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## Unexploded Ordnance (UXO), Ordnance and Explosives (OE), or Chemical Agents (CA) Functional Sub-Activity (UOFSA) Information Business Strategy

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# Unexploded Ordnance (UXO), Ordnance and Explosives (OE), or Chemical Agents (CA) Functional Sub-Activity (UOFSA) Information Business Strategy

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Defense Environmental Security Corporate Information Management

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## Background

Currently, the Explosive Ordnance Disposal (EOD) and unexploded ordnance (UXO) clean-up community are supported by three locally developed and maintained systems. The Unexploded Ordnance Site Management Model (UXOSMM) is being maintained by the Naval Explosive Ordnance Disposal Technology Division (EODTECHDIV). Ordnance Technical Management System (OTMS) is maintained by United States Army Engineer Division, Huntsville (USAEDH). In a functionally similar undertaking, landmine elimination in Host Nations is provided by the Humanitarian Demining Operations Geographic Information System (HDOGIS). HDOGIS is a Special Operations Command (SOCOM) automated tool currently used by host nation forces in Eritrea and Ethiopia. It was developed by the US SOCOM Central (US SOCCENT) to assist nations in eliminating landmines and mine fields. HDOGIS was designed to record, track and manage information associated with Humanitarian Demining Operations (HDO)—e.g., minefield and mine incident locations, personnel training, availability of resources to support demining operations, and plans for conducting operations. Spatial information—e.g., mine incident and/or minefield locations—are presented in a geographic view or map.

## Joint Design

The partnership between Defense Environmental Security Corporate Information Management Program Management Office and DoD Explosives Safety Board (DDESB) has sponsored the creation of functional working groups for several disciplines related to Explosives Safety. Joint Working Group meetings have been used to design the Defense Explosives Safety Management Suite (DESMS) created to support the DoD information technology strategy. This, in turn, will improve data management and business systems which support the Explosives Safety community. The DESMS development effort is subdivided into five sub-activities concentrating on solutions to specific explosives safety activities of Creating Policy, Site Planning, Mishap Analysis, Unexploded Ordnance Management, and Explosion Models. These five sub-activities will be compliant with the Defense Information Infrastructure (DII) and Common Operating Environment (COE). Sub-activities within the DESMS modules are focused on three broad information technology goals: establishing requirements, standardizing data, and Business Process Improvement. These goals for Unexploded Ordnance Management (UXM) are described below.

## Establish Requirements

The main function of the UXM software is to manage, oversee, coordinate, monitor, and clean up

real property contaminated with Unexploded Ordnance (UXO), Ordnance and Explosives (OE), or Chemical Agents (CA). To support this main function, UXM will enable the user to access and prioritize clearance projects, develop and approve clearance plans and manage clearance contracts for remediation of UXO-, OE-, or CA-contaminated real property.

To assess and prioritize clearance projects, the user will input a list of properties known or suspected of containing UXO, OE, or CA. The UXM user will enhance the real property database for the identification and control of UXO-, OE-, or CA-contaminated land with boundaries, suspected or known contamination, concentrations, and depths. This information needs to be established in the UXM database for UXO-, OE- or CA-contaminated real property (active and FUDS [Formerly Used Defensive Site] installations) for each ammunition plant, depot, laboratory, range (firing range, bombing range, demolition ground, explosive test area), and ammunition holding area. Track and record types and quantities of ordnance used on or released to the site for testing, training, demolition and demilitarization. As clearance occurs, UXM will enable the tracking and recording of types and quantities of ordnance removed from the site. This extensive database on UXO-, OE- or CA-contaminated real property will enable DoD to prioritize clearance projects based on risk. The clearance project priorities will be based on the risk associated with either military and/or civilian use, possible injury to EOD workers (military and contractor), estimated residual risks, population encroachments, and environmental concerns.

Next for approved and funded clearance projects, a plan for remediation of UXO-, OE- or CA-contaminated real property will characterize and/or investigate UXO-, OE- or CA-contaminated real property, sites and areas. The clearance plan will determine UXO-, OE- or CA-contaminated site boundaries, site history and site known or suspected contamination. It will also determine UXO, OE or CA contaminated land end use(s) and the feasibility and costs to clean-up (remediate) UXO-, OE- or CA-contaminated real property. A more detailed estimate of resources (EOD & UXO Contractor) required will be generated. The DDESB will evaluate and approve all UXO, OE or CA remediation plans.

After a remediation plan has been approved, project management of the clearance project for UXO-, OE- or CA-contaminated land clean-up/site remediation begins. If the clearance project will be out-sourced, the contract will be prepared and awarded based on the remediation plan. The clearance project will eliminate or reduce danger of UXO-, OE- or CA-contaminated land/sites by detecting and classifying buried UXO with geophysical instruments (to minimize intrusive activities). Geophysical Data Analysis using a UXO-Knowledgebase will assist in the classification of buried UXO. An administrative record will be kept by using the UXO-, OE- or CA-contaminated real property database to track and record types and quantities of ordnance removed from testing and training ranges and FUDS sites. This information will facilitate public affair's mission for UXO-, OE- or CA-contaminated land/site clean-up. Also, support for the preparation, review, and approval of plans for leasing, transferring, or disposing of DoD real property where UXO-, OE- or CA-contamination exists or is suspected to exist is required.

In addition, there is a need to manage/oversee research, technology, and training activities related to UXO-, OE- and CA-contaminated land/site clean-up. Also, the selection/acquisition of EOD/UXO tools and technology for UXO-, OE- and CA-contaminated land/site clean-up must be managed. The development, application and integration of existing UXO-, OE- and CA-contaminated land/site clean-up technology is also required. To promote development of detection technology, a repository of UXO, OE or CA remediation technology will be maintained.

## Data Standardization

To ensure information can be communicated effectively and efficiently, a parallel effort is being conducted. Functional interface and/or integration of legacy systems will be accomplished through use of standardized shared data contained in the DoD Data Dictionary System (DDDS). From an operational standpoint, commanders will have timely and accurate data, crossing organizational boundaries. *Data standardization will serve as the common communication tool.* This

standardization process is also the means by which "DATA" are coordinated/communicated between various DoD functions. The data standardization effort is defined by DoDD 8320.1, DoD Data Administration. It is the common denominator for legacy systems which begins to solve interoperability problems as fundamental as standard identification of ammunition or fuel. For the same reason, relationships between data must also be consistent across the DoD enterprise. The Defense Information Systems Agency (DISA) is the program manager for DoD Data Administration. They have developed and manage the DDDS and the Personal Computer Access Tool (PCAT) to enable all DoD access to the DDDS. Joint Working Group meetings were held to determine the tables (entities) and fields (attributes) with standardized definitions, type, values, sizes, and ranges (meta-data) needed to perform the UXM functional requirements. Definitions must be held consistent across the DoD enterprise. For example, Ammunition Nonstockpile Location must mean exactly the same thing to everyone and all systems before a true exchange of information can occur. Using the Entity-Relationship for WINdows (ERWIN) data modeling tool, Defense Environmental Security Corporate Information Management (DESCIM) is generating the input required for the DDDS. Currently, the UXM Data Model, as evolving, is robust enough to accommodate all UXO business processes including: Range Management UXO identification, EOD, Battle Field Clearance, Humanitarian Demining and Range Rule Reporting.

## Business Process Improvement

Modification of business processes used by DoD in the UXO Management area and taking advantage of information technology improvements is required to meet the requirements of the Range Rule Law. Tighter integration of functional elements through the UXM will enable Joint forces and functional activities to be more responsive to operational EOD, explosives safety, environmental security, and community needs. UXM applies to the functions required to identify, access, render safe, clear, and dispose of UXO, OE, or CA.

## Victim Assistance

The DESMS initiative begins with a sound strategy which enables many participants to focus on common objectives. DESMS will serve

- Explosives Safety community,
- Joint Service EOD community including deployed/home-based Detachments and respective supported Military bases/installations,
- DoD Installation Managers, Active Bases/Installations with ammunition and explosives facilities and/or Training/Testing Ranges where live ammunition firing takes place and UXO exist,
- Base Realignment and Closure/Formerly Used Defense Sites (BRAC/FUDS),
- Sites affected by forthcoming Military Range Rule, and
- Humanitarian Demining activities.

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For the past three years, George J. Hoehl has served as the Technical Team Coordinator with the Program Management Office (PMO) of the Defense Environmental Security Corporate Information Management (DESCIM). His main area of responsibility has been in the planning and execution of the five Explosives Safety modules which have been defined for the Defense Explosives Safety Management Suite (DESMS). He has also supported the Cleanup (Installation Restoration) and the Hazardous Substance areas. Mr. Hoehl is involved with the strategic planning required to enable Environmental Security to share information (form partnerships) with other DoD functional areas to accomplish DoD's mission. Before working for DESCIM, Mr. Hoehl developed communications systems and planning documents for Navy military message processing. The highlight of his career with the Navy was his support of the White House Communications Agency for seven years.