University Consortium for Applied Hypersonics:

PROJECT CALL

REQUEST FOR WHITE PAPER/REQUEST FOR PROTOTYPE PROPOSAL NUMBERS: TEES/JHTO-RPP-2021-002

AMENDMENT 1 – July 1, 2021

Project Call Release Date	June 28, 2021
Request for White Paper Questions Cutoff	July 26, 2021
Notice of Intent	August 2, 2021 (5:00 PM CST)
Phase 1: White Paper Submission Deadline	August 9, 2021 (5:00 PM CST)
Notification of White Paper Evaluations	September 21, 2021
Request for Prototype Proposal Questions Cutoff	November 8, 2021
Phase 2: Prototype Proposal Submission Deadline	November 22, 2021 (5:00 PM CST)
Agreement Award Notifications	February 8, 2022
Anticipated Project Start Date	June 1, 2022
Period of Performance	3 Years
Agreement Ceiling	Up to $1,500,000 per year per award
Expected Agreement Classification	Controlled Unclassified Information

TO APPLY TO THIS PROJECT CALL, YOUR UNIVERSITY'S AUTHORIZED ORGANIZATIONAL REPRESENTATIVE WILL NEED TO CREATE AN ACCOUNT AND SUBMIT WHITE PAPER/PROTOTYPE PROPOSAL DOCUMENTS THROUGH THE UNIVERSITY CONSORTIUM FOR APPLIED HYPERSONICS WEBSITE: HTTPS://HYPERSONICS.TAMU.EDU.

WHITE PAPERS/PROTOTYPE PROPOSALS WILL BE RECEIVED UNTIL THE ABOVE DEADLINE. IF YOU ENCOUNTER ANY ISSUES OR CONCERNS WITH YOUR SUBMISSION, PLEASE EMAIL: UCAH@TAMU.EDU. QUESTIONS REGARDING THE CONTENT OF THE REQUEST FOR WHITE PAPER/REQUEST FOR PROTOTYPE PROPOSALS MUST BE POSTED THROUGH THE UNIVERSITY CONSORTIUM FOR APPLIED HYPERSONICS WEBSITE ABOVE.

CONTENTS

1. PROJECT OVERVIEW

Funding Opportunity Title: University Consortium for Applied Hypersonics (UCAH) Project Call (TEES/JHTO-RPP-2021-002).

Dates: Questions regarding the Request for White Paper (RWP) may be emailed to UCAH@tamu.edu through **July 26, 2021, at 5:00 PM (CST).** Responses to the questions will be posted on the UCAH website (https://hypersonics.tamu.edu). Questions and responses to questions regarding White Papers (WPs) will be made available to all proposers.

Notice of Intent: Notice of Intent to submit a WP must be provided by **5:00 PM (CST) on August 2, 2021.** Please provide the Topic Number and full list of participants (name and institution) through the project call webpage on the UCAH website.

Phase 1: Project WP submissions must be submitted through the UCAH website proposal call link and **must be received no later than August 9, 2021, at 5:00 PM (CST).** Submissions received after the deadline will not be considered. The Government is interested in receiving top applied research proposals; hence WP submissions are limited to one per university[1], and a maximum of seven Principal Investigators (PI) are authorized per proposal.

Phase 2: WPs will be evaluated and a Request for Prototype Proposal (RPP) may be issued to those, which best meet the intent of the Office of the Under Secretary of Defense (OUSD), Research and Engineering (R&E) Joint Hypersonics Transition Office (JHTO), per Section 3.3 of this document. PIs whose WPs were not selected for continuation to the Prototype Project Proposal (PPP) phase will be notified. PPP submissions must be submitted through the UCAH website proposal call link and **must be received no later than November 22 , 2021 at 5:00 PM (CST).** Submissions received after the deadline will not be considered. Questions regarding the RPP may be emailed to UCAH@tamu.edu through **November 8, 2021 at 5:00 PM (CST).** Responses to the questions will be posted on the UCAH website (https://hypersonics.tamu.edu). Questions and responses to questions regarding the RPP will be made available to all proposers, unless they involve proprietary or controlled unclassified information (CUI) material.

Submission Instructions: Proposal submission will be conducted utilizing the UCAH website. After creating an initial account (see https://hypersonics.tamu.edu), proposal teams can upload proposal documents. You should verify that the person authorized to submit proposals for your organization has completed registration well in advance of the submission deadline. To apply for grants on behalf of your organization, you will need the Authorized Organizational Representative role. Proposal submissions cannot be accomplished before your organization is fully registered. The portal is the single point for submission.

Funding Opportunity Description: The JHTO, in partnership with Texas A&M Engineering Experiment Station (TEES) and the UCAH, is soliciting competitive WPs/PPPs supporting hypersonic research and technology, per the defined Statement of Need (SON) in Section 2.1. JHTO reserves the right to fund none, some, or all of the submissions made in response to this RWP/RPP. Furthermore, JHTO may choose to

[1] This does not preclude teaming between faculty members from different Universities, as long as no University submits more than one (1) WP on which it is the lead.

fund a portion of a submission or a combination of submissions. Not all meritorious submissions will necessarily receive funding. TEES and JHTO will exercise their discretion in selecting submissions. TEES and the JHTO will provide no funding for direct reimbursement of WP/PPP development costs.

Estimated Project Ceiling: Up to a three-year period of performance at $1,500,000 per year per Project Sub-Agreement (PSA). The JHTO reserves the right to approve projects that slightly exceed this level based on the technical strengths of the proposal and the reasonableness of the costs.

Applicant Eligibility: Applicant and any sub-institutions must be a university or affiliated UCAH Consortium Member by the time of proposal submission on November 22, 2021.

Non-traditional Defense Contractor Participation of Cost-Share Commitment:

a. Agreement awards are made under 10 U.S.C. § 2371b, and as such all awardees must meet at least one of the following conditions:
   i. There is at least one nontraditional defense contractor or nonprofit research institution participating to a signifigant extent in the prototype project.
   ii. All significant participants in the transaction other than the Federal Government are small business (including small business participating in a program described under section 9 of the Small Business Act (15 U.S.C. 638) or nontraditional defense contractors.
   iii. At least one-third of the total cost of the Prototype Project is to be paid out of funds provided by sources other than the Federal Government.
   iv. The senior procurement executive for the Agency determines, in writing, that exceptional circumstances justify the use of a transaction that provides for innovative business arrangements or structures that would not be feasible or appropriate under a contract, or would provide an opportunity to expand the defense supply base in a manner that would not be practical or feasible under a contract.

b. An NTDC is an entity that is not currently performing and has not performed, for at least one year preceding the issuance of a RPP, any contract or subcontract for the DoD that is subject to full coverage under the Federal Acquisition Regulation (FAR) based Cost Accounting Standards ("CAS"). A subsidiary or a division of a traditional defense contractor may still qualify as an NTDC.

c. Significant participation is determined on a project basis and is based on the importance of the NTDC contribution to the overall execution or outcome of the proposed project. OT Authority statute does not prescribe a monetary threshold or percentage value to justify significance. Examples of "significant" participation are:
   i. Supplying a new key technology or product, or unique capability;
   ii. Causing a material and quantifiable reduction in the project cost or schedule;
   iii. Causing a measurable increase in the performance of the prototype;
   iv. Accomplishing a significant amount of the effort;
   v. Value-added analysis not based on percentage of project work or value.

d. Since contracts and subcontracts with small businesses are exempt from full CAS coverage, small

businesses are deemed NTDCs under OT Authority. An entity is considered a small business based upon its applicable North American Industry Classification System ("NAICS") designation (as described at 13 C.F.R. §121.201) for the specific nature of the work being proposed.

Except as addressed in the next paragraph, individuals supported by a Sub-Agreement awarded as a result of this RWP/RPP process must be United States (U.S.) citizens prior to award. Since research projects are expected to include CUI, International Traffic in Arms Regulations (ITAR) or Distribution Statement C information, the fundamental research exclusion (National Security Decision Directive 189) is not expected to apply. Universities responding to this RWP/RPP must be able to appropriately maintain and handle sensitive data. Hence, all publications will require review and approval.

Affiliate Consortium Members, including Industry, University Affiliated Research Centers (UARCs), a University Affiliated Laboratory (UAL), and Federally Funded Research and Development Centers (FFRDCs), and universities (on a case by case basis) from Australia, Canada, New Zealand, and the United Kingdom are not eligible to respond to this RWP/RPP but may team with an eligible principal bidder and be funded accordingly.

Teams are encouraged in all areas, to include:

- Other universities;
- Industry;
- UARCs/FFRDCs;
- National Laboratories;
- Minority Serving Institutions;
- Nontraditional Members.

Period of Performance: Three-year with an anticipated start date no later than June 1, 2022.

Administrative and Evaluation Support: All submissions will be treated as "source selection information" as defined by 41 U.S.C. § 2101(7), and contents will be disclosed only in accordance with 41 U.S.C. § 2102. During the evaluation process submissions may be handled by government support contractors, TEES personnel, and other Consortium members for both administrative purposes and to support technical evaluations. Consortium members that are proposing under this RWP/RPP, will not be reviewers within the topic area that they proposed in. All persons performing these roles are expressly prohibited from performing sponsored technical research and are bound by appropriate nondisclosure agreements (NDAs).

2. PROJECT TOPIC DESCRIPTIONS

Section 2.1 identifies SON for each Prototype Project and the submission process will begin with the RWP. WPs shall follow the format described in Section 3.2. Selections of WPs will follow the basis of selection summarized in Section 3.3. UCAH members are responsible for all expenses associated with responding to the RWP.

2.1 Proposal Project Calls

JHTO in partnership with the UCAH are interested in receiving WPs and PPPs for the following areas:

2.1.1 Challenge Projects

Topic 1: Hypersonic Air-breathing Engine Design and Control for High Maneuverability and Operational Robustness.

Technology Discipline Areas: Navigation, Guidance & Control, Propulsion and Aerodynamics (PROP / NG&C / AERO)

Proposal Description: Hypersonic air-breathing vehicles with significant maneuvering capability will enable missions of the future. Whether achieved via traditional aerodynamic maneuvers, thrust vectoring, auxiliary thrusters, or other means, the engine will likely need to operate and perform over large and rapid changes to vehicle attitude. The range of vehicle attitude is not known at this point but conceivably could be as large as +/- 20 degrees of angle-of-attack (AoA) and +/- 10 degrees angle of side slip (AoS). Large and rapid changes in AoA/AoS pose challenging operability and performance requirements for hypersonic air breathing engines due to the resulting large and dynamic variation in engine airflow, airflow distortion, total pressure loss, and other phenomena.

Technical Solicitation: Multi-disciplinary proposals are sought for innovative solutions that enable hypersonic air-breathing vehicles to sustain atypical flight attitudes and conduct high rate-of-change maneuvers. These solutions should involve system designs that allow robust performance of hypersonic air-breathing engines at high AoA/AoS and with high AoA/AoS-rates of change, conceivably in the range of +/- 20 degrees AoA and +/- 10 degrees AoS. Approaches are expected to synthesize vehicle-integrated design and controls which take advantage of novel intelligent monitoring, prognostics, and diagnostics for robust operation. System concepts are not limited to but may include approaches such as traditional aero maneuvers involving bank and/or skid to turn using nominal or deployable aero surfaces and devices; thrust vectoring via nozzle mechanical or fluidic flow diversion; vehicle-integrated thrusters/jet reactions; and active shape change or flow control. Regardless of the method for achieving high maneuverability, the air-breathing engine design must be tolerant of large and dynamic fluctuations in inflow. The integrated engine and each component, (inclusive of inlet, isolator, combustor, and nozzle), will need to overcome fundamental limitations to robust engine operation across the AoA/AoS and AoA/AoS-rate envelope. This may require approaches inclusive of, but not limited to, engine variable geometry, passive or active flow control, and throttle and fuel distribution control.

Aspects of the Proposal: Proposals should include novel techniques and concepts designed to solve these critical challenges. Concepts should be matured to the point where claims can be evaluated for validity and concepts can be verified through measurement. Use of a reference vehicle shape to demonstrate feasibility is recommended. Concepts should be related to applications, and the successful team will have sufficient membership and skills to address how the concept can transition from novel science and research to application in a future system.

Proposals should include plans to involve students in all phases of the project and a transition partner should be identified to help ensure that results can viably transition to operational capabilities developed in an industry setting.

Topic 2: Development of Approaches for Intelligent Learning Algorithms for Hypersonic Sensors, NG&C Systems and Pre-Launch Mission Planning

Technology Discipline Areas: Navigation, Guidance & Control, Aerodynamics and Mission Planning (NGC&S / MP / AERO)

Proposal Description: Hypersonic flight requires robust and informed navigation and control, each relying on ground and flight test data that is time-intensive and expensive to generate. Additionally, hypersonic validation data is difficult to obtain and when available, takes long lead times to procure and at great expense. Guidance systems that can learn without requiring costly flight test information would be of significant value.

Current models that obtain the necessary information and accuracy for describing hypersonic physics often require long processing times to achieve sufficient accuracy. More rapid software development cycles would greatly improve mission planning and fight operations as well as vehicle responsiveness and performance.

Technical solicitation: Proposals should suggest novel approaches for system "learning" when limited flight data is available. The identification and construction of large databases which likely will include data that is not from hypersonic sources should be addressed. Proposals should recommend new data that will be required and offer a strategy for obtaining it.

Proposals could apply techniques and processes to develop terminal sensor algorithms with limited flight data using a system that "learns" from the processing of large databases of images to select and prioritize targets. Use of algorithms to support flight operations, trajectory generation, mission payload development, and future gradation of autonomous uncertainty quantification in reduced-order models is of particular interest.

Proposals could apply techniques and algorithms to develop mission-planning software with the ability to constantly train and adapt for the latest scenario to grow intelligent strategies using the possible trajectories that can be flown with a given vehicle. The fidelity of these strategies would grow as information and confidence of the adversary grows, creating a framework for executing intelligent automated system red-teaming.

Algorithms, to include trust algorithms, might eventually enable human-on-the-loop operations.

Proposals are sought to support flight operations, trajectory generation, mission payloads, and future gradation of autonomous uncertainty quantification in reduced-order models.

Aspects of the Proposal: Proposals should include novel techniques and concepts designed to solve these critical challenges. Concepts should be matured to the point where claims can be evaluated for validity and concepts can be verified through measurement. Use of a reference vehicle shape to demonstrate feasibility is recommended. Concepts should be related to applications, and the successful team will have sufficient membership and skills to address how the concept can transition from novel science and research to application in a future system.

Proposals should include plans to involve students in all phases of the project and a transition partner should be identified to help ensure that results can viably transition to operational capabilities developed in an industry setting.

3. PHASE 1: WHITE PAPER SUBMISSION AND EVALUATION

3.1 General Requirements

WPs should adhere to the following:

- Section I of the WP should be no more than four pages in length.
- Figures and tables must be numbered and, when referenced in the text, be referenced by that number. They should be of a size that is easily readable and may be in landscape orientation. They must be formatted to print on an 8.5 x 11-inch paper size.
- WPs will be single-spaced with one-inch margins on all sides. Font should be Times New Roman font (11-point minimum). Smaller font may be used in figures and tables, but must be legible.
- WPs must be in portrait orientation except for figures, graphs, images and pictures.
- The WP documents should be submitted as one pdf document. Number pages sequentially within the proposal showing proposal section and page number.
- All major sections shall begin on a new page.

- Proposal language shall be English.
- No classified information shall be submitted with the proposal.
- All information that is considered to be a trade secret or proprietary information should be marked as such. Note that government support contractors, TEES personnel, and other Consortium members may have access to this information for the purposes of administrative and evaluation support. Consortium members that are proposing under this RWP/RPP, will not be reviewers within the topic area that they proposed in. These personnel will be required to complete a NDA and to certify that they have no conflict of interest that might impact the process.

3.2 Format

Please use the WP templates provided on the UCAH website. WPs should be formatted as follows:

Cover Page. The Cover page should include:

- Project Title
- Technical Area and Topic Number (from Section 2)
- Applicant Organization
- Primary Technical Point of Contact (POC), including name, address, phone and email contact information
- Co-PI(s) names and institutions
- Primary Business POC, including name, address, phone and email contact information
- Total Solution Rough Order of Magnitude (ROM) price
- Date of Submission

Table of Contents. The Table of Contents should include all of the documents requested in Sections I-VIII.

Section I: Technical Requirements (4 pages maximum)

a. Background and Benefits of Proposed Solution as related to the SON
b. Technical Approach, including clearly defined prototype solution

Section II: Bibliography and References Cited

Section III: Facilities (2 pages maximum)

Identify any facilities required for the proposed research and whether those facilities are organic to project participants' organizations or must be leased or purchased. Note whether facility availability is likely to impact project cost/schedule/performance.

Section IV: Key Personnel

a. Include a description of contributions and significance of each
b. One-page biosketch for each participant
c. Current and pending sponsored research projects for each participant

Section V: Security Requirements

a. Address any special security and classification requirements, as necessary.

b. Is your institution as well as those you are collaborating with capable of protecting CUI in accordance with the following Defense Federal Acquisition Regulation Supplement (DFARS) clauses?:
   - DFARS 252.204-7012? YES or NO
   - DFARS 252.204-7019? YES or NO
   - DFARS 252.204-7020? YES or NO
   - DFARS 252.204-7021? YES or NO

c. Are they able to handle classified research? YES or NO

d. Are they registered with the Directorate of Defense Trade Controls (DDTC)? YES or NO

Section VI: Pricing

The JHTO, as the final decision-authority in making WP selections, will consider affordability. Therefore, each WP shall include a ROM price and narrative required to meet the technical solutions described in the WP. This ROM price shall include, at a minimum, the estimated cost for labor, material/equipment, other direct costs and subcontracts. The ROM narrative shall provide details on the following cost categories:

a. Labor Rates

b. Fringe Benefits

c. Travel

d. Material & Supplies

e. Subawards/Subcontracts

f. Recipient Acquired Equipment or Facilities

g. Other Direct Costs

h. Indirect Costs

Category	Year One	Year Two	Year Three	Total
A. Labor				$ -
B. Fringe Benefits				
Number of graduate students supported in this effort				
Number of undergraduate students supported in this effort				
C. Travel				$ -
D. Material/ Supplies				$ -
E. Subawards/Subcontracts	$ -	$ -	$ -	$ -
Institution #1: Fill In Name				$ -
Institution #2: Fill In Name				$ -
Institution #3: Fill In Name				$ -
Institution #4: Fill In Name				$ -
Institution #5: Fill In Name				$ -
Institution #6: Fill In Name				$ -
F. Equipment or Facilities				$ -
G. Other Direct Costs				$ -
H. Indirect Costs				$ -
Total Project Costs:	**$ -**	**$ -**	**$ -**	**$ -**

*A ROM budget and justification should be submitted from the lead university and any sub-universities/PIs.

Section VII: Affirmation of Business Status Certification

a. Name of Business Entity
b. Proposed NAICS Code
c. Cage Code
d. SAM Expiration Date
e. Address
f. Business POC Name, Title, Phone and Email

Section VIII: Data Rights Assertions

Identify any intellectual property, patents and inventions in the proposed solution and associated restrictions on JHTO use of that intellectual property, patents and inventions. The following information shall be presented for all assertions:

a. Technical data, computer software, or patent to be furnished with restriction
b. Basis for assertion
c. Asserted rights category
d. Name of entity asserting restrictions

3.3 Basis for Selection

WPs will be evaluated against the stated criteria below:

1) Relevance of the proposed solution in addressing the SON.
2) Technical Merit and feasibility of the proposed solution to address the SON.
3) Proposed solution's approach and/or underlying technology is unique, underutilized and/or innovative; and is a compelling solution to the SON.

WPs will be evaluated on the basis of the merit of the proposed concept in addressing each SON, not against other WPs submitted in response to the same SON. Additionally, while not overtly stated, the Government's evaluation will consider whether the proposal increases the likelihood of accomplishing the aspects of JHTO's mission.

This UCAH routinely receives more WPs than has the resources to award. All submissions will be fairly evaluated, however, only a select few will be invited to submit a PPP. The government reserves the right to limit the number of RPPs. The government also reserves the right to select a portion of a WP as the basis for requesting a PPP. As such, a proposed solution may also be evaluated to be of merit, but not requested to submit a PPP. WPs that are chosen to submit a PPP will be notified in writing as soon as practicable.

If the WP is of interest, but not requested to submit a PPP due to availability of government resources, the WP lead may be contacted within 180 calendar days from the WP submission date with a RPP for the possibility of a PSA award. If after 180 calendar days from the WP submission date (or earlier if notified by JHTO), government resources are not identified to formally move to Phase 2, requesting a PPP, the WP lead will no longer be eligible for an award under this RWP/RPP.

4. PHASE 2: PROTOTYPE PROJECT PROPOSAL SUBMISSION AND EVALUATION

Phase 2 of the award process, PPP submission and evaluation, will follow the evaluation process for Phase 1 as discussed in Section 3. The intent of the PPP is to provide increased, contract-level fidelity to information provided in the previously-submitted WP.

JHTO will issue a RPP through TEES. TEES will assign a program specialist to assist each member with the proposal process and ensure that the required documents are completed properly. PPPs shall follow the format described in Section 4.1 and 4.2 and will be evaluated by JHTO based on the criteria in Section 4.3. UCAH Consortium members are responsible for all expenses associated with responding to the RPPs.

4.1 General Requirements

PPPs should adhere to the following:

- Figures and tables must be numbered and, when referenced in the text, be referenced by that number. They should be of a size that is easily readable and may be in landscape orientation. They must be formatted to print on an 8.5 x 11-inch paper size.
- PPPs will be single-spaced with one-inch margins on all sides. Font should be Times New Roman (11-point minimum). Smaller font may be used in figures and tables, but must be legible.
- PPPs must be in portrait orientation except for figures, graphs, images and pictures.
- The proposal documents should be submitted as one pdf document. Number pages sequentially within the proposal showing proposal section and page number. The budget spreadsheets should

also be submitted as an excel document with formulas left available for evaluation purposes.

- All major sections shall begin on a new page.
- Proposal language shall be English.
- No classified information shall be submitted with the proposal.
- All information that is considered CUI (formerly FOUO), should be marked as such and transmitted appropriately.
- All information that is considered to be a trade secret or proprietary information should be marked as such. Note that government support contractors, TEES personnel, and other Consortium members may have access to this information for the purposes of administrative and evaluation support. Consortium members that are proposing under this RWP/RPP, will not be reviewers within the topic area that they proposed in. These personnel will be required to complete an NDA and to certify that they have no conflict of interest that might impact the process.
- Letters of support are encouraged. They can be attached as an appendix to the proposal submission.

4.2 Format

Please use the proposal templates provided on the UCAH website. PPPs should be formatted as follows:

Cover Page. The Cover page should include:

- Prototype Project Title
- Technical Area and Topic Number (from Section 2)
- Applicant Organization
- Primary Technical POC, including name, address, phone and email contact information
- Co-PI(s) names and institutions
- Primary Business POC, including name, address, phone and email contact information
- Facility Clearance Level (if required)
- Proposed Period of Performance
- Date of Submission
- Proposed Validity Date (must be valid for a minimum of ninety (90) days)

Table of Contents. The Table of Contents should include all of the documents requested in Sections I-X.

Section I: Statement of Work (12 pages maximum).

a. Abstract
b. Objectives Statement
c. Research Narrative
    i. Background and Benefits of Proposed Solution as related to the SON
    ii. Technical approach, including clearly defined prototype solution
    iii. Schedule and Deliverables
d. Place of Performance
e. Government Furnished Property / Equipment / Materials / High Performance Computing

Requirements

Section II: Bibliography and References Cited

Section III: Facilities

Identify any facilities required for the proposed research and whether those facilities are organic to project participants' organizations or must be leased or purchased. Note whether facility availability is likely to impact project cost/schedule/performance.

Section IV: Key Participants

Use of 10 U.S.C. § 2371b prototype authority for this Prototype Project requires that proposals meet requirements for significant participation by a non-profit research institution or NTDC. ~~or small business.~~

Include a description of contributions and significance of each such entity and indicate the percentage of their total available time each will devote to this project.

Participant	Business Status (Check one)	Participant Contribution and Significance to Overall Project
[Insert separate row(s) for each additional participant. Delete row(s) as applicable if Participant is the only participant.] *Name:* *Institution:* *Role:* *Time Commitment (%):*	☐ *Traditional* ☐ *Nontraditional defense contractor* ☐ *Nonprofit research institution* ☐ *Small business*	*[Insert detailed, quantifiable description which addresses the following:* • *What is this Participant's significant contribution?* • *Why is this Participant's contribution significant to the overall project?* • *How is this Participant uniquely qualified to provide this significant contribution?* *(Note: number of years of experience is not deemed a unique qualification.)]*

Each participant resume shall be no more than two (2) pages in length. Current and pending sponsored research projects are requested for each PI.

Section V: Security Requirements

a. Address any special security and classification requirements, as necessary.
b. Is your institution as well as those you are collaborating with capable of protecting CUI in accordance with following Defense Federal Acquisition Regulation Supplement (DFARS) clauses?:
   - DFARS 252.204-7012? YES or NO
   - DFARS 252.204-7019? YES or NO
   - DFARS 252.204-7020? YES or NO
   - DFARS 252.204-7021? YES or NO
c. Are they able to handle classified research? YES or NO
d. Are they registered with the Directorate of Defense Trade Controls (DDTC)? YES or NO

Section VI: Pricing

The Price Section shall provide sufficient detail to substantiate that the overall proposed price is realistic, reasonable, complete for the work proposed and reflects the best price for the PPP. The Pricing Section shall also include a narrative explanation of proposed prices. For all team members that do not have Government-approved rates, their proposed rates shall represent the most favored customer rates.

a. **Labor Rates:** Provide the basis for which the estimated total labor hours were calculated, including generic labor categories, estimated rates and hours for those individuals.
b. **Fringe Benefits:** The proposal should show the rates and calculation of the costs.
c. **Travel:** The proposed travel cost should include the following for each trip: the purpose of the trip, origin and destination if known, approximate duration, the number of travelers, and the estimated cost per trip (including mileage, parking, baggage costs, etc.) must be justified based on the organizations historical average cost per trip or other reasonable basis for estimation. Such estimates and the resultant costs claimed must conform to the applicable Federal cost principals. Proposed travel should include funds for a yearly Program Review.
d. **Materials & Supplies:** Provide a list of the materials/equipment required to meet the technical approach as described in the WP and the estimated cost.
e. **Sub-Agreements/Subcontracts:** Provide a description of the work to be performed by the subrecipient/ subcontractor. For each PSA, a detailed cost proposal is required to be submitted by the subrecipient(s).
f. **Recipient Acquired Equipment or Facilities:** Equipment and/or facilities are normally furnished by the Recipient. If acquisition of equipment and/or facilities is proposed, a justification for the purchase of the items must be provided. Provide an itemized list of all equipment and/ or facilities costs and the basis for the estimate (e.g., quotes, prior purchases, catalog price lists). Allowable items normally would be limited to research equipment not already available for the project. General purpose equipment (i.e., equipment not used exclusively for research, scientific or other technical activities, such as personal computers, laptops, office equipment) should not be requested unless they will be used primarily or exclusively for the project. For computer/laptop purchases and other general purpose equipment, if proposed, include a statement indicating how each item of equipment will be integrated into the program or used as an integral part of the research effort.
g. **Other Direct Costs:** Provide an itemized list of all remaining proposed other direct costs, such as Graduate Assistant tuition, laboratory fees, report and publication costs, and the basis for the estimate (e.g., quotes, prior purchases, catalog price lists).
h. **Indirect Costs:** Provide an estimate of the total indirect costs and provide data supporting how the estimate was calculated, including any estimated costs other than the labor and material equipment, i.e., overhead, G&A, etc.

You must provide a detailed budget justification for each year of the effort. You should clearly explain the need for each item. This section should include the budget, budget justification, copy of approved rate sheet, and any supporting documentation for the lead university and all sub-universities/PIs.

Section VII: Milestone Payment Schedule

The Milestone Payment Schedule shall include the payable events for the Prototype Project. Each event shall include a description and proposed price for the event.

Section VIII: Affirmation of Business Status Certification

Certifications for each participant shall be provided.

a. Name of Business Entity

b. Proposed NAICS Code
c. Cage Code
d. SAM Expiration Date
e. Address
f. Business POC Name, Title, Phone and Email

Section IX: Data Rights Assertions

Identify any intellectual property, patents and inventions in the proposed solution and associated restrictions on JHTO/the Government's use of that intellectual property, patents and inventions. The following information shall be presented for all assertions:

a. Technical data, computer software, or patent to be furnished with restriction (If the assertion is applicable to items, components, or processes developed at private expense, identify both the data and each such item, component, or process).
b. Basis for assertion (Generally, the development of an item, component, or process at private expense, either exclusively or partially is the only basis for asserting restrictions on the Government's rights to use, release, or disclose Technical Data pertaining to such items, components, or processes. Indicate whether development was exclusively or partially at private expense. If development was not at private expense, enter the specific reason for asserting that the Government's rights should be restricted).
c. Asserted rights category (Enter asserted rights category (e.g., government purpose license rights from a prior contract, limited, or specifically negotiated licenses).
d. Name of entity asserting restrictions (corporation, individual, or other person, as appropriate).

Section X: Appendices

4.3 Evaluation of Proposals

JHTO will evaluate all PPPs submitted in response to this RPP, with the expectation that multiple PPPs may exist for a given SON. JHTO reserves the right to award all, some or none of the PPPs submitted. JHTO may also request and recommend a directed partnership between two or more submitted PPPs which may include all elements or selected elements of those PPPs. Should the JHTO choose to do this, it will provide direction that will enable the PPP leads, in conjunction with TEES, to pursue a PSA that will meet the requirements of the SON. TEES and the JHTO will provide no funding for direct reimbursement of PPP development costs. Technical and cost proposals (or any other material) submitted in response to this RWP/RPP will not be returned.

If, based on evaluation of a PPP, JHTO in interested in pursuing award, TEES will negotiate a PSA(s) with the selected UCAH consortium member.

PPPs will be evaluated against the stated criteria below:

1) Relevance of the proposed solution in addressing the SON;
2) Technical Merit and feasibility of the proposed solution to address the SON;
3) Proposed solution's approach and/or underlying technology is unique, underutilized and/or innovative; and is a compelling solution to the SON;
4) UCAH consortium membership;

5) Student engagement in all phases of the proposed solution;
6) Proposed price;
7) Project schedule; and
8) Potential impact of data rights assertions.

PPPs will be evaluated on the basis of the merit of the proposed concept in addressing the SON and the factors above, not against any other PPPs held under the same SON. PPP submissions will be valid for 365 calendar days. Upon completion of evaluations, the government will notify the PPP lead that: (1) the proposed solution has been selected to pursue the award of a PSA; (2) the proposed solution is not of interest to the government; or (3) the proposed solution is of interest, but not eligible for a PSA due to availability of government resources.

If the proposed solution is of interest, but not eligible for a PSA due to availability of government resources, the PPP lead may be contacted within 365 calendar days from the PPP submission date with a request to refresh their PPP for the possibility of a PSA award. If after 365 calendar days from the PPP submission date (or earlier if notified by JHTO), government resources are not identified to formally move to a PSA award, the PPP lead will no longer be eligible for an award under this RPP.

4.4 Potential for Follow-On Production

In accordance with 10 U.S.C. § 2371b, paragraph (f), a Prototype Project issued under the overarching Other Transaction (OT) Agreement[2], if successfully completed and competitively awarded, may result in the award of a follow-on production contract or transaction without the use of competitive procedures. Success metrics for each PPP shall be defined in the individual Prototype Project and subsequent PSA(s).

Per DoD Policy, the following definition of "successfully completed" shall apply to any Prototype Project: 'A transaction for a Prototype Project is complete upon the written determination of the appropriate approving official for the matter in question that efforts conducted under an OT-Prototype Project: (1) met the key technical goals of a project; (2) satisfied success metrics incorporated into the Prototype Project; or (3) accomplished a particularly favorable or unexpected result that justifies the transition to production. Furthermore, successful completion can occur prior to the conclusion of a Prototype Project to allow the Government to transition any aspect of the Prototype Project determined to provide utility into production while other aspects of the Prototype Project have yet to be completed.'

All Prototype Projects issued under the overarching OT Agreement shall set forth the conditions for successful completion in the statement of work.

The language of paragraphs 1 and 2 of this section shall be incorporated into all PSAs in order to allow for the option of non-competitive follow-on production contract(s).

[2] The Agreement under which the UCAH is established and managed by TEES.