Geosoft DAP technology supports US Army Corps of Engineers' concept of Life Cycle Data Management for ordnance and explosives projects

The timely exchange of digital data in the course of conducting an Ordnance and Explosives (OE) project is a critical consideration. In the past, during both Engineering Evaluation/Cost Analysis (EE/CA) projects and Removal Actions, geophysical and GIS datasets have often been exchanged by attaching the data to emails, or by FTP transfer. Larger digital datasets are typically sent by burning the data onto a CD-ROM and express mailing it. On a very few occasions, GIS data for an OE project has been made available through the use of a Web-based GIS application that allows for live retrieval and viewing of data. No such live on-line capability has ever been implemented for geophysical datasets.

A key disadvantage of all these methods is that they do not allow for timely review and oversight of a contractor's geophysical data by the US Army Corps of Engineers (USACE). Mailing data can require a turnaround of several days and often results in project delays and missed opportunities to identify problems early and apply corrective actions where appropriate. Even an email or an FTP transfer is problematic because the party on the receiving end must download the entire file, including all associated files that might be needed, and reconstruct the viewing environment prior to performing any effective review.

In order to better meet their geophysical project data management needs, USACE conducted an evaluation of Geosoft DAP (Data Access Protocol) technology to determine its suitability for use in facilitating their concept of Life Cycle Data Management for OE projects.

Geosoft DAP viable and useful technology for performing reviews of geophysical datasets

The evaluation determined that the DAP Server technology is a viable and useful technology for performing reviews of geophysical datasets during active projects. DAP was found to be beneficial in allowing users to quickly and easily access and review geophysical data that is stored on a remote server. Even large datasets can be accessed used the DAP Server, as this technology dynamically streams only the relevant data in the viewing window to the client. The client software is easy to install, and straightforward to learn and use.
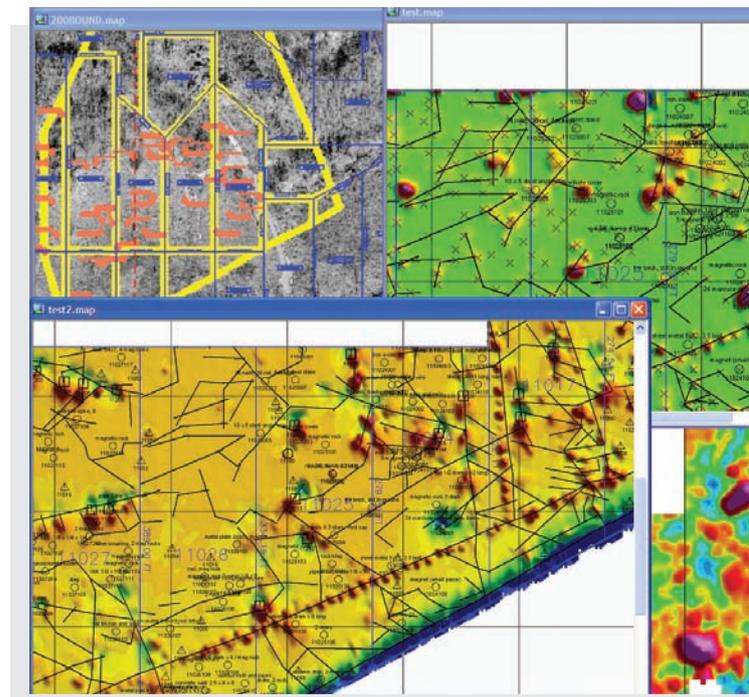
On the whole, it was determined that DAP technology could have a major role in filling the information exchange needs of USACE, contractors, and other stakeholders.

Geosoft DAP solution

For this project, a centralized server (the 'DAP Server') was implemented by Geosoft at Geosoft's office in Toronto. This server contained all of the files created as part of the geophysical investigation for this particular project, including historical data, supporting data (including GIS data) and project documents. A 'catalog' of these files was created using DAP server tools, and the DAP Server exposed this catalog to the client software (Oasis montaj) over the internet. The user could then choose which files to view and download, without

worrying about formats or having to reproject the data. Geosoft has built tools for the DAP Server to assist in both cataloging the data and managing the server side functions.

Geosoft has developed the Data Access Protocol (DAP) Server technology to address efficient distribution and management of geoscientific datasets. DAP enables the dynamic exchange of large datasets over the internet by 'windowing', compressing, and streaming the data for a selected area. This circumvents the usual requirement of having to send an entire dataset. For example, suppose that a Removal Action is being conducted at Installation X, and a DAP Server has been set up for use by the project team. Each day after the field work has been conducted, the geophysicist would process the data and upload it onto the DAP server. The Corps' geophysicist would then use the client software (in this case, Oasis Montaj v5.1.7) to selectively review the grids that were investigated for that day.

The DAP tool is not intended to perform analytical operations on remotely served data, but it is an excellent tool for QA/QC of geophysical data. It supports the live display of all Geosoft standard geophysical data formats, as well as the live display of Microstation format .dgn data.
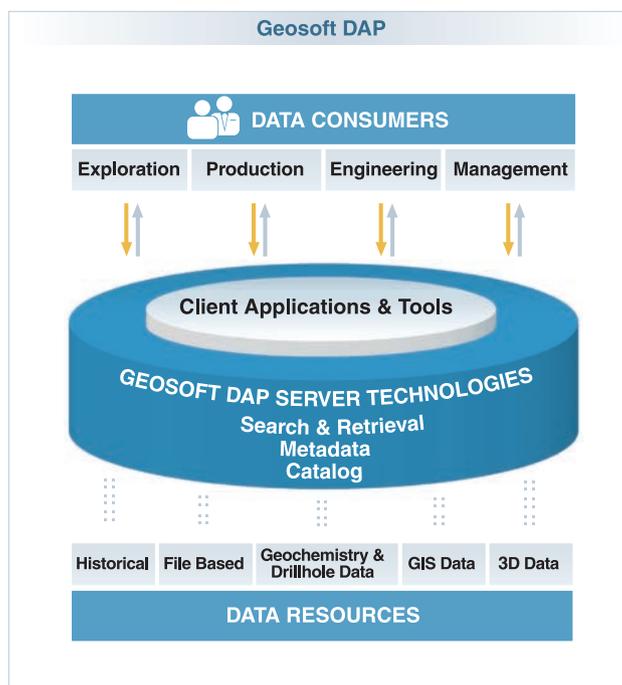
A Geosoft DAP server was interfaced with Oasis montaj to assist Life Cycle Data Management for OE projects. The solution enabled live access to geophysical datasets, facilitating efficient data distribution, timely data review and improved project management.

In addition to the dynamic display of these formats, the software is also able to handle all other files formats as 'documents'. This means that they are available for download through the Oasis montaj interface, similar to an FTP transfer. The entire file must be downloaded, however, and the user must also have the appropriate software loaded locally in order to open and work with the file. For example, a Word document could be made available on the DAP server. The end-user could download it and open it in Microsoft Word.

Geosoft DAP technology overview

 Geosoft DAP is a publishing service that makes spatial data placed on a file system available to a networked environment, and accessible via a web browser or web client application, such as ESRI's ArcIMS.

Once published to a DAP Server, data can also be accessed from a variety of desktop ('thick' client) applications including Geosoft's

Geosoft DAP — DATA CONSUMERS (Exploration, Production, Engineering, Management); Client Applications & Tools; GEOSOFT DAP SERVER TECHNOLOGIES — Search & Retrieval, Metadata, Catalog; DATA RESOURCES (Historical, File Based, Geochemistry & Drillhole Data, GIS Data, 3D Data)

Oasis montaj, and Geosoft montaj Viewer which are DAP-enabled. Geosoft has also developed plug-ins to DAP-enable MapInfo, ArcGIS and Windows Explorer. Users benefit from easy and transparent access to all available data from their desktop.

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