



SEISMIC ACQUISITION METADATA - STORING, MANAGING AND MINING

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Abstract

Logistics and planning play an ever more important role in determining the efficiency and profitability of a seismic operation as surveys continue to grow in size and complexity. The seismic metadata (information describing the seismic data) associated with these surveys is increasing at an even greater rate, yet is still stored in disparate locations such as trace headers, coordinate files, paper and electronic observer logs, ledgers, maps and various spreadsheets and databases. Efficient management, analysis and archival of metadata is both fundamental to acquisition logistics and quality control, and prevents 'metadata smear' associated with grouping temporally or spatially varying information during data processing. Furthermore, with the recent increase in popularity of time lapse seismic, the archived metadata from one survey becomes the pre-plan information for a repeat seismic survey, and it is consequently more important than ever that it be efficiently gathered, stored, analysed and archived.

By combining previously autonomous metadata sources with GIS layers (such as digital orthophotos and CAD files of pipelines or wells) into a single data warehouse, real inter-dependencies can be established through spatial, attribute, and temporal analysis, and proper cause and effect examination performed.

This paper presents the issues critical to building such a system will look at one particular implementation and will examine case studies illustrating some of the benefits that can be derived therefrom.
