Moving UXO Classification to the Cloud

Geosoft is partnering with Acorn Science and Innovation to create a cloud-based technology solution for unexploded ordnance (UXO) classification projects. The three-year project, funded by the US Department of Defense's Environmental Security Technology Certification Program (ESTCP), will deliver a cloud prototype for classifying buried metal as either UXO or non-hazardous clutter based on the analysis of electromagnetic induction (EMI) data.

UXO classification requires several players working in different locations, currently on personal computers. This includes field technicians, data processors, data analysts, government project managers and geophysicists, and regulators. Data collected using advanced electromagnetic (EM) sensors in the field are sent to the office for QA/QC and data processing - often with third party oversight – then back to the excavation team to guide field investigations. During this multi-phase process, project managers and regulators require regular status updates. The continuous movement of large volumes of data across the internet introduces considerable obstacles such as unreliable internet connections, storage and accessibility limitations, security breaches, and lack of software and data version control.

Faster and More Secured Access

The cloud-based solution proposed by the AcornSI-Geosoft team will provide enhanced security, automatic version control, and faster data processing. Every party with permission will have improved access to auditable reports of project status, quality assessment, results, and progress. Other benefits include fewer data transfers, better collaboration, and lower project costs.

The primary software for classifying UXO from EM sensor data is UX-Analyze, a geophysical target classification, modelling and analysis system developed by Geosoft and AcornSI for the U.S. Department of Defense (DoD), with funding support from the ESTCP.

Currently, UX-Analyze runs on personal computers in Geosoft's Oasis montaj software environment, providing data management and EMI analysis tools to detect, characterize, classify and document UXO. The cloud-based version will achieve the same results, but with much greater efficiency and security.

The solution will be configured to run on the Microsoft Azure cloud platform, ensuring the security of both data stored in the cloud and data transferred over the Internet. The UX-Analyze web server will provide software services for all functionalities including user permission management, project and survey planning, data processing, target picking, reporting, auditing, and decommissioning.

More information

- [Efficient and Secure Cloud Computing for UXO Classification and Project Management](#)

https://www.hydro-international.com/content/news/moving-uxo-classification-to-the-cloud