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Justification and Approval
For Other Than Full and Open Competition

1a. Contracting Agency:

U.S. Army Research, Development and Engineering Command Contracting Center (RDECOMCC), Adelphi Contracting Division, White Sands Missile Range (WSMR) Branch, Bldg 1624, White Sands Missile Range, NM 88002.

1b. Requiring Agency:

U.S. Army Research Laboratory
Human Research and Engineering Directorate (HRED)
RDRL-HRS-B, Dismounted Warrior Branch
Aberdeen Proving Ground, MD 21005

2. Description of Action: Approval is requested to solicit for a new Firm Fixed Price (FFP) contract in support of the U.S. Army Research Laboratory (ARL) Human Research and Engineering Directorate (HRED) on the basis of only one responsible source. [REDACTED]

3. Description of Supplies/Services. This action is for the acquisition of one (1) Raptor-E Optical Motion Capture System to include the parts listed below. The proposed contractor is Motion Analysis Corporation, 3617 Westwind Blvd, Santa Rosa, CA 95403. [REDACTED]

Item	Qty	Description	Price
RPTRE-RT-12		Raptor-E Digital Real Time 12 Camera Indoor/Outdoor Optical * Raptor-E digital cameras * Zoom lens * Tripods or Super Clamps * Near red, infrared, or visible ringlights * Calibration "L" frame and wand set (200 & 500mm) * Camera carrying cases * Power hub(s) * Ethernet switch(s) * Cables (50, 75 or 100 feet) * (1) Data collection and post process license, dongle, software, and manual * (1) Post process license and dongle * Biomechanics Marker kit * Full Body Cluster Kit	[REDACTED]
A/D-USB-128	1	Channel Analog Data USB Set, 16 bit, 250k Hz throughput	[REDACTED]
DV-REFERENCE	1	Digital Video Acquisition and Replay License	[REDACTED]
BASLER-120	1	Basler GigE high speed 659 x 493 Area Scan camera, (120 fps, color, 1/4" CCD sensor) 6-15mm zoom lens, power supply, tripod w/ mount, 3 meter ethernet cable, ethernet card. (Requires separate 15k rpm hard drive and DV Reference)	[REDACTED]
WIN-RT-AP	1	1 Quad core processor tracking station with two flat panel monitors. Reference Video 15k rpm hard drive. Software	[REDACTED]

		and drivers preinstalled and tested.	
BIO SW GROUP	1	Skeleton Builder, KinTool RT, BioFeedTrak, and Calcium software, licenses and manuals	
SKY	1	Sky Scripting Tool	
A/D-CORTEX	1	A/D-CORTEX 1 A/D Software, license and sync cable	
CORTEX-SDK	1	CORTEX-SDK 1 CORTEX SDK (streams data to Active X, Visual3D, LabView, MATLAB)	

4. Authority Cited:

The statutory authority permitting other than full and open competition is 10 U.S.C. 2304(c)(1) as implemented by FAR 6.302-1, "Only one responsible source and no other supplies or services will satisfy agency requirements".

5. Reason for Authority Cited:

Motion Analysis Corporation is the sole manufacturer and has proprietary rights to the design of the Raptor-E Optical Motion Capture System which will be used for research to be conducted in the Soldier Performance Equipment and Research (SPEAR) Facility, located at Rifle Range Road, APG, MD 21005. The motion capture system will be used for biomechanical experiments related to Soldier performance and Soldier-equipment interactions. The motion capture system will be a key piece of research equipment in the SPEAR Facility.

There are two (2) critical requirements for this motion capture system: 1) the demonstrated ability to record three dimensional (3-D) motion data outdoors in full sunlight and 2) cameras equipped with zoom lenses, allowing the data capture volume, field of view size, to be changed. These two requirements are critical due to the type of research for which the motion capture system will be used. This motion capture system will be utilized to collect three-dimensional motion data indoors at the SPEAR biomechanics laboratory, at Rifle Range Road, APG, MD as well as outdoors at the M-Range firing range and K-D range obstacle course, at Rifle Range Road, APG, MD.

The motion capture system will also be used for studies in which the capture volume size will need to be changed. Zoom lenses allow adjustment of the size of the field of view without physically moving the cameras. This enables the capture of 3D data of small, refined movements. Motion Analysis Corporation is the only motion capture company that offers cameras with zoom lenses. Therefore, Motion Analysis Corporation is the only company capable of satisfying the aforementioned two (2) critical requirements for the motion capture system that will be used for biomechanical investigations of Soldier performance and Soldier-equipment interactions.

6. Efforts to Obtain Competition:

No efforts were made to obtain competition as effective competition is not anticipated for this award. Motion Analysis is the sole manufacturer and has proprietary rights to design motion capture systems which meet the critical required specifications to support the HRED mission.

7. Actions to Increase Competition:

With regard to actions that may be taken to overcome barriers to competition, HRED does not anticipate purchasing another motion capture system for five or more years. To date no technical data package exists for competition as Motion Analysis is the sole provider of the required equipment.

8. Market Research:

A search was conducted via the internet, by Michaela McBride, who has a degree in Biological systems Engineering, to find companies that make motion capture systems. The term "motion capture system" was used for a search at Google (www.google.com). This search found three (3) companies that offer passive marker motion

capture systems. The three (3) companies were Vicon Motion System Incorporated, Qualisys North American Inc., and Motion Analysis Corporation.

Information about price and technical specifications were obtained from Christian Reist of Vicon Motion Systems Inc., Dan India of Qualisys North America Inc., and Gary Scheirman of Motion Analysis Corporation. Mr. Reist stated that Vicon Motion Systems Inc. cannot collect data outdoors in full sunlight and does not offer cameras with zoom lenses. Mr. India stated that Qualisys North America Inc cannot collect data outdoors in full sunlight and special approval, from Qualisys North America Inc., would be required to install custom zoom lenses and advised against customizing their cameras with zoom lenses. Mr. Scheirman from Motion Analysis Corporation stated that Motion Analysis Corporation offers a motion capture system with zoom lens cameras that are capable of recording data outdoors in full sunlight.

In addition, information about motion capture systems was gathered through web demonstrations of each Vicon Motion Systems Inc., Qualisys North America Inc., and Motion Analysis Corporations motion capture systems. Motion Analysis Corporation demonstrated their ability to collect motion capture data outdoors in full sunlight during a live data collection. Vicon Motion Systems, Inc and Qualisys North America, Inc could not demonstrate recording data outdoors in full sunlight. The market research was conducted by Michaela McBride.

9. Interested Sources:

A sole source synopsis/solicitation was posted on FebBiz Ops on 10 Aug 2010; to date no other sources have expressed interest in this acquisition. In accordance with FAR 5.201 any other bids or proposals received will be forwarded to the approving official for consideration.

10. Other facts:

a. Procurement History:

None. The required item has not been purchased before.

b. Acquisition Data Availability:

This action is for the procurement of a Raptor-E Optical Capture System and a technical data package suitable for competition does not exist because Motion Analysis Corporation is the sole manufacturer of this system and maintains exclusive right to the design and specifications of the system...

c. Unusual and Compelling Urgency:

None

d. Subcontracting Competition:

No subcontractor is expected to perform on this contract.

e. Follow-on contracts:

This is not a follow-on effort and none are planned in the future.

11. Technical Certification:

I certify that the supporting data under my cognizance which are included in the justification are accurate and complete to the best of my knowledge and belief.

[REDACTED]

[REDACTED]

12. Requirements Certification:

I certify that the supporting data under my cognizance which are included in the justification are accurate and complete to the best of my knowledge and belief.

[REDACTED]

[REDACTED]

13. Fair and Reasonable Cost Determination:

I hereby determine that the anticipated cost to the Government for this contract action will be fair and reasonable. Actions anticipated to ensure cost/price reasonableness will be accomplished in accordance with procedures and criteria contained in the Federal Acquisition Regulation. Detailed documentation and justification of cost/price reasonableness will be disclosed in the official contract file.

[REDACTED]

[REDACTED]

14. Procuring Contracting Officer Certification:

I certify that this justification is accurate and complete to the best of my knowledge and belief.

[REDACTED]

[REDACTED]

APPROVAL

Based on the foregoing justification, I hereby approve the procurement of Raptor-E 12 Camera Motion Capture System on an other than full and open competition basis pursuant to the authority of 10 U.S.C. 2304(c) FAR 6.302-1, "Only one responsible source and no other supplies or services will satisfy agency requirements" subject to availability of funds, and provided that the services and property herein described have otherwise been authorized for acquisition.

[REDACTED]