



# STANDARDIZED UXO DEMONSTRATION SITES

## APPLICATION PROCESS



A sling system demonstration underway in the mogul area at the Aberdeen Proving Ground Standardized Site.

Unexploded Ordnance (UXO) characterization technologies can be affected by variations in site terrain, geology, natural or man-made materials, vegetative cover, and weather conditions encountered. The establishment of standardized UXO technology demonstration sites will allow users and developers to define the range of applicability of specific UXO technologies, gather data on sensor and system performance, compare results, and document realistic cost and performance information.

The Standardized UXO Technology Demonstration Site Program is a multi agency program spearheaded by the US Army Environmental Center (USAEC). The US Army Aberdeen Test Center (ATC) and the U.S. Army Corps of Engineers Engineer Research and Development Center (ERDC) provide programmatic support. The program is being funded and supported by the Environmental Security Technology Certification Program (ESTCP), the Strategic Environmental Research and Development Program (SERDP), and the Army Environmental Quality Technology (EQT) program.

## THE STANDARDIZED SITES

Currently there are standardized sites in Maryland at Aberdeen Proving Ground (APG) and in Arizona at Yuma Proving Ground (YPG). The APG standardized site encompasses 17 acres of upland and lowland flats, woods, and wetlands, and the YPG standardized site covers approximately 20 acres of the Sonora Desert. The sites each consists of four standard areas – a calibration lane, a blind test grid, an open field area, and moguls. The calibration lane will allow demonstrators to test their equipment, build a site library, document signal strength, and deal with site-specific variables. The blind test grid allows the demonstrator to operate the sensor system without platform, coordinate system, or operational concerns. The open field area will document the performance of the entire system in actual range operations. The moguls section of the course is designed for testing vehicles' abilities to traverse adverse terrain and to check accuracy of sensor equipment when subjected to vibration and offset angles created by rough terrain.

In addition to the four standard areas discussed above, each standardized site consists of site specific areas. At APG, the wooded area and mine lanes provide additional challenges to demonstrators. At YPG, the desert extreme area is used to test the performance of different sensor platforms under more severe environmental conditions.

These sites provide a diversity of geology, climate, terrain, and



## For more information

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weather, as well as diversity in ordnance and clutter. Testing at these sites is independently administered and analyzed by the government for the purposes of characterizing technologies, tracking performance with system development, comparing performance of different systems, and comparing performance in varying environments.

### **THE ACTIVE RESPONSE SITE**

In addition to the standardized site at APG, an active response site has also been established. Although the standardized sites provide an excellent means of base lining and providing statistically valid data for UXO detection and discrimination, there are concerns that a technology performing well on a constructed site may not do as well on an active response site. The vendor would characterize an area known to contain UXO and provide the dig sheet to the program team. Anomalies identified by the vendor are reviewed, results are correlated, and the entire site is then carefully characterized.

Technologies that perform well in both the standardized site and the active response demonstration area provide evidence that the technology is technically mature and ready for full implementation by the user community.

### **THE TEST STAND**

Also available at the site is a test stand that provides technology developers an area to conduct accurate open-air evaluation of sensor systems used for UXO detection applications. The test stand and its associated equipment provide the capability to collect high-fidelity, precise signal response data for use in UXO discrimination model evaluation and verification. The test stand is constructed of materials that are both non-conductive and non-magnetic. The stand allows testing of common sensor modalities such as magnetics, electromagnetics, and radar.

The test stand provides a capability that enhances development and evaluation of new sensor systems and new discrimination algorithms. The stand is used to collect signatures on items in open air at multiple depths and orientations. Compared to measurements produced in the field or in laboratory situations, utilizing the stand produces a data set with greater measurement density and position repeatability.

### **THE APPLICATION PROCESS**

The initial request is designed to start a dialog between the demonstrator and Standardized UXO Technology Demonstration Site project manager. This initial request should be submitted in the form of the Standardized UXO Technology Demonstration Site Application/Demonstration Plan. The Application/Demonstration Plan should be submitted 60 days in advance of scheduled utilization of the site. ATC and USAEC will review the request package when it is received. Once

approved, the demonstrator and on-site project manager will schedule the demonstration.

Thirty days prior to arriving on site, the demonstrator is responsible for supplying the Standardized UXO Technology Demonstration Site project manager a Final Application/ Demonstration Plan.

The Final Application/Demonstration Plan is an elaboration of the initial Application/Demonstration Plan. It must contain a detailed description of detection/sensor equipment, summary of how data are collected, analyzed, and the decision process by which the algorithm discriminates between ordnance and munitions. The test plan should describe objectives and planned use of calibration lanes/ground test pit, blind test grid, and open field sites. No partial scoring is permitted. The final QA/QC plan must be clearly identified and described.

Data from the Final Application/Demonstration Plan will be used to populate the Final Scoring Report. It is essential that the demonstrator shows due diligence in writing the Final Application/Demonstration Plan.

An Application/Demonstration Plan template as well as detailed instructions for completing the plan is available to vendors for download at the Standardized UXO Technology Demonstration Site Program's Web site ([www.uxotestsites.org](http://www.uxotestsites.org)).

*ATC's test stand provides vendors an area to conduct open-air evaluations of sensor systems used for UXO detection.*

