

## **Robotic Infrared Detection and Digging System**

(RIDDS)

The US Army Communications-Electronics Command (CECOM) Acquisition Center-Washington, on behalf of the CERDEC Night Vision and Electronic Sensors Directorate (NVESD), Countermine Division, Humanitarian Demining Team, plans to negotiate a sole source contract with Concept Engineering Group (CEG), Verona, PA, for the development, fabrication, demonstration, testing, and maintenance of a Robotic Infrared Detection and Digging System (RIDDS). The current Air-Spade system designed by CEG is a manually operated digging tool which uses compressed air and water to safely uncover landmines and unexploded ordnance (UXO). This effort seeks to improve the existing system by adding the capability of detecting buried objects using compressed hot water and an infrared camera, as well as automating the detection and excavation process on an omni-directional robotic platform. This integration effort can significantly improve the functionality of the Air-Spade equipment and provide greater safety to deminers worldwide when performing manual demining operations.

Under this effort, CEG as Prime Contractor along with the Robotics Institute of Carnegie Mellon University will perform the following tasks: 1) Perform a preliminary design, build and test of an infrared detector which injects the soil with heated, compressed water and uses an infrared camera to display buried objects in the soil; 2) Design, build, and integrate the infrared detector, a color video camera, and the air excavation equipment on an omnidirectional robotic platform. The robotic platform may be tethered, via hoses and cables, to compressed air, heated water, and electrical power supplies. The robotic platform shall provide operator feedback and control of its functions via remote control to an operator control station; 3) Perform evaluations and demonstrations of the final RIDDS prototype and characterize the performance limitations of the system.

It has been determined that CEG is the 'Only One Responsible Source and no other Supplies or Services will satisfy Agency Requirements'. The statutory authority for other than full and open competition is 10 USC 2304 (c) (1); Only One Responsible Source and no Other Supplies or Services will satisfy Agency Requirements. However, all responsible sources that can provide supporting data to demonstrate they can successfully provide the required RIDDS improvements may submit a quote that shall be considered by the agency. Responses should be no longer than five (5) pages. The duration of this effort is 12 Months. The resultant contract will be cost plus fixed fee. All requests for further information must be in writing and via email, telephone requests for additional information will not be honored. You may forward responses to the following email address: [ellen.morris@cacw.army.mil](mailto:ellen.morris@cacw.army.mil). Acknowledgement of receipt will be issued. See Number Note 22.

## FEDBIZOPPS APPROVAL ROUTING SHEET

TITLE OF FBO ANNOUNCEMENT:                      Robotic Infrared Detection and Digging System

POTENTIAL CONTRACTOR:                              Concept Engineering Group, Inc.

PROJECT ENGINEER/PHONE NUMBER:              Nathan Burkholder / 703-704-0378

FUNDING INFORMATION: *Funding available for fiscal year 04:* YES  NO

APPROVAL:

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SEAN BURKE  
Humanitarian Demining Team Chief

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RICHARD WEAVER  
Division Director, Countermining Division

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SUSIE MCDOWELL  
Acquisition Advisor

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KATHLEEN YAMARIK  
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DONALD A. REAGO, JR,  
Principal Deputy for Technology and Countermining

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