

UXO Technology Standardized Demonstration Sites

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Estimates indicate that 14 million acres of land potentially contain unexploded ordnance (UXO). There is significant variability among these sites in terms of the conditions that affect sensor performance. Recent UXO sensor demonstrations evaluated system performance at a limited number of sites, with singular vegetative and geologic conditions, and without standard protocols, resulting in a narrow applicability of the sensor evaluation. ESTCP funded a program to provide the UXO technology developer test sites for the evaluation of UXO detection and discrimination technologies using standardized protocols. The application of standardized test methodologies, procedures, and facilities will help ensure that critical parameters such as detection capability, false alarms, discrimination, reacquisition and system efficiency are accurate and repeatable.

Data generated from these standardized sites will be compiled into a technology-screening matrix, which will enable installation UXO project managers to choose appropriate technologies for their application. The standardized demonstration sites, targets, and data collection protocols will support more efficient UXO clean-up operations and help direct future UXO technology research and development endeavors.

In order to satisfy both the research and development (R&D) community and the technology demonstration community, standardized test sites will be made up of three areas (the calibration lane, the blind grid, and the open field). The calibration lane will contain targets from the standardized target list at the six primary orientations and at three depths. Information on depth, orientation, type, and location will be provided to the tester. The calibration lane will allow demonstrators to test their equipment, build a site library, document signal strength, and deal with site-specific variables.

In the blind grid area, the demonstrators will know the possible location of the target and they are then required to report whether or not a target or clutter actually exists. If a target is found, they must then report type of target, classification of target, and depth of target. The blind grid allows the demonstrators to showcase the sensors on their system without platform, coordinate system, or operational concerns.

The open field will be a 10-acre area with a myriad of clutter and targets. The demonstrators will be given no information. The demonstrators will approach the open field as if they were performing at an actual Department of Defense (DOD) installation. They will be required to report item location, classify it as clutter or target, and provide type, classification, and depth of target. The open field will document the performance of the entire system in an actual range operation mode.

One of the main products of this program is the creation of a series protocols to establish all procedures and specifics necessary to construct and run a standardized UXO test site. Another product of this program is to launch a standardized target repository that can be used by installations, technology developers and demonstrators to improve UXO endeavors.

