



**THIS IS NOT  
AN ORDER**

**REQUEST FOR BIDS/PROPOSALS COVERSHEET**  
**THE UNIVERSITY OF SOUTHERN MISSISSIPPI**  
**Procurement and Contract Services**  
**118 College Drive #5003, Hattiesburg, Mississippi 39406-0001**

**Date:** June 25, 2020

**Bid No. 21-04**

THE UNIVERSITY OF SOUTHERN MISSISSIPPI is considering the purchase of the following item(s). We ask that you submit your bid and retain one copy for your files. Right is reserved to accept or reject any part of your bid. Your quotation will be given consideration if received in Bond Hall, Room 214 on or before:

2:00 p.m. CT

July 17, 2020

**Buyer:** Jessica Whitten

Name: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

TERMS - Bidder should state terms of sale. Our terms are 2% ten days, net 45 days.

These terms will apply per Mississippi law.

AWARDING CONTRACT - Cash terms will not be used as a basis for awarding contracts; however, the University will accept cash discounts when earned.

**NOTE: If you cannot quote on the exact material shown, please indicate any exception giving brand name and complete specifications of any alternate. If additional space is required, use a separate sheet or letter of transmittal.**

ITEM	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL NET PRICE
		<p><b>RFx #3160003723</b></p> <p><b>DESCRIPTION</b></p> <p><b>Bid 21-04 Autonomous Underwater Vehicle</b></p> <p>PROPOSAL MUST BE RETURNED TO THE UNIVERSITY IN ACCORDANCE WITH THE SPECIFICATIONS. BID NUMBER AND DATE OF BID OPENING MUST BE SHOWN ON THE OUTSIDE OF THE ENVELOPE IF USING THAT METHOD.</p>		

We quote you as above-F.O.B. The University of Southern Mississippi. Shipment can be made in \_\_\_\_\_ days from receipt of order. DATE \_\_\_\_\_ TERMS \_\_\_\_\_  
Return quotation to Procurement Services at above address.

**Signature Required** \_\_\_\_\_

**THE UNIVERSITY OF SOUTHERN MISSISSIPPI  
PROCUREMENT SERVICES  
118 COLLEGE DRIVE #5003  
HATTIESBURG, MS 39406-0001**

**GENERAL TERMS, CONDITIONS AND INSTRUCTIONS FOR BIDS/PROPOSALS**

- 1.) Failure to examine any drawings, specifications, and instructions will be at bidder ' s risk.
- 2.) Samples of items when called for must be furnished free of expense and if not destroyed in testing, will, upon request, be returned at the bidder ' s expense. Request for the return of samples must be made within ten (10) days following opening bids. Each individual sample must be labeled with bidder ' s name and manufacturer ' s brand name and number.
- 3.) Bids must be signed and sealed with bidder ' s name and address on the outside of the envelope, and the time and date of the bid opening and the bid file number shown in the lower-left corner of the packages; envelopes, express mailing labels, boxes, etc.
- 4.) In order for your bid to be considered, it must be received and time stamped in our office by 2:00 P.M. of the bid opening date. It is the responsibility of the vendor to ensure their bid is received within the appointed time. If your bid package is not received in Bond Hall, Room 214, by 2:00 P.M. of the bid opening date, it will not be considered.

If you are delivering your bid, you need to hand carry the bid package to:

The University of Southern Mississippi  
Procurement Services  
Bond Hall, Room 214  
Hattiesburg, Mississippi

If you are mailing your bid package via U.S. Postal Service, mail to:

The University of Southern Mississippi  
Procurement Services  
118 College Drive #5003  
Hattiesburg, MS 39406-0001

If you are express mailing your bid package via Federal Express or UPS, or any other delivery service which requires the use of a physical address, deliver to:

The University of Southern Mississippi  
Receiving Department  
2609 West 4<sup>th</sup> Street  
Hattiesburg, MS 39401

- 5.) Bids or proposals shall not be modified, corrected, altered, or amended after the specified closing time and the opening of such bids, unless otherwise noted in the request for bids or proposals.
- 6.) The University of Southern Mississippi reserves the right to reject any and all bids, to waive any informality in bids, and unless otherwise specified by the bidders, to accept any items on the bid. If the bidder fails to state the time within which bids must be accepted, it is understood and agreed that The University of Southern Mississippi shall have 60 days to accept. The University of Southern Mississippi reserves the right to make an award to this bid on an all or none basis, or on a line by line basis, whichever serves the best interest of The University of Southern Mississippi.
- 7.) Contracts and purchases will be made or entered into with the lowest, responsible bidder meeting specifications.
- 8.) A written purchase order or contract award mailed or otherwise furnished to the successful bidder within the time of acceptance specified in the Invitation for Bid results in a binding contract without further action by either party. The contract shall not be assignable by the vendor in whole or in part without the written consent of The University of Southern Mississippi.
- 9.) Bid files may be examined during normal working hours by bid participants. Non-participants will be prohibited from obtaining any information relative to the bid until the official award has been made.
- 10.) If purchase orders or contracts are canceled because of the awarded vendor's failure to perform or request for price increase, that vendor shall be removed from our bidders' list for a period of 24 months.
- 11.) No addendum will be issued within a period of two (2) working days prior to the time and date set for the bid opening. Should it become necessary to issue an addendum within the two-day period prior to the bid opening, the bid date will be reset giving bidders ample time to answer the addendum.
- 12.) Alternate bids, unless specifically requested or allowed, will not be considered.
- 13.) Bid openings will be conducted open to the public. However, they will serve only to open the bids. No discussion will be entered into with any vendor as to the quality or provisions of the specifications, and no award will be made either stated or implied at the bid opening. After the close of the bid opening meeting, the bids will be considered to be in the evaluation process and will not be available for review by bidders. Proposal openings are not required to be open to the public; however, the resulting award is open for public inspection.
- 14.) Prices quoted shall be firm for the term of the contract or for the stated time of

acceptance.

- 15.) The bidder understands that The University of Southern Mississippi is an equal opportunity employer and, therefore, maintains a policy which prohibits unlawful discrimination based on race, color, creed, sex, age, national origin, physical handicap, disability, or any other such discrimination; and the bidder, by signing this bid, agrees during the term of agreement that the bidder will strictly adhere to this policy in its employment practices and provision of products or services.
- 16.) Bidders must upon request of The University of Southern Mississippi furnish satisfactory evidence of their ability to furnish products or services in accordance with the terms and conditions of these specifications. The University of Southern Mississippi reserves the right to make the final determination as to the bidder's ability.
- 17.) Questions or problems arising from bid procedures should be directed to the Buyer listed on the solicitation at:

The University of Southern Mississippi  
118 College Drive #5003  
Hattiesburg, MS 39406-0001  
Phone: (601) 266-4131
- 18.) All items must equal or exceed the specifications listed. The absence of detail specifications or the omission of detail description shall be recognized as meaning that only the best commercial practices are to prevail and that only first quality materials and workmanship are to be used.
- 19.) It is the intent of the specifications to obtain a product that will adequately meet the needs of the user while promoting the greatest extent of competition that is practicable. It is the responsibility of the prospective bidder to review the entire Invitation to Bid packet and to notify The University of Southern Mississippi if the Specifications, Instructions, General, or Special Conditions are formulated in a manner which would unnecessarily restrict competition.
- 20.) It shall be incumbent upon the bidders to understand the specifications. Any requests for clarifications shall be in writing and shall be submitted to our Procurement Services office at least five (5) days prior to the time and date set for the bid opening, unless otherwise noted in the bid or proposal specifications.
- 21.) The minimum specifications are used to set a standard and in no case are used with the intention to discriminate against any manufacturer. Bidders should note the name and the manufacturer and model number of the product they propose to furnish and submit descriptive literature.
- 22.) Trade names, brand names, and/or manufacturer's information used in these specifications are for the purpose of establishing quality, unless otherwise noted. Bids on

products of other qualified manufacturers are acceptable, provided they are demonstrated as equal to those specified in construction, design and suitability. Each bidder shall submit with his bid a complete brochure with pictures on each item and shall point out specifically any deviations from the specified items. Failure to do so may disqualify any bid. Please bid as specified or an approved equal.

- 23.) A copy of the manufacturer's standard guarantee/warranty shall accompany and become a part of this bid.
- 24.) There are no federal or state laws that prohibit bidders from submitting a bid lower than a price or bid given to the U.S. Government. Bidders may bid lower than U.S. Government contract price without any liability as The University of Southern Mississippi is exempt from the provisions of the Robinson-Patman Act and other related laws. In addition, the U.S. Government has no provisions in any of its purchasing arrangements with bidders whereby a lower price to The University of Southern Mississippi must automatically be given to the U.S. Government.
- 25.) All invoices, unless noted otherwise, are to be billed to:
- The University of Southern Mississippi  
Accounts Payable  
118 College Drive #5104  
Hattiesburg, MS 39406-0001
- 26.) All equipment bid shall be of current production and of the latest design and construction.
- 27.) Where all, or part(s), of the bid is requested on a unit price basis, both the unit prices and the extension of the unit prices constitute a basis of determining the lowest responsible and responsive bidder. In cases of error in the extension of price, the unit price will govern.
- 28.) Should the University of Southern Mississippi close due to inclement weather conditions, or any other unforeseen events on the bid opening date, sealed bids will open the following business day at the same time and location.
- 29.) As an alternative to traditional sealed bids in envelopes, the University of Southern Mississippi is capable of receiving electronic bid responses. While this option is available, it is not required and we ask that all potential respondents keep in mind that with any electronic system there could be delays or glitches with the submission process; therefore the University highly encourages traditional sealed bids which are either mailed or submitted in person. Should a vendor choose to submit their response electronically, please follow the instructions below using the following website: [https://www.ms.gov/dfa/contract\\_bid\\_search/Home/Sell](https://www.ms.gov/dfa/contract_bid_search/Home/Sell). On this site you will find helpful links to procurement opportunities, as well as a link to supplier registration. If not already registered in this system, potential bidders will first need to click on 'Supplier

Registration' and follow the steps outlined (a one-time process). Once registered, they can return to the original website and click on 'Procurement Opportunities' where they can either search by keyword for the bid they desire to respond to or leave the search box blank and click 'Search' for a listing of all current bids and proposals for the various State of Mississippi offices.

With regard to construction bids, there is one additional step required during the bid submission process. Along with the bid response and other attachments, contractors will also need to attach their Certificate of Responsibility (COR), or a statement that the bid enclosed does not exceed Fifty Thousand Dollars (\$ 50,000.00). If their COR or such statement is not attached, the bid will be invalid and not considered.

**AA/EOE/ADA**

**The University of Southern Mississippi**  
**USM BID #21-04**  
**SPECIFICATION FOR AUTONOMOUS UNDERWATER VEHICLE**

**I. Background**

The University of Southern Mississippi (USM) has received funding to develop capabilities to characterize the nearshore regions via Autonomous Underwater Vehicles (AUV) in conjunction with Autonomous Surface Vehicles (ASV). For this reason, USM is seeking to purchase an AUV capable of operating in shallow near coastal water. The AUV needs to be customizable to enable the development of custom payloads and custom mission behavior as well as acoustically link to a computer on the surface to exchange data and commands.

**II. Purpose**

A key goal is the purchase of a beach deployable AUV. The AUV will be used to characterize several parameters in shallow coastal water. Furthermore, USM will develop sensors for the AUV and integrate sensors into the AUV. For this reason, the AUV will need a customizable payload section.

**III. General Performance Specification**

The vehicle shall perform surveys in coastal waters in depths ranging from 1 to 50 meters and in water temperature ranging from 0° C to 35° C. The vehicle shall have the mission of measuring water column data such as conductivity, temperature, pressure, sediment load, and water current. The vehicle shall be able to maintain accurate geographical reference throughout its mission and needs to be able to send and receive mission status to a surface transducer via an acoustic modem.

The vehicle must have a customizable payload section carrying a secondary control board that is capable of interfacing with the AUV's main controller and any custom payload. This controller shall provide full control of all vehicle functions as well as have access to all sensor data in real-time. The customizable payload section should provide the option for through-hull penetration for electrical, optical, or pipe connections that will be utilized by USM to integrate various sensor options. The specific location of the hull penetrations will be provided by USM either at the time of purchase or at some later time in the project.

The vehicle size and weight shall enable launch and retrieval from the beach or small vessels by no more than two persons without the need for specialized equipment.

The vehicle shall be sufficiently robust to be operated and maintained in the field with minimal technical support. The vehicle shall have a modular and open design to be customizable by USM. Customization will include some components of the hardware as well as mission behavior.

**IV. Required Specification**

The following specifications are to ensure that the vehicle will perform the tasks necessary to satisfy the project's objectives. Any deviation from the following specifications must be explained and justified. Table 1 provides a summary of basic vehicle characteristics and required specifications. The following sections provide more detailed requirements.



	Vehicle Characteristics	Specification
1	Maximum Depth	100 meters or greater with 1.5 safety factor
2	Speed Range	0.5 to 2.5 meters/second (1-5 knots)
3	Vehicle power	Rechargeable batteries with a maximum charging time of 12 hours.
4	Endurance	Minimum of 10 hours at cruising speed of 2-3 knots with all onboard sensors and navigation equipment turned on.
5	Range	Minimum of 30 miles with all onboard sensors and navigation equipment turned on.
6	Data Storage	Data storage capacity shall provide the capability to store all data from all sensors and equipment listed in this bid specification while operating for 12 continuous hours.
7	Additional Custom Payload Section	Custom payload section with bulkhead connections to the outside of the vehicle. See section IV.A.7 for detail.
8	CAD Model of payload section.	A CAD model of the custom payload section must be provided. See section IV.A.8 for detail.
9	Secondary Controller	A secondary controller enabling custom mission behavior and sensor control. See section IV.A.9 for detail.
11	Operational Salinity Range	0-40 ppt (via ballast adjusting)
12	Operational Temperature Range	-0°C to +35°C
13	Transportation Temperature Range	-10°C to +45°C
14	Navigation Equipment Sensors	Integrated IMU/DVL/GPS
15	Underwater Communication	Acoustic underwater modem.
16	Surface Communication	RF radio modem with a minimum range of 300 m

16	Additional sensors	The AUV shall have the capability to measure conductivity, temperature, and depth and provide the option to add at least two additional sensors. See section IV.F for detail.
17	Time Synchronization	All sensors, navigation equipment, and data collection devices shall be time-synchronized with each other.
18	Acoustic Management	All acoustic sensors on the vehicle and support vessel shall have acoustic management to avoid interference between systems.

Table 1

**A. Basic Vehicle**

1. Maximum Operating Depth shall be 100 meters or greater with a built-in 1.5 safety factor for the entire vehicle, including all sensors.
2. The velocity of the AUV shall be variable over the range of 0.5 to 2.5 m/s (0.5 to 5.0 knots) or better.
3. The vehicle shall be powered by rechargeable batteries. Time to recharge the battery pack in the vehicle between deployments must be 12 hours or less. Operators must be able to monitor the vehicle's power consumption and reserve at all times via the RF radio modem while at the surface and via the acoustic modem while the AUV is submerged. Powering the AUV on and off shall be done without opening the AUV. The AUV shall have a connection in the hull to allow for external power. This connection shall also be used for the charging of the internal batteries. This connection shall have a waterproof closure mechanism.
4. The vehicle shall be capable to autonomously collect data and operate for a minimum of 10 hours at a survey speed of 2-3 knots while collecting data from all navigation equipment and each of the sensors specified in Section IV.F. (all sensors used simultaneously).
5. The AUV must have a minimum range of 30 miles (48.3 km).
6. The vehicle shall have data storage capability for 12 hours of continuous run time with all vehicle sensors and equipment operating. This includes all required and optional equipment described in this specification. Data upload and download shall be provided via a waterproof connection. Also, wireless communication and data download must be possible.
7. The AUV shall have a swappable and customizable dry payload section. The payload section shall have the option to install a minimum of two sets of a minimum of 6 radially distributed through-hull connections in the form of waterproof

removable plugs. Each plug shall have a minimum diameter of 2 cm. These plugs shall be customizable to allow wire penetrations, pipe penetrations, optical fiber penetrations, optical windows, etc. to be installed on the payload section. The payload section shall have a minimum length of 16". The exact placement and number of penetrators will be specified after the AUV has been delivered. Once these specifications have been received, the payload section shall be delivered to USM within a reasonable amount of time.

8. 3-D CAD files documenting all components and dimensions of the payload section, as well as how the payload sections interfaces with the rest of the AUV must be made available to USM. CAD files are meant to allow USM to integrate custom sensors into the payload section and design other custom payload sections and attachments to the AUV.
9. The AUV will have a secondary controller. This controller must have full access to all vehicle parameters and controls as well as to all installed sensors in real-time. This controller must have the capability to take control of all functions of the AUV. However, when the secondary controller fails to communicate within a programmable time, the primary controller shall take control of the AUV as a failsafe. The controller's architecture shall be open and programmable via software modules such as ROS and MOOS. A full list of commands to control all functions of the AUV via the secondary controller shall be provided by the vendor.
10. The AUV shall be capable of following a preprogrammed path allowing the vehicle to conduct linear transects or detailed surveys of specific areas by "mowing the grass" grid patterns. The vehicle shall be capable of following changing bathymetry by maintaining a preprogrammed altitude above the seabed, as level flight at a preprogrammed depth, as well as undulate between a programmed distance from the ocean surface and the ocean floor.
11. The AUV shall be modular in design to allow the unit to be broken down into sections for shipping and transport. Foam-lined transportation cases designed to support the enclosed equipment shall be provided.

## **B. Control**

1. Programming the AUV's survey path, setup of sensor parameters, data transfer from the AUV and monitoring the status of the AUV setup shall be done via a PC based field operation console. A graphical user interface (GUI) shall be provided with a selection of settings via mouse-based parameter selection and not only via command input at a prompt. The GUI shall provide a minimum of:
  - a. Parameter entry of the mission plan, automatic error checking to be performed on all aspects of the planned mission, and warning messages if any mission parameters are conflicting.
  - b. A map view, showing the planned mission for review.
2. Connecting the vehicle to the field operation console for programming, configuration, or data download shall not require opening the vehicle's hull. If this connection is exposed, then it should have a waterproof closure.

3. All sensor data shall be time-stamped and be exportable into a format that is directly importable into a scientific computing/spreadsheet software such as MATLAB or Excel.

### **C. Navigation**

The AUV's primary navigation is a key factor in being able to meet the navigation accuracy and precision requirements. The primary navigation equipment on the AUV shall consist of an integrated Doppler Velocity Log (DVL), an Inertial Measurement Unit (IMU) with Kalman filter that provides positioning drift of no more than 3% of the range traveled with a 95% confidence, and a GPS unit that provides GPS fixes when the vehicle is on the surface. The AUV shall have the option to integrate a fiber optic Inertial Navigation System (INS). In combination with the optional fiber optic INS the navigation accuracy will be 0.05% or better of the range traveled. The vendor needs to provide a separate line item with pricing for this optional INS to be added later.

### **D. Safety Features**

1. The AUV shall have a means of self-aborting a mission due to abnormal system readings or deviations from set points that will result in immediate surfacing of the vehicle. Abnormal readings, which lead to a self-abort of the mission, will include but are not limited to water intrusion, low battery, pressure abnormalities, and other erroneous sensor readings.
2. The AUV shall have the ability to receive mission commands during the mission while on the surface via the RF modem and via the acoustic modem while submerged. Vehicle commands required, but not limited to, are to abort the mission, navigational corrections, ability to turn sensors on or off, and the ability to send and receive data from the secondary controller.
3. The AUV shall have an acoustic locating pinger that is independent of vehicle power so that the vehicle can be located in the event that the vehicle suffers catastrophic power failure. The pinger must be compatible with the Sonotronics UDR receiver and DH-4 directional hydrophone.
4. The AUV shall have a strobe light that is visible to the human eye over a distance no less than 500 m under clear atmospheric conditions through the air and no less than 50 m underwater in clear water conditions.

### **E. Communications**

1. The AUV shall have an Iridium satellite communications system for long-range status on location updates to the user.  
The AUV shall have an RF Radio for surface control and communications. The vendor will supply a field operation console capable of communicating with and tracking the vehicle via the RF radio link. The vendor needs to provide a separate line item with pricing for this optional field operation console.
2. The AUV shall be equipped with an underwater acoustic modem. The modem shall have a communications minimum capability of 50 b/sec-5 kb/sec (depending on the environment, range, and acceptable noise levels). The

acoustic modem must be able to operate in shallow water (2 m or less) and have an effective range of at least 1 km. The field operations console and installed software must be able to communicate with the AUV via the acoustic modem. The received AUV coordinates shall be displayed on the operations console. The received AUV status updates shall be displayed on the operations console. The modem must be capable of communicating with the secondary controller outlined in IV.A.9 and exchange custom messages and commands. The communication protocol will be made available to USM to allow communication with the AUV via a serial bus or some other standard computer communication interface using the acoustic modem.

#### **F. Sensors**

The following sensors must be included on the vehicle and must be time-synchronized and spatially referenced with data from other sensors and the positioning/navigational data.

1. CTD (Conductivity, Temperature, Depth) sensor and the option to support two additional sensors from the following list: • Dissolved Oxygen • fDOM • ISEs (Ammonium, Chloride, and Nitrate) • pH (guarded and unguarded) • pH & ORP (guarded and unguarded) • Rhodamine • Total Algae (Chlorophyll + Phycocyanin and Phycoerythrin) • Turbidity
2. ADCP/DVL (Acoustic Doppler Current Profiler / Doppler Velocity Log). A downwards looking ADCP/DVL capable of measuring above ground vehicle speed as well as water column parameters such as water currents speed and backscatter intensity. USM will use the ADCP data to estimate sediment load within the water column.

#### **G. Acoustic Management**

All acoustic navigation equipment, sonars, and communication equipment on the vehicle and support vessel shall have acoustic management to avoid interference between systems.

#### **V. Software**

- A. The vendor shall provide mission planning and management software. This software must allow the user to plan the AUV mission from a graphical user interface and must be capable of displaying the position of the vehicle as tracked during the mission by RF or acoustic means. Both mission planning and vehicle-tracking information must be overlaid graphically on a chart/map.
- B. The vendor will provide a means of reviewing vehicle performance after completion of a mission. Software must be provided for displaying and assessing vehicle performance and vehicle logs must be accessible in a documented format so that an in-house analysis may be performed via scientific computing/spreadsheet software such as MATLAB or Excel.

## **VI. Transportation of Equipment**

The equipment will be transported to various sites where it will be mobilized or returned to the vendor for repairs; as such, the vehicle needs to be easily transportable. Ground and air transportation will require that the AUV will be disassembled into components that will fit into padded shipping cases provided by the vendor.

## **VII. AUV Deployment and Recovery**

The ability to recover and deploy the AUV from a large variety of vessel sizes as well as from the shore is a key capability of the intended vehicle. The AUV will need to be beach and vessel deployable without the need for specialized launch and recovery equipment. Therefore, vendors must assume that the AUV will be deployed and recovered by hand with minimal equipment.

## **VIII. Warranty Services**

At a minimum, the vendor shall provide Software/Hardware Warranty support for one year from acceptance. Longer warranty periods are preferred.

## **IX. Documentation**

The vendor shall provide Operations and Maintenance manuals to USM. Documentation provided shall include, but not be limited to the following:

- A. Theory of operation
- B. Operating procedures
- C. Interfacing instructions with connector pinouts for the custom payload section
- D. Complete wiring schematics to the component level for the custom payload section
- A. 3D CAD assembly model of all components of the custom payload section
- B. Troubleshooting and maintenance procedures
- C. Parts lists with manufacturer's original part numbers
- D. Documentation of the various software packages

## **X. Other**

The vendor shall provide pricing for a "field repair kit" containing a set of parts, which can be expected to need periodic replacement while operating the vehicle in the field. Included in the kit will be all tools to accomplish this task. The vendor needs to provide a separate line item with pricing for this optional "field repair kit".

The vendor shall supply lists and pricing for spare parts necessary to repair and maintain the AUV for a period of at least two (2) years. USM reserves the right to purchase some or all items within the first year of operation of the vehicle after acceptance. The list shall include, but not be limited to:

- A. Spare circuit boards including digital and analog subassemblies

- B. Sensors and electronic parts associated with them.
- C. Power components
- D. Mechanical parts to the component level, such as casing, fins, propellers, cages for electronics, mechanical connections, etc.

### **XI. Training**

The vendor shall provide, as a separate line item, pricing for an optional training on the operation, software, maintenance, and troubleshooting of the AUV for a minimum of six persons at the vendor's location or some other agreed upon site. This must include at least one actual deployment & recovery of the system as well as mission planning and basic mission data analysis.

### **XII. Proof of Performance**

The vendor shall provide a proven record of the vehicle's performance. The vendor must demonstrate that all acoustic navigation equipment, sonars, and communication equipment on the vehicle and support vessel have acoustic management to avoid interference between systems. The vendor shall demonstrate that the specified navigational accuracy is achieved using the standard and optional fiber optic INS in combination with the DVL. This means, with the proposal, the seller will provide representative sample performance data for the navigational accuracy of the AUV as well as for all sensors. Furthermore, the seller needs to provide references of at least three (3) customers who have purchased and operated a vehicle in a substantially similar configuration as specified above within the last five (5) years. The above requested information will assist USM in determining the bidder's capability of meeting these requirements.

### **XIII. Copies**

At least one (1) signed original copy of the bid response MUST be provided, as well as a portable electronic virus/malware free copy (thumb drive) of the bid response from the responding Vendor to be included in the bid response package. If an electronic copy is not included, the University reserves the right to request an electronic copy of the exact bid response prior to review of the bid.

### **XIV. Payment**

The currency used for payment of costs will be in United States dollars. State law requires that the University receive an original invoice from the Vendor and that payment of the invoice is processed within 45 days of receipt (Miss Code 31-7-305).

## **XV. USM Terms and Conditions**

The winning Vendor agrees to be bound by the USM Terms and Conditions, which are incorporated herein, and may be found at <https://www.usm.edu/procurement-contractservices/Uusm-terms-and-conditions>.

The University of Southern Mississippi reserves the right to reject any and all bids.

The University of Southern Mississippi reserves the right to accept or reject optional line items included in the bid response.

## **XVI. Delivery**

Vendor should quote the lead-time required for delivery of the quoted equipment. Quoted prices should be F.O.B. Destination Freight Allowed delivered to Marine Research Center, 1030 30th Avenue, Gulfport, MS 39501.