

2. DESCRIPTION OF PROPOSALS SOUGHT

2.1 OBJECTIVE OF PROPOSED WORK

Proposals are requested to demonstrate and validate the use of advanced EMI sensors and/or analysis methods at munitions response sites to significantly reduce the costs of remediation by classifying detected subsurface items as either targets of interest or not. Technologies proposed must be ready for demonstration and validation in a production environment; this usually requires a prior successful demonstration at one of the Standardized UXO Test Sites or other site that provides neutral third-party scoring.

Application of classification methods to munitions response typically proceeds in three stages. First, high-quality geophysical data are collected, these data are analyzed to extract target characteristics that enable discrimination of targets of interest from all other targets, and finally, an anomaly list is prepared ranked by the likelihood that the item causing the anomaly is a target of interest. It has been demonstrated repeatedly over the past five years that advanced EMI sensors, defined here as multi-channel, multi-axis sensors based on digital electronics, and the application of advanced analysis methods to data from production sensors are able to accomplish this task.

The ESTCP Live Site Classification Program has a number of objectives:

- demonstrate innovative EMI sensors,
- demonstrate the use of advanced analysis methods applied to data from either advanced sensors or carefully deployed production sensors, and
- facilitate the adoption of these advanced sensors and analyses in the production environment.

Demonstrations proposed must be able to contribute to one or more of these objectives and be able to contribute to acceptance of these methods by regulators and other stakeholders for production use.

Accordingly, demonstrations in one or more of the following areas are sought:

- data collection with advanced EMI sensors,
- data collection with production EMI sensors coupled with advanced analysis,
- innovative data collection methodologies,
- advanced technologies for data analysis and anomaly classification, and
- use of these advanced techniques in the production environment.

Proposals for demonstrations are solicited in one or a combination of these areas by either individual performers or teams of performers. Demonstrations that involve the use of these technologies as they would be used on production sites or with production teams are of particular interest. Proposals involving the application of standard production sensors or their obvious variants must be coupled with advanced analysis techniques to be responsive. Activities that can be described as field support work are only responsive to the extent that they support one of the five objectives above. Proposals addressing only detection are not of interest.

Proposals that focus only on data analysis and signal processing technologies can expect data sets from one, or more, of the following advanced sensors to be available:

- MetalMapper (ESTCP Project MR-200603);
- TEMTADS (ESTCP Project MR-200601);
- Man-Portable Vector sensor (ESTCP Project MR-201005);
- Handheld BUD (SERDP Project MR-1667);
- Man-portable TEMTADS (ESTCP Project MR-200909).

Details of each of these sensors can be found at www.serdp-estcp.org/Program-Areas/Munitions-Response/Land/Sensors. Carefully collected data from an EM61-MK2 sensor is solicited above and will be made available for those proposing to focus on analysis of production data.

Additionally, a MetalMapper system will be available as Government-furnished Equipment for proposers seeking to perform data collection demonstrations.

Demonstrations will be conducted at sites amenable to the use of towed arrays and other large platforms as well as sites on which smaller cart and man-portable sensors will be appropriate. Some sites will be open, with good sky view, while others will have vegetation and other obstructions that restrict access to GPS signals. The first two demonstrations are planned for the Pole Mountain Target and Maneuver Area, WY and the former Camp Beale, CA. The Pole Mountain site is a typical high grasslands area – relatively flat, low grass, and minimal interference from larger vegetation. Good sky view is available throughout the demonstration area. The Camp Beale site is a mix of valley areas and wooded areas without good sky view. This site is planned as a demonstration of man-portable instruments.

Proposers with technologies that may be applicable to only a subset of demonstration sites and conditions should specify in the proposal the conditions under which their technology will operate most effectively. Proposals selected for funding will be matched with a demonstration site(s) based on these restrictions; therefore, it is imperative that proposers provide a clear description of applicable operating conditions.

The government expects to fund more than one proposal to attain the objectives of this program, as different combinations of technologies are expected to be optimum depending on site conditions (geology, topography, and vegetation) and the particular munitions of concern.

2.2 COST AND DURATION OF PROPOSED WORK

The cost and time of proposed demonstration projects are at the discretion of the proposer. For purposes of proposal costing, proposers should assume work will be conducted in the continental United States. Four demonstration sites will be selected by ESTCP staff and will be on the order of 50 acres containing 2,000 to 3,000 geophysical anomalies.

Proposers contemplating work at more than one site should provide costing for each site individually. Proposals concerning both data collection and analysis should separate those two components on the cost-by-task worksheet.

The proposal should incorporate the appropriate time schedule and cost requirements to accomplish the scope of work proposed either during the spring and summer of 2011 or the

spring and summer of 2012. ESTCP staff will evaluate the cost and duration of the project plan in light of the scope of work proposed.