INVITATION FOR BIDS
OFFICE OF PROCUREMENT & CONTRACTS

1. INSTRUCTIONS FOR BIDDERS

a. Sealed bids will be received in the Office of Procurement & Contracts, Mississippi State University, for the purchase of the items listed herein.

b. All bids must be received in the Office of Procurement & Contracts on or before the bid opening time and date listed herein. Delivery of bids must be during normal working hours, 8:00 a.m. to 5:00 p.m. CST, except on weekends and holidays when no delivery is possible.

c. Bidders shall submit their bids either electronically or in a sealed envelope. To submit electronically, follow the instructions below. Bids CANNOT be emailed.
   i. Sealed bids should include the bid number on the face of the envelope as well as the bidders' name and address. Bids should be sent to: 245 Barr Avenue, 610 McArthur Hall, Mississippi State, MS 39762.
   ii. At this time we only accept non-ITS bids electronically. For electronic submission of bids, go to: portal.magic.ms.gov.
   and use the RFX number on the next page as your reference number.

d. All questions regarding this bid should be directed to the Office of Procurement & Contracts at 662-325-2550.

2. TERMS AND CONDITIONS

a. All bids should be bid "FOB Destination"

b. Bidders must comply with all rules, regulations, and statutes relating to purchasing in the State of Mississippi, in addition to the requirements on this form. General Bid Terms and Conditions can be found here: https://www.procurement.msstate.edu/procurement/bids/Bid_General_Terms_May_2019_V2.pdf

c. Any contract resulting from this Invitation for Bid shall be in substantial compliance with Mississippi State University's Standard Contract Addendum: https://www.procurement.msstate.edu/contracts/standardaddendum.pdf

Bid Number/RFX Number: 23-86/RFX# 3160005978
Opening Date: July 12, 2023 at 2:00 p.m.
Description: Manual C Scan System

Vendor Name: _____

Vendor Address: _____

Telephone Number: _____

Days the Offer is Firm: _____

Authorized Signature: _____

Name: _____

Title: _____

Item	Quantity	Description	Unit Price	Total Price
1	1	Manual C Scan System with Software and Associated Transducers		

1.0 Scope

This requirements description covers a portable test system for ultrasonic nondestructive flaw inspection of non-metallic and metallic components / assemblies with a primary emphasis on carbon fiber composite materials.

2.0 Applicable Documents

ACI Documents

Customer Documents

Industry Specifications, Standards and Handbooks

ISO 18563 Non-destructive testing — Characterization and verification of ultrasonic phased array equipment
Part 1 – Instruments
Part 2 - Probes
Part 3 – Combined Systems
International Organization for Standardization

ASTM E2491 Standard Guide for Evaluating Performance Characteristics of Phased-Array Ultrasonic Testing Instruments and Systems American Society for Testing and Materials

Abbreviations, Acronyms and Terms used in this document are in accordance with ASME Y14.38M, Abbreviations and Acronyms.

3.0 Requirements

3.1 General Requirements

The system shall consist of a recording / processing instrument unit, scanning elements as both a wheel probe type unit for linear array scans and a set of various frequency single crystal contact probes plus post processing software capable of stitching collected C-span data sets and re-gating for analysis. The system shall be ruggedized for travel and application in both shop environments with controlled / uncontrolled environments and field use on composite structure vehicles.

3.2 Transducers

- Roller Form, Array
  - One linear array wheel probe 5 Mhz 64 element type with thread [covering in contact with inspection articles] suitable for use following application of coupling media without requiring a presoak period. The roller configuration shall support scanning of the article under review from edge to edge.
  - Laser pointer for alignment tracking in manual movement
  - Detachable cable interface for processing unit and wireless connectivity to the processing unit
  - Attachment mechanism for a remote display for operator line of sight review of scan results to the roller form, with angle of view adjustment

- Single Compression Delay Line Medium Damped Type
  Qty 1 Transducer, 2.25 Mhz, .25 in. Diameter, Delay Line
  Qty 2 Transducer, 5.0 Mhz, .25 in. Diameter, Delay Line
  Qty 2 Transducer, 2.25 Mhz, .50 in. Diameter, Delay Line
  Qty 2 Transducer, 5.0 Mhz, .50 in. Diameter, Delay Line

- Fingertip Contact Type
  Qty 2 Transducer, 1.0 Mhz, 0.5 in. Diameter
  Qty 2 Transducer, 2.25 Mhz, 0.50 in. Diameter
  Qty 2 Transducer, 5.0 Mhz, 0.5 in. Diameter

- Single Crystal Composite Probe Type
  Qty 1 Composite Transducer, 1 Mhz, 1.0 in. Diameter
  Qty 1 Composite Transducer, 2.25 Mhz, 1.0 in. Diameter
  Qty 1 Composite Transducer, 5 Mhz, 1.0 in. Diameter

3.3 Recorder / Signal Processing Unit

System Bandwidth:	0.2 to 23 MHz Linear Scanning & 0.2 to 18 MHz Conventional UT
Pulse Voltage:	100V - 50V Linear Scanning & 400V - 100V Conventional UT
Channels:	128 channels Linear Scanning & 2 channels Conventional UT
Gain Range:	80dB Linear Scanning & 100dB Conventional UT
Max Pulse Repetition Frequency [PRF]:	50 000 Hz Linear Scanning & 20 000 Hz Conventional UT
Data Throughput / Storage:	155 MB/sec and 128 GB SSD with no file size limit
Instrument Display:	Touch Screen 10.4 in width LED-backlit LCD w/ 1024 x 600 resolution
Communication Ports:	WiFi 802.11n, Ethernet Gigabits & 3 master USB2
Calibration Standards:	ISO18563 or ASTM E2491
Nominal operational time on batteries:	6.5 hours with battery interchange hot swappable
Operating Temperature:	14 to 122°F
Weight:	Not to Exceed 10.5 lbs less battery; battery not to exceed 1 lb.
Remote Control Software:	Windows® 10 OS compatible

3.4 System Software

Post-acquisition Tools
- Stitching of C-scan files strips to compile a merged data set
- C-scan regating - syncronise of individually
- Gain adjustment of individual C-scan data

Analysis Tools
- Depth and amplitude defect conditional criteria
- Automated defect measurements and statistics
- Real time defect zone contours
- Assignable color palletes

Reporting Tools
- CAD file imaging import for overlay
- Customizable measurement tools
- PDF report generation

Operating System
- Windows® 10 OS & 64 bit OS

3.5 System Certification

The portable NDI system shall include calibration certification to applicable industry standards with delivery.