



6 September 2016

**Arctic Domain Awareness Center (ADAC)
A U.S. Department of Homeland Security
Center of Excellence
Request for Proposal (RFP)**

A. Background

The Department of Homeland Security (DHS), Center of Excellence (CoE), Center for Maritime Research (CMR), Arctic Domain Awareness Center (ADAC), led by the University of Alaska, develops and transitions technology solutions, innovative products and educational programs to improve situational awareness and crisis response capabilities related to emerging maritime challenges posed by the dynamic Arctic environment.

This RFP responds to an ADAC hosted Arctic “Incidents of National Significance” (Arctic IoNS) workshop hosted by ADAC in Anchorage, Alaska, on 21-22 June 2016. The purpose of the workshop was to present current research and determine technology shortfalls associated with United States and Canada Coast Guard discerned areas of concern, in responding to a disabled cruise ship in Arctic waters.

This RFP call is being issued to a wide audience and solicits proposals that will focus on interdisciplinary research, education, and technology development in the areas of the Arctic domain.

The end user of the research associated with this RFP is principally oriented to the United States Coast Guard and other Arctic maritime operators.

ADAC announces a corresponding Arctic-related Incidents of National Significance (Arctic IoNS) workshop, Rapporteurs report to accompany this RFP. ADAC hosted the Arctic IoNS workshop in Anchorage Alaska, on 21-22 June 2016, with the principal focus to elicit the research questions included in this RFP. The Arctic IoNS 21-22 June 2016 workshop Rapporteurs report is posted at <http://adac.uaa.alaska.edu/>.

B. Proposal Theme Areas

ADAC seeks to address a number of research questions related to the themes of Domain Awareness, Maritime Technology Research, Product Transition, and Education Outreach

that are of interest to the public and relevant international, federal, state, and local agencies. As a result of an interdisciplinary workshop focused on a fictitious disabled cruise ship in Arctic waters, ADAC seeks to gain research addressing gaps and shortfalls in science and technology. In summary, these are addressing: crisis accountability, medical preparedness, mitigating environmental hazards and reducing crisis uncertainty in an Arctic maritime environment.

These questions are broken into four categories.

1. Accountability.

- What are the technological gaps and shortfalls associated with technologies (in primary and secondary) accountability methods, which requires further research to be conducted?
- Will Arctic maritime conditions (climate, temperatures and water immersion) interfere with tracking methods (primarily evaluating RFID or transmitting type technologies)?
- What are the human actions in preparing for shipboard emergency and willingness to cooperatively use accountability technology in advance and during rescue and recovery phases?
- What is required for a “full spectrum accountability” set of uniform industry standards to be researched, developed and implemented?

2. Medical Preparedness.

- “Can pre-existing medical data (mindful of United States and Canada’s federal statutes in patient privacy protections) be incorporated into passenger and crew personal accountability systems?”
- “What new or alternative evacuation and rescue capabilities or technologies are needed to enhance safe personnel transfer, including mobility challenged passengers and crews, from a casualty to a rescue vessel of differing freeboard, and then from an evacuation craft (life raft or lifeboat) to a temporary place of safety (i.e. larger vessel)?”
- “What unique communications requirements are necessary to enable telemedicine in support of a major response operation, accounting for known communication conditions in remote and austere Arctic locations?”
- “What thermal protection requirements are necessary for survival craft and personal protective equipment (what, who, where, when) to adequately preserve and protect occupants in an Arctic maritime environment?”

- “How can “on-demand” “local/localized” domain awareness be achieved (via user defined parameters) and what kind of technologies can best support localized domain awareness in austere Arctic environments?”

3. Mitigating Arctic Environmental Hazards.

- “How can we improve weather and sea ice forecasting tools to better serve operators? What new innovative Arctic marine early warning system can be developed and cost effective? “What appropriate thresholds would have to be identified for these tools?”
- “What is the practically needed performance of standard safety equipment in the Arctic?”
- “How can we improve awareness and understanding of nearshore bathymetry across the Arctic (in particular, the North American Arctic)?”

4. Reducing Uncertainty.

- “How do assumptions of human reactions in crisis response compare to actuality?” “What reasonable assumptions of human reactions can be incorporated into crisis mitigation strategies? “
- “What are the optimal scales of data flow, data types, and data conversion capabilities at each level (tactical, operational, and strategic) needed to respond to a major response operation corresponding to a disabled cruise-ship in Arctic waters?”
- “How can non-government employed citizens (“in place” or residence), in a coordinated fashion, be leveraged during and after a mass rescue operation?”
- “What is the best method to make available to planners and responders summaries and details of past rescue and recovery activities, lessons learned or strategies, for possible use in the Arctic and elsewhere?”
- “What measures are needed to advance crisis communications to support SAR, HA and DR. accounting for the unique challenges across the North American Arctic?”
- “What role can remotely-stationed, launched, piloted and recovered aircraft situated in austere locations can contribute towards improved rescue response efforts and SSA)?”

- “What type of life saving appliances capable of recovering large numbers of persons (50-100), particularly in the Arctic environment, can be developed? The general approach is an easily deployable, air-dropped device to evacuate personnel from a stricken vessel, and the device should provide a safe place of refuge for at least 24 hours.”
- “For the Arctic region where infrastructure may be limited to non-existent, what are the system options for sustaining both evacuees and first responders in the short term (0 – 72 hours) during a Mass Rescue Operation (MRO)? What are the system options for sustainment over a 3 – 4- month timeframe if the MRO grows into a salvage, recovery, and environmental response operation? Such a system should include a testing regime to determine the extended sustainment capability over a 2 -3 weeks to understand and verify capabilities, Concept of Operations, and logistics involved.”

C. Award Information

1. Funding Availability

ADAC anticipates that up to three (3) projects may be available for distribution under this solicitation. The exact amount of funds that may be awarded will be determined during the negotiations between the applicant and ADAC/DHS representatives. Publication of this notices does not obligate ADAC to award any specific project or to obligate any available funds. If an application for award is selected for funding, ADAC has no obligation to provide any additional funding in connection with the award in subsequent years beyond the award period. Notwithstanding verbal or written assurance that may have been received, there is no obligation on the part of DHS or ADAC to cover pre-award costs unless approved by the University of Alaska Anchorage, Office of Sponsored Programs as part of the terms when the award is made.

The maximum award for each grant cannot exceed \$275,000. ADAC estimates that approximately three (3) awards may be made depending on the level of the funding available.

2. Project/Award Period

Awards made under this RFP may have a maximum period of 24 months. Total funding cannot exceed \$275,000 for the duration of the award regardless of the length of the project period. Proposals requesting incrementally funded projects exceeding the ceiling limit of \$275,000 will not be accepted.

3. Type of Funding Instrument

Under this call, ADAC will fund projects via a Federal Demonstration Partnership (FDP) subaward agreement.

4. Allowable Costs

Funds awarded cannot necessarily pay for all costs that the recipient might incur in the course of carrying out the project. Allowable costs are determined by reference to the Uniform Administrative Requirements, Cost Principles, and Audit Requirements at 2CFR200 and are incorporated via the DHS Standard Terms and Conditions for Centers of Excellence. Generally, costs that are allowable include salaries and supplies as long as these are “necessary and reasonable.”

D. Eligibility Applicants

Awards can be made to accredited academic, non-profit (U.S. non-profit, non-governmental organization must provide a copy of their Section 501(c)(3) or status determination letter received from the Internal Revenue Service), and industry institutions. Partnered proposals between academic, non-profit, and industry are acceptable.

E. Proposal Format and Evaluation Criteria

The available funds will be used for the project(s) that score the highest against the evaluation criteria.

While the intent of this RFP is to resource awards through terms and conditions associated with a cooperative agreement in place with the Department of Homeland Security, it may be determined that an award could be issued through a task-order contract.

Given the complexity of challenges posed by the research questions above, ADAC encourages and give preference to applications received for proposals that incorporate multi-disciplinary expertise in methodological approaches.

Applicants are invited to submit a proposal that addresses the following:

Title Page (one-page limit) must contain the following:

1. Project Title;
2. Project Duration (with a start date no earlier than 1 March 2017);
3. Applicant name;
4. Applicant address and phone number of the Principal Investigator or Contact for Institution/organization;
5. The theme(s) for which this proposals addresses.

Technical Narrative (11 point Calibri font, 10-page limit, including figures):

1. Introduction;
2. Research Question(s) being addressed;
3. Goal and Objectives;
4. Research Methodology;
5. Tasks;
6. Milestones;
7. Deliverables (Outputs);
8. Performance Metrics;
9. Stakeholder Engagement;
10. Transition Approach;
11. Impact/Benefit (Outcomes);
12. Programmatic Risks and Mitigation Plans;
13. References (References do not count towards the page limit).

Compliance Assurances (2-page limit):

1. Data Needs– if the applicant is not generating their own data, please outline the data you will acquire in this project and how you will obtain it (e.g., publicly available, available for purchase, federal data). If you are relying on federal data sources, please explain in detail how you plan to gain access to these, as their release is not a condition of the award.
2. Human Subjects Research (IRB) or Animal Welfare Research (IACUC)—if applicable.
3. ITAR/Export Controls– if applicable.

Cost Information (no page limit):

1. Detailed Budget showing itemized direct costs as well as indirect costs;
2. Budget Narrative/Justification.

Biographical Sketch for the PI (2-page limit)

F. Submission Instructions

- a. Proposals must be submitted in a single PDF (electronic format) to ADAC at the following email address: adac@uaa.alaska.edu;
- b. If application via electronic submission to email is not feasible, delivery via postal mail or commercial mail to:

Arctic Domain Awareness Center
University of Alaska Anchorage

3211 Providence Drive
BOC Suite 203
Anchorage, AK 99508

- c. Application must be received and validated by email on or before 14 October 2016; Applications received after the deadline will be rejected without further consideration.
- d. **Please note that additional reference information or supporting documentation (in any format) may be requested by ADAC following submission.**
- e. **Please review the Arctic IoNS Rapporteurs Report before responding to this RFP opportunity.**

G. Review/ Selection Process

Reviewers from the academic/research community and DHS will evaluate the proposals.

Merit-based evaluation criteria will be used to determine the award(s) based on Scientific quality and relevance to DHS and U.S. Coast Guard mission.

Scientific Quality Review.

Reviewers will be asked to rate how the proposal addresses the following criteria, posed as questions. Reviewers will rate applications using numerical ratings of 1 to 5 (poor to excellent) and apply the percentage-weighting factor as indicated for an overall rating.

1. Originality and/or Innovativeness (25%)

- Is it original, e.g., does the proposed effort challenge and seek to shift current research or paradigms by utilizing novel theoretical concepts, inter-disciplinary approaches or methodologies?
- Is it innovative, e.g., is the proposal a novel refinement, improvement, or new application of theoretical concepts, inter-disciplinary approaches or methodologies proposed?
- Does this research have the potential to generate influential publications in the scientific community or lead to new discoveries or areas of investigation?

2. Proposed Approach/Methodology (25%)

- Are the research goals clear and based on sound theory?
- Are the methods proposed clearly stated and appropriate for testing the hypotheses?
- Are the data generation or collection approaches appropriate for the research methods?

- Is the approach or methodology technically sound, incorporating interdisciplinary expertise when appropriate, including a demonstrated understanding of the critical technology or engineering challenges required for achieving the project goals?

3. Influence and Cooperative Linkages (25%)

- Does the application show partnerships or cooperative initiatives with other institutions or organizations?
- Does the application demonstrate a viable plan for developing substantial and continuing linkages with the Homeland Security Enterprise?

4. Qualifications of Personnel and Suitability of Facilities (15%)

- Does the investigative team have the breadth of qualifications - credentials and experience - to conduct and complete the proposed research?
- Does the investigative team have prior experience in similar efforts and do they clearly demonstrate an ability to deliver products that meet the proposed technical performance within their proposed budget and schedule?
- Are the facilities suitable for the proposed research?

5. Costs (10%)

- Is the proposed research (and/or education) costs appropriate and reasonable?

Relevancy Review

Reviewers will be asked to rate how the proposal addresses the following criteria, posed as questions. Reviewers will rate applications using numerical ratings of 1 to 5 (poor to excellent) and apply the percentage-weighting factor as indicated for an overall rating.

1. Mission Relevance (75%)

- Does the proposed project address one or more of the research questions?
- Does the proposed project complement - and not duplicate – existing research and development programs sponsored by DHS or others?
- Are the potential research deliverables and users of the research well described?

2. Communicating/Transitioning Results (25%)

- Does the applicant have a track record of effectively communicating or successfully transitioning research results to appropriate stakeholders, specifically?
- Will the research team be able to deploy a technology and/or solution(s) that can be transitioned effectively to the user community either through

commercialization of the technology, open source distribution, or through other means?

- Does the proposal demonstrate the implementation of an appropriate knowledge transfer process (i.e., models from case studies to other areas, patents, etc.) from academic to government end-users and other DHS customers?

H. Award Process

- a. Awardees will be notified by ADAC when a determination is made.
- b. Subject to the availability of funds, review of proposals will occur during the months following the proposal due date given in this announcement and is expected to be completed no later than 31 December, 2016. Funding should begin after a work plan is approved. Projects should not be expected to begin prior to approved work plan (approximately 1 March 2016).
- c. In no event will ADAC or DHS be responsible for proposal preparation costs. Publication of this announcement does not obligate ADAC or DHS to award any specific project or to obligate any available funds. Recipients are subject to all U.S. federal laws, agency policies, regulations and procedures.

I. Points of Contact

- a. Should any applicant have questions or concerns regarding this request for proposal, please email the ADAC Executive team at adac@uaa.alaska.edu