

REQUEST FOR INFORMATION (RFI)
ONR RFI Announcement # 11-RFI-0006
Title “Propulsion Thruster Reliability Improvement Project”

I. DISCLAIMER:

This announcement constitutes a Request for Information (RFI) for the purpose of determining market capability of sources or obtaining information. It does not constitute a Request for Proposals (RFP), a Request for Quote (RFQ) or an indication that the Government will contract for any of the items and/or services discussed in this notice. Any formal solicitation that may subsequently be issued will be announced separately through Federal Business Opportunities (FedBizOpps). Information on the specific topics of interest is provided in the following sections of this announcement. Neither ONR nor any other part of the federal government will be responsible for any cost incurred by responders in furnishing this information.

II. BACKGROUND:

The Office of Naval Research (ONR) owns six oceanographic research vessels, which are charter leased to academic institutions for operations and maintenance to support ocean science research objectives. Five of the six ships are mono-hull with propulsion provided by azimuthing main propulsion thrusters known as Z-drives. Z-drives were selected for their excellent station keeping and maneuvering characteristics, which have been validated during at sea operations. Between 1993 and 2001, a problem with Z-drive lower unit gear set failures was identified and successfully resolved. Recently, a new problem with failure of shafts in the Z-drives has arisen which is suspected to be fatigue related. Of note is the fact that some of the research vessel Z-drives have operated for over 88,000 hours in the past 15 years, and can be expected to operate for as many as 25 more years.

III. SPECIFIC INFORMATION OF INTEREST:

ONR would like to identify thruster components with the highest potential for fatigue failure, determine the methods to identify impending failures (including but not limited to fatigue failures) and the actions to minimize the possibility of unexpected casualties through component replacements, etc. Current inspection procedures and techniques should be reviewed, and emerging technology that has potential to improve inspections should be evaluated. Frequency of inspections and component replacements should be evaluated in view of the above failure analyses and a recommended plan developed.

Potential tasks may include:

- Documentation of failures occurring since 2001 (Government to provide source information).
- Document specific characteristics of each ship’s thrusters
- Development of a record of thruster transfers and current ship assignments
- Evaluation of actual thruster loading versus design loading for mission usage
- Identification of potential failure points
- Development of improved thruster inspection procedures

- Evaluation of thruster overhaul frequency and parts replacement
- Development of projected life-cycle costs for thruster overhaul
- Development of recommendations for thruster operating limitations
- Evaluation of a need for thruster replacement and potential viable replacements

The intent of this RFI is to gauge industry interest, capabilities and relevant experience with these tasks.

IV. SUBMISSION INSTRUCTIONS and FORMATTING REQUIREMENTS

- a. Responses are requested by **September 5, 2011**. Any response received after this date will also be considered but may not be included in initial reporting or assessments.
- b. All responses should be in PDF format and emailed to the technical point of contact: **Robert Schnoor** at tim.schnoor@navy.mil. The subject line of the email should read as follows "RFI: **11-RFI-0006**". All responses must be unclassified. No classified response may be submitted. All information received in response to this RFI that is marked proprietary will be handled accordingly. Responses to this notice will not be returned.
- c. Responses should not exceed **4 pages** and should be typed in 12-point Times New Roman font, single spaced, with 1-inch margins.
- d. A suggested submission organization:
 1. Capability Statement (not more than 3 pages). Include the RFI number and name, address, company, technical point of contact, with printed name, title, email address and date.
 2. Fixed Price Rough Order of Magnitude (ROM) estimate (not more than 1 page)

V. QUESTIONS AND POINT OF CONTACT

Questions of a technical nature regarding this RFI may be sent to the following Technical Point of Contact:

Name: Robert Schnoor

Email Address: tim.schnoor@navy.mil