CNOOC Increases Exploration and Development Success

GeoFrame software provides integrated project data management for major efficiency gains offshore China

CHALLENGE
Integrate exploration data management encompassing huge amounts of geoscience data for a large-scale offshore basin.

SOLUTION
Use GeoFrame integrated reservoir characterization system to centralize data for exploration projects, leveraging the GeoFrame enterprise solution that CNOOC has been employing since 2005.

RESULTS
Gained new efficiencies through GeoFrame software’s powerful data management capability—improving the quality and effectiveness of exploration and development projects; enhanced collaboration across E&P teams with shared access to data resources.

“"Our geoscientists can more easily collaborate and have greater confidence in project data accuracy using the full capabilities of GeoFrame software to support multidomain reservoir studies."”

Mr. Chen Shenyi
Senior Systems Engineer
CNOOC Shenzhen Subsidiary

Manage growing amount of geoscience data
Since the implementation of a Schlumberger Information Solutions (SIS) integrated E&P enterprise technology solution in 2005, CNOOC Shenzhen Subsidiary has used GeoFrame geological and geophysical (G&G) software in its oil and gas exploration and development projects. As the number of projects increased, however, more and more geoscience data accumulated. How to efficiently manage, use, and share data resources among several E&P teams was a major issue, and it became necessary to acquire highly accurate G&G data that would improve insight and decision making.

Integrate E&P domains and data
GeoFrame software integrates multiple E&P domains in a secure, shared project database and manages vast amounts of data. The productivity-enhancing features of this system were critical to CNOOC goals of consolidating all offshore exploration data and improving access to that data, so that geoscientists could spend more time on reservoir studies.

Three main categories of daily E&P data had to be included:
- basic data—2D and 3D seismic data; data from key exploration and appraisal wells including coordinates, deviation surveys, well types, and geological markers; and well log data such as sonic, density, and resistivity
CASE STUDY: G&G software supports multireservoir studies

GIS data—coastlines, water depth contours, basin boundaries, Class I and Class II structural units, concession block boundaries, and 3D seismic survey coverage within exploration and development areas

Interpretation results—oils and gas distribution maps, horizons, and faults from seismic interpretations, regional and local structure maps, isopach maps, and E&P summary maps.

GeoFrame software was leveraged to unify and centralize the data; help create large basin-scale projects; and load all 2D and 3D seismic data, well log data, seismic interpretation results, and log data from exploration and appraisal wells, basin structural unit outlines, 3D seismic coverage, various block boundaries, coastlines, and water depth contours.

GeoFrame data management functions enabled users to quickly query and access all seismic and well data, and to conduct subsequent collaborative tasks at the basin level in a secure, multiuser environment. Improved work efficiency allowed completion of exploration objectives in less time than before. Individual interpreters could perform tasks independently using shared data, and create multiple interpretation sets to test various play and prospect concepts, improving overall project accuracy.

Team members were able to browse and examine their data quickly and extract seismic, well log, and other relevant information from large projects for consolidation and generation of shared projects or subprojects. They could also access historical results to reach more rational geological judgments.

Increased exploration and development success rate

Tapping into the data management capability of GeoFrame software provided E&P team members at CNOOC with a tool that supports knowledge sharing and collaboration across the enterprise. This contributed to increased confidence in the data and a higher exploration and development success rate. The success was directly attributable to easier access to more accurate, centralized geoscience data and more time to focus on conducting and interpreting the results of reservoir studies.

Schlumberger Information Solutions

Schlumberger Information Solutions (SIS) is an operating unit of Schlumberger that provides software, information management, IT, and related services. SIS collaborates closely with oil and gas companies to solve today’s tough reservoir challenges with an open business approach and comprehensive solution deployment. Through our technologies and services, oil and gas companies empower their people to improve business performance by reducing exploration and development risk and optimizing operational efficiencies.

E-mail sisinfo@slb.com or contact your local Schlumberger representative to learn more.