Mississippi State University  
Notice of Proposed Sole Source Purchase

Mississippi State University anticipates purchasing the item(s) listed below as a sole source purchase. Anyone objecting to this purchase shall follow the procedures outlined below.

1. Commodity or commodities to be purchased (make, model, description):
2. Nano-Hyperspec® VNIR (400-1000nm)

Headwall Photonics p/n 1003A-20502

2) F/1.4, 400-1000nm, Compact Barrel, C-Mount, 8mm

Headwall Photonics p/n 1004A-21442

3) Nano-Hyperspec® Airborne Package

Headwall Photonics p/n 1005A-31215

1. Explanation of the need to be fulfilled by this item(s) and why it is the only one that can meet the specific needs of the department:

This sensor will be used to collect high resolution spatial, spectral and temporal hyperspectral VNIR imagery from an unmanned aerial vehicle (UAV). In order to accomplish this feat, a few aspects must be considered; e.g., size, weight, the physics of sensing, geo-referencing and data storage. In particular, the weight and size of this sensor are critical since we are concerned with putting it on a UAV and flying it for a sufficient amount of time to collect data. This sensor is the lightest and has the smallest form factor of sensors on the market. It weighs 1.2 pounds, and it is a 3”x 3” x 3” cube. When collecting hyperspectral imagery, it is important to eliminate chromatic dispersion, and this sensor is a patented aberration-corrected imaging spectrometer that has a low-scatter convex design that eliminates chromatic dispersion. It is also important to collect the data at a fast rate. The aperture of this sensor has been optimized in order to provide high-signal throughput while maintaining sharp spatial images. It is able to collect the imagery at a frame rate of 350Hz which is a sufficient rate to collect the data. Hyperspectral sensing produces vast amounts of data that is collected, and this sensor has 480GB of onboard storage which makes this sensor ideal for collecting and storing the hyperspectral imagery.

1. Name of company/individual selling the item and why that source is the only possible source that can provide the required item(s):

Headwall Photonics is the only company that is able to provide a sensor that provides a sensor of these dimensions and weight (3”x3”x”3 and 1.2 lbs). The sensor provided by Headwall Photonics is the only sensor of this size that is able to provide the patented aberration-corrected imaging spectrometer that is able to eliminate chromatic dispersion because of the design of the sensor. It is also the only sensor of its size that has the ability to store 480GB of imagery onboard the sensor.

1. Estimated cost of item(s) and an explanation why the amount to be expended is considered reasonable:

Nano-Hyperspec® VNIR (400-1000nm) : $45,000

Nano-Hyperspec® Airborne Package: $17,200

F/1.4, 400-1000nm, Compact Barrel, C-Mount, 8mm : $1,550

This amount is extremely reasonable relative to the impressive capabilities of the sensor. For example, the cost of this sensor is proportional to a single data collection in recent years (which typically has been on a plane versus a UAV). Instead of paying such a cost for a single data collection, or a few data collections possibly, we can pay this cost once, fly this sensor many times (e.g., day after day for an entire season) and obtain substantial savings (versus going out to the marketplace and paying a company to collect such data). Furthermore, when one looks at the marketplace for multi and hyperspectral sensors, this is a very competitive price. Our research needs also demand that we collect unique and continuous data sets.

1. Explanation of the efforts taken by the department to determine this is the only source and the efforts used to obtain the best possible price:

A thorough review of the market was conducted to find any other potential vendors that are able provide a hyperspectral sensor with the necessary size, weight, and data collection capabilities of the needed sensor. At multiple conferences (i.e. SPIE, IGARS, etc.) different vendors were questioned about their products, and no other company is able to provide a sensor that will suffice for the needed tasks. Headwall Photonics was the only company that was able to manufacture the sensor of the necessary specifications. We communicated with the company. We have worked with the company to reduce the price as much as possible. This is the lowest price we can obtain.

Any person or entity that objects and proposes that the commodity listed is not sole source and can be provided by another person or entity shall submit a written notice to:

Don Buffum, CPPO  
Director of Procurement & Contracts  
[dbuffum@procurement.msstate.edu](mailto:dbuffum@procurement.msstate.edu)  
**Subject Line must read “Sole Source Objection”**

The notice shall contain a detailed explanation of why the commodity is not a sole source procurement. Appropriate documentation shall also be submitted if applicable.

If after a review of the submitted notice and documents, MSU determines that the commodity in the proposed sole source request can be provided by another person or entity, then MSU will withdraw the sole source request publication from the procurement portal website and submit the procurement of the commodity to an advertised competitive bid or selection process.

If MSU determines after review that there is only one (1) source for the required commodity, then MSU will appeal to the Public Procurement Review Board. MSU will have the burden of proving that the commodity is only provided by one (1) source.

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