Paradigm 15 release supports cross-domain workflows and expanded third-party data interoperability

Paradigm 15 introduces variable density support in its Echos Reverse Time Migration to capture and more accurately represent subsurface wave propagation. The release also expands its multicomponent offering with shear wave splitting processing and analysis for shale resource plays and other fractured reservoirs. Significant run-time performance improvements in broadband deghosting and full-azimuth imaging (EarthStudy 360) create additional opportunities for geophysicists to pursue high-definition processing and imaging objectives, from field data through seismic inversion. The Paradigm 15 release extends this method to more accurate parameterization of anisotropic velocity models with the incorporation of VSP arrivals in the GeoDepth grid tomography solution. The release also strengthens the synchronization of the geophysical (velocity) model and geological (earth) model through initial integration of its industry-leading GeoDepth and SKUA-GOCAD product lines. This enables geophysicists to utilize advanced structural and stratigraphic model building capabilities in the depth imaging workflow, incorporating geologic complexity and constraints in the process.

The integration of early Quantitative Seismic Interpretation (QSI) into the seismic interpretation process is a highly effective method for qualifying direct hydrocarbon indicators, enhancing the resolution of seismic data acquired over stratigraphic and thin bed reservoirs, and evaluating the fabric of a formation for stresses and fractures. In this release, Paradigm enriches its existing QSI solutions with two dedicated packages: QSI-RFP for rock and fluid properties, specifically designed for interpreters and reservoir geophysicists, and QSI-AzFP for azimuthal analysis of fracture properties. Among many fully integrated features, QSI-RFP offers a single, streamlined interface, and a new colored inversion tool to generate impedances as part of the interpretation process. Through the azimuthal analysis of fracture properties, QSI-AzFP provides accurate information about the orientation, intensity, and density of fracture/tectonic-stress systems, which is essential for the efficient production of oil and gas.

As part of the high-definition theme, the SKUA-GOCAD modeling system offers a new, easy-to-use variogram analysis tool to capture crucial multiscale spatial variability that is fundamental to building accurate velocity and reservoir models. The release also includes enhancements that allow the construction of flow simulation grids that honor geological deformations in highly compressive structures. Expanded integration with third-party databases and applications offers further productivity improvements. This includes support for the transfer of many data types generated in Paradigm processing, interpretation, and modeling applications between Epos and Petrel®, and between standalone Stratimagic and VoxelGeo applications and Petrel. Other enhancements include optimized performance in loading simulation and production data from Eclipse and CMG, and new connectivity options between Geolog and Landmark (Petris) Recall, and Geolog and Petrel (two-way data transfer).

Visit Paradigm at booth 2808 for more information.

Contributed by Paradigm

Over the past several years, seismic service companies and oil field operators have invested heavily in improving methods for acquiring high-resolution data from the subsurface. These include broadband seismic acquisition and processing, wide and rich azimuth seismic acquisitions, and new downhole tools that capture key reservoir parameters with high precision. This information allows geoscientists to resolve geologic features not solvable by conventional technologies and acquisition methods.

Unfortunately, by the time this information is processed, interpreted, and modeled, much of the rich information that was acquired has been degraded or even lost due to software limitations.

Paradigm’s “high-definition” platform is designed to capture and preserve high-resolution subsurface information from field recording to reservoir simulation. The technologies involved allow geoscientists to image, visualize, and model detailed subsurface features so that the full value of original field data is maintained.

High-resolution seismic and borehole data can result in improvements in vertical, spatial, and azimuthal (directional) resolution. To properly image, interpret, and model this data, Paradigm high-definition technologies include a new broadband deghosting solution; in-situ, full-azimuth seismic imaging and characterization; high-fidelity voxel-visualization; and true 3D chronostratigraphic modeling solutions that implement high-resolution geologic grids without distortions or approximations. Collectively, these technologies enable companies to optimize their return on investment from high-resolution recorded surface and subsurface data, with the ultimate goal of identifying the most productive targets first, drilling fewer but better wells, and minimizing non-productive time.

With its recent release of Paradigm 15, Paradigm has strengthened this high-definition platform with new technologies that support cross-domain workflows and expanded third-party data interoperability.

**Visit Paradigm at booth 2808 for more information.**