



NOTICE OF INTENT TO SOLE SOURCE

Date: **August 23, 2023**

Subject: **Update the Particle Image Velocimetry (PIV) System**

FDA ID: **NOI_FDA-SS-119557**

This is a notice that the U.S. Food & Drug Administration (FDA) intends to issue a purchase order to LaVision Inc., located at 211 W. Michigan Avenue, Ypsilanti, MI 48197. The Government intends to issue a sole source award in accordance with FAR 13.301(a)(1)(ii), sole source, include brand name.

The NAICS Code is: 334516- Analytical Laboratory Instrument Manufacturing.

TECHNICAL HARDWARE REQUIREMENTS:

1. Shall provide one newly manufactured, not used, refurbished, or previously used for demonstration hardware, BRAND NAME or EQUAL.
2. Shall include the following:
 - A. **PIV Computer:**
 1. Must be compatible with existing PIV camera equipment:
 - a. LaVision Imager Pro X Cameras - FDA Tag: 1101340, SN: VC06-0079, EN: 8000000653/8051000586
 - b. LaVision High Speed Controller - FDA Tag: 1108075, SN: VZ13-0201, EN: G0906-03-13
 2. Running Windows 10 Professional or newer.
 3. Must have a 18-core, 3.0GHz/4.6GHz Max Turbo or equal CPU.
 4. Multiple available PCI-e slots (for frame grabber).
 5. Contains devoted GPU – GeForce RTX 3090 Turbo 24G or equal.
 6. Minimum 64GB of RAM.
 7. A read/write DVD player.
 8. Minimum 512 SSD for operating system.
 9. Minimum 4TB of internal storage.
 10. Space for expandable storage.
 11. Must have all necessary input and output ports needed to operate PIV system.
 12. Must include a monitor, mouse, and keyboard.
 - B. **Programmable Timing Unit:**
 1. Must be compatible with existing PIV camera equipment:
 - a. LaVision Imager Pro X Cameras - FDA Tag: 1101340, SN: VC06-0079, EN: 8000000653/8051000586.
 - b. LaVision High Speed Controller - FDA Tag: 1108075, SN: VZ13-0201, EN: G0906-03-13.
 2. Must have more than 10 output trigger ports.
 3. Must have high time resolution – less than 100ns.
 4. Must have option for user defined delayed triggering.
 5. Must have at least 5 user-defined input/output ports.
 6. Must be ready off the shelf.

C. **Frame Grabber Card:**

1. Must be compatible with existing PIV camera equipment:
 - a. LaVision Imager Pro X Cameras - FDA Tag: 1101340, SN: VC06-0079, EN: 8000000653/8051000586.
 - b. LaVision High Speed Controller - FDA Tag: 1108075, SN: VZ13-0201, EN: G0906-03-13.
 2. Must be compatible with 64-bit windows platforms.
 3. Must support at least 2 cameras.
 4. Must use a PCI-E slot in PIV computer.
 5. Must be ready off the shelf.
- D. Shall include one (1) year warranty from date of acceptance.
- E. Shall provide online or technical support for one (1) year at no additional cost to the government.

TECHNICAL SOFTWARE REQUIREMENTS:

- A. Compatibility: must be compatible with existing PIV camera equipment in OSEL:
 1. LaVision Imager Pro X Cameras - FDA Tag: 1101340, SN: VC06-0079, EN: 8000000653/8051000586
 2. LaVision High Speed Controller - FDA Tag: 1108075, SN: VZ13-0201, EN: G0906-03-13
- B. Synchronization: Must be designed to trigger (possibly with necessary hardware components) camera and laser systems, acquire images and write images to disc at high speeds.
- C. Data Processing: Must be devoted PIV processing software designed to capture, store, and process particle images in a fluid field. Must be capable of computing velocity fields from raw particle images using a cross-correlation across a large number of interrogation windows. Must also be capable of numerous pre- and post-processing procedures such as background reduction, image intensity adjustment, cropping, calculating basic fluid dynamics values such as shear rates and Reynolds stresses, calculating derived values such as vortex identification techniques, among other features.
- D. Data capture modes: Must be capable of capturing numerous types of PIV data including but not limited to instantaneous 2-dimensional 2-component (2D2C) PIV, time-resolved PIV at rates up to 10kHz, stereo-PIV, tomographic PIV, and particle tracking velocimetry techniques. Each of these features do not need to be available in the base version of the software and may be purchasable upgrades.
- E. Calibration: Must work with numerous and customizable calibration targets.
- F. Must have options for distributed data processing (i.e., using a computing cluster) and options for GPU processing.
- G. Must run on 64-bit Windows platforms.
- H. Must have ongoing customer support available.

This notice is not a request for competitive proposals. However, any party that believes it can meet this requirement as stated herein may submit a written capability statement that clearly supports and demonstrates their ability to perform the requirement. Capability statements must be received by the response date and time of this notice. Submissions will be reviewed to determine if they can meet the requirement. A determination by the Government to compete this proposed contract based upon responses to this notice is solely within the discretion of the Government.

It is anticipated that an award will be issued to LaVision Inc., within approximately ten (10) days after the date of this notice unless the Government determines that any other organization has the capability to meet this requirement.

Response Date: August 30, 2023 by 8:00AM (EDT). Please email responses to Nicole Craig at nicole.craig@fda.hhs.gov. **No phone calls will be accepted.**