over a period of up to two business days as the application moves through intermediate systems before the applicant learns via a validation or rejection notification whether NIST has received the application. (See [Grants.gov](https://www.grants.gov) for full information on application and notification through Grants.gov.) Please note that a Federal assistance award cannot be issued if the designated recipient's registration in the System for Award Management (SAM.gov) is not current at the time of the award.

5. Intergovernmental Review

Applications under this Program are not subject to Executive Order 12372.

6. Funding Restrictions

Profit or fee is not an allowable cost.

7. Other Submission Requirements

- a. Applications must be submitted electronically at [Grants.gov](https://www.grants.gov)**

- (1) Applicants should carefully follow specific Grants.gov instructions to ensure that all attachments will be accepted by the Grants.gov system. A receipt from Grants.gov indicating an application is received does not provide information about whether attachments have been received. For further information or questions regarding applying electronically for the 2021-NIST-AI3-01 announcement, contact the Grants.gov Help Desk at 800-518-4726.
- (2) Applicants are strongly encouraged to start early and not wait until the approaching due date before logging on and reviewing the instructions for submitting an application through Grants.gov. The Grants.gov registration process must be completed before a new registrant can apply electronically. The typical registration process takes three to five business days. If problems are encountered, the registration process can take two weeks or more. Applicants must have a valid unique entity identifier number and must maintain a current registration in the Federal government's primary registrant database, the System for Award Management (<https://www.sam.gov>), as explained on the Grants.gov Web site. After registering, it may take several days or longer from the initial log-on before a new Grants.gov system user can submit an application. Only individuals authorized as organization representatives will be able to submit the application, and the system may need time to process a submitted application. Applicants should save and print the proof of submission they receive from Grants.gov. If problems occur while using Grants.gov, the applicant is advised to (a) print any error message received and (b) call Grants.gov directly for immediate assistance. If calling from within the United States or from a U.S. territory, please call 800-518-4726. If calling from a place other than the United States or a U.S. territory, please call 606-545-5035. Assistance from the Grants.gov Help Desk will be available around the clock every day, except for Federal holidays. Help Desk service will resume at 7:00 a.m. Eastern Time the day after Federal holidays. For assistance using Grants.gov, the applicant may also contact support@grants.gov.
- (3) To find instructions for submitting an application on Grants.gov, applicants should refer to the "Applicants" tab in the banner just below the top of the Grants.gov home page. Clicking on the "Applicants" tab produces two exceptionally useful sources of information, Applicant Actions and Applicant Resources, which applicants are advised to review.

Applicants will receive a series of e-mail messages over a period of up to two business days before learning whether a Federal agency's electronic system has received its application.

Applicants should pay close attention to the guidance under Grants.gov's "[Applicant FAQs](#)," as it contains information important to successful submission, including essential details on the naming conventions for attachments to applications.

All applicants should be aware that adequate time must be factored into applicants' schedules for delivery of their application. Applicants are advised that volume on Grants.gov may be extremely heavy leading up to the deadline.

The application must be both received and validated by Grants.gov. The application is "received" when Grants.gov provides the applicant a confirmation of receipt and an application tracking number. If an applicant does not see this confirmation and tracking number, the application has not been received. After the application has been received, it must still be validated. During this process, it may be "validated" or "rejected with errors". To ascertain whether the application was rejected with errors and the reasons for the rejection, the applicant must log in to Grants.gov, select "Applicants" from the top navigation, and select "Track my application" from the drop-down list. If the status is "rejected with errors," the applicant may still seek to correct the errors and resubmit the application before the deadline. If the applicant does not correct the errors, the application will not be forwarded to NIST by Grants.gov.

Refer to important information in Section IV.4. Submission Dates and Times, to help ensure the application is received on time.

- b. Amendments.** Any amendments to this NOFO will be announced through Grants.gov. Applicants may sign up on Grants.gov to receive amendments by e-mail or may request copies by e-mail from pscr@nist.gov.

V. Application Review Information

1. Evaluation Criteria

The evaluation criteria that will be used in evaluating applications and their assigned weights are as follows:

- a. Project Description (0-30 points)**

Reviewers will evaluate the:

- (1) Extent to which the proposal demonstrates a clear understanding of this NOFO.
- (2) Extent to which the approach is cohesive, comprehensive, innovative, feasible, and likely to achieve successful administration of a prize competition that will meet the program goals described in this NOFO.
- (3) Extent to which the approach to collaborating with NIST and subject matter experts from both industry/academia and public safety will result in a successful prize competition.
- (4) Likelihood that the proposal will result in significant outcomes and impacts, both short-term and long-term, for the PSIAP, participants, public safety, and the R&D community.

b. Prize Competition Dataset Description (0-20 points)

Reviewers will evaluate the:

- (1) Dataset design proposal within the project description, and whether the methodology used to obtain and clean data is sufficient.
- (2) Method the applicant will use to ensure that the data is publicly available or will be created or owned by the PA and not data that is scraped from private websites or accessed outside of its terms of use.
- (3) Extent to which the proposed data within the dataset aligns with the situational awareness criteria outlined in the Background portion of Section I.
- (4) Experience of applicant or its subcontractor or subrecipient in developing or administering datasets of similar magnitude/complexity.

c. Project Execution (0-25 points)

Reviewers will evaluate the:

- (1) Extent to which the project approach is clearly described and supports the objectives of this NOFO.
- (2) Feasibility, sufficiency, clarity, and appropriateness of the schedule, deliverables, milestones for achieving the goals of the prize competition.
- (3) Feasibility, sufficiency, clarity, and appropriateness of the identified risks and the associated mitigation strategies, including a plan outlining utilization of unawarded prize money, should that scenario occur.
- (4) Feasibility, sufficiency, clarity, and appropriateness of the intellectual property management strategy in addressing how the applicant will protect the data and intellectual property of the competition participants including data and intellectual property associated with the participants' submissions such as algorithms,

any new data generated by the submission, and/or compilation data.

- (5) Feasibility, sufficiency, clarity, and appropriateness of the intellectual property management strategy in addressing how data created during the evaluation phase of the competition by the judges will be collected, organized, and disseminated to the research community.
- (6) Extent to which the applicant's plan details how any IRB requirements will be addressed, as appropriate.

d. Budget Narrative (0-10 points)

Reviewers will evaluate the:

- (1) Extent to which the budget narrative reflects a clear understanding of this NOFO, and the appropriateness and cost effectiveness of the budget with respect to executing the prize competition.
- (2) Appropriateness of proposed overhead costs in relation to prize competition prize costs.
- (3) Appropriateness of prize competition awards and any additional prizes specified in application.

e. Qualifications (0-15 points)

Reviewers will evaluate the:

- (1) Relevance and sufficiency of the qualifications of the individuals, teams, and organizations that will be executing or supporting the proposed prize competition, and the likelihood that they will be able to fulfill the objectives of this NOFO.
- (2) Applicant's demonstrated success executing prize competitions or technology demonstrations similar in scope and magnitude to the proposed project, including any examples of working with a diverse cross-section of experts from across academia, industry, and the public sector to create a clear and concise plan that achieved high-reaching goals.
- (3) Applicant's access to the necessary staff, equipment, facilities, support, and resources to accomplish the proposed objectives.
- (4) Level of participation by project team members as evidenced by their integration in the project execution and letters of commitment.

2. Selection Factors

- a. The Selecting Official or designee, will make a final award recommendation to the NIST Grants Officer. The Selecting Official shall generally select an application for award based on the rank order

of the applications and on one or more of the following selection factors:

- (1) Results of the merit reviewers' evaluations.
- (2) The availability of funding.
- (3) Whether the project duplicates other projects funded by NIST or other Federal agencies.
- (4) Alignment with the NOFO objectives.
- (5) Diversity of entity types within the PSCR R&D portfolio.
- (6) Geographic diversity within the PSCR R&D portfolio.

3. Review and Selection Process

Proposals, reports, documents and other information related to applications submitted to NIST and/or relating to financial assistance awards issued by NIST will be reviewed and considered by Federal employees, or non-Federal personnel who have entered into conflict of interest and confidentiality agreements covering such information, when applicable.

- a. **Initial Administrative Review of Applications.** Applications received by the deadline will be reviewed to determine eligibility, completeness, and responsiveness to this NOFO and to the scope of the stated program objectives. Applications determined to be ineligible, incomplete, and/or nonresponsive may be eliminated from further review. However, NIST, in its sole discretion, may continue the review process for an application that is missing non-substantive information, the absence of which may easily be rectified during the review process.
- b. **Full Review of Eligible, Complete, and Responsive Applications.** Applications that are determined to be eligible, complete, and responsive will proceed for full reviews in accordance with the review and selection process below:
 - (1) **Merit Review.** At least three (3) objective reviewers, who may be Federal employees or non-Federal personnel, with appropriate professional and technical expertise relating to the topics covered in this NOFO, will evaluate and score each eligible, complete, and responsive application based on the evaluation criteria (see Section V.1. of this NOFO). While every application will have at least three (3) reviewers, applications may have more than three (3) reviewers if specialized expertise is needed to evaluate an application. During the review process, the reviewers may discuss the applications with each other, but scores will be determined on an individual basis. Reviewers may consult as a panel with Federal or non-Federal subject-matter experts to seek clarification or explanation of specific issues identified during

the initial review process. Applications will be ranked by averaging the scores of all reviewers for each application.

(2) Evaluation Panel. Following the merit review, an evaluation panel consisting of at least three (3) NIST staff and/or other Federal employees with the appropriate technical expertise will conduct a panel review of the ranked applications. The evaluation panel may contact applicants via e-mail to clarify contents of an application. The evaluation panel will provide a final adjectival rating and written evaluation of the applications to the Selecting Official for further consideration, considering:

- All application materials.
- Results of the merit reviewers' evaluations, including scores and written assessments.
- Any relevant publicly available information.
- Any clarifying information obtained from the applicants.

The adjectival ratings are:

- Outstanding
- Very Good
- Average
- Deficient

For decision-making purposes, applications receiving the same adjectival rating will be considered to have an equivalent ranking, although their review scores may not necessarily be the same.

(3) Selection. The Selecting Official will make final award recommendations to the NIST Grants Officer. The Selecting Official shall generally select and recommend the most meritorious application for an award based on the final adjectival ratings prepared by the Evaluation Panel and one or more of the selection factors described in Section V.2. of this NOFO. The Selecting Official retains the discretion to select and recommend an application out of order (i.e., from a lower adjectival category) based on one or more of the selection factors.

NIST reserves the right to negotiate the budget costs with the applicant that has been selected to receive an award, which may include requesting that the applicant remove certain costs. Additionally, NIST may request that the applicant modify objectives or work plans and provide supplemental information. NIST also reserves the right to reject an application where information is uncovered that raises a reasonable

doubt as to the responsibility of the applicant. NIST may select some, all, or none of the applications, or part(s) of any application. In some cases, NIST may ask applicants to consider combining projects. The final approval of selected applications and issuance of awards will be by the NIST Grants Officer. The award decisions of the NIST Grants Officer are final.

- c. Federal Awarding Agency Review of Risk Posed by Applicants.** After applications are proposed for funding by the Selecting Official, the NIST Grants Management Division (GMD) performs pre-award risk assessments in accordance with 2 C.F.R. § 200.206, which may include a review of the financial stability of an applicant, the quality of the applicant's management systems, the history of performance, and/or the applicant's ability to effectively implement statutory, regulatory, or other requirements imposed on non-Federal entities.

In addition, prior to making an award where the total Federal share is expected to exceed the simplified acquisition threshold (currently \$250,000), NIST GMD will review and consider the publicly available information about that applicant in the Federal Awardee Performance and Integrity Information System (FAPIIS). An applicant may, at its discretion, review and comment on information about itself previously entered into FAPIIS by a Federal awarding agency. As part of its review of risk posed by applicants, NIST GMD will consider any comments made by the applicant in FAPIIS in making its determination about the applicant's integrity, business ethics, and record of performance under Federal awards. Upon completion of the pre-award risk assessment, the Grants Officer will make a responsibility determination concerning whether the applicant is qualified to receive the subject award and, if so, whether appropriate specific conditions that correspond to the degree of risk posed by the applicant should be applied to an award.

4. Anticipated Announcement and Award Date

Review of applications, selection of successful applicants, and award processing is expected to be completed by November 2021. The earliest start date for awards under this NOFO is expected to be November 2021.

5. Additional Information

- a. Safety.** Safety is a top priority at NIST. Employees and affiliates of award recipients who conduct project work at NIST will be expected to be safety-conscious, to attend NIST safety training, and to comply with all NIST safety policies and procedures, and with all applicable terms of their guest research agreement.

- b. Notification to Unsuccessful Applicants.** Unsuccessful applicants will be notified by e-mail and will have the opportunity to receive a debriefing after the opportunity is officially closed. Applicants must request within 10 business days of the email notification to receive a debrief from the program office. The program office will then work with the unsuccessful applicant in arranging a date and time of the debrief.
- c. Retention of Unsuccessful Applications.** Unsuccessful applications will be retained in accordance with the [General Record Schedule 1.2/021](#).

VI. Federal Award Administration Information

- 1. Federal Award Notices.** Successful applicants will receive an award package from the NIST Grants Officer.
- 2. Administrative and National Policy Requirements**
 - a. Uniform Administrative Requirements, Cost Principles and Audit Requirements.** Through 2 C.F.R. § 1327.101, the Department of Commerce adopted Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards at 2 C.F.R. Part 200, which apply to awards in this program. Refer to <http://go.usa.gov/SBYh> and <http://go.usa.gov/SBg4>.
 - b. Department of Commerce Financial Assistance Standard Terms and Conditions.** The Department of Commerce will apply to each award in this program, the Financial Assistance Standard Terms and Conditions in effect on the date of award. The current version, dated November 12, 2020, is accessible at [Department of Commerce Financial Assistance Standard Terms and Conditions](#). Refer to Section VII. of this NOFO, Federal Awarding Agency Contacts, Grant Rules and Regulations, if you need more information.
 - c. Pre-Award Notification Requirements.** The Department of Commerce will apply the Pre-Award Notification Requirements for Grants and Cooperative Agreements dated December 30, 2014 (79 FR 78390), accessible at <http://go.usa.gov/hKkR>. Refer to Section VII. of this NOFO, Federal Awarding Agency Contacts, Grant Rules and Regulations, for more information.
 - d. Funding Availability and Limitation of Liability.** Funding for the program listed in this NOFO is contingent upon the availability of appropriations. NIST or the Department of Commerce will not be responsible for application preparation costs, including but not limited to if this program fails to receive funding or is cancelled because of agency

priorities. Publication of this NOFO does not oblige NIST or the Department of Commerce to award any specific project or to obligate any available funds.

- e. Collaborations with NIST Employees.** If an applicant proposes collaboration with NIST, the statement of work should include a statement of this intention, a description of the collaboration, and prominently identify the NIST employee(s) involved, if known. Any collaboration by a NIST employee must be approved by appropriate NIST management and is at the sole discretion of NIST. Prior to beginning the merit review process, NIST will verify the approval of the proposed collaboration. Any unapproved collaboration will be stricken from the application prior to the merit review. Any collaboration with an identified NIST employee that is approved by appropriate NIST management will not make an application more or less favorable in the competitive process.
- f. Use of Federal Government-Owned Intellectual Property.** If the applicant anticipates using any Federal Government-owned intellectual property, in the custody of NIST or another Federal agency, to carry out the work proposed, the applicant should clearly identify such intellectual property in the proposal. This information will be used to ensure that no Federal employee involved in the development of the intellectual property will participate in the review process for that competition. In addition, if the applicant intends to use the Federal Government-owned intellectual property, the applicant must comply with all statutes and regulations governing the licensing of Federal government patents and inventions, described in 35 U.S.C. §§ 200-212, 37 C.F.R. Part 401, 2 C.F.R. §200.315, and in Section C.03 of the [Department of Commerce Financial Assistance Standard Terms and Conditions](#), dated November 12, 2020. Questions about these requirements may be directed to the Chief Counsel for NIST, (301) 975-2803, nistcounsel@nist.gov.

Any use of Federal Government-owned intellectual property by a recipient of an award under this announcement is at the sole discretion of the Federal Government and will need to be negotiated on a case-by-case basis by the recipient and the Federal agency having custody of the intellectual property if a project is deemed meritorious. The applicant should indicate within the statement of work whether it already has a license to use such intellectual property or whether it intends to seek a license from the applicable Federal agency.

If any inventions made in whole or in part by a NIST employee arise in the course of an award made pursuant to this NOFO, the United States

Government may retain its ownership rights in any such invention. Licensing or other disposition of the Federal Government's rights in such inventions will be determined solely by the Federal Government, through NIST as custodian of such inventions, and include the possibility of the Federal Government putting the intellectual property into the public domain.

g. Research Activities Involving Human Subjects, Human Tissue, Data or Recordings Involving Human Subjects Including Software Testing.

Any application that includes research activities involving human subjects, human tissue/cells, or data or recordings from or about human subjects, must satisfy the requirements of the Common Rule for the Protection of Human Subjects ("Common Rule"), codified for the Department of Commerce at 15 C.F.R. Part 27. Research activities involving human subjects that fall within one or more of the classes of vulnerable subjects found in 45 C.F.R. Part 46, Subparts B, C and D must satisfy the requirements of the applicable subpart(s). In addition, any such application that includes research activities on these subjects must be in compliance with all applicable statutory requirements imposed upon the Department of Health and Human Services (DHHS) and other Federal agencies, all regulations, policies and guidance adopted by DHHS, the Food and Drug Administration (FDA), and other Federal agencies on these topics, and all Executive Orders and Presidential statements of policy on applicable topics. (Regulatory Resources: <http://www.hhs.gov/ohrp/humansubjects/index.html> which includes links to FDA regulations, but may not include all applicable regulations and policies).

NIST uses the following Common Rule definitions for research and human subjects research:

Research: A systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge. Activities which meet this definition constitute research for purposes of this policy, whether or not they are conducted or supported under a program which is considered research for other purposes. For example, some demonstration and service programs may include research activities.

Human Subject: A living individual about whom an investigator (whether professional or student) conducting research: (i) Obtains information or biospecimens through intervention or interaction with the individual, and uses, studies, or analyzes the information or biospecimens; or (ii) Obtains,

uses, studies, analyzes, or generates identifiable private information or identifiable biospecimens.

- (1) *Intervention* includes both physical procedures by which information or biospecimens are gathered and manipulations of the subject or the subject's environment that are performed for research purposes.
- (2) *Interaction* includes communication or interpersonal contact between investigator and subject.
- (3) *Private information* includes information about behavior that occurs in a context in which an individual can reasonably expect that no observation or recording is taking place, and information which has been provided for specific purposes by an individual and that the individual can reasonably expect will not be made public (for example, a medical record). Private information must be individually identifiable (i.e., the identity of the subject is or may readily be ascertained by the investigator associated with the information) in order for obtaining the information to constitute research involving human subjects.
- (4) *Identifiable biospecimen* includes a biospecimen for which the identity of the subject is or may readily be ascertained by the investigator or associated with the biospecimen.

See 15 C.F.R. § 27.102 (Definitions).

- 1) Requirement for Federalwide Assurance.** If the application is accepted for [or awarded] funding, organizations that have an Institutional Review Board (IRB) are required to follow the procedures of their organization for approval of exempt and non-exempt research activities that involve human subjects. Both domestic and foreign organizations performing exempt research requiring limited IRB review or non-exempt research activities involving human subjects will be required to have protocols approved by a cognizant, active IRB currently registered with the Office for Human Research Protections (OHRP) within the DHHS that is linked to the engaged organizations. All engaged organizations must possess a currently valid Federalwide Assurance (FWA) on file from OHRP. Information regarding how to apply for an FWA and register an IRB with OHRP can be found at <http://www.hhs.gov/ohrp/assurances/index.html>. See 15 C.F.R. § 27.103. NIST relies only on OHRP-issued FWAs and IRB Registrations for both domestic and foreign organizations for NIST supported

research involving human subjects. NIST will not issue its own FWAs or IRB Registrations for domestic or foreign organizations.

2) Administrative Review. The NIST Research Protections Office (RPO) reserves the right to conduct an administrative review³ of all applications that potentially include research involving human subjects and were approved by an authorized non-NIST institutional entity (an IRB or entity analogous to the NIST RPO) under 15 C.F.R. § 27.112 (Review by Institution). If the NIST RPO determines that an application includes research activities that potentially involve human subjects, the applicant will be required to provide additional information to NIST for review and approval. The documents required for funded proposals are listed in each section below. Most documents will need to be produced during the proposal review process; however, the Grants Officer may allow final versions of certain required documents to be produced at an appropriate designated time post-award. Research involving human subjects may not start until the NIST Grants Officer issues an award explicitly authorizing such research. In addition, all amendments, modifications, or changes to approved research and requests for continuing review and closure will be reviewed by the NIST RPO. Please note that the NIST IRB is unable to serve as the IRB for financial assistance recipients.

3) Required documents for proposal review. All applications involving human subjects research must clearly indicate, by separable task, all research activities believed to be exempt or non-exempt research involving human subjects, the expected institution(s) where the research activities involving human subjects may be conducted, and the institution(s) expected to be engaged in the research activities.

a. Not research determination. If an activity/task involves human subjects as defined in the Common Rule, but the applicant participant(s) indicates to NIST that the activity/task is not research as defined in the Common Rule, the following information may be

³ Conducting an “administrative review” means that the NIST RPO will review and verify the performing institution’s determination for research not involving human subjects or exempt human subjects research. In addition, for exempt research requiring limited IRB review and non-exempt human subjects research, the NIST RPO will review and confirm that the research and performing institution(s) are in compliance with 15 C.F.R. Part 27, which means RPO will 1) confirm the engaged institution(s) possess, or are covered under a Federalwide Assurance, 2) review the research study documentation submitted to the IRB and verify the IRB’s determination of level of risk and approval of the study for compliance with 15 C.F.R. Part 27, 3) review and verify IRB-approved substantive changes to an approved research study before the changes are implemented, and 4) review and verify that the IRB conducts a continuing review at least annually, as appropriate.

requested for that activity/task:

- (1) Justification, including the rationale for the determination and such additional documentation as may be deemed necessary by NIST to review and/or support a determination that the activity/task in the application is not research as defined in the Common Rule.
- (2) If the applicant participant(s) used a cognizant IRB that provided a determination that the activity/task is not research, a copy of that determination documentation must be provided to NIST. The applicant participant(s) is not required to establish a relationship with a cognizant IRB if they do not have one.

NIST will review the information submitted and may coordinate further with the applicant before determining whether the activity/task will be defined as research under the Common Rule in the applicable NIST financial assistance program or project.

b. Research not involving human subjects. If an activity/task is determined to be research and involves human subjects, but is determined to be *not human subjects research* (or *research not involving human subjects*) under the Common Rule, the following information may be requested for that activity/task:

- (1) Justification, including the rationale for the determination and such additional documentation as may be deemed necessary by NIST to review and/or support a determination that the activity/task in the application is not research as defined in the Common Rule.
- (2) If the applicant participant(s) used a cognizant IRB that provided a determination that the activity/task is research not involving human subjects, a copy of that determination documentation must be provided to NIST. The applicant participant(s) is not required to establish a relationship with a cognizant IRB if they do not have one.

c. Exempt research determination with no IRB. If the application appears to NIST to include exempt research activities that do not meet the criteria for requiring a limited IRB review, and the performer of the activity or the supplier and/or the receiver of the information or biospecimens from human subjects **does not** have a cognizant IRB to provide an exemption determination, the following information may be requested during the review process so that NIST can evaluate whether an exemption under the Common Rule

applies (see 15 C.F.R. § 27.104(b) and (d)):

- (1) The name(s) of the institution(s) where the exempt research will be conducted.
- (2) The name(s) of the institution(s) providing the biospecimens or information from human subjects.
- (3) A copy of the protocol for the research to be conducted; and/or the biospecimens or information from human subjects to be collected/provided, not pre-existing samples (*i.e.*, will proposed research collect only information without personal identifiable information, will biospecimens or information be de-identified and when and by whom was the de-identification performed, how were the materials or data originally collected).
- (4) For pre-existing biospecimens or information from human subjects, provide copies of the consent forms used for collection and a description of how the biospecimens or information were originally collected and stripped of personal identifiers. If copies of consent forms are not available, explain.
- (5) Any additional clarifying documentation that NIST may deem necessary in order to make a determination whether the activity/task or use of biospecimens or information from human subjects is exempt under the Common Rule.

d. Research review with an IRB. If the application appears to NIST to include research activities (exempt or non-exempt) involving human subjects, proposed performer of the activity must have a relationship with a cognizant IRB registered with OHRP, and linked to their Federalwide Assurance. The following information may be requested during the review process:

- (1) The name(s) of the institution(s) where the research will be conducted.
- (2) The name(s) and institution(s) of the cognizant IRB(s), and the IRB registration number(s).
- (3) The FWA number of the applicant linked to the cognizant IRB(s).
- (4) The FWAs associated with all organizations engaged in the planned research activity/task, linked to the cognizant IRB.
- (5) If the IRB review(s) is pending, the estimated start date for research involving human subjects.
- (6) The IRB approval date (if currently approved for exempt or non-exempt research).

- (7) If any of the engaged organizations has applied for or will apply for an FWA or IRB registration, those details should be clearly provided for each engaged organization.

If the application includes research activities involving human subjects to be performed in the first year of an award, additional documentation may be requested by NIST during pre-award review for those performers, and may include the following for those research activities:

- (1) A copy of each applicable final IRB-approved protocol.
- (2) A signed and dated approval letter from the cognizant IRB(s) that includes the name of the institution housing each applicable IRB, provides the start and end dates for the approval of the research activities, and any IRB-required interim reporting or continuing review requirements.
- (3) A copy of any IRB-required application information, such as documentation of approval of special clearances (*i.e.*, biohazard, HIPAA, etc.) conflict-of-interest letters, or special training requirements.
- (4) A brief description of which portions of the IRB submitted protocol are specifically included in the application submitted to NIST, if the protocol includes tasks not included in the application, or if the protocol is supported by multiple funding sources. For protocols with multiple funding sources, NIST will not approve the study without a non-duplication-of-funding letter indicating that no other federal funds will be used to support the tasks proposed under the proposed research or ongoing project.
- (5) If a new protocol will only be submitted to an IRB if an award from NIST is issued, a draft of the proposed protocol.
- (6) Any additional clarifying documentation that NIST may request during the review process to perform the NIST administrative review of research involving human subjects. (See 15 C.F.R. § 27.112 (Review by Institution)).

This clause reflects the existing NIST policy and requirements for Research Involving Human Subjects. Should the policy be revised prior to award, a clause reflecting the policy current at time of award may be incorporated into the award.

If the policy is revised after award, a clause reflecting the updated policy may be incorporated into the award.

For more information regarding research projects involving human subjects, contact Anne Andrews, Director, NIST Research Protections Office (e-mail: anne.andrews@nist.gov; phone: (301) 975-5445).

h. Research Activities Involving Live Vertebrate Animals or Pre-Existing Cell Lines/Tissues From Vertebrate Animals. Any application that proposes research activities involving live vertebrate animals that are to be cared for, euthanized, or used by award recipients to accomplish research goals, teaching, or testing must meet the requirements of the Animal Welfare Act (AWA) (7 U.S.C. § 2131 et seq.), and the AWA final rules (9 C.F.R. Parts 1, 2, and 3), and if appropriate, the Good Laboratory Practice for Nonclinical Laboratory Studies (21 C.F.R. Part 58). In addition, such research activities should be in compliance with the *“U.S. Government Principles for Utilization and Care of Vertebrate Animals Used in Testing, Research, and Training”* (Principles). The Principles and guidance on these Principles are available in the National Research Council's *“Guide for the Care and Use of Laboratory Animals,”* which can be obtained from National Academy Press, 500 5th Street, N.W., Department 285, Washington, DC 20055, or as a free PDF online at <http://www.nap.edu/catalog/12910/guide-for-the-care-and-use-of-laboratory-animals-eighth>.

1) Administrative Review. NIST reserves the right to conduct an administrative review⁴ of all applications that potentially include research activities that involve live vertebrate animals, or custom samples from, or field studies with live vertebrate animals. If the application includes research activities, field studies, or custom samples involving live vertebrate animals, the applicant will be required to provide additional information for review and approval. In addition, NIST will verify the applicant's determination(s) of excluded samples from vertebrate animals. The documents required for funded proposals are listed in each section below. Some may be requested for a pre-review during the proposal review process; however, the Grants Officer may allow final versions of certain required documents to be produced at an appropriate designated time post-award. If an award is issued, no research activities involving live vertebrate animals shall be initiated or

⁴ Conducting an “administrative review” means that the NIST RPO will review and verify the performing institution's IACUC's approval of research with live vertebrate animals, and confirm that the research and performing institution(s) have an appropriate assurance and are in compliance with applicable regulations. RPO will 1) confirm the engaged institution(s) possess, or are covered under an applicable assurance, 2) review the research study documentation submitted to the IACUC and verify the IACUC's determination of level of risk and approval of the study for compliance with applicable regulations, 3) review and verify IACUC-approved substantive changes to an approved research study before the changes are implemented, and 4) review and verify that the IACUC receives an annual report for the study and conducts an appropriate continuing review at least every three years.

costs incurred for those activities under the award until the NIST Grants Officer issues written approval. In addition, all re-approvals, amendments, modifications, changes, annual reports and closure will be reviewed by NIST.

2) Required documents for NIST proposal review. *The applicant should clearly indicate in the application, by separable task, all research activities believed to include research involving live vertebrate animals and the institution(s) where the research activities involving live vertebrate animals may be conducted. In addition, the applicant should indicate any activity/task that involves an excluded or custom collection from vertebrate animals, or a field study with animals.*

- a) **Excluded Collections from Vertebrate Animals:** The requirements for review and approval by an Institutional Animal Care and Use Committee (IACUC) do not apply to proposed research using preexisting images of animals or to research plans that do not include live animals. These regulations also do not apply to obtaining stock or pre-existing items from animal material suppliers (e.g., tissue banks), such as pre-existing cell lines and tissue samples, or from commercial food processors, where the vertebrate animal was euthanized for food purposes and not for the purpose of sample collection.

For pre-existing cell lines and tissue samples originating from vertebrate animals, NIST requires that the proposer provide documentation or the rationale for the determination that the cell line or tissue is pre-existing and not a custom collection from live vertebrate animals for an activity/task within the proposal. NIST may require additional documentation to review and/or support the determination that the cells and/or tissues from vertebrate animals are excluded from IACUC review.

- b) **Custom Collections Harvested from Live Vertebrate Animals:** NIST requires documentation for obtaining custom samples from live vertebrate animals from animal material suppliers and other organizations (i.e., universities, companies, and government laboratories, etc.). Custom samples includes samples from animal material suppliers, such as when a catalog item indicates that the researcher is to specify the characteristics of the live vertebrate animal to be used, or how a sample is to be collected from the live vertebrate animal.

- c) **Field Studies of Animals:** Some field studies of animals may be exempt under the Animal Welfare Act from full review and approval by an animal care and use committee, as determined by each institution. Field study is defined as “... *a study conducted on free-living wild animals in their natural habitat...*”. 9 C.F.R. § 1.1. However, this term excludes any study that involves an invasive procedure or that harms or materially alters the behavior of an animal under study. Field studies, with or without invasive procedures, may also require obtaining appropriate federal or local government permits (marine mammals, endangered species, etc.). If the applicant’s institution requires review and approval by an animal care and use committee, NIST will require that documentation to be provided as described below.
- d) **For custom collections or studies with live vertebrate animals that require review and approval by an animal care and use committee the following documentation is required:**
- (1) **Requirement for Assurance.** An applicable assurance for the care and use of the live vertebrate animal(s) to be used in the proposed research is required. NIST may request documentation to confirm an assurance, if adequate confirmation is not available through an assuring organization’s website. The cognizant IACUC where the research activity is located may hold one or more assurances applicable to the research activity that are acceptable to NIST. These four assurances are:
- i. Animal Welfare Assurance from the Office of Laboratory Animal Welfare (OLAW) indicated by the OLAW assurance number, *i.e.*, A-1234;
 - ii. USDA Animal Welfare Act certification indicated by the certification number, *i.e.*, 12-R-3456;
 - iii. Association for the Assessment and Accreditation of Laboratory Animal Care (AAALAC) indicated by providing the organization name accredited by AAALAC as listed in the AAALAC Directory of Accredited Organizations; and
 - iv. Letter of Assurance of compliance with the Animal Welfare Act, the U.S. Government Principles, and National Marine Fisheries Service (NMFS) IACUC policy that is valid for five years and provided by a NMFS Regional IACUC for activities with marine mammals or sea turtles (NMFS Policy Directive 04-112).
- (2) **Documentation of Research Review by an IACUC:** If the applicant’s application appears to include research activities,

field studies, or custom sample collections involving live vertebrate animals the following information regarding review by an applicable IACUC may be requested during the application review process:

1. The name(s) of the institution(s) where the research involving live vertebrate animals will be conducted and/or custom samples collected.
2. The assurance type and number, as applicable, for the cognizant Institutional Animal Care and Use Committee (IACUC) where the research activity is located. [For example: Animal Welfare Assurance from the Office of Laboratory Animal Welfare (OLAW) should be indicated by the OLAW assurance number, i.e. A-1234; an USDA Animal Welfare Act certification should be indicated by the certification number i.e. 12-R-3456; and an Association for the Assessment and Accreditation of Laboratory Animal Care (AAALAC) should be indicated by AAALAC.]
3. The IACUC approval date for the Animal Study Protocol (ASP) (if currently approved).
4. If the review by the cognizant IACUC is pending, the estimated start date for research involving vertebrate animals.
5. If any assurances or IACUCs need to be obtained or established, that should be clearly stated.
6. If any special permits are required for field studies, those details should be clearly provided for each instance, or indicated as pending.

If the application includes research activities involving vertebrate animals to be performed in the first year of an award, additional documentation may be requested by NIST during pre-award review for those performers, and may include the following for those research activities, which may also include field studies, custom sample collections involving live vertebrate animals:

1. A copy of the IACUC approved ASP.
2. Documentation of the IACUC approval indicating the approval and expiration dates of the ASP.
3. If applicable, a non-duplication-of-funding letter if the ASP is funded from several sources.

4. If a new ASP will only be submitted to an IACUC if an award from NIST is issued, a draft of the proposed ASP may be requested.
5. Any additional clarifying documentation that NIST may request during review of applications to perform the NIST administrative review of research involving live vertebrate animals.

This clause reflects the existing NIST policy for Research Involving Live Vertebrate Animals. Should the policy be revised prior to award, a clause reflecting the policy current at time of award may be incorporated into the award.

If the policy is revised after award, a clause reflecting the updated policy may be incorporated into the award.

For more information regarding research projects involving live vertebrate animals, contact Linda Beth Schilling, Senior Analyst (e-mail: linda.schilling@nist.gov; phone: 301-975-2887

3. Reporting

- a. **Reporting Requirements.** The following reporting requirements described in Sections A.01, Reporting Requirements, of the [Department of Commerce Financial Assistance Standard Terms and Conditions](#), dated November 12, 2020, apply to awards in this program:

(1) Financial Reports. Each award recipient will be required to submit an SF-425, Federal Financial Report on a quarterly basis for the periods ending March 31, June 30, September 30 and December 31 of each year. Reports will be due within 30 days after the end of the reporting period. A final financial report is due within 120 days after the end of the project period.

(2) Research Performance Progress Report (RPPR). Each award recipient will be required to submit a RPPR on a quarterly basis for the periods ending March 31, June 30, September 30 and December 31 of each year. Reports will be due within 30 days after the end of the reporting period. The RPPR shall conform to the requirements in 2 C.F.R. § 200.329 (<http://go.usa.gov/xkVgP>) and [Department of Commerce Financial Assistance Standard Terms and Conditions](#), Section A.01.

A final RPPR shall be submitted within 120 days after the expiration

date of the award, and publication citation information as well as links to publicly available data shall be submitted as soon as they become available.

If a recipient's Data Management Plan (DMP) has changed since their last submission of an RPPR, the recipient must include their revised DMP with the next RPPR following the revision to the DMP. The revised DMP must include all the requirements described in Section IV.2.a.(12). of this NOFO.

(3) Patent and Property Reports. From time to time, and in accordance with the Uniform Administrative Requirements and other terms and conditions governing the award, the recipient may need to submit property and patent reports.

(4) Recipient Integrity and Performance Matters. In accordance with section 872 of Public Law 110-417 (as amended; see 41 U.S.C. 2313), if the total value of a recipient's currently active grants, cooperative agreements, and procurement contracts from all Federal awarding agencies exceeds \$10,000,000 for any period of time during the period of performance of an award made under this NOFO, then the recipient shall be subject to the requirements specified in Appendix XII to 2 C.F.R. Part 200, <http://go.usa.gov/cTBwC>, for maintaining the currency of information reported to SAM that is made available in FAPIIS about certain civil, criminal, or administrative proceedings involving the recipient.

b. Audit Requirements. The Department of Commerce Financial Assistance Standard Terms and Conditions, Section D.01, and 2 C.F.R. Part 200 Subpart F, adopted by the Department of Commerce through 2 C.F.R. § 1327.101, require any non-Federal entity (i.e., including non-profit institutions of higher education and non-profit organizations) that expends Federal awards of \$750,000 or more in the recipient's fiscal year to conduct a single or program specific audit in accordance with the requirements set out in the Subpart. Additionally, unless otherwise specified in the terms and conditions of the award, entities that are not subject to Subpart F of 2 C.F.R. Part 200 (e.g., for-profit commercial entities) that expend \$750,000 or more in DOC funds during their fiscal year must submit to the Grants Officer either: (i) a financial related audit of each DOC award or subaward in accordance with Generally Accepted Government Auditing Standards; or (ii) a project specific audit for each award or subaward in accordance with the requirements contained in 2 C.F.R. § 200.507. Applicants are reminded that NIST, the Department of Commerce Office of Inspector General, or another authorized Federal agency may conduct an audit of an award at any time.

c. Federal Funding Accountability and Transparency Act of 2006. In accordance with 2 C.F.R. Part 170, all recipients of a Federal award made on or after October 1, 2010, are required to comply with reporting requirements under the Federal Funding Accountability and Transparency Act of 2006 (Public Law No. 109-282). In general, all recipients are responsible for reporting sub-awards of \$25,000 or more. In addition, recipients that meet certain criteria are responsible for reporting executive compensation. Applicants must ensure they have the necessary processes and systems in place to comply with the reporting requirements should they receive funding. Also see the Federal Register notice published September 14, 2010, at 75 FR 55663 available here <http://go.usa.gov/hKnQ>.

VII. Federal Awarding Agency Contacts

Questions should be directed to the following:

Subject Area	Point of Contact
Programmatic and Technical Questions	E-mail: pscr@nist.gov with 'AI3' in subject line
Technical Assistance with Grants.gov Submissions	grants.gov Phone: 800-518-4726 E-mail: support@grants.gov
Grant Rules and Regulations	Grants Officer: Scott McNichol Phone: 303-497-3444 E-mail: scott.mcnichol@nist.gov

VIII. Other Information

1. Personal and Business Information

The applicant acknowledges and understands that information and data contained in applications for financial assistance, as well as information and data contained in financial, performance and other reports submitted by applicants, may be used by the Department of Commerce in conducting reviews and evaluations of its financial assistance programs. For this purpose, applicant information and data may be accessed, reviewed and evaluated by Department of Commerce employees, other Federal employees, and also by Federal agents and contractors, and/or by non-Federal personnel, all of whom enter into appropriate conflict of interest and confidentiality agreements covering the use of such information. As may be provided in the terms and conditions of a specific financial assistance award, applicants are expected to support program reviews and evaluations by submitting required financial and performance information and data in an accurate and timely manner, and by cooperating with Department

of Commerce and external program evaluators. In accordance with 2 C.F.R. § 200.303(e), applicants are reminded that they must take reasonable measures to safeguard protected personally identifiable information and other confidential or sensitive personal or business information created or obtained in connection with a Department of Commerce financial assistance award.

In addition, Department of Commerce regulations implementing the Freedom of Information Act (FOIA), 5 U.S.C. Sec. 552, are found at 15 C.F.R. Part 4, Public Information. These regulations set forth rules for the Department regarding making requested materials, information, and records publicly available under the FOIA. Applications submitted in response to this Federal Funding Opportunity may be subject to requests for release under the Act. If an application contains information or data that the applicant deems to be confidential commercial information that should be exempt from disclosure under FOIA, that information should be identified, bracketed, and marked as Privileged, Confidential, Commercial or Financial Information. In accordance with 15 CFR § 4.9, the Department of Commerce will protect from disclosure confidential business information contained in financial assistance applications and other documentation provided by applicants to the extent permitted by law.

2. Public Website

NIST PSCR has a public website, (www.nist.gov/ctl/pscr/funding-opportunities/grants-and-cooperative-agreements/psiap-artificial-intelligence-iot), that provides information pertaining to this Funding Opportunity⁵. Any amendments to this NOFO will be announced through Grants.gov.

Applicants must submit all questions pertaining to this funding opportunity in writing to pscr@nist.gov with 'AI3' in the subject line.

3. Webinar Information Session:

NIST PSCR will host a webinar to provide general information regarding this NOFO, offer general guidance on preparing applications, and answer any questions. Proprietary technical discussions about specific project ideas will not be permitted and NIST staff will not critique or provide feedback on specific project ideas while they are being developed by an applicant or brought forth during the webinar or at any time before the deadline for all applications. However, questions about the 2021-NIST-PSIAP-AI3-01 eligibility requirements, evaluation and award criteria, selection process, and the general characteristics of a competitive application can be addressed at the webinar and by e-mail to pscr@nist.gov as described in the previous paragraph. There is no cost to attend the webinar, but participants must register in advance. Participation in the

⁵ Refer to Section VII. of this NOFO, Federal Awarding Agency Contacts, Programmatic and Technical Questions, if more information is needed.

webinar is not required and will not be considered in the application review and selection process. Additional information on this AI3 NOFO and webinar is available at www.nist.gov/ctl/pscr/funding-opportunities/grants-and-cooperative-agreements/psiap-artificial-intelligence-iot.