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: August 21, 2025

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.

BID No. 26-01

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

September 9, 2025

Buyer: Amber Floyd

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		UNIT PRICE	TOTAL NET PRICE
		DESCRIPTION **BID 26-01 Bio-nose** **RFx # 3160007570** PROPOSAL MUST BE RETURNED TO THE UNIVERSITY IN ACCORDANCE WITH THE SPECIFICATIONS. RFP NUMBER AND DATE OF BID OPENING MUST BE SHOWN ON THE OUTSIDE OF THE ENVELOPE IF USING THAT METHOD.		

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

AA/EOE/ADAI

Signature Required_____

SYSTEM DESIGN SPECIFICATIONS FOR A PAIR OF BIOLOGICAL SENSOR NOSE CONE SYSTEMS (BIO-NOSE)

The University of Southern Mississippi

Prepared by Steve Stanic and Landry Bernard

AUG 6/2025

SPECIFICATIONS FOR A PAIR OF BIOLOGICAL SENSOR NOSE CONE SYSTEMS (BIO-NOSE)

I. Background

The University of Southern Mississippi (USM) currently has several Hefring Oceanscout glider systems that have provided data to enhance the development of USM's msbCOAWST model.

The University of Southern Mississippi (USM) has received funding to add biological sensors to two of its unmanned Oceanscout underwater gliders. These two new biological sensor systems shall be integrated into two custom designed noses (Bio-nose) that shall replace two of the current Oceanscout nose assembles. The data from these systems will be used to further develop a comprehensive understanding of the water space environment in areas off the Mississippi coast and in the Gulf of Mexico. Data from these Bio-nose systems shall be transmitted to USM's data fusion center and inputted into USM's CUBEnet data environment.

II. Purpose

This document contains the minimum technical specifications required for two biological sensor packages and two custom nose assemblies (Bio-nose) that will be integrated into two of USM's Oceanscout subsurface gliders.

III. General Sensor Requirements

1. These sensors shall be integrated into each of the newly designed Bio-nose cones and will measure:
    a. Chlorophyll-a
    b. fDom
    c. Dissolved Oxygen
    d. Conductivity
    e. Temperature

2. The contractor shall design and supply two newly designed Bio-nose cones that shall be integrated on two of USM's Hefring Oceanscout glider systems.
3. The outputs of the sensors shall interface with Oceanscout's data acquisition system.
4. The sample rates for these sensors shall be controlled using Hefring's User Interface.
5. These high-resolution sensor data streams shall also be recorded on the Hefring Oceanscout Glider.
6. The data from these biological sensors shall also be parsed for satellite transmission back to USM's data center in near real time.
7. The vendor shall provide Bio-nose and sensor engineering and integration services.
8. The delivery arrangements and transportation costs shall be the vendor's responsibility.
9. The Bio-nose system shall be delivered to The University of Southern Mississippi, School of Ocean Science and Engineering, Dept of Marine Sciences, 1020 Balch Blvd, Stennis Space Center, MS 39529.

IV. Sensor Specifications

1. The following table outlines the minimum technical specifications that the Oceanscout Bio-nose sensors shall meet.

Sensor Technical Specifications	
Sensor System	**Description/Value**
Chlorophyll-a	Channel wavelength shall be 470 nm/695 nm or 435 nm/695 nm Calibrated range shall no less than 0-50 µg/L Detection limit shall be no less than 0.01 µg/l
fDOM	Channel Wavelength 0-500ppb Detection limit shall be at least 0.03ppb
Turbidity	Channel wavelength shall be 700 nm Calibrated range shall be at least 0-500 FTU Detection limit shall be no less than 0.001 FTU
Oxygen	The Oxygen sensor shall have a calibrated range of at least 0-500 µM The sensor shall have a saturation range of at least 0-120% Operating temperature shall be at least 1.5^{0}C to 25^{0}C Sensor accuracy of at least ±5% or ± 8µmol/L The resolution shall be <1µmol/L The time constant shall be < 1 sec Sampling rates shall range from 1 Hz to 25 Hour
Conductivity and Temperature	Conductivity measurements shall range from 0.5 to 65 mS/cm Conductivity resolution shall be at least ±0.001 mS/cm The conductivity accuracy shall be ±0.01 mS/cm Temperature measurements shall range from -3^{0}C to at least 40^{0}C The temperature resolution shall be at least 0.001^{0}C The temperature accuracy shall be at least ±0.01^{0}C The total response time of the sensor shall be < 0.2s

V. Software

The vendor shall provide a Complete Software Package and product documentation for all systems. The vendor shall provide vehicle Interface program dashboards.

VI. Training

The vendor shall provide training on the operation, software, maintenance and troubleshooting integration of all systems. This must include mission planning and basic mission data analysis and display. This training shall take place at the USM facility located at Stennis Space Center MS.

VII. Proof of Performance

The vendor shall provide a proven record of the developing UUVs, integrated systems, and sensors. The vendor needs to provide references where these systems and their operating system in a similar configuration as specified above have operated successfully over the last 2 years. The above requested information will assist USM in determining the bidder's capability of meeting these requirements.

VIII. Warranty Services

At a minimum, the Contractor shall provide software/hardware warranty support for one year from acceptance. Longer warranty periods are preferred. The Vendor shall agree to repair, adjust, and/or replace (as determined by the University to be in its best interest) any defective materials at the Vendor and/or manufacturers' sole cost. The University will incur no costs for service or replacement of materials during the warranty period. The Vendor will be the sole point of contact for warranty issues.

IX. Documentation

The Contractor 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 pin outs
D. Troubleshooting and maintenance procedures
E. IPB (Isometric Parts Breakout) drawings showing how all parts, especially mechanical parts, relate to one another.
F. Documentation of the various sensor and software packages.