



**REQUEST FOR INFORMATION  
No. JF165333**

**HEAVY LIFT SPOOLER**

## I. SCHEDULE OF EVENTS

### SCHEDULE OF EVENTS:

Issue Date.....June 28, 2013

Due Date and Time.....July 19, 2013 (3:00 pm, PT)

### CONFERENCE:

A conference is not required.

## II. ISSUING OFFICE AND CONTACT

### ISSUING OFFICE:

The Procurement and Contract Services (PaCS) department of Oregon State University (OSU) is the issuing office and is the sole point of contact for this Request for Information. All concerns or questions pertaining to this Request for Information should be appropriately addressed to the individual identified below:

### CONTACT PERSON:

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## III. INTRODUCTION

### INTRODUCTION:

This is a Request for Information (RFI), issued by Oregon State University (OSU) Procurement and Contract Services (PaCS). The purpose of this RFI is to solicit input from potential contractors for information pertaining to a Heavy Lift Spooler.

Oregon State University (OSU), with funding from the National Science Foundation (NSF) is requesting information from qualified organizations who are knowledgeable on oceangoing, portable heavy lift spoolers as specified below in Attachment A. This spooler will be used to support the research and field operations of the Ocean Observatories Initiative (OOI). The spooler will be used from a range of UNOLS vessels for a minimum of 25 years in the

deployment and recovery of moorings, and will typically be used in conjunction with an A-frame or a marine crane to support the over-boarding sheave. The primary tension members will be of a synthetic, soft line type.

#### **OREGON STATE UNIVERSITY:**

Founded in 1868, Oregon State University is a comprehensive, research-extensive, public university located in Corvallis. OSU is a member of the Oregon University System and one of only two American universities to hold the Land Grant, Sea Grant, Space Grant and Sun Grant designations. OSU is also the only Oregon institution to hold the Carnegie Foundation's top ranking for research universities, a recognition of the depth and quality of OSU's graduate education and research programs. OSU is the Implementing Organization for the Endurance Array component of the OOI, under a subaward with the Consortium for Ocean Leadership.

### **IV. REQUIREMENTS/SUBMITTALS**

OSU is seeking information on Heavy Lift Spoolers. It is our desire to gather as much information on industry and product offerings as possible. This information will allow OSU to align our needs with the industry expertise. Please provide the following information.

- Submit 3 copies of your response to the address above, or email your response.
- Brief company history demonstrating your expertise with this type of equipment.
- Please review attachment A and respond to the following. Attachment A is a tentative specification to support a potential future RFP.
  - Please make recommendations on improvements. These recommendations may include areas that you feel are missed, items that are confusing, clarifications, enhancements, ..... Include any topic that you feel is applicable. Please be very clear in your responses.
- Product Information; provide literature/brochures are product presently available, or, if allowable, in the design stage. This information may be used to gain an understanding of industry direction or expand the OSU future specifications.

### **V. SUMMARY**

To be considered, responses to this RFI must be received no later than the due date and time indicated in the Schedule of Events. Responses must be sent to the contact person identified in Section II of this RFI.

Information gathered in this process could potentially be incorporated in an Invitation to Bid (ITB) or Request for Proposal (RFP). Any resulting RFP or ITB will be openly competitive and therefore responses should not be exclusive or restrict competition. This RFI does not obligate OSU to issue an RFP or ITB nor to include information submitted by respondents.

A contract will not be issued directly from this RFI, nor will issuance or acceptance of submittals or subsequent conversations bind OSU into any type of contractual obligation or relationship

**ATTACHMENT 1**  
**Technical Specification ver1-04**  
**Heavy Lift Spooler**

**1. Background**

Oregon State University (OSU), with funding from the National Science Foundation (NSF) is soliciting proposals from qualified organizations interested in providing one oceangoing, portable heavy lift spooler as specified below. This will be used to support the research and field operations of the Ocean Observatories Initiative (OOI). The spooler will be used from a range of UNOLS vessels for a minimum of 25 years in the deployment and recovery of moorings, and will typically be used in conjunction with an A-frame or a marine crane to support the over-boarding sheave. The primary tension members will be of a synthetic, soft line type.

**2. Instructions to Proposal Respondents**

The specifications listed in this document consist of requirements and options.

- 2.1 Any proposal submitted in response to this specification will be understood by OSU to adhere to all listed requirements unless stated otherwise in writing by the Vendor.
- 2.2 Any exception to these requirements shall be explicitly stated in writing in the proposal response.
- 2.3 Any proposal submitted in response to this specification shall explicitly address each option as a separate line item.
- 2.4 Each option shall be priced individually unless not offered by the Respondent.
- 2.5 Complete warranty terms shall be included with each proposal.
- 2.6 Normal maintenance requirements shall be summarized in writing with each proposal.
- 2.7 Proposal shall include Respondent's timeline in Gantt chart format for production of this spooler. At minimum, timeline shall explicitly indicate durations and relative timing of the following milestone tasks after receipt of order.
  - Kickoff meeting (may be in teleconference format)
  - Respondent engineering effort
  - Respondent design reviews with OSU and OOI.
  - Submittal reviews by OSU
  - Material procurement
  - Fabrication
  - Factory Acceptance Test (FAT)
  - Shipping to OSU
  - Successful Site Acceptance Test (SAT) after installation and sea-trial on a West-coast UNOLS vessel.
- 2.8 Following proposal award, the Awardee (referred to as Supplier hereafter) shall provide timely submittals of all general arrangement drawings, major assembly drawings, and purchased component specifications and data sheets to OSU for approval. OSU will respond fully to submittals within five business days.

- 2.9 Following proposal award, Supplier shall provide a written FAT and SAT plan to OSU for review, and shall work with OSU to ensure that the plan fulfills the OOI requirements prior to conducting the FAT.
- 2.10 Supplier shall conduct the FAT, to be witnessed by OSU personnel.
- 2.11 Supplier shall allow OSU personnel access to Supplier's facilities at any time during working hours for inspection of progress or to resolve issues. OSU will give at least five days advance notice of such visits.

### **3. Spooler Operating Environment**

- 3.1 Spooler shall be designed for 25 year service in a marine environment with exposure to all weather and salt spray during operations, as well as exposure to occasional green water while not operating.
- 3.2 Spooler shall be able to operate at full capacity (see Section 6.3) over the air temperature range of -10 to +50 °C.

### **4. Spooler Structural and Handling Requirements**

- 4.1 Spooler shall be designed in accordance with 46 CFR 189.35-9 and UNOLS RVSS Appendix B, based on design line tension (DLT) of 70,000 lbf breaking strength.
- 4.2 Spooler shall have suitable lifting points to allow for level lifting by crane without special rigging hardware, or rigging hardware will be provided to lift winch level.
- 4.3 Spooler shall have 14" wide x 5" high forklift pockets accessible from opposite sides of the spooler base.
- 4.4 All exposed spooler structural elements shall be of corrosion-resistant materials (e.g. bronze, stainless steel) or shall be coated with a maintainable paint system that is suitable for the marine environment.
- 4.5 All exposed stainless steel surfaces shall be passivated.
- 4.6 Spooler frame shall have provision for securing the spooler to the UNOLS deck pattern of 1"-8 threaded inserts on 24 inch centers. 1.188" clearance holes shall be provided to accommodate insert location tolerances.

### **5. Spooler Dimension and Capacity Requirements**

- 5.1 Spooler drum and sheaves shall have a minimum diameter of 12 inches.
- 5.2 Spooler drum shall have a minimum working capacity of 2,750 m of ¾ inch synthetic line, double spaced, with a minimum of 2 inch freeboard.
- 5.3 Spooler shall accommodate synthetic line from 3/8 to ¾ inch diameter.
- 5.4 Spooler shall not exceed plan dimensions of 84 inch x 96 inch, and height of 80 inches.
- 5.5 Spooler weight shall not exceed 10,000 lb including design maximum line weight.

### **6. Spooler Performance Requirements**

- 6.1 Spooler shall provide minimum line pull at full drum of 25,000 lbf, and, at minimum, a Maximum Permissible Tension (MPT) of the same value.

- 6.2 Spooler shall provide minimum line speed at mid-drum of 40 m/min in both directions.
- 6.3 Spooler shall be capable of a minimum 75% operational duty cycle over a four hour period, i.e. at least three hours continuous operation followed by no more than one hour cool-down without the need for external cooling throughout the air temperature range stated in Section 3.2.

## **7. Control and Monitoring Requirements**

- 7.1 Drum control shall be via joystick.
- 7.2 Local (i.e. at the spooler) and remote control stations shall be provided.
- 7.3 Local and remote stations shall include Measurement Technology Northwest LCI-90i displays. OSU will consider alternate displays but will make the final decision regarding their acceptability.
  - 7.3..1 OPTION. Winch controller shall have output compatible with Measurement Technology Northwest WinchDAC software.
- 7.4 Remote station shall be wireless or cabled.
- 7.5 If remote station is cabled, the cable shall include stainless steel SubConn Micro Series connectors to allow it to be readily detached and reattached at either end to support spooler installation and removal.
  - 7.5..1 OPTION. If provided, remote station cable shall be offered in lengths of 50 ft, 100 ft and 150 ft.
- 7.6 Line tension, speed and payout length shall be digitally displayed with a 10 Hz update rate on local and remote stations with characters of minimum ½ inch height that are readily visible at night and in direct sunlight.
- 7.7 Provision shall be made for user calibration of line tension, speed and payout.
- 7.8 The following parameters shall be updated and archived at 20Hz for control and alarm functions
  - 7.8..1 Line tension shall be displayed at an accuracy of  $\pm 100$  lbf.
  - 7.8..2 Line speed shall be displayed at an accuracy of  $\pm 1$  m/min when no hardware is being passed.
  - 7.8..3 Line payout shall be displayed to an accuracy of  $\pm 1$  m when no hardware is being passed.
  - 7.8..4 Winch Mode (speed mode, autorender, etc...)
  - 7.8..5 Winch Alarms
- 7.9 Level wind override switch shall be provided at local and remote stations.
- 7.10 Spooler power button shall be at spooler local station only.
- 7.11 Local and remote stations shall both have an illuminated E-stop switch.
- 7.12 Auto-render functionality with user adjustable setpoint up to 110% of MPT shall be provided.
- 7.13 Auto-render shall be capable of being enabled and disabled from local and remote operating stations.

## **8. Level Wind Requirements**

- 8.1 Level wind shall operate automatically with manual override.
- 8.2 Level wind shall accept tension members between 3/8" and 3/4" diameter
- 8.3 Level wind shall accommodate passage of shackles and other in-line hardware of up to 10 inch maximum diameter under full tension without obstruction.
- 8.4 Level wind shall accommodate vertical fleet angles from  $-10^{\circ}$  to  $+45^{\circ}$ , and horizontal fleet angles from  $-10^{\circ}$  to  $+10^{\circ}$ .

## **9. Electrical Requirements**

- 9.1 OSU will give preference to an all-electric spooler, i.e. without hydraulic power pack.
- 9.2 The spooler shall operate on ship's power only; a dedicated diesel engine power unit is unacceptable.
- 9.3 Spooler shall be designed for 400 VAC/50 Hz to 480 VAC/60 Hz three phase, with 200 A maximum current draw.
- 9.4 Spooler local controller shall have provision to limit and digitally display the maximum current draw over the full range in 25 A, or smaller, increments.
- 9.5 Motors, cables and electrical enclosures shall be rated for IP 67.
- 9.6 Spooler controller shall be supplied with a Russellstoll MaxGard Load Breaking Receptacle #DS2404MRA00 (male inlet with angle adaptor) and shall be supplied with one matching Female Connector #DF2404FP000 and watertight covers for both items. OSU and spooler users will provide wiring to connect spooler to ship's power.
- 9.7 Spooler shall be provided with the following IP-67-rated status and alarm lights.
  - 9.7..1 A red beacon to indicate that an alarm condition has occurred
  - 9.7..2 An amber beacon to indicate that the winch is currently operating.

## **10. Documentation Requirements**

- 10.1 Spooler shall be shipped with a comprehensive operations and maintenance (O&M) manual. Two printed and bound copies of the O&M manual shall be provided together with one PDF file copy in digital format (e.g. CD-ROM, jump drive). All copies shall be identical in terms of content and version number.
- 10.2 Spooler shall be shipped with a complete set of assembly and schematic drawings. Two printed and bound copies of these documents shall be provided together with one PDF copy and one copy of digital source material in a mutually agreed file type, prior to proposal, on digital media (e.g. CD-ROM, jump drive). All copies shall be identical in terms of content and version number.

- 10.3 Spooler shall be shipped with UNOLS-compliant Maximum Capability Document (MCD). Two printed and bound copies of this document shall be provided together with one PDF copy in digital format (e.g. CD-ROM, jump drive). All copies shall be identical in terms of content and version number. An example MCD is provided with this RFP.
  - 10.3..1 The MCD must contain an engineering analysis for a worst-case scenario (DLT, Fleet angles, etc) and provide the maximum reaction forces for the UNOLS bolt down pattern.
  - 10.3..2 MCD must contain a free body diagram displaying the forces and reactions.
- 10.4 Spooler shall be shipped with one set of printed copies of all manufacturer's internal test and FAT documents in an appropriately labeled three-ring binder.