

Automated Geoscience Application Projects and Assets Management

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ABSTRACT

The exponential growth of geoscientists, interpretations and models improves industry productivity and results in data accumulation over the years. Controlling data redundancy and improving asset tracking and protection are major challenges to enhancing data management, especially for large organizations. This paper shares a new solution to manage open access resources and define rules and regulations on interpretation and modeling environments. These policies will be governed by application project tracking and a management system. It streamlines interpretation and modeling processes and provides a roadmap for all other geoscience domains. A complete geoscience computing environment analysis was conducted in seismic interpretation and geological modeling workflows to cover major project-based application processes. In the seismic interpretation business process, the derived outcomes based on area of interest are faults, horizons, grids and maps. In 3D property modeling, the main outputs are porosity, permeability, water saturation and shale volume. These processes generally take months or even years to obtain the ultimate consequences for prospect generation and field development. This system captures application project requirements, processes and produced assets starting from creation to completion. The projects are controlled in a unified system with standard nomenclature to reduce projects and intermediate volume duplication. To maintain asset tracking, the projects are linked to geoscience applications workflows to facilitate asset identification using knowledge-based tracking methodology to manage data flow throughout its life cycle and optimize storage utilization. The integrated system also accommodates a centralized repository to enhance data organization, analysis and protection. In the future, geoscience projects will grow exponentially as the enterprise grows; and data expansion poses a challenge to quality and accuracy. The effective management of application project data and assets along with appropriate execution of architecture, policies and practices will be the principle of resources optimization.